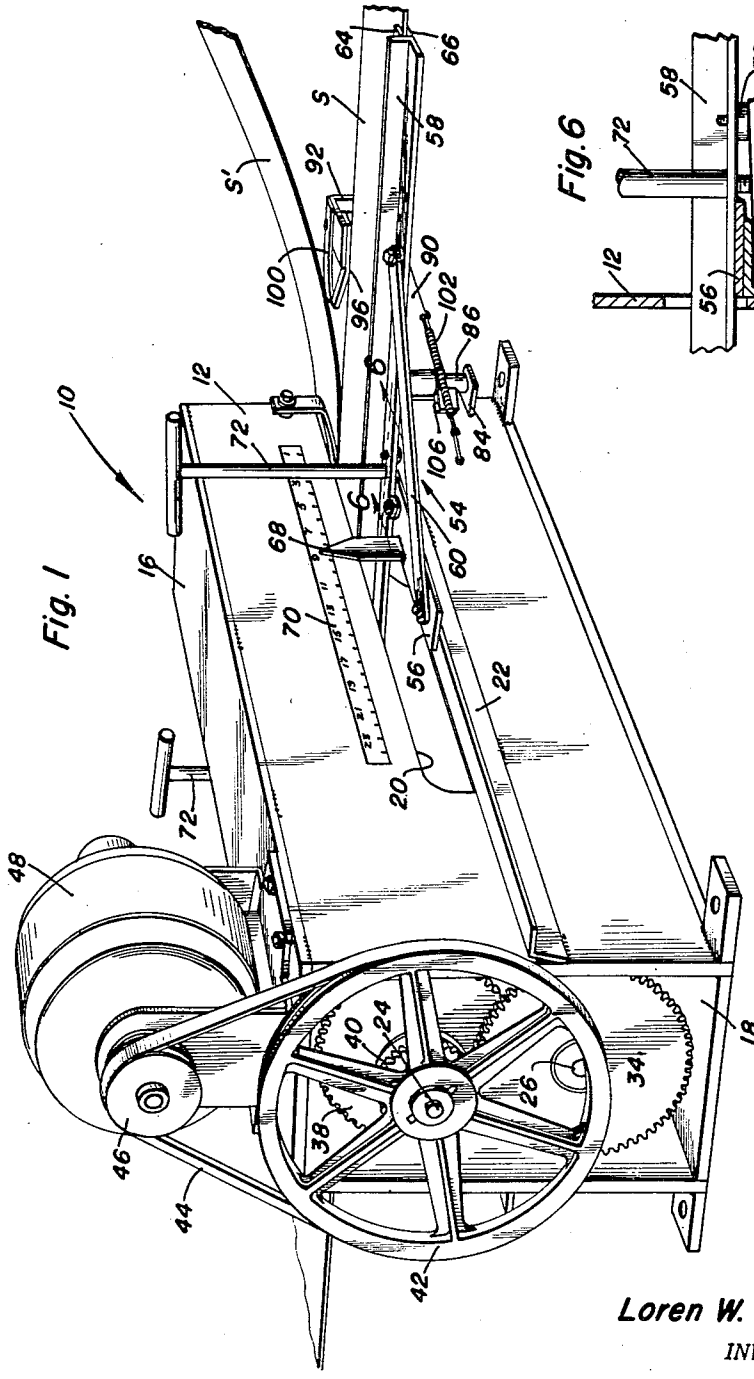
April 12, 1955 L. W. WILDER 2,706,001

METAL SLITTING MACHINE WITH SHEET AND SCRAP STRIP GUIDES

Filed July 5, 1951 3 Sheets-Sheet 1



Loren W. Wilder
INVENTOR.

BY Clarence A. O'Brien and Harvey B. Jacobson
Attorneys

April 12, 1955 L. W. WILDER 2,706,001

METAL SLITTING MACHINE WITH SHEET AND SCRAP STRIP GUIDES

Filed July 5, 1951 3 Sheets-Sheet 2

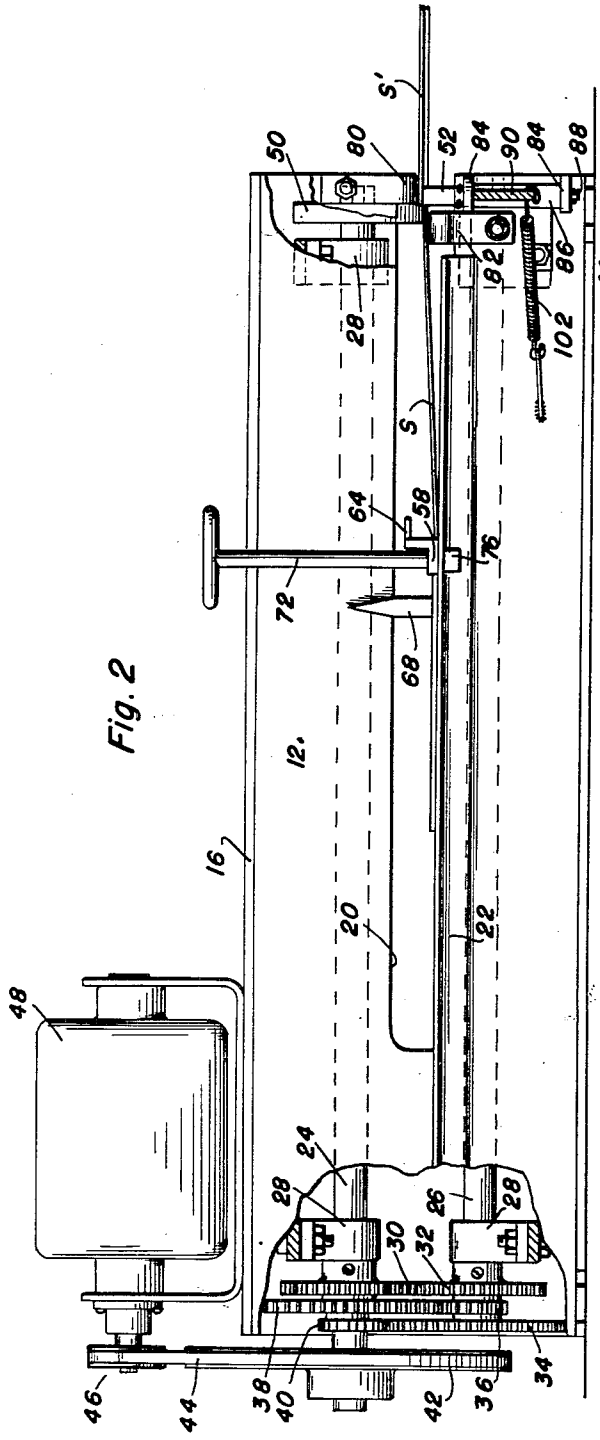


Fig. 2

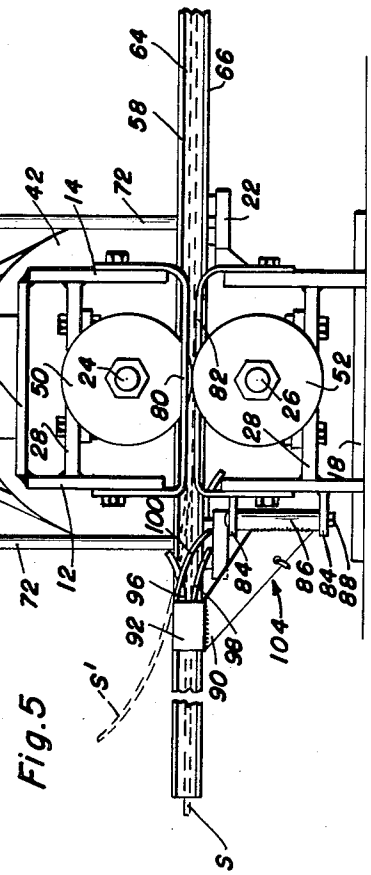


Fig. 5

Loren W. Wilder
INVENTOR.

BY Clarence A. O'Brien and Harvey B. Jacobson
Attorneys

April 12, 1955 L. W. WILDER 2,706,001

METAL SLITTING MACHINE WITH SHEET AND SCRAP STRIP GUIDES

Filed July 5, 1951

3 Sheets-Sheet 3

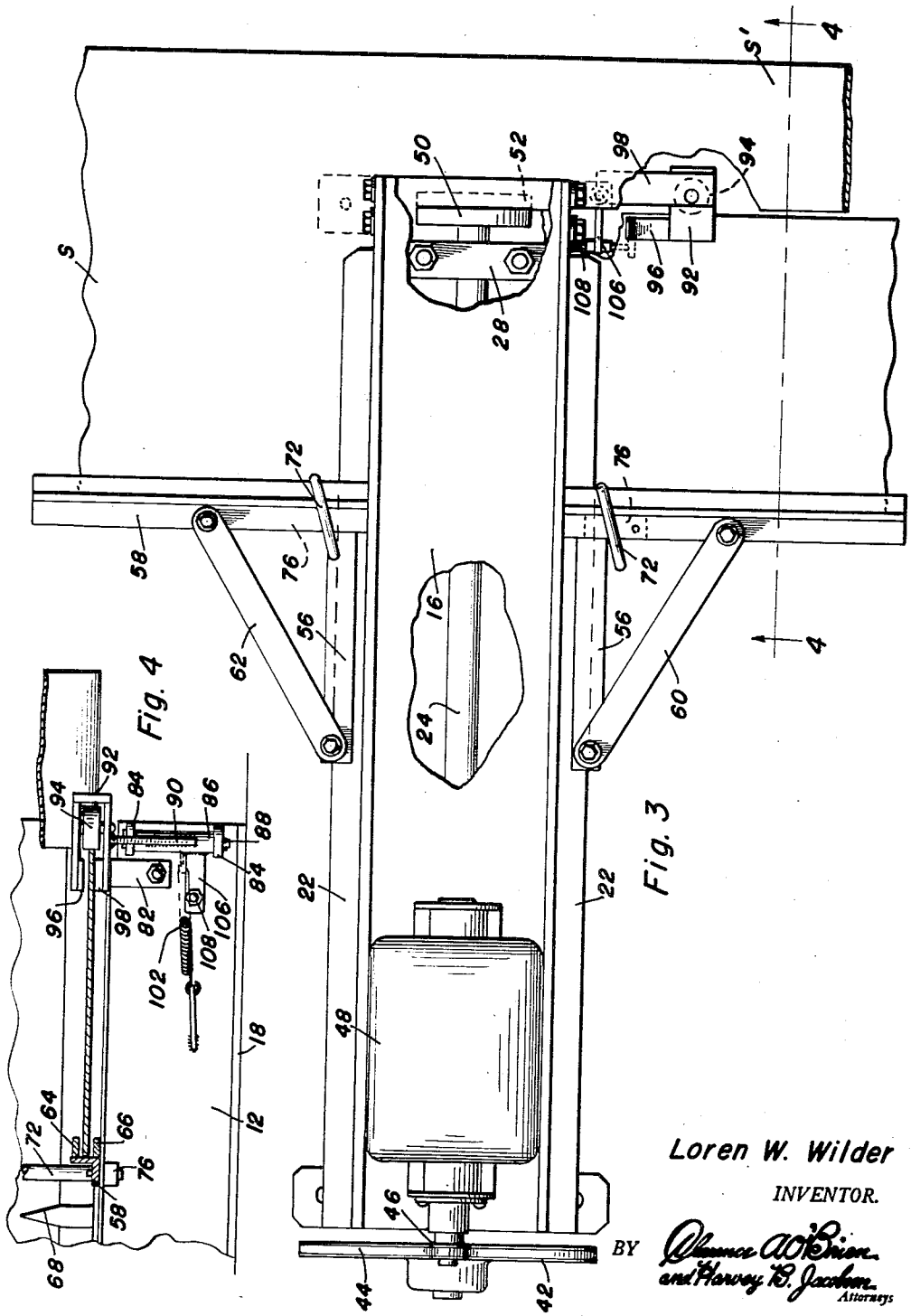


Fig. 3

Fig. 4

Loren W. Wilder

INVENTOR.

BY Clarence A. O'Brien and Harvey B. Jacobson

Attorneys

United States Patent Office 2,706,001
Patented Apr. 12, 1955

2,706,001

METAL SLITTING MACHINE WITH SHEET AND SCRAP STRIP GUIDES

Loren W. Wilder, Monterey, Calif.

Application July 5, 1951, Serial No. 235,224

2 Claims. (Cl. 164—60)

This invention relates to new and useful improvements in metal cutting or slitting machines and the primary object of the present invention is to provide a machine for slitting metal sheets into two sections and for guiding scrap strips away from the sheet cut to permit unrestricted sliding movement of a sheet of metal between oppositely rotating complemental cutters.

Another important object of the present invention is to provide a novel and improved guide attachment for metal slitting machines that will guide a sheet of metal and the scrap strip cut therefrom, and which attachment is quickly and readily applied to or removed from a metal slitting machine in a convenient manner.

A further object of the present invention is to provide a metal slitting machine involving a guide carriage that is adjusted between the ends of the machine and relative to a pair of oppositely rotating cutters in order to permit a sheet of metal to be cut at a predetermined width, the carriage including an elongated guide for slidably receiving the sheet of metal before, during and after the sheet of metal has been cut.

A still further aim of the present invention is to provide a machine of the aforementioned character that is simple and practical in construction, strong and reliable in use, efficient and durable in operation, inexpensive to manufacture, service and operate, and otherwise well adapted for the purposes for which the same is intended.

Other objects and advantages reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a perspective view of the present invention in use;

Figure 2 is an elevational view of Figure 1 and with parts broken away for the convenience of explanation;

Figure 3 is a plan view of Figure 1 and with parts broken away for convenience of explanation;

Figure 4 is a vertical sectional view taken on the plane of section line 4—4 of Figure 3;

Figure 5 is an end view of Figure 1; and,

Figure 6 is a detail vertical sectional view taken on the plane of section line 6—6 of Figure 1.

Referring now to the drawings in detail, wherein for the purpose of illustration, there is disclosed a preferred embodiment of the present invention, the numeral 10 represents an elongated support including a pair of side walls 12 and 14 that are joined at their upper and lower ends by an upper wall 16 and a lower wall 18. The side walls 12 and 14 are provided with horizontal slots 20 and support horizontal angle iron guide strips 22 that are located flush with the lower edges of the slots 20.

Upper and lower horizontal cutter supporting shafts 24 and 26 are supported in bearings 28 between the walls 12 and 14. A gear 30 fixed to the shaft 24 meshes with a gear 32 fixed to the shaft 26. A pair of interconnected gears 34 and 36 are rotatably supported on the shaft 26 and the gear 36 meshes with a gear 38 fixed on shaft 24. Gear 34 meshes with a gear 40 journaled on shaft 24 and the gear 40 is secured to a pulley 42 that is connected by a belt 44 to a pulley 46 on the drive shaft of a motor 48 supported on wall 16. Through this construction, the shafts 24 and 26 will rotate at the same speed but in opposite directions.

The ends of the shafts 24 and 26, remote from the gears aforementioned, support cutters 50 and 52 whose adjacent portions overlap each other a slight amount as shown in Figures 2 and 5. The overlapping portions of the cutters are located at one end of the slots 20 and in registry with the slots.

A guide carriage 54 extends transversely of the support 10 and includes a pair of slide plates 56 that rest upon the guide strips 22. An angle iron strip 58 extends through the slots 20 and is connected to the plates 56 by brace arms 60 and 62. The vertical flange of the strip 58 fixedly supports upper and lower horizontal guide strips 64 and 66 that define with the vertical flanges of strip 58 a guide channel for slidably receiving one edge of a sheet of metal S that is to be cut by the cutters.

The carriage 54 includes an upstanding pointer 68 that will register with graduations on a scale 70 mounted on the side wall 12, to indicate the distance the strip 58 is located from the cutters 50 and 52.

Means is provided for retaining the carriage adjusted between the ends of the support and at a predetermined distance from the cutters 50 and 52. This means comprises a pair of vertical rods 72 whose lower externally threaded ends 74 extend through apertures in the horizontal flange of strip 58. Plates 76 hinged, as at 78, to the horizontal flange of strip 58 (see Figure 6), are provided with threaded apertures that receivably engage the ends 74 of rods 72. As the rods 72 are rotated in one direction the plates 76 will clamp against the strips 22 to hold the carriage in an adjusted position.

The web portion of an upper U-shaped guide member 80 extends through the slots 20 adjacent the cutters and its ends are secured to the walls 12 and 14. The web portion of an inverted U-shaped guide member 82 also extends through the slots 20 and its ends are also secured to the walls 12 and 14. The web of member 80 is located alongside of the cutter 50 whereas the web of member 82 is disposed alongside of cutter 52 and beneath cutter 50 as shown in Figure 2.

A pair of horizontal ears 84 project outwardly from wall 12 below the guide 80 and removably support a guide 104. Guide 104 includes a vertical sleeve 86 disposed between the ears 84. A vertical pivot 88 extends through the ears and the sleeve to permit horizontal swinging movement of a vertically inclined arm 90 that is fixed to the sleeve to form a part of guide 104.

The upper end of arm 90 carries a U-shaped bracket 92 in which there is mounted a vertical guide roller 94. Upper and lower guide plates 96 and 98 extend forwardly from the bracket with the forward end of the plate 96 curving upwardly and with the forward end of plate 98 curving downwardly. The plates 96 and 98 are disposed alongside of the roller 94. Another guide plate 100 curves downwardly and forwardly from the bracket 92 for a purpose presently to be described.

A spring 102 terminally secured to wall 12 and arm 90 yieldingly urges the guide 104 toward the wall 12 so that a sheet of metal S may be yieldingly guided between the carriage 54 and the guide 104 and the roller 94 will follow the slit edge of the sheet of metal to maintain the guide plates 96, 98, 100 in operative position. An arm 106 fixed to the sleeve 86 carries an horizontally adjustable stop and gage element 108 that is urged against wall 12 by spring 102.

In practical use of the invention, the carriage is first adjusted until the pointer 68 registers with a selected indicia on the scale 70. Then the sheet of metal S is fed to the cutters with one side edge of the sheet S riding against strip 58 and between strips 64 and 66.

Cutters 50 and 52 will form a slit in the sheet of metal with the scrap strip S' of the sheet of metal riding against guide plate 100 and over bracket 92 and away from the cut sheet of metal that is guided between plates 96 and 98 and against roller 94.

Having described the invention, what is claimed as new is:

1. In a metal slitting machine having a pair of ears and cutting means adjacent the ears, a guide attach-

ment comprising a vertical sleeve received between the ears, a vertical pivot extending through the ears and the sleeve, a vertically inclined arm fixed to the sleeve, a roller supported on the arm, a pair of spaced guide plates extending past the roller, said guide plates being disposed one above the other with the upper plate provided with an upwardly curved end and the lower plate provided with a downwardly curved end, and a scrap guide plate carried by the arm alongside of said pair of plates and having a downwardly curved end disposed in front of the roller to guide a scrap of metal over the roller as the main portion of a sheet of metal is guided by said pair of plates and roller during operation of the cutting means in cutting the sheet of metal.

2. A metal slitting machine comprising an elongated support having a horizontal slot, a pair of oppositely rotating power driven cutters at one end of the support extending transversely thereof for slitting a sheet of metal fed transversely of the support through said slot, a pair of guide strips on the support at opposite sides of the slot, a guide carriage extending through said slot supporting one edge of the sheet for feeding of the sheet thereon past said cutters for slitting by said cutters in a line parallel with said edge of the sheet, said carriage being slidably supported on said strips for adjustment laterally of said cutters to vary the line

of slitting, means on said carriage clampingly engaging said strips to retain the carriage in adjusted position, a guide for the slit edge of the sheet having upper and lower oppositely curved plates for straddling said slit edge and a roller for engaging and following said slit edge, spring tensioned means carrying said guide and pivotally mounted on said support for swinging movement toward said slit edge to maintain the roller engaged with the slit edge, and a scrap guiding plate on said spring tensioned means alongside said pair of plates curved to guide a scrap strip cut in slitting the plate over the roller and maintained in scrap guiding position by said spring tensioned means.

References Cited in the file of this patent

UNITED STATES PATENTS

44,839	Perkins	Oct. 25, 1864
299,982	Hodgson	June 10, 1884
438,845	Hine	Oct. 21, 1890
824,694	Irwin	June 26, 1906
924,562	Metzke	June 8, 1909
1,703,738	Keiser	Feb. 26, 1929
2,075,287	Jagusch	Mar. 30, 1937
2,440,302	Sherman	Apr. 27, 1948
2,554,298	Ferguson et al.	May 22, 1951
2,570,061	Johnstone	Oct. 2, 1951