Nov. 24, 1931. W. H. SCHNEIDER 1,833,230

COMBINATION TOOL

Filed June 12, 1928

Fig. 1

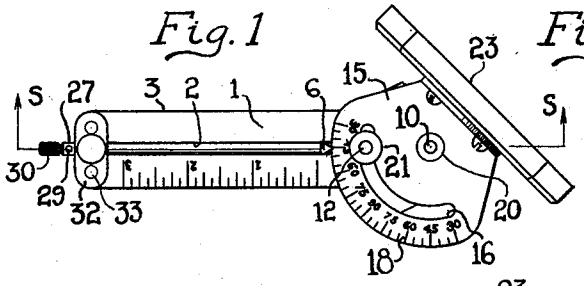


Fig. 2

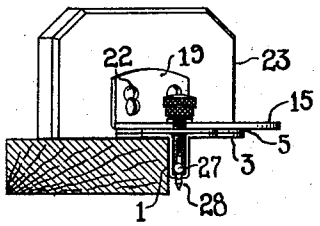


Fig. 3

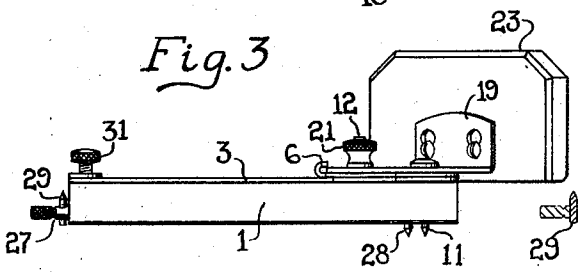


Fig. 4

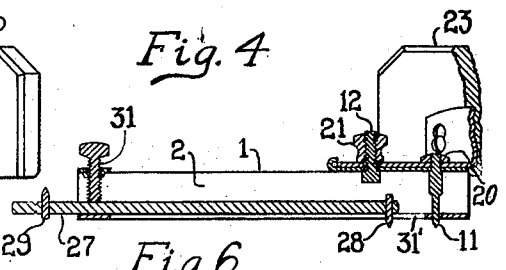


Fig. 5

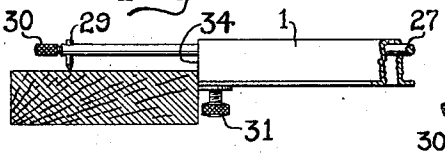


Fig. 6

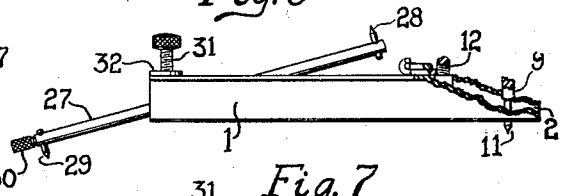


Fig. 14

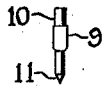


Fig. 7

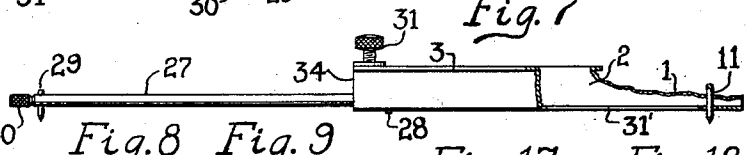


Fig. 15

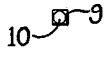


Fig. 8

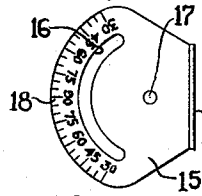


Fig. 9

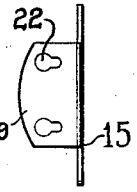


Fig. 17

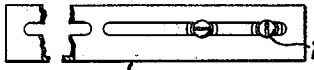


Fig. 18

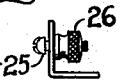


Fig. 16

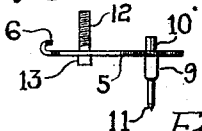


Fig. 10

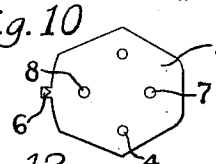


Fig. 11

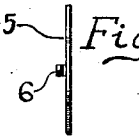


Fig. 19

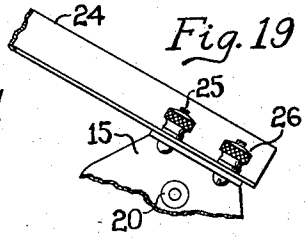


Fig. 12

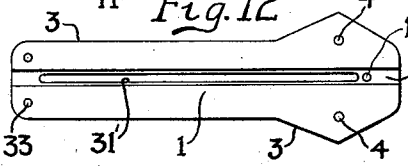
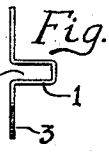


Fig. 13



INVENTOR.

William H. Schneider

Patented Nov. 24, 1931 1,833,230

UNITED STATES PATENT OFFICE

WILLIAM H. SCHNEIDER, OF MILWAUKEE, WISCONSIN

COMBINATION TOOL

Application filed June 12, 1928. Serial No. 284,689.

The invention relates more particularly to woodworkers' tools, such as mitre sawing or marking gauges and the primary object of the invention is to provide a novel combination of several other useful tools together with the mitre gauge, into a compact and practical combination tool.

Another object of the invention is to provide in combination with the mitre gauge, a compasses for describing circles.

A further object of the invention is to provide in combination with the mitre gauge and compasses a joiner's marking gauge, for striking lines parallel to the straight side of a board or other material.

A still further object of the invention is to provide a combination tool that can be cheaply made, due to its novel construction requiring a minimum number of parts and these preferably of sheet metal fabrication.

With the above primary and other incidental objects in view, as will more fully appear in the specifications, the invention consists of the features of construction, the parts and combinations thereof, and the mode of operation or their equivalents as hereinafter described and set forth in the claim.

Referring to the drawings:

Figure 1 is a top plan view of the combination tool with the head or dial plate positioned at an angle of 45 degrees.

Figure 2 is an end elevation of the tool as viewed from the body end, the section of wood is included only to illustrate the normal position of the tool in relation to a board when used as a mitre sawing or marking gauge.

Figure 3 is a side or longitudinal elevation of the tool, showing the scribers of the compasses close together.

Figure 4 is a longitudinal sectional view taken along the line S—S of Fig. 1, parts broken away.

Figure 5 is a view of the tool in an inverted position with parts broken away, the section of wood is included merely to illustrate the tool's position when used as a joiner's gauge.

Figure 6 is a longitudinal view of the tool with parts broken away and showing the combination extensible compasses and joiner's gauge rod in turnable position in relation to its axis.

Figure 7 is a longitudinal view with scriber rod fully extended.

Figures 8, 9, 10, 11, 12, and 13 are detailed plan and end views of the dial and body parts of the tool.

Figures 14, and 15 are detail plan and end views of the pin which serve as a pivot spindle for the dial on one end and a compasses point or scriber on the other end.

Figure 16 is a detail plan view of a body part with the pin and dial locking screw in assembled position.

Figures 17 and 18 are longitudinal and end views respectively of an adjustable straight edge attachment for the mitre gauge dial head.

Figure 19 is a top plan view with parts broken away, showing the straight edge attached to the dial.

Like parts are indicated by similar characters of references throughout the various views.

The metal base or body 1 of the tool is provided with the channel or trough 2 longitudinally disposed and preferably the entire length of the body as is shown in detail in Figs. 12 and 13 of the drawings.

At the top of the body and extended at right angles to the sides of the channel, are the flanges 3.

Adapted to be fastened to flanges 3 by means of the rivet holes 4 and suitable rivets or by any other fastening means, is the plate 5.

At one end of the plate 5 and preferably forming an integral part thereof is the degree indicating member 6.

Longitudinally disposed and in line preferably with the indicating member 6, are the holes 7 and 8 shown in detail in Fig. 10 of the drawings.

The hole 7 is adapted to receive the spindle 10, which is located on one end of the preferably square bodied pin 9, as shown in detail in Figs. 14–15.

Provided on the opposite end of pin 9 is the scriber or pointed member 11.

The hole 8 in the plate 5, is adapted to receive the dial locking screw 12, having preferably a square or flat sided head 13.

Figure 16 shows the pin 9 and screw 12 as they appear when inserted in their respective positions in the holes 7 and 8 of the plate 5 before being fastened to the body 1.

The body of the pin and the head of the screw are substantially of a size to properly fit the channel 2 of the body. This serves the purpose of aligning the degree indicating member 6 on the plate 5 in the proper position on the body before being fastened to the flanges by means of the rivets.

The square bodied pin 9 and head 13 of the screw also eliminates the possibility of these parts from turning in the channel due to their proper fit or contact against the sides thereof.

In mounting the assembled plate 5 in position on the body 1 the pointed member 11 is positioned sufficiently therethrough and beyond the under side of the body 1.

Mounted in turnable position in respect to the spindle 10 and the hole 17 and on top of the plate 5, is a suitable dial plate or head 15 of semicircular shape. A suitable slot 16 is provided in the dial of sufficient length to permit the necessary rotation or movement in respect to the degree markings 18 thereon.

As will be noted more clearly from the drawings Figs. 8–9, the dial plate 15 is provided with the right angle or vertical flange 19 appropriately positioned thereon in respect to the degree markings radiating from the center of the hole 17.

The dial head is normally held in position on the plate 5 by means of the spindle 10 extending through the hole 17. Over the end of the spindle 10, is placed the washer 20, as shown in Fig. 1.

The spindle protrudes somewhat through the washer to allow for riveting the washer properly in place. The dial head is thereby held in a substantial manner to the body and permits the dial to be rotated on the spindle as desired. The dial locking screw 12 extends through the slots 16 sufficiently to permit the thumb nut 21 to be threaded thereon.

The under side of the nut 21 is sufficiently large to straddle both sides of the slot 16 and thus engage the dial head to lock the same at any desired angle.

Adapted to be readily fastened to or removed from the flange 19 by means of the bayonet slots 22, is the elongated flat plate member 23.

The plate member 23 serves as a medium length straight edge for marking or laying out angles on boards or other materials.

The face or the plate member can also be used as a guide for a saw when sawing mitres or angles.

When it is desired to mark angles of a greater length than it is possible with plate 23 the adjustable straight edge 24 may readily be substituted to the flange 19 on the dial head, by means of the bayonet slots 22, the screws 25, and the thumb nuts 26.

Figs. 17 and 18 are detail drawings of the straight edge.

Fig. 19 shows the straight edge as it is attached to the dial head 15.

In using the mitre tool or gauge, the dial head is set at any angle desired by merely turning the head until the indicating part 6 points directly at or in line with the degree wanted. When in the desired position, the dial lock nut is then screwed down tight against the face of the dial which locks the head in position. The tool is then brought in contact with the work to be marked or sawed, as is illustrated by an end view of the tool and its relative position on a board as shown in Fig. 2.

The underside of the flange of the body of the tool, rests on top of the board to be marked, while the side of the channel shaped section of the body is held against the edge or side of the board.

The plate 23 or straight edge 24, then serves to guide the marking or sawing as desired.

The degree reading at the point of the indicator is the angle of the straight edge on the head of the tool in relation to the longitudinal center line or sides of the body.

From the above description it will be seen that here is a novel and practical type of mitre gauge and one which can be cheaply made.

Due to its design and construction it adapts itself readily in alliance with other tools used by wood workers in which a part or parts of the mitre tool is used to complete the tools associated.

The metal rod 27 is slidably placed in the channel 2 of the body 1. At or near each end of the rod 27, and protruding therethrough, is one of the pointed pins or scribers 28, 29. These scribers are securely held in the required position as by means of a driving fit in a hole of proper size. The scriber pins 28 and 29 are suitably positioned, and at right angles to the sides of rod 27, with their pointed ends pointing directly opposite to each other.

For convenience in adjustment or manipulation, the rod 27 is provided with a knurled end or tip 30. The bottom of the channel 2 in the body 1 is provided with a longitudinal perforation or slot 31′, which extends the greater length of the body. The slot is provided to receive the protruding scriber 28 in a manner as is shown in the drawing Fig. 4. From this drawing it will be seen that the scriber 28, and the pointed member 11, which is a part of the dial spindle pin

9, that the two together form the legs or points of a pair of dividers or compasses.

When the scriber pin 28 is protruding through the slot and bottom of body in this position and in close proximity to the spindle pin, a very small circle can be described.

When the rod 27 is pulled out or fully extended from the body, and the scriber is at the end of the slot, a considerably larger circle can be described.

The thumb screw 31 is provided at the end of the body to retain and lock the rod 27, and scriber 28, in any desired position in the body channel.

The thumb screw 31, is threaded in the oblong strap or plate 32, which straddles the channel 2 and is preferably fastened to the top of flanges 3 by means of the rivets and rivet holes 33.

Whenever it is desired to describe a circle larger than the scriber pin 28 positioned in the slot permits, the rod locking screw is unscrewed sufficiently to allow the rod 27 to be tilted in the channel 2, the required amount to enable the rod to be rotated a half turn on its axis so that the scriber point 28 is pointing upward or in reverse of its original position in the slot.

Figure 6 of the drawings illustrates in what manner the rod is tilted to enable the scriber to be turned, in order to clear sides of channel. The rod is then returned to normal position in the channel and instead of the scriber point extending through the slot as before, it reposes inactive in the channel.

As will be noted in Figure 7 of the drawings, the scriber pin 29 near the outward end of the rod 27 now becomes effective. The rod and scriber in this position readily lends itself to any adjustment by means of the locking screw 31.

Circles of a considerably larger diameter can now be described, as will be noted in the several drawings where the rod and scriber pin 28 is shown to advantage, regardless of whether the pin is in an active or inactive position, a portion of it engages the sides of the slot 31. This acts as a key in the slot and prevents the rod from turning when in use even though the locking screw is only slightly screwed against the rod. This insures axial alignment of the scribers 28 or 29 with the pointed member 11 with which it is associated when scribing circles.

From the foregoing description it will be seen that an ideal combination of two tools is possible.

A third tool automatically evolves itself by this combination and this without the use of any additional parts. By merely returning the rod so that the scriber pin 28 is back in its original position in the slot, and the point is protruding therethrough, a joiner's marking gauge is created.

To use the marking gauge it is merely necessary to invert the tool with the rod 27 extended and locked in any desired position. Bring the end of the body 1 against the material to be marked and proceed to scribe a line on the material with the scriber 29.

The end 34 of the tool, when held properly against the edge of the material acts as a guide or gauge for the scriber point.

The drawing Figure 5 illustrates the tool when used on a board as a joiner's marking gauge for striking parallel lines to the edge thereof.

From the above description it will be apparent that there is thus provided a device of the character described possessing the particular feature of advantage before enumerated as desirable but which obviously is susceptible of modification in its form, proportion, detail construction or arrangement of parts, without departing from the principal involved or sacrificing any of its advantages.

While, in order to comply with the statute, the invention has been described in language more or less specific as to certain structural features, it is to be understood that the invention is not limited to any specific details, but that the means and construction herein described comprise one mode of putting the invention into effect and the invention is, therefore, claimed broadly in any of its possible forms or modifications within the scope of the appended claim.

Having thus described my invention, I claim:

In a combination tool, a straight edge body member provided with a longitudinally extending guideway and a scriber point, a scriber rod slidably mounted in said guideway and provided with oppositely disposed scriber points whereby the device may be used as a compasses for drawing large or small circles or may be used as a marking gauge, and means for holding said scriber rod in adjusted position.

In testimony whereof I have hereunto set my hand this 8th day of June, A. D. 1928.

WILLIAM H. SCHNEIDER.