March 28, 1939. T. WILSON 2,152,165

SHEET METAL APPARATUS

Filed Dec. 23, 1937 2 Sheets-Sheet 1

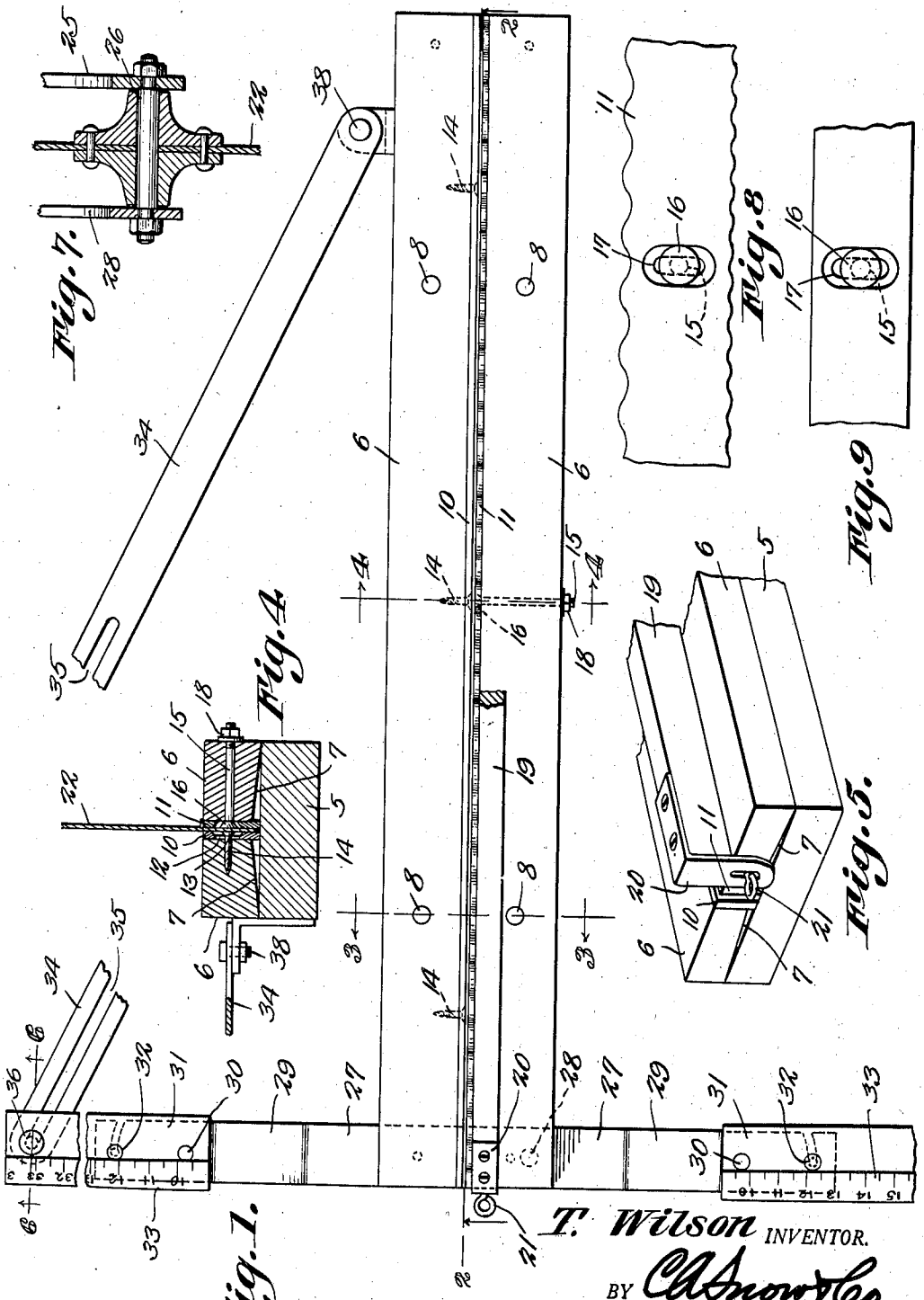


Fig. 1.

Fig. 7.

Fig. 4.

Fig. 8.

Fig. 9.

Fig. 5.

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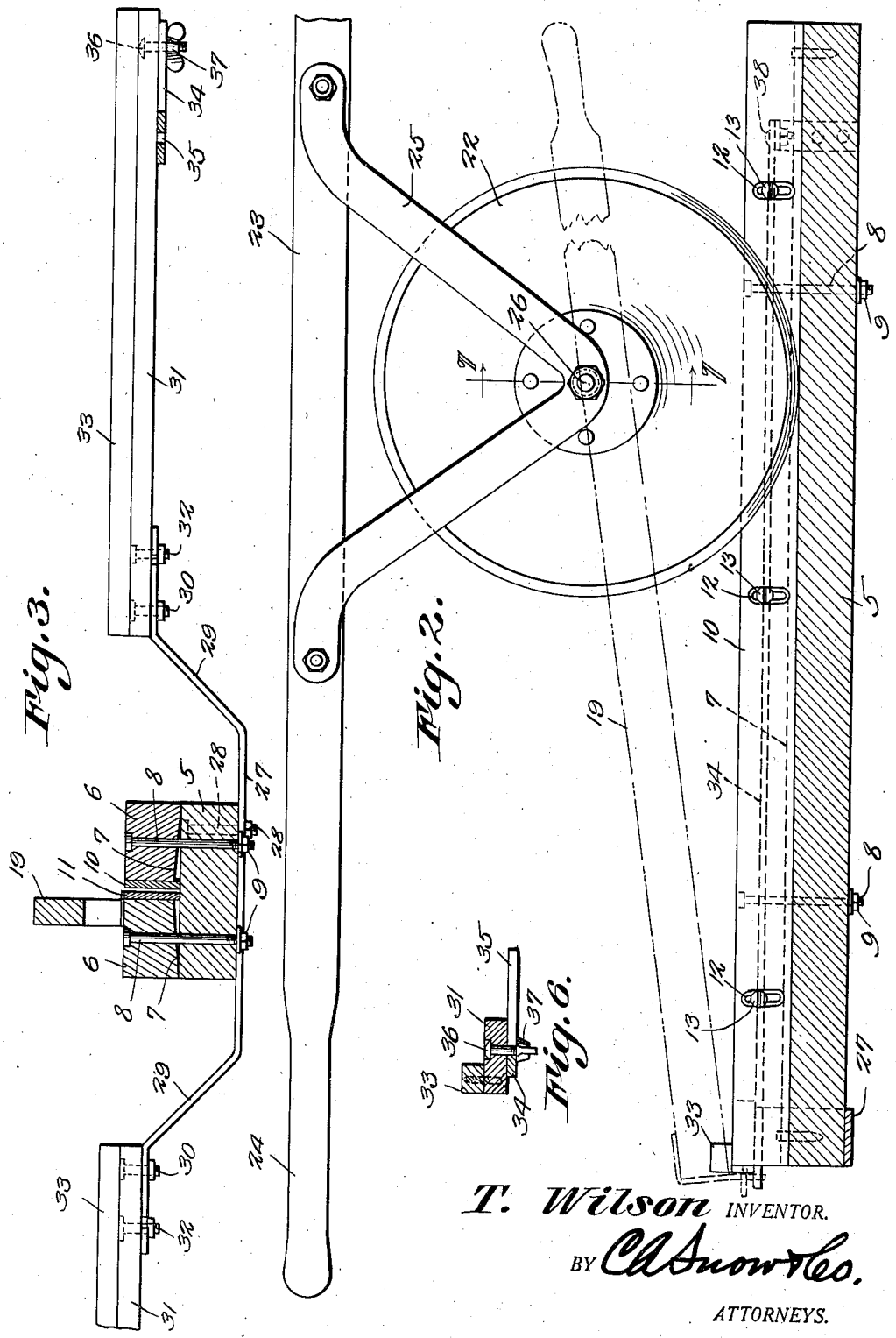


Fig. 3.

Fig. 2.

Fig. 6.

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SHEET METAL APPARATUS

Tom Wilson, Lake Village, Ark.

Application December 23, 1937, Serial No. 181,431

3 Claims. (Cl. 164—55)

This invention relates to a support and gage designed primarily for use in cutting sheet metal employed in roof construction.

An important object of the invention is to provide a device of this character including members adjustable with respect to each other and spaced apart providing a guideway or slot through which a cutting blade may be accurately moved in cutting the sheet metal supported on the device, thereby insuring the true and even cutting of the sheet metal.

Another object of the invention is to provide a sheet metal gage having means to adapt the device for use in holding sheet metal of the corrugated type, so that an accurate cutting of the corrugated sheet metal will be insured, regardless of the irregular construction thereof.

A further object of the invention is the provision of a guide bar which may be adjusted to various angles, whereby the sheet metal under operation may be cut at the desired angle, for fitting the adjacent angular ends of sheet metal strips.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein described, may be made within the scope of what is claimed, without departing from the spirit of the invention.

Referring to the drawings:

Figure 1 is a plan view of a support and gage constructed in accordance with the invention.

Figure 2 is a sectional view through the device, illustrating a rotary cutter as operating through the guideway of the device, taken on line 2—2 of Figure 1.

Figure 3 is a sectional view taken on line 3—3 of Figure 1.

Figure 4 is a transverse sectional view taken on line 4—4 of Figure 1.

Figure 5 is a perspective view of one end of the support, illustrating the manner of pivotally connecting the clamping bar, forming a part of the device.

Figure 6 is a sectional view taken on line 6—6 of Figure 1.

Figure 7 is a sectional view taken on line 7—7 of Figure 2.

Figure 8 is an elevational view illustrating the means employed in supporting corrugated sheet metal strips while being cut.

Figure 9 is a fragmental elevational view illustrating one of the bars forming one edge of the guideway through which the cutter is moved.

Referring to the drawings in detail, the device embodies a base member 5 to which the guide bars indicated by the reference characters 6, are secured, the guide bars being of lengths equal to the lengths of the base member 5, as clearly shown by Figure 1 of the drawings.

The lower surfaces of the guide bars 6 are beveled as at 7, providing spaces near the inner edges thereof between the bars 6 and base 5.

Bolts 8 extend through aligning openings in the guide bars 6 and base member 5, securing the guide bars 6 to the base 5, the heads of the bolts 8 being counter-sunk, so that the bolts will not in any way interfere with the positioning of the meal sheet to be cut, on the device.

Nuts 9 are positioned on the lower ends of the bolts 8, and afford means whereby the giude bars 6, may be adjusted towards the base 5, for purposes to be hereinafter more fully described.

As clearly shown by Figure 3 of the drawings, these bars 6 are supported in parallel spaced relation with each other providing a space through which the cutting member is moved, in cutting a length of sheet metal positioned on the guide bars 6. Secured to the adjacent parallel faces of the guide bars 6, are metallic strips 10 and 11 which cooperate with the cutting member in cutting the sheet metal. These metallic strips 10 and 11 are wider than the inner surfaces of the guide bars 6, to which they are attached, so that the lower edges of the metallic strips extend below the beveled surfaces 7 of the guide bars 6, supporting the inner edges of the guide bars 6. Vertically elongated openings 12 are provided in the metallic strip 10, and accommodate the heads 13 of the securing screws 14, that secure the metallic strips 10 to one of the guide bars 6.

The reference character 15 designates bolts that are provided with heads 16 that are fitted in elongated openings 17 of the metallic strip 11, the bolts being provided with nuts 18, whereby the metallic strip 11 may be readily and easily removed and reversed, it being understood that the metallic strip 11 is provided with a scalloped upper and lower edge, the scallops of the lower edge being smaller than the scallops of the upper edge, adapting the metallic strips for use in supporting corrugated sheet metal of various types. Thus it will be seen that due to this construction, the metallic strips may be loosened, and the bolts 8 drawn downwardly with the result that the adjacent parallel edges of the guide bars 6 will be moved closer together, reducing the width of the

guideway through which the cutting blade is moved. After the proper adjustment of the guide bars 6 has been made, the metallic strips 10 will again be secured, and the nut 9 tightened, holding the guide bars in their positions of adjustment.

In order that the metallic strip under operation will not slip, a clamping bar indicated by the reference character 19 is provided, the clamping bar being formed with an angle plate 20 formed with an elongated opening to accommodate the eye bolt 21 that is extended into one end of one of the guide bars 6. This connection permits the clamping bar 19 to be elevated allowing the sheet metal to be positioned thereunder, whereupon the clamping bar may be moved downwardly clamping the sheet metal between the bar 19 and guide bar 6, associated therewith. The sheet metal cutting tool which embodies a rotary cutting blade 22, may now be moved through the slot or guideway, cutting the sheet metal.

As shown, the cutting member embodies a supporting bar 23 having its ends formed into handles 24 to be grasped by the operator, in exerting pressure on the rotary cutting blade 22, as it is being moved through the guideway.

Brackets 25 are secured to the supporting bar 23 and extend downwardly therefrom, where they are provided with bearing openings to accommodate the shaft 26 on which the rotary cutting blade 22 is mounted.

The reference character 27 designates a metallic supporting bar which is secured to the lower surface of the base member 5, by means of the bolt 28 that is extended through the base member 5.

This supporting bar 27 has upwardly extended portions 29 disposed at approximately a forty-five degree angle, the extremities thereof being extended laterally where they are provided with openings to accommodate the bolts 30 that pivotally connect the gage bars 31 thereto. The laterally extended portions of the supporting bar 27 are also provided with curved slots extending from the inner edge thereof, the curved slots accommodating the bolts 32, to the end that the gage bars may be swung inwardly to positions where the outer ends thereof will rest on the guide bars 6, when the device is to be folded for transportation.

Each of these gage bars 31 is formed with a longitudinal shoulder 33 against which the sheet metal being cut, is positioned, when it is desired to cut the sheet metal, or square the end thereof.

Connected with the gage bar 31 at one side of the base member 5, is an adjusting bar 34, the adjusting bar 34 being formed with an elongated opening 35 extending to a point adjacent to the outer end of the bar, where it accommodates the bolt 36 carried by the gage bar associated therewith, the bolt 36 being provided with a winged nut 37, whereby the connection between the adjusting bar 34 and gage bar 31, may be readily loosened or tightened, after an adjustment of the bar 34 with respect to the gage bar 31, has been made. One end of the adjusting bar 34 is pivotally connected to the base member 5, at 38. From the foregoing it will be seen that should it be desired to cut the end of a length of sheet metal at an angle with respect to the side edge thereof, it is only necessary to loosen the nut 37, and move the gage bar 31 associated therewith, to the desired angle. The winged nut 37 is now tightened securing the gage bar in its position of adjustment. The sheet metal to be cut may now be moved to engage the longitudinal shoulder of the adjusted gage bar, where the sheet metal may be held by means of the clamping bar previously described, to insure against the sheet metal moving while the cutting blade is being moved to cut the sheet metal.

It might be further stated that the gage bars are provided with suitable graduations, where the necessary measurements may be made while the sheet metal is positioned on the base member, thereby eliminating the necessity of using the usual hand rule or tape, in measuring the sheet metal.

In the use of the device, the length of sheet metal to be cut, is positioned on the base member, with one edge of the sheet metal resting against the longitudinal shoulders of the gage bars 31. The clamping bar is now moved to clamp the sheet metal to the base member 5, and the cutting blade 22 may now be moved along the groove, to cut the sheet metal.

When it is desired to cut sheet metal of the corrugated type, the corrugations of the sheet metal will lie in the scalloped portions of the metallic strip 11, insuring against the corrugated strip of metal slipping, during the cutting operation.

I claim:

1. A device of the class described, comprising a base, parallel guide bars having beveled lower surfaces, mounted on the base, said guide bars being spaced apart providing a longitudinal guideway through which a cutting blade is moved in cutting a length of sheet metal placed on the guide bars, metallic strips secured to the adjacent faces of the guide bars, the lower edges of the metallic strips resting on the base and providing a support for the inner edges of the guide bars whereby the guide bars may be adjusted vertically regulating the width of the space between the guide bars, and means for clamping an article to the guide bars while the article is being cut by a cutting member moved through the space between the guide bars.

2. A device of the class described, comprising a base, guide bars mounted on the base and arranged in spaced relation providing a guideway through which a blade is moved in cutting an article supported on the guide bars, metallic strips secured to the adjacent edges of the guide bars, said metallic strips being wider than the edges of the guide bars to which the metallic strips are secured, providing supports for the inner edges of the guide bars whereby the inner edges of the guide bars may be adjusted vertically, and a clamping bar for holding a length of sheet metal on the device when the sheet metal is being cut.

3. A device of the class described, comprising a base, a pair of guide bars mounted on the base and spaced apart providing a guideway, said guide bars having the lower surfaces thereof beveled, providing narrow inner edges and substantially wide outer edges, metallic strips adjustably secured to the adjacent surfaces of the guide bars, and extending below the lower surfaces of the guide bars adjustably supporting the inner edges of the guide bars, and a clamping bar for clamping a length of sheet metal to the device, while a cutting blade is moved through the guideway in cutting the sheet metal held on the device.

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