

No. 18-1765

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**United States Court of  
Appeals for the Federal Circuit**

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**FORUM US, INC.**, a Delaware corporation,

Plaintiff - Appellee,

v.

**FLOW VALVE, LLC**, an Oklahoma limited liability company,

Defendant - Appellant.

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Appeal from the United States District Court  
for the Western District of Oklahoma

Hon. Stephen P. Friot, Senior District Judge

(District Court No. CIV-17-0495-F)

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**CORRECTED  
Opening Brief of  
Flow Valve, LLC**

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### **Certificate of Interest**

1. The full name of every party represented by me is:  
Flow Valve, LLC
2. The name of the real party in interest (if the party named in the caption is not the real party in interest) represented by me is:  
none.
3. All parent corporations and any publicly held companies that owns 10% or more of the stock of the parties represented by me are:  
none.
4. The names of all law firms and the partners or associates that appeared for the party or amicus now represented by me in the trial court or agency or are expected to appear in this court are:  
Tomlinson McKinstry, P.C.: Robert D. Tomlinson, Ross N. Chaffin, Kelly J. Kress, and Gary Peterson.
5. The title and number of any case known to counsel to be pending in this or any other court or agency that will

directly affect or be directly affected by this court's decision in the pending appeal. See Fed. Cir. R. 47. 4(a)(5) and 47.5(b). (The parties should attach continuation pages as necessary).

None

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(Appx1-2)

Order Granting Summary Judgment, February 21, 2018  
(Appx3-14)

United States Patent No. RE45,878  
(Appx15-21)

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### **Statement of Related Cases**

There are no related cases.



## **I. Jurisdictional Statement.**

The District Court's jurisdiction in this patent case was based on 28 U.S.C. § 1338(a). This Court has appellate jurisdiction under 28 U.S.C. § 1295(a)(1).

On March 1, 2018, the District Court entered final judgment in favor of Forum's claim for a declaratory judgment of patent invalidity, and against Flow Valve's counterclaims for patent infringement. The remaining claims in the case were dismissed by agreement. Appx1-2. Flow Valve filed its notice of appeal on April 2, 2018.

## **II. Statement of the Issue.**

Did the trial judge properly grant a summary judgment invalidating claims of the reissue patent, without regard to evidence about how an artisan of ordinary skill would have understood the invention disclosed in the original patent?

## **III. Statement of the Case.**

In a first amended complaint filed in July of 2017, Forum sought declaratory judgments that Flow Valve's U.S. Patent No. RE45,878 was invalid, unenforceable, not infringed and

subject to intervening rights. Flow Valve denied liability, and counterclaimed for infringement of the same patent. Flow Valve also counterclaimed for a declaratory judgment of infringement. Both parties demanded a jury trial.

Flow Valve moved for summary judgment solely on the ground that new claims in Flow Valve's reissue patent were invalid because of failure to satisfy the "original patent" requirement. The trial judge granted this motion. Appx3-14. Judgment was entered in Forum's favor on its invalidity claim, and against Flow Valve's counterclaims. Appx1-2. Forum's remaining claims for declaratory judgment were dismissed by agreement. This appeal followed.

#### **IV. Statement of Facts.**

##### **A. The Flow Valve Invention.**

The invention relates to the machining of pipe joints used in the oil and gas industry. Such pipe joints must be machined in order to add threads, seats and other features. The pipe joint, or workpiece, is held in a "fixture" while it undergoes machining by a machine tool.

A fixture is custom-built to the shape of the specific workpiece that it will support. Because it locates each successive workpiece in the exact same position, a fixture allows production of multiple parts with standardized dimensions. Designing and building of fixtures is an important part of the work of a machinist. Appx179, ¶ 7.

A typical machine shop includes several kinds of machine tools. One such tool is the lathe, which rotates a workpiece. A stationary cutting tool cuts the workpiece as the lathe rotates it. If a workpiece is contained in a fixture, the lathe rotates the fixture as well. Another type of machine tool is the mill, which includes a rotating cutting tool. The mill holds the workpiece stationary as it is machined by the rotating cutter. When a part is to be produced through a rotational machining operation, either tool can be used to make it. Fixtures are useful with both kinds of tools. Appx183, ¶¶ 23-24.

“Elbows” are pipes that are bent, typically at a 90 degree angle. The RE45,878 patent discloses fixtures that are used in the machining of such elbows. The body of the fixture has an

internal channel that can receive an elbow. Opposite ends of the elbow project through openings formed in the body. Adjustable bolts fix the elbow within the body.

In one embodiment described in the specification and shown in the drawings, the body of the fixture is provided with “arbors”: knob-like projections that can be gripped by a lathe. No passage in the patent identifies arbors as essential or critical to the disclosed invention.

B. The Original and Reissue Patents.

Flow Valve’s 8,215,213 patent was issued on July 10, 2012, and was based on an application filed June 5, 2009. All of its 13 claims require “a plurality of arbors supported by the body member.” Appx22-27.

Flow Valve applied for reissue of the ’213 patent on July 10, 2014, two years after its issuance. The patent was reissued as No. RE45,878 on February 2, 2016. The reissue patent made no change in the specification and drawings. Original claims 1-13, all of which defined workpiece supporting assemblies, were largely unchanged as well. Dependent claim 4, the only original

claim to be altered, was corrected to add the words “means for.” These words had been omitted from the original patent by a transcription error. The reissue patent also added seven new claims, 14-20. These new claims covered a workpiece supporting assembly and a method of machining an elbow. None required any arbor. Appx19-21.

C. Forum’s Summary Judgment Motion and Flow Valve’s Response.

Forum moved for a summary judgment declaring the new reissue claims 14-20 invalid because of noncompliance with the original patent requirement of 35 U.S.C. § 251(a). Apart from the original and reissue patents themselves, the only evidence that Forum offered to support its motion was the deposition testimony of a patent lawyer, Mitchell McCarthy. Mr. McCarthy was one of the lawyers who represented Flow Valve during prosecution of the reissue application. Forum did not show that Mr. McCarthy had any technical expertise in the relevant art. The admissibility of Mr. McCarthy’s testimony was contested by Flow Valve, and the trial judge found it

unnecessary to consider it for purposes of the motion. Appx7 & n.3.

In opposing summary judgment, Flow Valve presented the declaration of Terry Iafrate, a working machinist from Weatherford, Oklahoma. Appx178-184. Mr. Iafrate has worked as a machinist since 1982, and has had extensive experience in the design and building of fixtures. Appx178-179, ¶¶ 3-4, 7. Mr. Iafrate stated that a person of ordinary skill in the field of fixture design, as of 2009, would have had twelve to fifteen years of work experience as a traditional machinist, including regular work on the design and building of fixtures. Appx180, ¶13.

Mr. Iafrate asserted that a worker of ordinary skill would have understood from the patent's disclosure that arbors were an optional feature of the invention it describes. Appx181, ¶ 16. He cited passages from the patent to support this opinion.

According to Mr. Iafrate, the patent told a worker of ordinary skill that the purpose of arbors was to locate the fixture in relation to a lathe, and to keep it attached to that

lathe. In support of this conclusion, he cited col. 3, l. 20-28, where the patent states: “the second arbor 60 is positioned so that the longitudinal axis 66 thereof is coincident with the datum or central axis 68 of the extending elbow end 12C. Thus, by ... placing the second arbor 60 in the chuck 42, rotation of the second arbor 60 and the body member 52 ... will rotate the elbow end 12C about its datum axis 68.” The chuck 42 is part of a lathe. Appx20; Appx181-182, ¶ 18.<sup>1</sup>

Given the purpose for arbors revealed by the patent’s text, Mr. Iafrate believed that a worker of ordinary skill would have recognized that arbors were not an essential component. Such an artisan would have known that other configurations of known components could have achieved the same purpose as arbors. Mr. Iafrate cited one such arborless configuration as an example. Appx182, ¶ 19.

Mr. Iafrate further stated that a worker of ordinary skill

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<sup>1</sup>Patent citations reference the reissue patent only. The line numbers in the reissue patent (Appx15-21) vary slightly from those in the original (Appx22-27), but the text and drawings relevant to the order under review are identical. The trial judge used the same citation system. Appx5 & n.2.

would have appreciated the optional nature of arbors from the patent's declaration about the non-criticality of its disclosed components: "While presently preferred embodiments of the invention have been described in varying detail for purposes of the disclosure, it will be understood that numerous changes may be made which will readily suggest themselves to those skilled in the art and which are encompassed within the spirit of the invention disclosed and as defined in the above text and in the accompanying drawings." Appx20, col. 3, l. 53-60; Appx182, ¶ 20.

D. The Trial Judge's Ruling.

The trial judge concluded that Mr. Iafrate's declaration was insufficient to create a genuine issue of material fact: "no matter what a person of ordinary skill in the art would recognize, the specification of the original patent must clearly and unequivocally disclose the newly claimed invention in order to satisfy the original patent rule." Because "the specification of the original patent does not explicitly and unequivocally indicate that the invention described therein can



be practiced without a plurality of arbors[,]” new claims 14-20 were found invalid. Appx12.

## **V. Summary of Argument.**

Flow Valve’s reissue patent claimed a subset of the elements claimed in its original patent. Forum sought summary judgment on the ground that the new reissue claims were invalid under § 251(a), because they covered an invention not disclosed in the original patent. In opposing summary judgment, Flow Valve offered evidence from an experienced machinist familiar with the level of ordinary skill in the art.

The machinist asserted that an artisan of ordinary skill would have understood from the original patent’s disclosure that the features omitted from the new reissue claims, arbors, were merely an optional part of the disclosed invention. The trial judge nonetheless granted summary judgment, deeming his own assessment of the original patent’s disclosure controlling, “no matter what a person of ordinary skill in the art would recognize.” Because patents are written for those of skill in the art, not for lawyers or judges, the judge erred by

dismissing the machinist's opinion in this way. His declaration created an issue of material fact that precluded summary judgment.

## **VI. Argument.**

### **The Trial Court Erred in Granting Summary Judgment on the Original Patent Defense.**

There was no dispute that Flow Valve's original patent contained a full written description of every feature of new reissue claims 14-20. The only controversy here was about an element *not* found in any of those claims: arbors. According to the trial judge, the new claims were invalid because the original patent did not say, "in an explicit and unequivocal manner," that arbors were an optional feature of the invention. Appx13. We disagree that this issue could be resolved by summary judgment.

#### **A. Standards of Review.**

This Court reviews a district court's grant of summary judgment *de novo*. See *Ethicon Endo-Surgery, Inc. v. United States Surgical Corp.*, 149 F.3d 1309, 1315 (Fed. Cir. 1998). Summary

judgment is appropriate when there is no genuine issue as to any material fact and the moving party is entitled to judgment as a matter of law. *Id.* In deciding whether summary judgment was appropriate, this Court must view all evidence in the light most favorable to the non-moving party. *Id.*

A patent is presumed valid. See 35 U.S.C. § 282(a). Proof of invalidity must be by clear and convincing evidence. See *Microsoft Corp. v. i4i Limited Partnership*, 564 U.S. 91, 95 (2011). The heightened burden of proof that a challenger of validity must bear is a key factor bearing on whether summary judgment is appropriate. See *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 254 (1986) (heightened standard of clear and convincing evidence is to be considered when evaluating sufficiency of evidence on motion for summary judgment).

**B. Claiming a Subset of the Disclosed Features Is a Longstanding Patent Practice.**

The new reissue claims covered a subset of the features disclosed in the original patent: one without arbors. Claiming of such a subcombination is a time-honored practice of patent

law. Indeed, there would be no occasion for authorizing reissue “by reason of the patentee claiming ... less than he had a right to claim in the [original] patent,” 35 U.S.C. § 251(a), if such subcombination claiming were not possible.

This Court has recognized the propriety of subcombination claiming:

It is common, and often permissible, for particular claims to pick out a subset of the full range of described features, omitting others .... A specification can adequately communicate to a skilled artisan that the patentee invented not just the combination of all identified features but combinations of only some of those features (subcombinations) which may achieve stated purposes even without omitted features.

*ScriptPro, LLC v. Innovation Associates*, 762 F.3d 1355, 1359 (Fed. Cir. 2014). The Supreme Court has approved the practice as well. See *Special Equipment Co. v. Coe*, 324 U.S. 370, 377 (1945) (“The statutes permit, and it is the settled practice of the Patent Office, many times sustained by this Court, to allow, claims to a combination and also its subcombinations”).

Flow Valve was following long-established patent practice

when it sought subcombination claims in its reissue application. While those claims had broader scope than those in the original patent, Flow Valve filed its application in time for such broadening. See 35 U.S.C. § 251(d). And there was nothing within the original patent that would compel a finding that such claims were unlawful.

**C. Factual Issues About How an Artisan Would Have Understood the Original Patent Precluded Summary Judgment.**

The trial judge found no “explicit and unequivocal” language in the original patent stating that arbors were an optional feature of the invention. Appx13. But the judge was relying on his own reading of the patent, while ignoring how a skilled artisan would understand it: “no matter what a person of ordinary skill in the art would recognize.” Appx12. We disagree that the insights of such an artisan can be dismissed so casually.

Patents are written for persons of ordinary skill in the art, not for judges or lawyers. Such an audience is reflected in the patent statutes, which require a disclosure “in such full, clear,

concise, and exact terms as to enable any person skilled in the art to which it pertains ... to make and use the same.” 35 U.S.C. § 112(a). See *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc) (“patents are addressed to and intended to be read by others of skill in the pertinent art”); *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. \_\_\_, 134 S.Ct. 2120, 2128-29 (2014) (“patents are ‘not addressed to lawyers, or even to the public generally,’ but rather to those skilled in the relevant art”). Under these authorities, the perspective of an artisan of ordinary skill is always critical in assessing a patent’s validity.

35 U.S.C. § 251(a) authorizes reissuance of a patent only for “the invention disclosed in the original patent.” Compliance with § 251(a) is an issue of law involving subsidiary issues of fact. See *Hester Industries, Inc. v. Stein Inc.*, 142 F.3d 1472, 1479 (Fed. Cir. 1998). The test for compliance with § 251(a) was announced in *In re Amos*, 953 F.2d 613 (Fed. Cir. 1991):

the inquiry that must be undertaken ... is to examine the entirety of the original disclosure and decide whether, through the “objective eyes” of the hypothetical person

having ordinary skill in the art, an inventor could fairly have claimed the newly submitted subject matter in the original application ....

953 F.2d at 618. How a patent's disclosure would be understood by a person of ordinary skill in the art is an issue of fact. See *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1567 (Fed. Cir. 1991).

In opposing summary judgment, Flow Valve offered evidence about how the original patent would have been understood by an artisan of ordinary skill. That evidence came from Terry Iafrate, a working machinist with many years of experience in designing and building fixtures. Appx178-180. Mr. Iafrate said that a worker of ordinary skill would have understood from the patent that arbors were an optional feature of the disclosed invention. Appx181, ¶ 16. He cited passages from the patent to support his conclusion.

According to Mr. Iafrate, a worker of ordinary skill would have recognized from the patent that the purpose of the arbors was to locate the fixture in relation to a lathe, and to keep it attached to that lathe. Appx181-182, ¶ 18. He cited a passage

from the patent identifying that purpose: “the second arbor 60 is positioned so that the longitudinal axis 66 thereof is coincident with the datum or central axis 68 of the extending elbow end 12C. Thus, by ... placing the second arbor 60 in the chuck 42, rotation of the second arbor 60 and the body member 52 ... will rotate the elbow end 12C about its datum axis 68.” The chuck 42 is part of a lathe. Appx20, col. 3, l. 20-28.

Given the purpose of arbors revealed by the patent’s text, Mr. Iafrate believed that a worker of ordinary skill would have recognized that arbors were not an essential component of the invention. Such an artisan would have known that other configurations of known components could achieve the same purpose that the patent identified for arbors. Mr. Iafrate cited an example of one such arborless configuration. Appx182, ¶ 19.

Mr. Iafrate noted that the patent expressly contemplates changes from the disclosed embodiment: “While presently preferred embodiments of the invention have been described in



varying detail for purposes of the disclosure, it will be understood that numerous changes may be made which will readily suggest themselves to those skilled in the art and which are encompassed within the spirit of the invention disclosed and as defined in the above text and in the accompanying drawings.” Appx20, col. 3, l. 53-60. He believed that this language would have confirmed to an artisan that arbors were non-critical components. Appx182, ¶ 20.

Nothing in the disclosure of the original patent is at odds with Mr. Iafrate’s conclusion. In particular, no passage in the original patent identifies arbors as critical to the inventions it discloses. Cf. *Johnson Worldwide Associates, Inc. v. Zebco Corp.*, 175 F.3d 985, 993 (Fed. Cir. 1999) (for claims to be limited to particular element disclosed in specification, disclosure must make “crystal clear” that element is essential to invention).

How might Flow Valve have written its original patent so as to satisfy the trial court? One way would have been to add the word “optional” to the patent’s initial description of arbors, at col. 3, l. 11-12. Appx20. The word “optional” would seem

sufficiently explicit and unequivocal to show that “the invention described therein can be practiced without a plurality of arbors.” Appx13. But how would this single word have benefitted one of ordinary skill in the art, the person to whom the patent was addressed?

According to Mr. Iafrate, an artisan of ordinary skill would already have understood from the original patent that arbors were optional. Appx181, ¶ 16. Such an artisan would have gained no additional knowledge by seeing the word “optional” in print. Where the reissue patent explicitly and unequivocally described each feature of the *claimed* invention, there was no sound reason to require use of an extra word like “optional” to describe an *unclaimed* feature.

While the trial judge perceived no “explicit and unequivocal” disclosure of an arborless invention, Mr. Iafrate disagreed, and did so from the standpoint of an artisan of ordinary skill. While Mr. Iafrate did not use legalisms like “explicit and unequivocal,” his declaration leaves no doubt that the patent’s disclosure was clear enough for such an artisan to

recognize an arborless invention. Neither § 251(a) nor § 112(a) requires anything more.

The trial judge was wrong in giving preclusive effect to his own beliefs about the patent, “no matter what a person of ordinary skill in the art would recognize.” Summary judgment on the record here was error.

**D. The *Antares* and *U.S. Industrial* Decisions Did Not Support Summary Judgment.**

In reaching its decision, the trial court gave primary weight to a panel decision of this Court in *Antares Pharma, Inc. v. Medac Pharma Inc.*, 771 F.3d 1354 (Fed. Cir. 2014) and a Supreme Court decision upon which it relies, *U.S. Industrial Chemicals, Inc. v. Carbide & Carbon Chemicals Corp.*, 315 U.S. 668 (1942). Appx9-13. But neither decision supported summary judgment here.

*Antares* involved a reissue patent litigated in the trial court on a motion for preliminary injunction. On appeal, this Court found the patent invalid for failure to satisfy the original patent requirement of § 251(a). But it appears that the *Antares* patent

owner chose not to offer any expert testimony at the hearing held on the original patent issue: no such evidence is mentioned in the opinion. Nothing in *Antares* suggests that the original patent issue can be resolved without a trial, when expert evidence like that here has been offered.

The *Antares* opinion made no reference to the level of skill in the relevant art, nor to how the original patent's disclosure would have been understood by an artisan of such skill. These omissions may have encouraged the trial court to act as it did. But *Antares* did not purport to overrule any of this Court's prior decisions tying the original patent requirement to the understanding of a person of ordinary skill in the art. See, e.g., *In re Amos*, 953 F.2d 613, 618 (Fed. Cir. 1991); *Revolution Eyewear, Inc. v. Aspex Eyewear, Inc.*, 563 F.3d 1358, 1367 (Fed. Cir. 2009). Indeed, without support from the en banc Court, the *Antares* panel lacked authority to overrule these prior decisions. See *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1563 (Fed. Cir. 1991) (decisions of a three-judge panel cannot overturn prior precedential decisions).

Following *Amos*, the *Revolution* Court equated the standards for compliance with the original patent requirement and the written description requirement of § 112(a). 563 F.3d at 1367 (“Because we have held that the written description requirement is satisfied, we similarly hold that claim 22 complies with § 251”). The trial judge perceived *Antares* as having altered this legal rule. Appx12 & n. 7. Again, we disagree. The *Antares* panel did not purport to overrule the *Revolution* holding, nor could it have taken such an action without en banc intervention by the full Court. *Amos* and *Revolution* remain the law, and are controlling here.

The *U.S. Industrial* case was decided, not on summary judgment, but after a full trial on the merits. See 121 F.2d 665, 666 (4th Cir. 1941). The *U.S. Industrial* Court took note of the importance that expert testimony could have on the original patent issue. 315 U.S. at 678 (“it is permissible, and often necessary, to receive expert evidence”). That evidence fell short in *U.S. Industrial*, but only because it ignored the disclosure of the patent: instead, it merely equated the disclosed and

claimed processes as a technical matter. *Id.* Mr. Iafrate's declaration, on the other hand, explains why the disclosure of the patent teaches a skilled artisan the invention claimed in the reissue patent. Such proof is what the *U.S. Industrial Court* found lacking, and it precludes summary judgment here.

**VII. Conclusion.**

The judgment of the District Court should be reversed.

Respectfully submitted,

/s/ Gary Peterson

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## **Addendum**

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**IN THE UNITED STATES DISTRICT COURT  
FOR THE WESTERN DISTRICT OF OKLAHOMA**

**FORUM US, INC., a Delaware corporation**

**Plaintiff,**

**v.**

**FLOW VALVE, LLC, an Oklahoma  
limited liability company**

**Defendant.**

**Case No. CIV-17-0495-F**

**FINAL JUDGMENT**

The Court is in receipt of Plaintiff/Counter-Defendant Forum US, Inc.’s (“Forum”) Unopposed Motion to Dismiss Without Prejudice.

By Order of February 21, 2018, Dkt. 45, the Court granted Forum’s Motion for Partial Summary Judgment, invalidating claims 14-20 of RE 45,878 as requested in Forum’s First Cause of Action – Declaratory Judgment of Invalidity. That summary judgment also disposed of Counterclaimant Flow Valve, LLC’s counterclaims for patent infringement and declaratory judgment of infringement as a result of the invalidation of claims 14-20 of the patent. Because claims 14-20 of RE 45,878 are the only claims asserted by Flow Valve in this case, Forum moves to dismiss its “Second Cause of Action – Declaratory Judgment of Unenforceability” and “Third Cause of Action – Declaratory Judgment of Non-Infringement and Intervening Rights,” as moot. *See*, Dkt. 44 at 2-3. Defendant/Counter-Claimant Flow Valve is not opposed to this motion.



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Plaintiff/Counter-Defendant's Second and Third Causes of Action are hereby **DISMISSED** without prejudice. Pursuant to the Court's grant of summary judgment in Dkt. 45, judgment is entered in favor of the Plaintiff on its claim for a declaratory judgment of patent invalidity. The Court declares claims 14-20 of United States Patent No. RE 45,878 invalid. Judgment is entered against the Defendant on its counterclaims.

Having disposed of all claims in this case, the Court hereby enters **FINAL JUDGMENT**.

The clerk shall give notice of this decision to the Director of the United States Patent & Trademark Office pursuant to 35 U.S.C. § 290.

IT IS SO ORDERED this 1<sup>st</sup> day of March, 2018.

  
STEPHEN P. FRIOT  
UNITED STATES DISTRICT JUDGE

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in a light most favorable to the non-movant. United States v. Agri Services, Inc., 81 F.3d 1002, 1005 (10<sup>th</sup> Cir. 1996). Once the moving party has met its burden, the opposing party must come forward with specific evidence, not mere allegations or denials, demonstrating that there is a genuine issue for trial. Posey v. Skyline Corp., 702 F.2d 102, 105 (7th Cir. 1983).

A patent is presumed valid and the burden of proving invalidity rests on the party asserting such invalidity; at trial, the party asserting invalidity (here, Forum) must prove invalidity by clear and convincing evidence. *See*, Microsoft Corp. v. i4i Ltd. Partnership, 564 U.S. 91, 95 (2011) (35 U.S.C. § 282 requires an invalidity defense to be proved by clear and convincing evidence). The court keeps this heightened standard of proof in mind when evaluating Forum's motion for partial summary judgment. *See*, Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 254 (1986) ("[I]n ruling on a motion for summary judgment, the judge must view the evidence presented through the prism of the substantive evidentiary burden," such as the "convincing clarity" requirement applicable in that case).

Determining whether a reissue patent violates 35 U.S.C. § 251 is a question of law which is reviewed *de novo*. AIA Engineering Ltd. v. Magotteaux Int'l S/A, 657 F.3d 1264, 1271 (Fed. Cir. 2011). This legal question may involve underlying factual questions. Hester Industries, Inc. v. Stein, Inc., 142 F.3d 1472, 1479 (Fed. Cir. 1998). Accordingly, before Forum could be entitled to partial summary judgment in its favor, it must establish, under the standards of Rule 56, that any underlying fact issues are undisputed on this record, and that it is otherwise entitled to summary judgment as a matter of law.

#### Summary of the Parties' Arguments

In this action, Forum seeks (among other relief) a declaratory judgment determining that claims 14-20 of reissue patent 45,878 are invalid for various reasons, including failure to meet the requirements of 35 U.S.C. § 251, the statute

which is the source of the original patent rule that is the subject of this motion. *See*, doc. no. 21 (First Amended Complaint, “First Cause of Action – Declaratory Judgment of Patent Invalidity,” ¶¶ 22-26; and “Prayer For Relief,” ¶ 1). Claims 14-20 are the new claims which were added by the reissue patent, to the original patent claims 1-13. The motion asks the court to summarily determine that claims 14-20 are invalid as a matter of law for failure to comply with the original patent rule.

Forum argues that claims 14-20 describe a workpiece supporting assembly without any requirement of a plurality of arbors.<sup>1</sup> Forum argues that for the reissue patent to be valid, the original patent rule requires that the specification of the original patent indicate, in an explicit and unequivocal manner, that the invention described therein can be practiced without a plurality of arbors.<sup>2</sup> Forum argues that the specification of the original patent does not do so because it does not explicitly and unequivocally indicate a workpiece supporting assembly without a plurality of arbors. Forum notes that the specification repeatedly refers to a plurality of arbors, including, for example, the following statement, found in the “description” portion of the original and reissue patents: “[T]he multiple arbors of the workpiece supporting assembly provides means for machining the ends of the unfinished elbow member 12 by a single set up and only a change from one arbor to one of the other arbors allows rapid and accurate machining of the workpiece in a machine turning machine.” Doc. no. 42-1, Col. 3, ll. 33-38 (original patent); doc. no. 42-2, Col.3, ll. 42-47 (reissue patent).

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<sup>1</sup> As shown in the figures in the original and reissue patents, the arbors extend from the workpiece supporting assembly and provide the means for attaching the workpiece supporting assembly to a lathe.

<sup>2</sup> As used in this order, “specification” embraces everything in a patent (visual and textual), aside from the claims. The line numbers in the reissue patent vary slightly from the line numbers in the original patent, but other than this, the original patent and the reissue patent are identical *except* for the fact that the reissue patent added claims 14-20. Thus, the specification of the original patent is reproduced in the specification of the reissue patent.

Flow Valve makes a variety of arguments in response to the motion. Flow Valve contends the issue presented by Forum's motion is one of fact as to which clear and convincing evidence is required at trial, and that genuine issues of material fact preclude summary judgment. Flow Valve argues the omission of arbors from the reissue claims does not render those claims invalid as a matter of law. Flow Valve argues that a patent may disclose multiple inventions, such as an invention with arbors and an invention without arbors. Flow Valve argues that the original patent's disclosure supports claims without arbors, as well as claims with arbors. Flow Valve argues that an artisan of ordinary skill would understand from the original patent that the arbors are an optional feature of the fixture. Flow Valve identifies evidence from its proposed expert, Terry Iafrate, for the proposition that an individual with ordinary skill in the art to which the patent relates, would understand, from the disclosures in the original patent, that the original patent supports claims to multiple inventions, specifically, a workpiece with arbors as well as a workpiece without arbors. Flow Valve argues that the relevant statute, 35 U.S.C. § 251, only requires that the claimed invention be disclosed in the original patent, and that the statute does not use the terms "explicit" and "unequivocal." Flow Valve argues that Forum's cases do not support summary judgment. Flow Valve argues that testimony from Mitchell McCarthy may not be considered. If McCarthy's testimony is considered, Flow Valve argues that his testimony is consistent with that of Iafrate and that it does not support summary judgment.

#### Initial Fact-Findings

Movant Forum presents six material facts, five of which are expressly admitted by Flow Valve and one of which, the sixth, Flow Valve purports to dispute.

The five facts which are expressly undisputed are as follows.

1. Flow Valve's original patent, patent number 8,215,213, issued on July 10, 2012.

2. All of the claims of the original patent, claims 1-13, either directly or indirectly, have a limitation requiring “a plurality of arbors.”
3. On July 10, 2014, Flow Valve sought a reissue patent in place of the original patent, which issued on February 2, 2016, as RE 45,878, entitled “Workpiece Supporting Assembly.”
4. The Reissue Patent added claims 14-20 to the original claims 1-13 from the original patent.
5. Claims 14-20 do not have the limitation requiring “a plurality of arbors.”

#### Discussion

The court begins its discussion with the sixth proposed fact presented in support of Forum’s motion. There, Forum contends:

6. The specification of the original patent does not indicate in an explicit and unequivocal manner that the invention described therein can be practiced without a plurality of arbors.<sup>3</sup>

Implicit in this sixth fact is Forum’s contention of law that, for a reissue patent to be valid, the original patent must indicate, in an explicit and unequivocal manner, the invention described in the reissue patent. Flow Valve appears to take issue with

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<sup>3</sup> For this contention, Forum cites excerpts from the deposition of McCarthy (prosecuting counsel for the reissue patent), found at doc. no. 42-3, pp. 36-37 and 40-46. Flow Valve contends the court should not consider McCarthy’s testimony because McCarthy was not qualified as an expert in any technical field, because his testimony as a lawyer is inadmissible, and because he was not designated under Rule 30(b)(6), Fed. R. Civ. P. Flow Valve also notes that McCarthy’s testimony was given in a prior action between these parties, and that the reissue patent did not exist when the deposition was taken. Without determining the propriety of considering McCarthy’s testimony, the court presumes, *arguendo*, that it should not consider that testimony at this stage, and it does not do so. That said, with or without consideration of that testimony, the result would be the same. Moreover, ignoring McCarthy’s testimony does not leave Forum’s sixth fact untethered to the record because the face of the original patent, standing alone, supports the sixth fact. *See* discussion n. 4, *supra*.

this proposition, arguing that the relevant statute, § 251, does not include the terms “explicit” or “unequivocal.” That argument, however, does not account for court decisions interpreting the statute, which are discussed later in this order.

Also pertinent to the sixth fact, the court observes that Flow Valve does not directly challenge Forum’s contention that the specification of the original patent does not indicate, in an explicit and unequivocal manner, that the invention described there can be practiced without a plurality of arbors.<sup>4</sup> Flow Valve argues that no passage in the original patent identifies arbors as critical to the inventions it discloses, but that is not quite the same thing. Iafrate’s affidavit, offered by Flow Valve, does not contend that the original patent teaches a fixture without arbors in an explicit and unequivocal manner. Rather, Iafrate’s affidavit discusses what a worker of ordinary skill *would* understand, or *would* know, or *would* appreciate. Doc. no. 43-1.

In short, Flow Valve purports to dispute the original patent’s lack of an explicit and unequivocal indication of an invention without a plurality of arbors *not*

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<sup>4</sup> Flow Valve cannot challenge Forum’s contention in this regard because it is clear, from the face of the original patent, that the original fails to explicitly and unequivocally disclose an invention without arbors, including for the following reasons.

- The original patent’s abstract, and its summary, both refer to a plurality of arbors.
- The original patent’s figures show two arbors.
- The original patent’s description refers to a first arbor and a second arbor.
- The original patent’s description explains the purpose of multiple arbors. (Previously quoted in this order, the description indicates that “[T]he multiple arbors of the workpiece supporting assembly provides means for machining the ends of the unfinished elbow member by a single setup....”)
- The original patent’s claims (1 – 13) include several express references to a plurality of arbors, and the other original claims refer indirectly to a plurality of arbors (by, for example, citing claims which expressly refer to a plurality of arbors).
- Nothing in the original patent refers to an invention without a plurality of arbors or an invention with no arbors.

by challenging this contention (Forum's sixth fact) head-on, but by proposing a different proposition, *i.e.* that an individual with ordinary skill in the art would understand, from the original patent, that it supports claims for an invention consisting of a fixture with arbors as well as a fixture with no arbors.

Accordingly, it is necessary to sort out, in the context of the original patent rule, the relationship between the two principles relied on by the parties: 1) Forum's reliance on a requirement that, for the reissue patent to be valid, the specification of the original patent must explicitly and unequivocally disclose a fixture with arbors and without arbors; and Flow Valve's reliance on evidence (taken as true at this stage) that an individual ordinarily skilled in the art would understand, from the disclosure of the original patent, that it supports claims with arbors as well as claims without arbors. Antares Pharma, Inc. v. Medac Pharma Inc., 771 F.3d 1354 (Fed. Cir. 2014), addresses the relationship between these positions. But before reaching that issue, it is helpful to address the original patent rule, and its source in § 251, more generally.

Title 35 U.S.C. § 251(a), entitled "Reissue of defective patents," provides as follows.

Whenever any patent is, through error, deemed wholly or partly inoperative or invalid, by reason of a defective specification or drawing, or by reason of the patentee claiming more or less than he had a right to claim in the patent, the Director shall, on the surrender of such patent and the payment of the fee required by law, reissue the patent for the invention disclosed in the original patent, and in accordance with a new and amended application, for the unexpired part of the term of the original patent. No new matter shall be introduced into the application for reissue.

35 U.S.C. § 251(a) (emphasis added).



In Antares, the Federal Circuit reaffirmed the original patent requirement (also referred to in this order as “the original patent rule”) which is derived from § 251, then found that the reissue claims asserted in that case violated the rule. *Id.* at 1357-58.<sup>5</sup> In reaching that conclusion, the court explained the consequence of waiting until after a patent had issued to seek to broaden claims (as occurred here), as follows.

The delay in seeking to broaden the claims is not without cost. By waiting until after the patent is issued, the applicant becomes subject to two additional requirements relevant here: first, the claims must not violate the recapture rule; second, the claims must satisfy the statutory original patent requirement of 35 U.S.C. § 251.

*Id.* at 1358 (emphasis added, footnote omitted).

Antares observes that the original patent requirement is well-established, having been recognized in the reissue statute and in longstanding Supreme Court jurisprudence. *Id.* at 1358. In that regard, Antares reviews various Supreme Court decisions, including what it calls “[t]he Supreme Court’s definitive explanation of the original patent requirement [which] appears in U.S. Industrial Chemicals, Inc. v. Carbide & Carbon Chemicals Corp., 315 U.S. 668, 62 S. Ct. 839, 86 L. Ed. 1105 (1942).” *Id.* at 1359. As described in Antares, in Industrial Chemicals, the Supreme Court found that the reissue patent was invalid for failing to satisfy the same invention requirement. *Id.*, citing Industrial Chemicals at 680-81. Per Antares, Industrial Chemicals ”explained that a reissue claim is for the same invention if the original patent specification fully describes the claimed inventions, but not if the broader claims are [ ] merely suggested or indicated in the original specification. [I]t

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<sup>5</sup> In Antares, the original claims, 1-22, covered a needle-assisted jet-injector system for injecting medicine, in which a needle punctures the skin before forcefully expelling the medicine. Plaintiff had obtained a reissue patent in which claims 23-27 were not limited to jet-injection devices and which focused, instead, on safety features for any injection devices. Antares at 1356.

is not enough that an invention might have been claimed in the original patent because it was suggested or indicated in the specification.” *Id.*, citing Industrial Chemicals at 676, full citations and interior quotations omitted.

Antares states that although the Supreme Court’s articulation of the same invention test in Industrial Chemicals was in the context of 35 U.S.C. § 64, which had slightly different language from the current reissue statute, 35 U.S.C. § 251, the 1952 amendments did not change the substance of the same invention statute. Antares at 1360.<sup>6</sup> As set out in Antares, after the 1952 amendments, the courts continued to view Industrial Chemicals as articulating the applicable test. *Id.* As one example, Antares cites McCullough Tool Co. v. Well Surveys, Inc., 343 F.2d 381 (10<sup>th</sup> Cir. 1965), a decision which reiterates the Industrial Chemicals rule that “[i]t is not enough that an invention might have been claimed in the original patent because it was suggested or indicated in the specification;” rather, the invention described in the reissue patent “must be ‘explicitly disclosed and taught’ in the specification.” Antares at 1360-61 (quoting McCullough at 389).

Finally, addressing the competing principles asserted by the parties in this case, Antares explains as follows. “[T]he Industrial Chemicals standard is analogous to the written description requirement [of 35 U.S.C. § 112], which...requires that the patent description clearly allow persons of ordinary skill in the art to recognize that the inventor invented what is claimed.” Antares at 1362, interior quotations and citations omitted. Antares then states: “Whether or not the written description requirement of §112 is satisfied here, Industrial Chemicals made clear that, for § 251, it is not enough that an invention might have been claimed in the original

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<sup>6</sup> Flow Valve argues that Industrial Chemicals involved a patent reissued prior to the 1952 amendments and that it is unclear whether Industrial Chemicals would have been decided the same way today. Flow Valve also makes other arguments regarding the inapplicability of Industrial Chemicals. The court rejects these arguments. As explained in the text of this order, Antares makes clear the ongoing importance of Industrial Chemicals.

patent because it was suggested or indicated in the specification. Rather, the specification must clearly and unequivocally disclose the newly claimed invention as a separate invention.” *Id.* at 1362 (interior quotations and citations omitted; emphasis added). Thus, according to the Federal Circuit’s understanding of Industrial Chemicals as set out in Antares, no matter what a person of ordinary skill in the art would recognize, the specification of the original patent must clearly and unequivocally disclose the newly claimed invention in order to satisfy the original patent rule.<sup>7</sup>

In short, Iafrate’s declaration, relied on by Flow Valve in an attempt to dispute Forum’s sixth fact, does not create a genuine issue of *material* fact regarding the contention posited in the sixth fact by Forum, which is that the specification of the original patent does not explicitly and unequivocally indicate that the invention described therein can be practiced without a plurality of arbors. The court finds that Forum’s sixth fact is undisputed on this record.

As stated in Antares, the invention described in the reissue patent “must be ‘explicitly disclosed and taught’ in the specification.” Antares at 1360-61 (quoting McCullough at 389). Because it is undisputed that the specification of the original patent does not comply with this requirement, claims 14-20 of the reissue patent violate the original patent rule and the reissue patent is invalid.

Antares is consistent with this result. For example, Antares notes that every one of the original claims contained the jet-injection limitation, but that the asserted claims were focused on particular safety features and did not contain the jet-injection

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<sup>7</sup> Consistent with this understanding, Antares’ discussion of In re Amos, 953 F.2d 613 (Fed. Cir. 1991), makes clear that although the original patent requirement is analogous to the written description requirement, the standards for judging whether those requirements are satisfied are not the same. Antares, at 1362, n.8 (discussing Amos; stating that the standards, while analogous, are not the same; distinguishing another case which suggested that one test was dispositive of the other and noting the other case had not taken Industrial Chemicals into consideration).

limitation. *Id.* at 362. A similar situation exists here, as all of the original claims refer directly or indirectly to a plurality of arbors and none of the original claims refers to a fixture without a plurality of arbors. Furthermore, as previously mentioned, Antares contrasts its facts with the facts of In re Amos, 953 F.2d 613 (Fed. Cir. 1991), a case which (unlike Antares) upheld the reissue patent. Antares at 1363. The facts of the present case are likewise distinguishable from those of Amos. In Amos, the reissue patent sought to add a computer-controlled embodiment. As described in Antares, Amos upheld the reissue patent because “the exact embodiment claimed on reissue was expressly disclosed in the specification.” *Id.*<sup>8</sup>

In summary, a reissue patent is invalid if it does not explicitly and unequivocally indicate the new invention sought to be covered in the reissue patent. Here, the specification of the original patent does not indicate, in an explicit and unequivocal manner, that the invention described therein can be practiced without a plurality of arbors. Despite this fact, a workpiece supporting assembly without a plurality of arbors is what is claimed by the reissue patent, in claims 14-20. In these circumstances, claims 14-20 are necessarily invalid under the original patent rule.

#### Conclusion

After careful consideration, the court determines and declares that claims 14-20 of United States Reissue Patent RE 45,878 are invalid as a matter of law under


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<sup>8</sup> Per Antares, the specification in Amos expressly disclosed that rollers, as they approached the end of the table, could be “raised either mechanically by the roller cams or electronically by the computer controlling the router.” *Id.* at 1363, quoting Amos at 614. The original claims had only covered the manual embodiment, but on reissue the applicant sought to add the computer-controlled embodiment. *Id.* at 1363.

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the original patent rule of 35 U.S.C. § 251, and that the reissue patent is therefore invalid. Forum's motion for partial summary judgment is **GRANTED**.<sup>9</sup>

IT IS SO ORDERED this 21<sup>st</sup> day of February, 2018.

  
STEPHEN P. FRIOT  
UNITED STATES DISTRICT JUDGE

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<sup>9</sup> Forum's reply brief states that a ruling in its favor will make it appropriate for the court to dismiss any other claims and enter judgment. If the parties agree in this regard, they may file a joint notice proposing a procedure by which to close this action and enter judgment. Otherwise, this action will remain pending, with the existing deadlines in place.



US00RE45878E

(19) **United States**  
 (12) **Reissued Patent**  
**Nowell et al.**

(10) **Patent Number:** **US RE45,878 E**  
 (45) **Date of Reissued Patent:** **Feb. 2, 2016**

(54) **WORKPIECE SUPPORTING ASSEMBLY**(71) Applicant: **Flow Valve LLC**, Sulphur, OK (US)

(72) Inventors: **Mark S. Nowell**, Ardmore, OK (US);  
**Guy J. Lapointe**, Sulphur, OK (US)

(73) Assignee: **FLOW VALVE LLC**, Sulphur, OK (US)(21) Appl. No.: **14/328,490**(22) Filed: **Jul. 10, 2014****Related U.S. Patent Documents**

Reissue of:

(64) Patent No.: **8,215,213**  
 Issued: **Jul. 10, 2012**  
 Appl. No.: **12/479,391**  
 Filed: **Jun. 5, 2009**

(51) **Int. Cl.**  
**B23B 5/36** (2006.01)  
**B23B 25/00** (2006.01)  
**B23B 31/00** (2006.01)

(52) **U.S. Cl.**  
 CPC ..... **B23B 25/00** (2013.01); **B23B 31/00**  
 (2013.01); **Y10T 82/2593** (2015.01); **Y10T**  
**82/27** (2015.01)

(58) **Field of Classification Search**  
 CPC ..... **B23B 25/00**; **B23B 25/31**; **Y10T 82/27**;  
**Y10T 82/2593**  
 USPC ..... **82/162**, **170**, **172**, **104**, **150**, **151**;  
**279/133**, **152**, **142**, **145**, **143**; **269/9**  
 See application file for complete search history.

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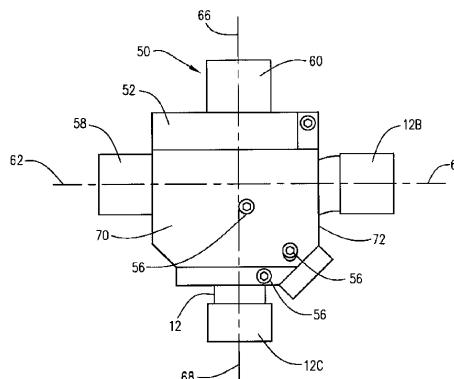
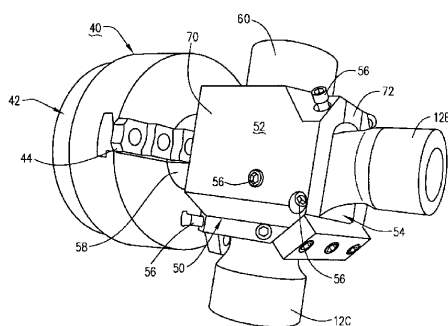
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Primary Examiner — William Doerfler

(74) Attorney, Agent, or Firm — Hall Estill Attorneys at Law

(57) **ABSTRACT**

A workpiece supporting assembly, having a body member with an internal workpiece channel and a plurality of body openings communicating with the internal workpiece channel, supports a workpiece within the workpiece channel so that end portions of the workpiece extend from the body openings. The body member has a plurality of arbors, each arbor having a longitudinal axis that is coincident with a datum axis of one of the extending workpiece portions. A turning machine grips one arbor at a time and rotates the body member about the selected longitudinal axis for machining the extended workpiece portion.

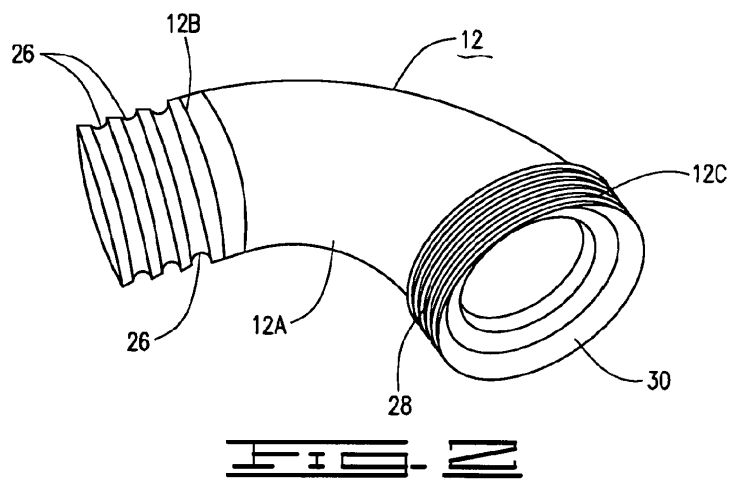
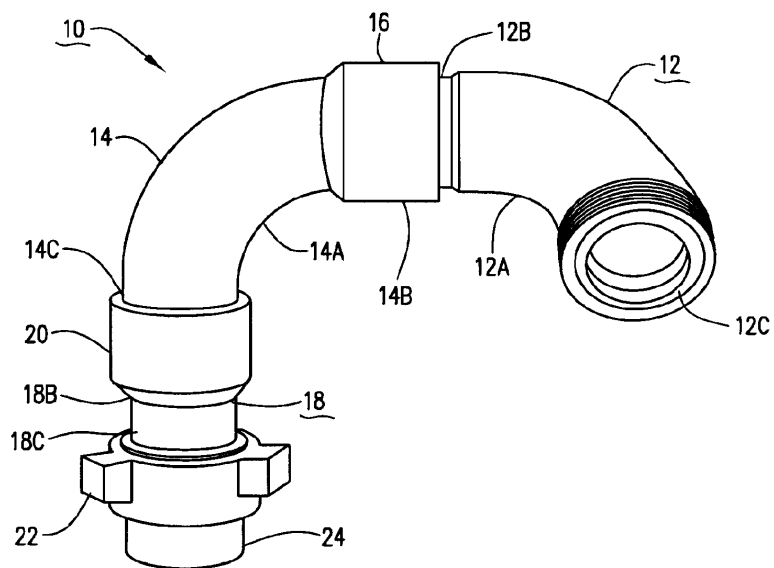
**20 Claims, 3 Drawing Sheets**

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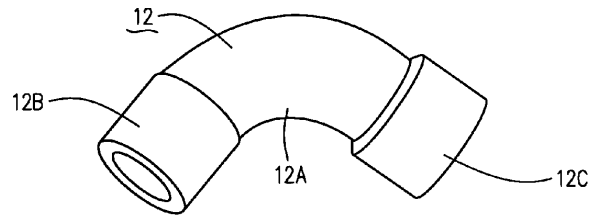


FIG. 3

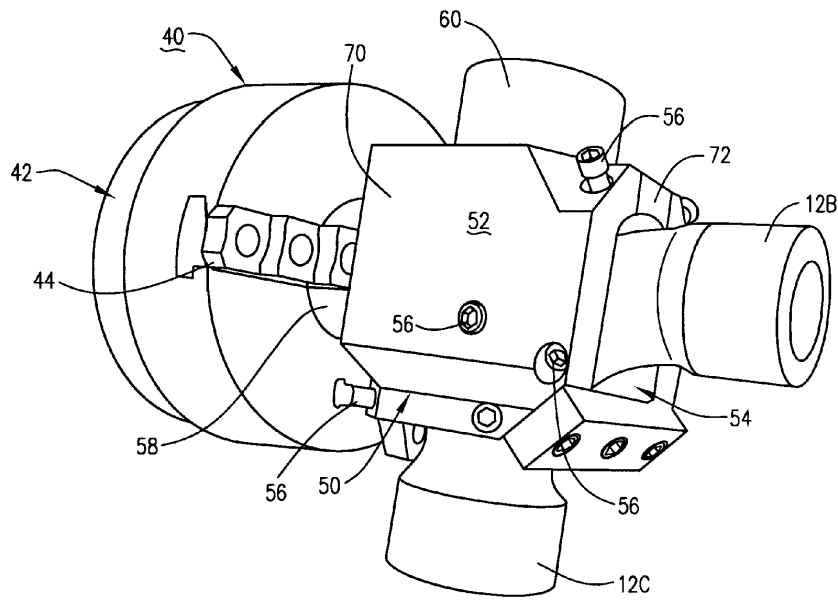


FIG. 4

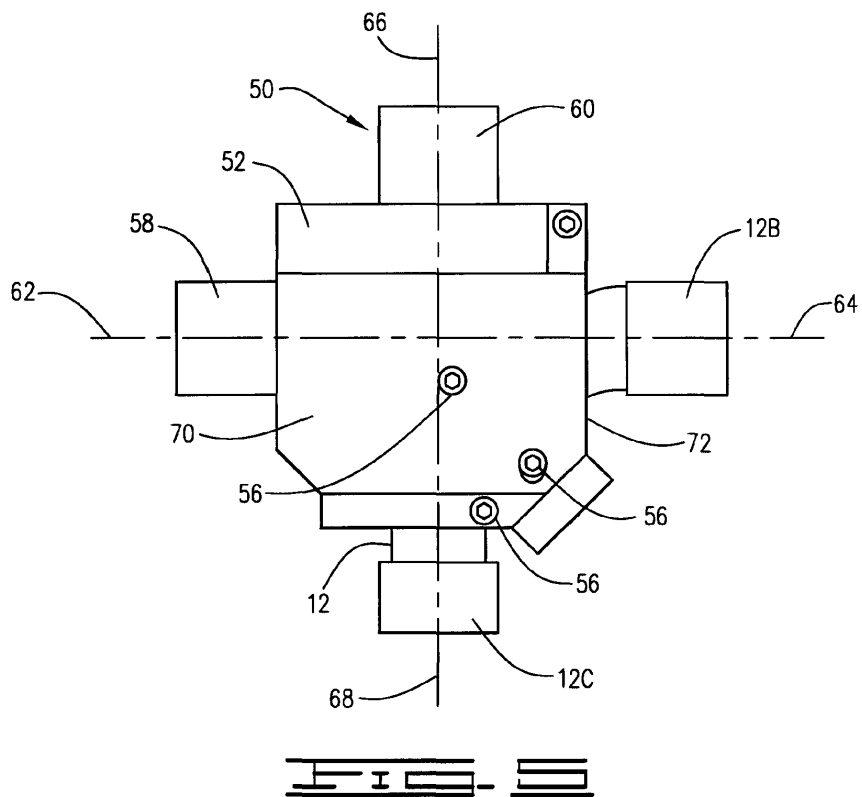


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**WORKPIECE SUPPORTING ASSEMBLY**

**Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates the additions made by reissue; a claim printed with strikethrough indicates that the claim was canceled, disclaimed, or held invalid by a prior post-patent action or proceeding.**

**FIELD OF INVENTION**

The present invention relates to metal shaping and machining devices, and more particularly but not by way of limitation, to an assembly for supporting a multi-face workpiece in workpiece machining implement such as a turning machine.

**DISCUSSION**

Many pipe fittings, such as pipe elbows and swivel joints, are manufactured by bending straight pipes, often at advanced temperatures, to a required length and angular extension. For such fittings of the type that are to be made up with other pipe sections or the like by means of threaded connections, one or more ends of the fittings require machining in a turning machine, such as a lathe, to form threads or to form seat surfaces.

Typically such pipe fittings are supported in a holding fixture such as a lathe chuck and rotated while a cutting tool is manipulated into cutting or polishing engagement to achieve the required shape of the fitting end. Commonly, multiple spindles supporting different working tools are mounted in a CNC lathe and the fitting is machined one end at a time, with the pipe fitting being supported in a different orientation by chucks to position each fitting end appropriately for machining in sequence. This often requires multiple chucks capable for each fitting to achieve the required orientation while accommodating the turning machine requirements.

It would be advantageous to provide a multi-purpose holding fixture that would serve to expedite the machining of the pipe fittings to minimize machine setup time while optimizing the integrity of the machining operation.

**SUMMARY OF INVENTION**

The present invention provides a workpiece supporting assembly having a body member with an internal workpiece channel and a plurality of body openings communicating with the internal workpiece channel. A workpiece is supported within the workpiece channel so that end portions of the workpiece extend the body openings. A plurality of arbors extend from the body member, each arbor having an axis coincident with a datum axis of one of the extending workpiece portions. A turning machine grips one of the arbors at a time and rotates the supporting assembly about the selected axis for machining the extended workpiece portion.

The nature, principle and utility of the invention will be made apparent from the following detailed description when read in conjunction with the accompanying drawings and appended claims.

**BRIEF DESCRIPTION OF THE DRAWINGS**

For an understanding of the embodiment of the invention described herein, reference is made to the following detailed

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description of the invention which is to be read in conjunction with the accompanying drawings, wherein:

FIG. 1 is a perspective view of a swivel joint assembly having components that can be machined by the present invention.

FIG. 2 is a perspective view of an elbow component of the swivel joint assembly of FIG. 1.

FIG. 3 is a perspective view of the elbow member of FIG. 2 in an unfinished condition.

FIG. 4 is a perspective view of a workpiece machining implement supporting a workpiece supporting assembly constructed in accordance with the present invention.

FIG. 5 is a side elevational view of the workpiece supporting assembly of FIG. 4.

**DESCRIPTION**

The present invention provides a workpiece supporting assembly capable of supporting a variety of workpieces, but will be illustrated in its application to the finish machining of the ends of an elbow member. Turning to the drawings, and in particular to FIG. 1, there is illustrated a conventional fitting, a swivel joint assembly 10, that has components that require fabrication by a turning machine. The swivel assembly 10 has a pair of elbow members 12 and 14, each of which has a 90 degree bend in the medial portion 12A and 14A, respectively. A first swivel joint 16 is formed by the joiner of a male end 12B of the elbow member 12 and a female end 14B, a plurality of ball bearings being disposed in internal grooves to accommodate rotation of the elbow member 12 with respect to the elbow member 14.

Similarly, an opposing male end 14C of the elbow member 14 is joined with a female end 18B of a pipe member 18 to form a second swivel joint 20, a plurality of ball bearings being disposed in internal grooves to accommodate rotation of the elbow member 14 with respect to the member 18. An opposing end 18C of the member 18 has a make-up collar 22, with externally extending hammer knobs, for threadingly engaging a threaded male end of a typical conduit joint 24.

FIG. 2 shows an enlarged view of the elbow member 12 in order to illustrate the ring grooves 26 in the end 12B, and threads 28 and beveled seat surface 30 in end 12C thereof. It will be recognized by persons skilled in the art that while the elbow member 12 can be bent by the application of external force to create the bend at its medial portion 12A, the precision features at its ends 12B and 12C, that is, the ring grooves 26, the threads 28 and the seat surface 30, require machining such as by a lathe. The view in FIG. 3 shows the elbow member 12 prior to this machining; that is, the ends 12B and 12C of the elbow member 12 have yet to be machined to form the ring grooves 26, threads 28 and seat surface 30.

In FIG. 4 a workpiece machining implement 40 is shown as having a lathe chuck 42 that is rotatable by a conventional motor and shaft arrangement (not shown) that are believed to be well known and need not be described in further detail herein. The chuck 42 is of the type having three or more gripping jaw members 44 (only one shown) that are movable toward each other by a turning key wrench to grip an item placed in between the jaws. Shown in FIGS. 4 and 5 is a workpiece supporting assembly 50 in which is mounted a workpiece, namely, the unfinished elbow 12 having its ends 12B and 12C extending therefrom.

The workpiece supporting assembly 50 has a body member 52 that forms an internal channel 54 that is configured to rigidly support the elbow 12, which in this example is the workpiece to be worked upon by the workpiece machining implement 40. Several support adjustment bolts 56 (only

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some of which are shown) are positioned about the body member 52 in threaded bores that communicate with the internal channel 54 so that the bolts disposed therein extend into the internal channel 54 so as to press against the medial portion 12A of the elbow 12, and upon tightening, the adjustment bolts 56 will secure the elbow 12 therein for operation upon by a cutting or polishing tool (not shown).

The body member 52 provides body openings that communicate with the internal channel 54 so that extending workpiece portions (the ends 12B, 12C) extend from the body openings. Further, the body member 52 has a first arbor 58 and a second arbor 60 supported to extend from the body member 52. The first arbor 58 is positioned so that the longitudinal axis 62 thereof is coincident with the datum or central axis 64 of the extending elbow end 12B so that, when workpiece machining implement 40 rotates the chuck 42, the first arbor 58 is rotated about its longitudinal axis 62, the body member 52 will rotate the elbow end 12B about the datum axis 64 thereof.

In like manner, the second arbor 60 is positioned so that the longitudinal axis 66 thereof is coincident with the datum or central axis 68 of the extending elbow end 12C. Thus, by removing the body member 52 from the chuck 42, with the elbow 12 still secured in the internal channel of the body member 52, and placing the second arbor 60 in the chuck 42, rotation of the second arbor 60 and the body member 52 about the longitudinal axis 66 of the second arbor 60 will rotate the elbow end 12C about its datum axis 68.

The body member 52 comprises a pair of side plates 70 and end plates 72 that are joined via screw members (not shown) and serve as a housing to form the internal channel 54. Threaded bores are readily made at appropriately spaced apart locations to support the treaded adjustment bolts 56 that are dimensioned to extend into the channel 54. The openings of the channel 54 are determined to permit placing the workpiece, which is in the embodiment illustrated, the elbow member 12, and once the ends 12B, 12C extend an appropriate distance, the adjustment bolts 56 are tightened against the elbow member so as to secure it therein. A simple machine set up is made so that the datum axes 64, 68 align to coincide with the longitudinal axes 62, 66, respectively.

Thus, the multiple arbors of the workpiece supporting assembly provides means for machining the ends of the unfinished elbow member 12 by a single setup and only a change from one arbor to one of the other arbors allows rapid and accurate machining of the workpiece in a machine turning machine. That is, the ring grooves 26 on the end 12B and the external threads 28 on the end 12C, as well as the seats, of the elbow member 12 can be machined by the workpiece machining implement such as illustrated as a conventional lathe.

It is clear that the present invention is well adapted to carry out the objects and to attain the ends and advantages mentioned as well as those inherent therein. While presently preferred embodiments of the invention have been described in varying detail for purposes of the disclosure, it will be understood that numerous changes may be made which will readily suggest themselves to those skilled in the art and which are encompassed within the spirit of the invention disclosed and as defined in the above text and in the accompanying drawings.

What is claimed is:

1. A workpiece machining implement comprising:

a workpiece supporting assembly comprising:

a body member having an internal workpiece channel, the body member having a plurality of body openings communicating with the internal workpiece channel;

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means supported by the body member for positioning a workpiece in the internal workpiece channel so that extending workpiece portions of the workpiece extend from selected ones of the body openings;

a plurality of arbors supported by the body member, each arbor having an axis coincident with a datum axis of one of the extending workpiece portions; and

means for rotating the workpiece supporting assembly about the axis of a selected one of the arbors.

2. The workpiece machining implement of claim 1 wherein the body member comprises side plates and end plates and means for connecting said plates to form the workpiece channel.

3. The workpiece machining implement of claim 1 wherein the means for positioning comprises a plurality of adjustment bolts supported by the body member to extend into the workpiece channel.

4. The workpiece machining implement of claim 1 wherein the means for rotating comprises a chuck.

5. An implement for machining a multiple datum axis workpiece, comprising:

a body member having a workpiece channel;

a plurality of arbors supported by the body member, each arbor having an axis, the workpiece supportable in the workpiece channel so that each of the workpiece datum axes is coincident with one of the arbor axes;

means for rotating a selected one of the arbors so that the workpiece is rotated about a selected one of the workpiece axes.

6. The workpiece machining implement of claim 5 wherein the body member comprises side plates and end plates and means for connecting said plates to form the workpiece channel.

7. The workpiece machining implement of claim 5 further comprising a plurality of adjustment bolts supported by the body member to extend into the workpiece channel to position and secure a workpiece in the workpiece channel.

8. The workpiece machining implement of claim 5 wherein the means for rotating the arbors is a lathe chuck.

9. A workpiece supporting assembly comprising:

a body member having an internal workpiece channel, the body portion having a plurality of body openings communicating with the internal workpiece channel;

means supported by the body member for positioning a workpiece in the internal workpiece channel so that extending workpiece portions of the workpiece extend from selected ones of the body openings; and

a plurality of arbors supported by the body member, each arbor having an axis coincident with a datum axis of one of the extending workpiece portions.

10. The assembly of claim 9 further comprising:

means for rotating the workpiece supporting assembly about the axis of a selected one of the arbors.

11. The assembly of claim 9 wherein the body member comprises side plates and end plates and means for connecting said plates to form the workpiece channel.

12. The workpiece machining implement of claim 9 wherein the means for positioning comprises a plurality of adjustment bolts supported by the body member to extend into the workpiece channel to position and secure the workpiece.

13. The workpiece machining implement of claim 10 wherein the rotating comprises a lathe chuck.

14. A workpiece supporting assembly for securing an elbow during a machining process that is performed on the elbow by operation of a workpiece machining implement, the workpiece supporting assembly comprising:

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a body having an internal surface defining a channel, the internal surface sized to receive a medial portion of the elbow when the elbow is operably disposed in the channel; and

a support that is selectively positionable to secure the elbow in the workpiece supporting assembly, the body pivotable to a first pivoted position, the body sized so that a first end of the elbow extends from the channel and beyond the body so the first end of the elbow is presentable to the workpiece machining implement for performing the machining process, the body pivotable to a second position and sized so that a second end of the elbow extends from the channel beyond the body so the second end of the elbow is presentable to the workpiece machining implement for performing the machining process.

15. The workpiece supporting assembly of claim 14 wherein the support comprises an adjustment bolt supported by the housing member to extend into the workpiece channel.

16. A workpiece supporting assembly for rigidly supporting an elbow during a machining process that is performed on the elbow by a workpiece machining implement, the workpiece supporting assembly comprising:

a body having an internal surface defining a channel, the internal surface sized to receive a medial portion of the elbow when the elbow is operably disposed in the channel; and

a support adjustment bolt threadingly engaged with the body and selectively positionable to urge the medial portion of the elbow against the internal surface, the body sized so that each end of the elbow extends from the channel and beyond the body so that each end of the elbow is presentable to the workpiece machining implement for performing the machining process after securing the elbow and before removing the secured elbow from the workpiece supporting assembly.

17. A workpiece supporting assembly for securing an elbow during a machining process that is performed on the elbow by operation of a workpiece machining implement, the workpiece supporting assembly comprising:

a body having an internal surface defining a channel, the internal surface sized to receive a medial portion of the elbow when the elbow is operably disposed in the channel; and

a support that is selectively positionable to operably urge the medial portion of the elbow against the internal surface to thereby secure the elbow in the workpiece supporting assembly, the body selectively positionable to a first position where a datum axis of one end of the secured elbow is operably aligned with the workpiece machining implement, and the body alternatively positionable to a different second position where a datum axis of the other end of the secured elbow is operably aligned with the workpiece machining implement.

18. A method for securing an elbow during a machining process that is performed on the elbow by operation of a workpiece machining implement, the method comprising:

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obtaining a workpiece supporting assembly having an internal surface defining a channel, the internal surface sized to receive a medial portion of the elbow;

placing the elbow in the channel;

positioning a support to operably secure the elbow in the workpiece supporting assembly, the body sized so that each end of the elbow extends from the channel and beyond the body so that each end of the elbow is presentable to the workpiece machining implement for performing the machining process;

after the positioning a support, positioning the workpiece supporting assembly to a first position to align a datum axis of one end of the elbow with the workpiece machining implement and performing the machining process for the one end of the elbow;

after the positioning the workpiece supporting assembly to a first position, positioning the workpiece supporting assembly to a different second position to align a datum axis of the other end of the elbow with the workpiece machining implement and performing the machining process for the other end of the elbow; and

after the performing the machining process for the other end of the elbow, removing the secured elbow from the workpiece supporting assembly.

19. A method for machining an elbow having first and second ends, comprising:

placing the elbow into a channel on a body of a workpiece supporting assembly so that first and second ends of the elbow extend beyond the channel;

securing the elbow against at least a portion of an inner surface of the channel using a support that engages the body;

performing a first machining operation on the first end of the elbow;

positioning at least a portion of the workpiece supporting assembly;

performing a second machining operation on the second end of the elbow; and

removing the elbow from the workpiece supporting assembly.

20. A workpiece supporting assembly for securing an elbow during machining of first and second ends of the elbow by a workpiece machining implement, comprising:

a body having a channel therein for receiving the elbow, whereby the first and second ends of the elbow extend from the channel;

a support that engages the body and secures the elbow in the channel, the body positionable between a first position for machining the first end of the elbow by the workpiece machining implement and a second position for machining the second end of the elbow by the workpiece machining implement.

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### **Certificate of Service**

I certify that on June 6, 2018 I transmitted the foregoing to the Clerk using the Court's CM/ECF System for filing. Based on the records currently on file, the Clerk will transmit a Notice of Docket Activity to the following attorneys for Appellee, who are CM/ECF registrants:

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