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Capkovic

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(54) **WIRE COIL STABILIZER AND SAW GUIDE**

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B23D 51/04 (2006.01)

(52) **U.S. Cl.**
CPC ***B23D 51/04*** (2013.01)

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CPC B23D 55/04; B23D 51/04; B21L 19/00; B27G 5/02; B27G 5/026; B26B 29/06
USPC 30/90.4, 90.8, 92.5, 394, 506–509, 124, 30/90.1, 90.2; 83/452–456, 761–764, 83/767; 269/293–295
See application file for complete search history.

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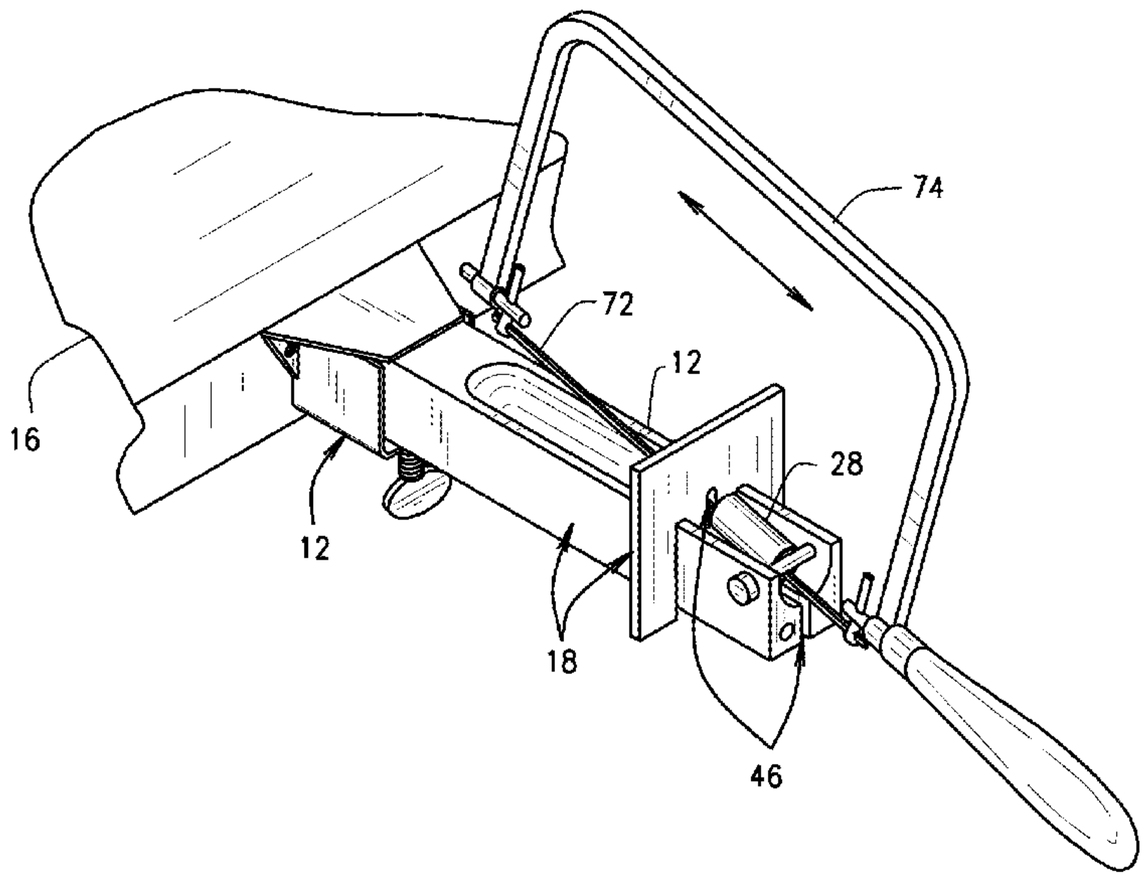
(57) **ABSTRACT**

A wire coil stabilizer and saw guide for cutting jump rings from a coil of wire including a block with a half circle groove having a bottom slot for holding a coil of wire threaded on a jeweler's saw blade. A tracking plate with a slit aligned with the bottom slot for compressing the coil of wire in the groove and aligning a jeweler's saw blade with the coil of wire.

10 Claims, 8 Drawing Sheets



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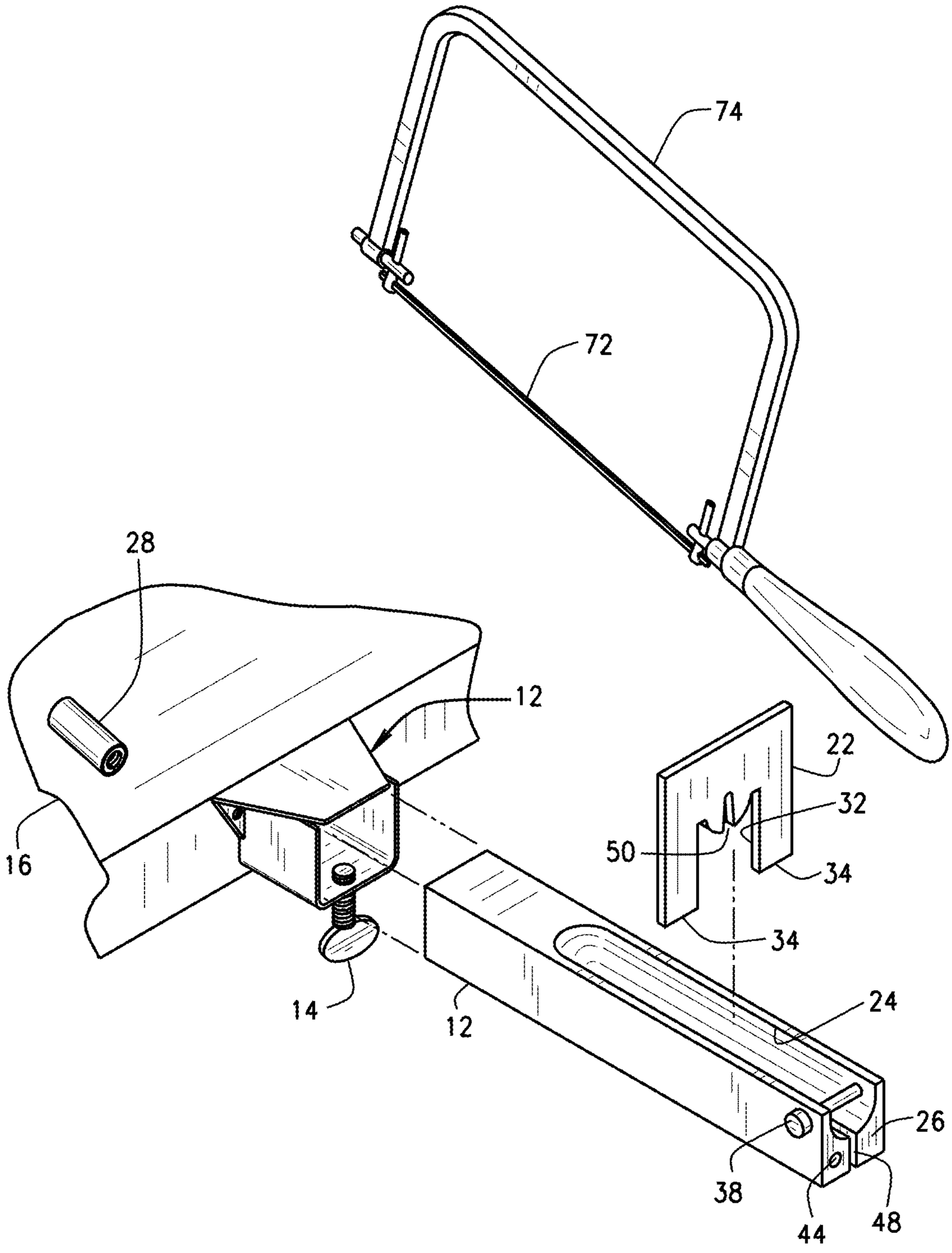

FIG. 1

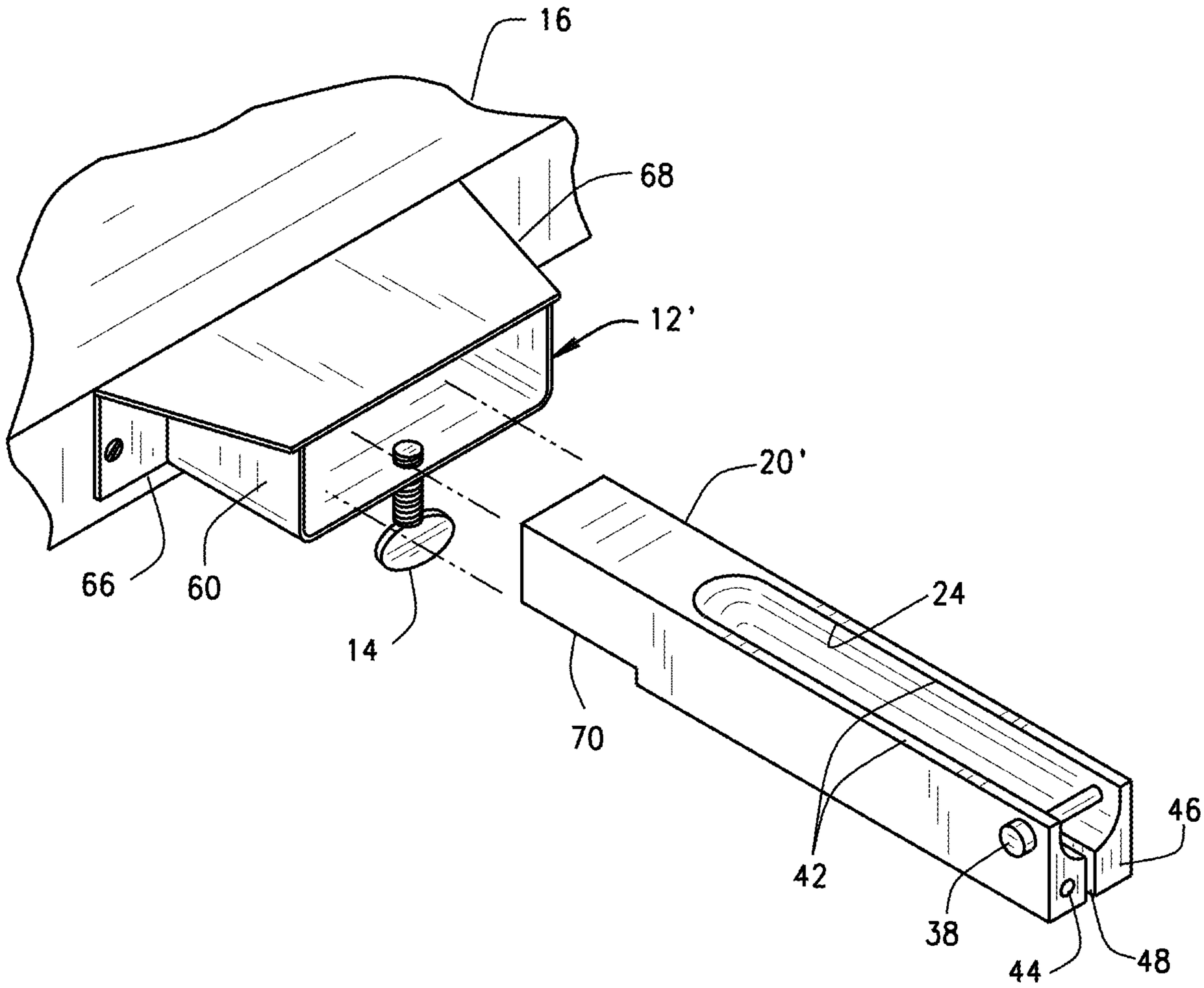

FIG. 2

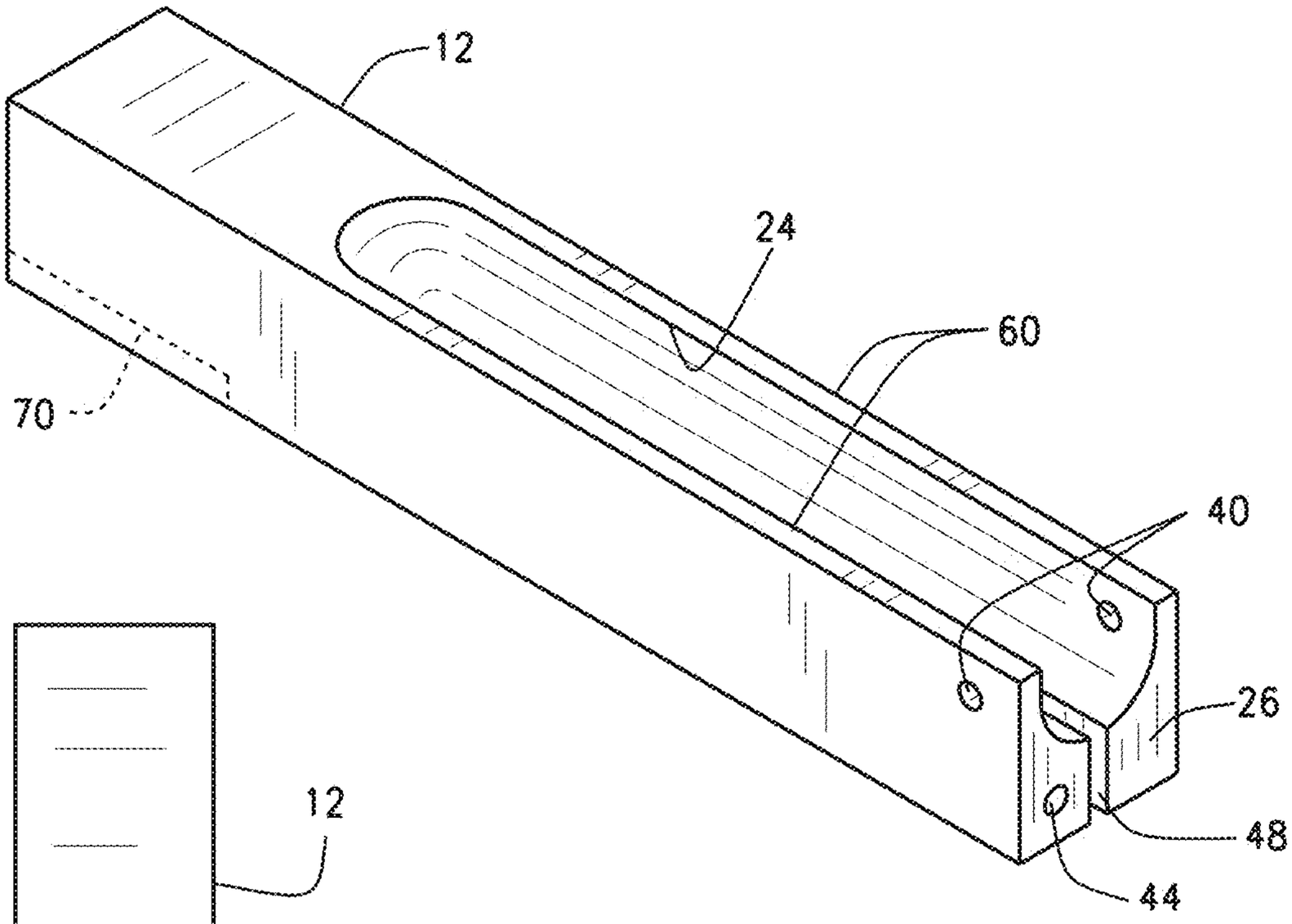

FIG. 3

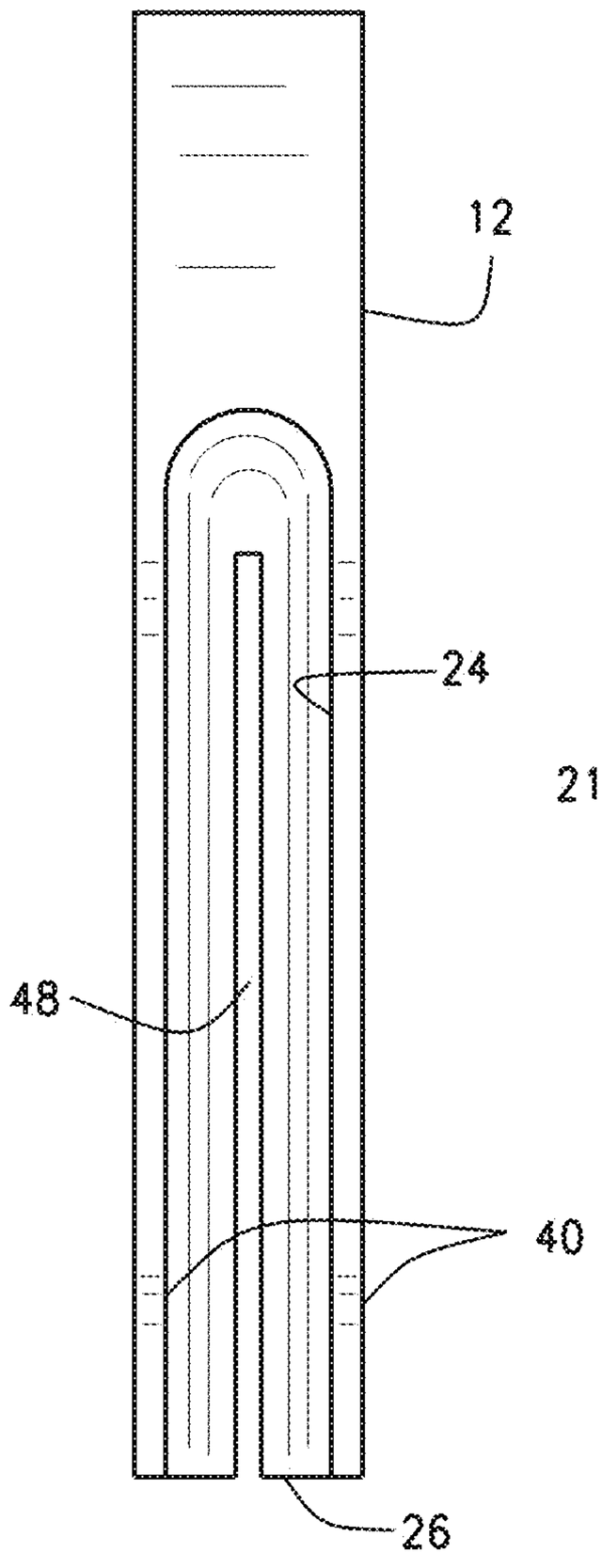

FIG. 4

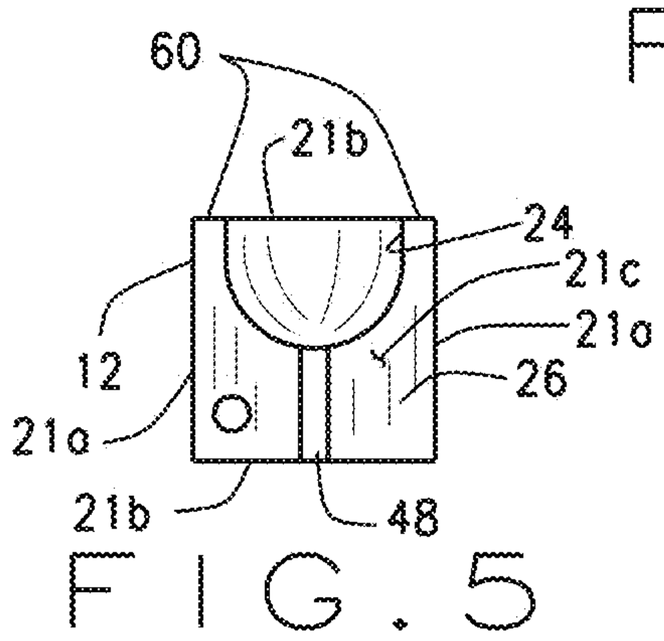

FIG. 5

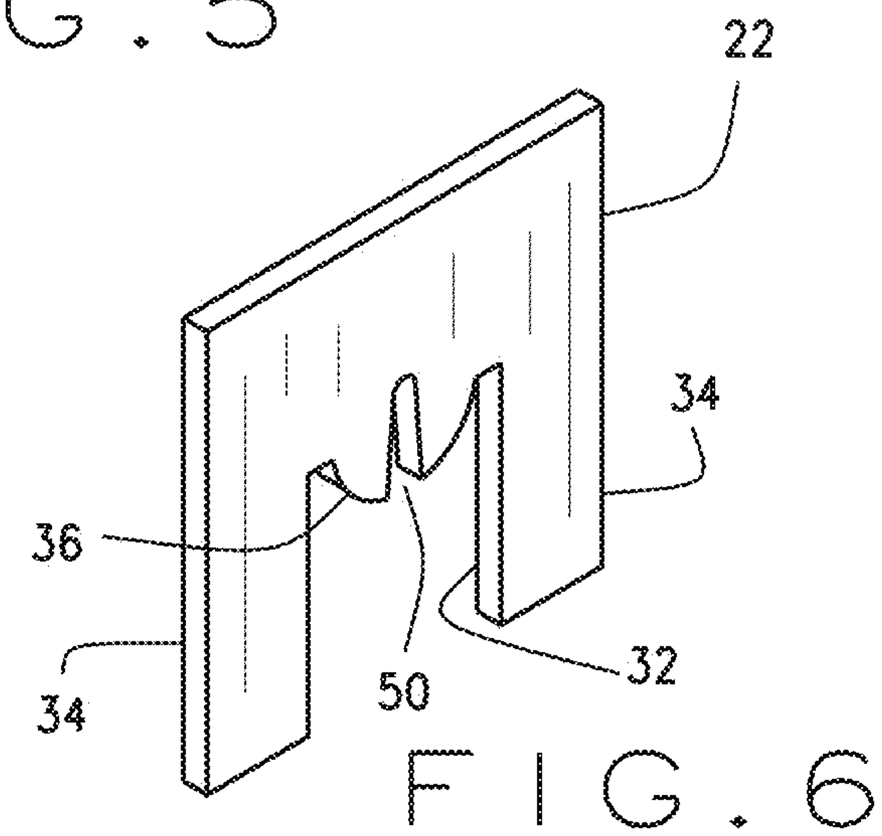

FIG. 6

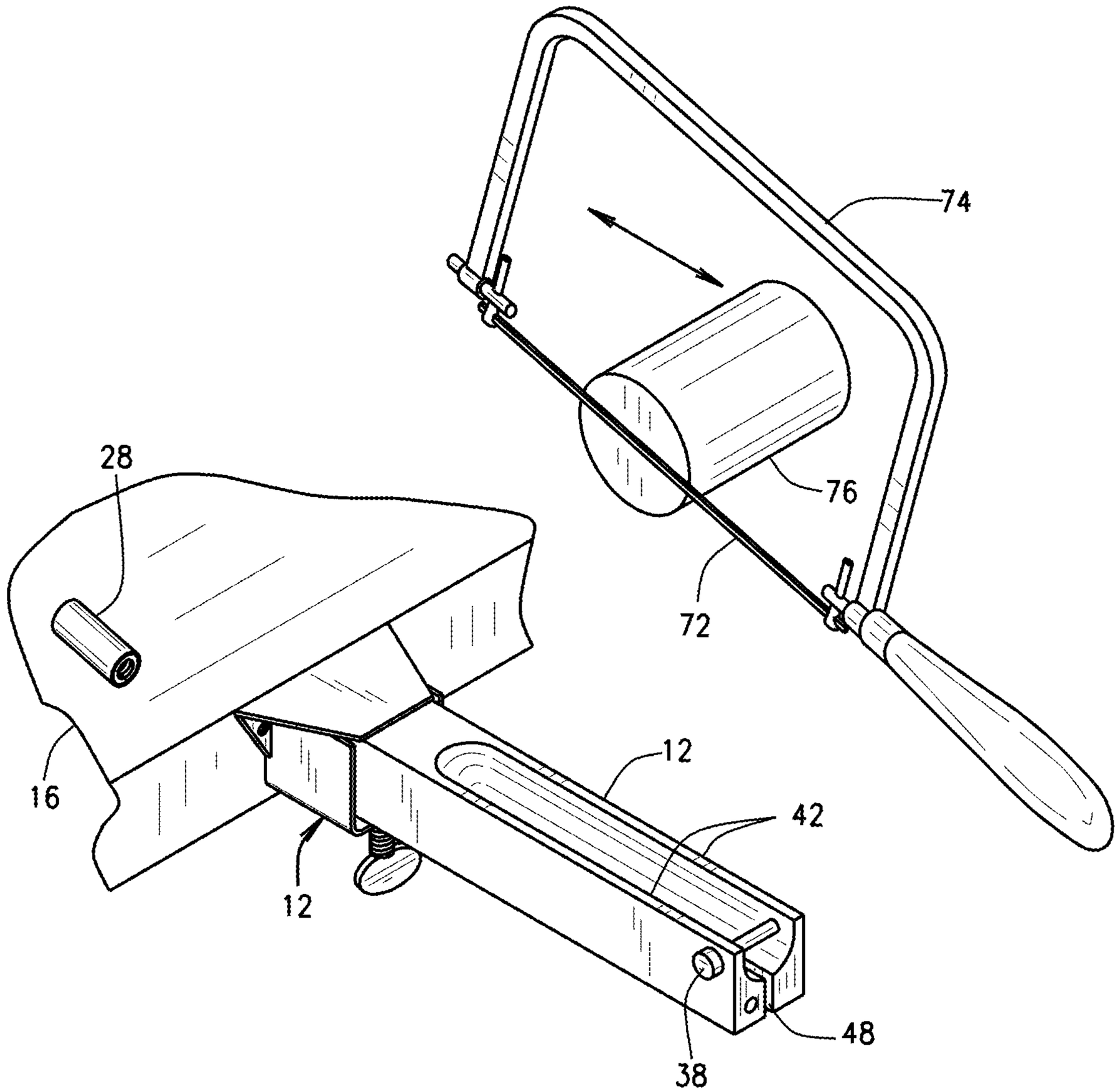

FIG. 7

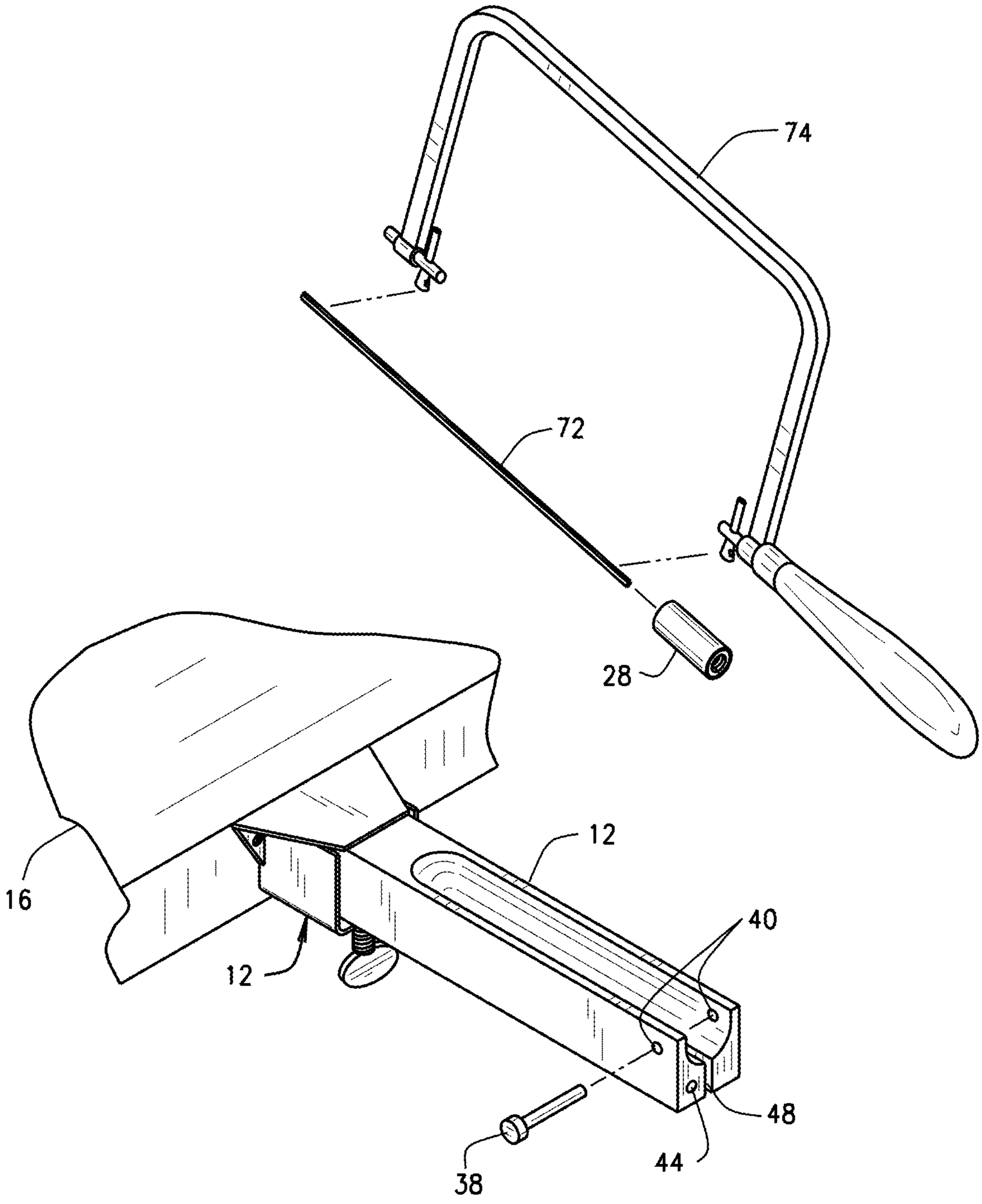

FIG. 8

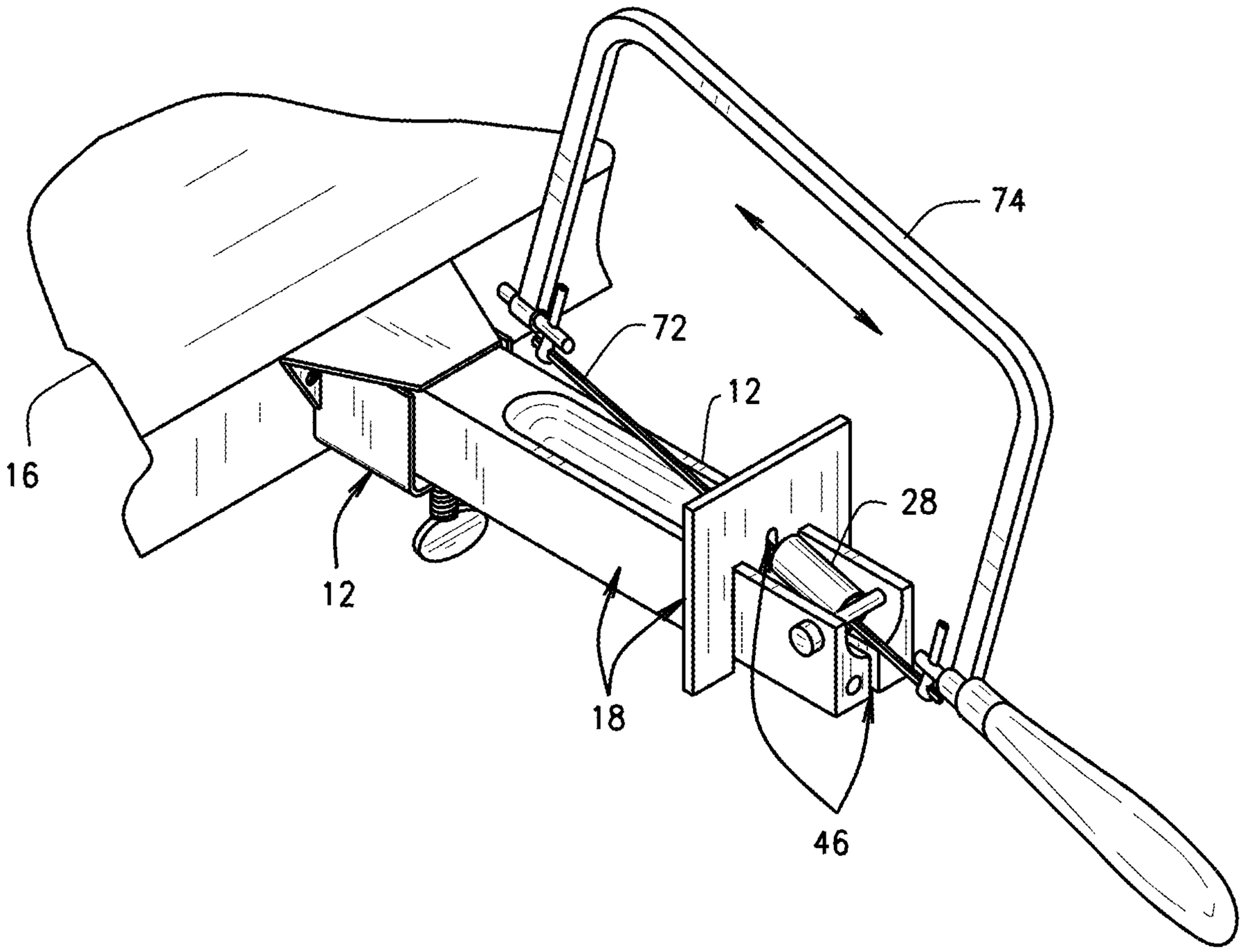

FIG. 9

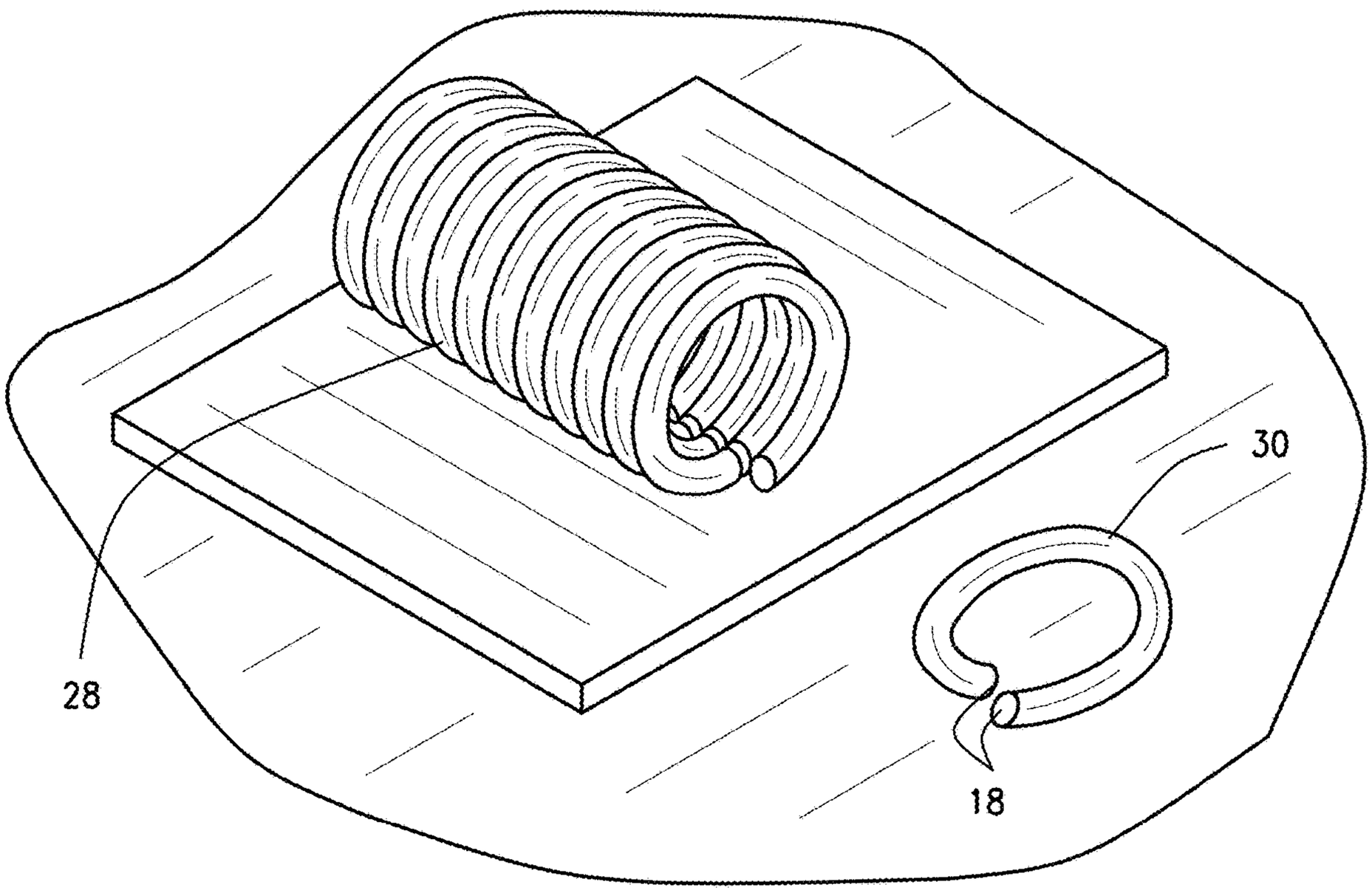

FIG. 10

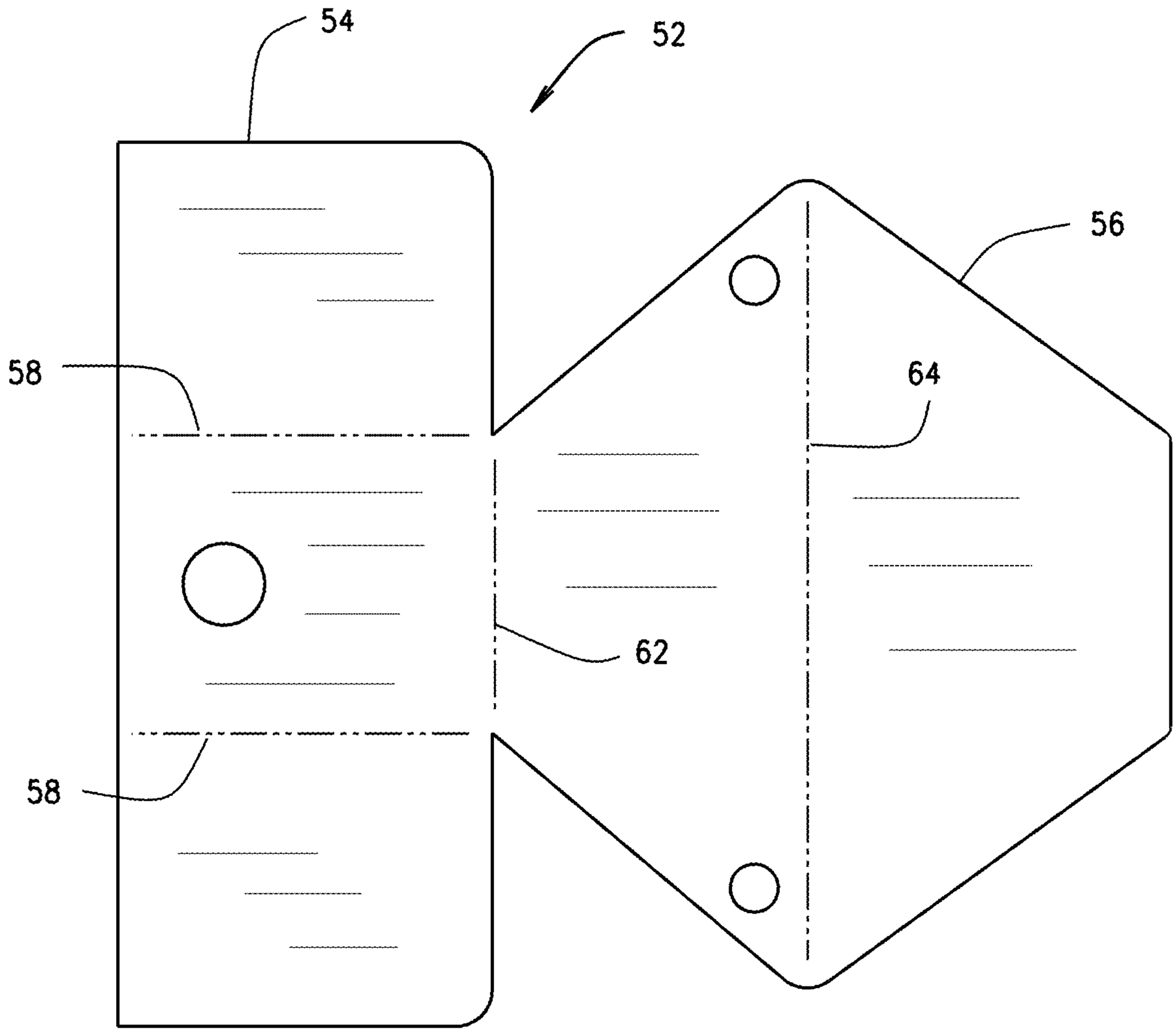

FIG. 11

WIRE COIL STABILIZER AND SAW GUIDE

BACKGROUND OF THE INVENTION

Field of the Invention

The present invention relates to a stabilizer for holding a wire coil used in combination with a saw guide for a jeweler's saw.

Brief Description of the Prior Art

One of the essential skills needed by a silver smith or jeweler is the ability to cut jump rings. It is common practice for the jeweler to mount a bench block in a standard jeweler's bench clamp provided in a support or bench. The jeweler holds a spiral coil on the bench block with the fingers of one hand and uses the other hand to operate a saw in order to cut rings. It is extremely difficult for the jeweler to hold the spiral coil without turning or twisting the workpiece. Thus inaccuracies in the cut frequently occur because the spiral coil is not firmly held on the bench block. This may result in the cut ends not being square so that two ends do not sit flush for a neat and more secure finish when the ring is compressed. In addition injuries may occur to the hand holding the spiral coil from a saw cut.

BRIEF SUMMARY OF VARIOUS PREFERRED EMBODIMENTS OF THE INVENTION

In view of the above, it is an object of the present invention to provide a stabilizer for holding a wire coil during cutting of jump rings used in combination with a saw guide for a jeweler's saw. Other objects and features of the invention will be in part apparent and in part pointed out hereinafter.

In accordance with the invention, a wire coil stabilizer and saw guide comprises a combination of a longitudinally extending block and a tracking plate that straddles the block. The block has a rear end configured for attachment to a bench clamp with a groove running from a front end towards the rear end. The groove has a pair of angularly oriented sides for holding a wire coil with a bottom slot between the sides for receiving a saw blade with a removable stop at the front end of the groove.

The tracking plate has a central portion configured to fit inside the groove flanked by legs that straddle the block. The central portion of the tracking plate has a slot for receiving the saw blade with the wire coil threaded on the saw blade and pinched between the stop and the tracking plate.

In some embodiments, the stop is a pin received in first and second opposing apertures in the block at the front end. In other embodiments, the block has a third aperture in the front end for storing the pin when not in use. In still further embodiments, an underside of the block is notched at the rear end for insertion into a standard jeweler's bench clamp.

In other embodiments the clamp is specially design to fit a block with or without the notch. In those cases, the clamp may be formed from a foldable template having a rectangular base attached to a hexagonal member.

The invention summarized above comprises the constructions hereinafter described, the scope of the invention being indicated by the subjoined claims.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

In the accompanying drawings in which one of various possible embodiments of the invention is illustrated, corresponding reference characters refer to corresponding parts throughout the several views of the drawings in which:

FIG. **1** is a perspective view of a first stabilizer for holding a wire coil in combination with a saw guide for attachment to a jeweler's bench with a first bench clamp;

FIG. **2** is a perspective view of a second stabilizer for holding a wire coil in combination with a saw guide for attachment with a second bench clamp;

FIG. **3** is a perspective view of a block component of the first stabilizer;

FIG. **4** is a plan view of the block;

FIG. **5** is a front end view of the block;

FIG. **6** is a perspective view of a tracking plate component;

FIG. **7** is a perspective view of a saw blade of a jeweler's saw being lubricated;

FIG. **8** is a perspective view of a coil of wire being inserted on the blade of the jeweler's saw;

FIG. **9** is a perspective view the coil of wire being cut into rings with the jeweler's saw held in a saw guide formed by a groove in the block and a slot in the tracking plate;

FIG. **10** is a perspective view of the coil of wire cut into a plurality of jump rings having flat end faces; and,

FIG. **11** is a template for construction of a bench clamp as see in FIG. **1**.

DETAILED DESCRIPTION OF AT LEAST ONE PREFERRED EMBODIMENT OF THE INVENTION

Referring to the drawings more particularly by reference character, a wire coil stabilizer and saw guide **10** is shown in FIG. **1** for attachment to a bench clamp **12** shown attached with screw **14** to a jeweler's work bench **16**. Wire coil stabilizer portion **18** of unit **10** includes a longitudinally extending block **20** with a tracking plate **22**. As shown in FIG. **5** with side faces **21***a*, top and bottom faces **21***b* and end faces **21***c*, block **20** is rectangular in shape with opposite faces that are equal in size and parallel to each other. In the embodiment illustrated in FIG. **1**, block **20** is formed of close grained hard wood and measures 14.60 mm in length and 19.05 mm in height and width. Block **20** has a groove **24** formed in a top face opening to front end **26**. Groove **24** is 107.5 mm in length and 6.2 mm in depth. So constructed, groove **24** accommodates a wire coil **28** having an outside diameter between about 2.5 and 13.0 mm which covers the sizes of jump rings **30** typically used by a jeweler. If larger jump rings **30** are needed, wire coil stabilizer **18** may be scaled accordingly.

With continuing reference to FIG. **1**, tracking plate **22** is illustrated as a rectangular member preferably formed of a metal. Tracking plate **22** has an aperture **32** with flanking legs **34** configured to straddle and embrace block **20**. Tracking plate **22** has a dependant central portion **36** in aperture **32** configured to fit inside groove **24**. In the embodiment illustrated, tracking plate **22** is formed of twenty gauge (0.9 mm) sheet brass and measures 38.1 mm by 38.1 mm. Central portion **36** is formed as a half circle. The assembly comprising wire coil stabilizer **18** is completed with a removable stop **38** such as a pin inserted through aligned holes **40** with a diameter of 1.56 mm in sides **42** of block about 4 mm from front end **26**. Stop **38** may be stored in a hole **44** that is 1.56 mm diameter and 28 mm in depth provided in front end **26**.

As shown in FIG. **1**, saw guide **46** portion of unit **10** includes a bottom slot **48** in the bottom of groove **24** opening to front end **26** of block **20**. Bottom slot **48** is aligned with

a slit **50** formed in central portion **36** of tracking plate **22**. As illustrated, slot **48** is 94 mm in length and slit **50** is 10 mm in length.

Turning to FIG. **11**, bench clamp **12** as shown in FIG. **1** is formed from a template **42** having a rectangular base **54** to which is attached a hexagonal member **56**. Ends of rectangular base **54** are folded along lines **58** to form sides **60** of bench clamp **12**. Hexagonal member **56** is folded along lines **62**, **64** to form back **66** and top **68**. Holes are provided in back **66** such that bench clamp **12** may be screwed to jeweler's bench **16** as disclosed above. Block **20** may be firmly held in bench clamp **12** by tightening set screw **14**.

In the embodiment of block **20'** shown in FIG. **2**, a notch **70** is formed on a bottom side of the block which is received in a standard jeweler's bench clamp **12'**. Notch **70** stabilizes block **20'** from lateral movement in bench clamp **12'** when tightened therein with set screw **14**.

It will be understood that wire coils **28** for making jump rings **30** come in different diameters and are formed from a host of different materials and wire gauges and that wire coil stabilizer **18** and saw guide **46** need to be scaled accordingly. Hence wire coil stabilizer and saw guide **10** shown in the drawings and described above will be understood by those skilled in the art as illustrative and non-limiting.

As shown in FIGS. **7-8**, wire coil stabilizer and saw guide **10** may be used to cut jump rings **30**. Beginning with FIG. **7**, a saw blade **72** of a typical jeweler's saw **74** is oiled with a stick lubricant **76**. After blade **72** has been lubricated, wire coil **28** previously formed on a mandrel (not shown) and covered with a layer of tape is threaded on saw blade **72** as shown in FIG. **8** and stop **38** inserted in aligned holes **40** in block **20**, **20'**. Continuing then to FIG. **9**, wire coil **28** is positioned in groove **24** and tracking plate **22** inserted over the block. In this position, saw blade **72** is held in slot **48** formed in groove **24** and slit **50** formed in central portion **38** of tracking plate **22**. At the same time, wire coil **28** is sandwiched and firmly held between tracking plate **22** and removable stop **38**. Back and forth sawing motion of saw blade **72** results in cutting wire coil **28** into a plurality of jump rings **30** shown in FIG. **10** with flat ends **78**. Sawing can continue through the entire wire coil **28** or be stopped when the number of jump rings **30** has been reached. When jump rings **30** are flattened by compression, flat ends **78** are spaced apart the distance of the saw kerf which can be closed by compression in the plane of the ring without distortion and with no sharp pointed ends that can catch upon a user's person or clothing.

As various changes could be made in the above constructions without departing from the scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

What is claimed is:

1. A wire coil stabilizer and saw guide combination,

said wire coil stabilizer comprising a block with a groove having a semi-circular bottom surface and side walls configured for receipt of a wire coil, a pin extending transverse to the groove and removably mounted to the side walls above the bottom surface of the groove and a tracking plate, wherein the tracking plate is slidably moveable within the groove to clamp a wire coil between the tracking plate and the removable pin, said tracking plate having an aperture flanked by legs configured to straddle and embrace the block, said tracking plate having a depending portion in the aperture configured to fit inside the groove; and,

said saw guide comprising a slot in the bottom of the groove aligned with a slit with a closed top in the depending portion of the tracking plate when the depending portion of the tracking plate is in the groove, wherein said slit and slot are configured to accommodate a jeweler's saw blade with a coil of wire threaded on the blade for cutting the coil of wire from the inside to form jump rings.

2. The wire coil stabilizer and saw guide of claim **1** wherein the block is rectangular in shape with opposite faces that are equal in size and parallel to each other.

3. The wire coil stabilizer and saw guide of claim **1** wherein the tracking plate is rectangular and formed of metal.

4. A wire coil stabilizer and saw guide combination,

said wire coil stabilizer comprising a rectangular block with side faces that are equal in size and parallel to each other and end faces that are parallel to each other and top and bottom elongated faces with a longitudinal groove having a semi-circular bottom surface and side walls in the top face opening to a first end face of said end faces, said groove configured for receipt of a wire coil, a pin extending transverse to the groove and removably mounted to the side walls above the bottom surface of the groove proximate the first end face, and a tracking plate wherein the tracking plate is slidably moveable within the groove to clamp a wire coil between the tracking plate and the removable pin, said tracking plate having an aperture flanked by legs configured to straddle and embrace the block, said tracking plate having a depending portion in the aperture configured to fit inside the groove; and,

said saw guide comprising a slot in the bottom of the groove in the block aligned with a slit with a closed top in the depending portion of the tracking plate when the depending portion of the tracking plate is in the groove, wherein said slit and slot are configured to accommodate a jeweler's saw blade with a coil of wire threaded on the blade for cutting the coil of wire from the inside to form jump rings.

5. The wire coil stabilizer and saw guide of claim **4** wherein said removable pin is received in aligned holes in the block proximate the first end face.

6. The wire coil stabilizer and saw guide of claim **5** wherein the block has a notch in the bottom face and is received a second end face of said end faces opposite the first end face in a jeweler's bench clamp.

7. The wire coil stabilizer and saw guide of claim **5** wherein the block is received at the second end face in a bench clamp formed from a template having a rectangular base attached to a hexagonal member, said rectangular base having first and second fold lines forming side walls of the bench clamp, said hexagonal member having a first fold line where the rectangular base is attached to the hexagonal member forming a back wall of the bench clamp and a second fold line connecting opposing vertices forming a top of the bench clamp.

8. A wire coil stabilizer and saw guide combination,

said wire coil stabilizer comprising a rectangular block with side faces that are equal in size and parallel to each other and end faces that are parallel to each other and top and bottom elongated faces with a longitudinal groove having a semi-circular bottom surface and side walls in the top face opening to a first end face of said end faces, said groove configured for receipt of a wire coil, a pin extending transverse to the groove and removably mounted to the side walls above the bottom

surface of the groove proximate the first end face, and a tracking plate, wherein the tracking plate is slidably moveable within the groove to clamp a wire coil between the tracking plate and the removable pin, said tracking plate having an aperture flanked by legs configured to straddle and embrace the block, said tracking plate having a depending portion, said depending portion having a half circle shape configured to fit inside the groove; and,

said saw guide comprising a slot in the bottom of the groove aligned with a slit with a closed top in the depending portion of the tracking plate, wherein said slit and slot are configured to accommodate a jeweler's saw blade with a coil of wire threaded on the blade for cutting the coil of wire from the inside to form jump rings.

9. The wire coil stabilizer and saw guide of claim **8** wherein the tracking plate is rectangular and formed of metal.

10. The wire coil stabilizer and saw guide of claim **8** wherein said removable pin is received in aligned holes in the block proximate the first end face.

* * * * *