

S. JACKSON.
MACHINE FOR MAKING METAL TUBING.
APPLICATION FILED JUNE 27, 1907.

953,955.

Patented Apr. 5, 1910.

3 SHEETS—SHEET 1.

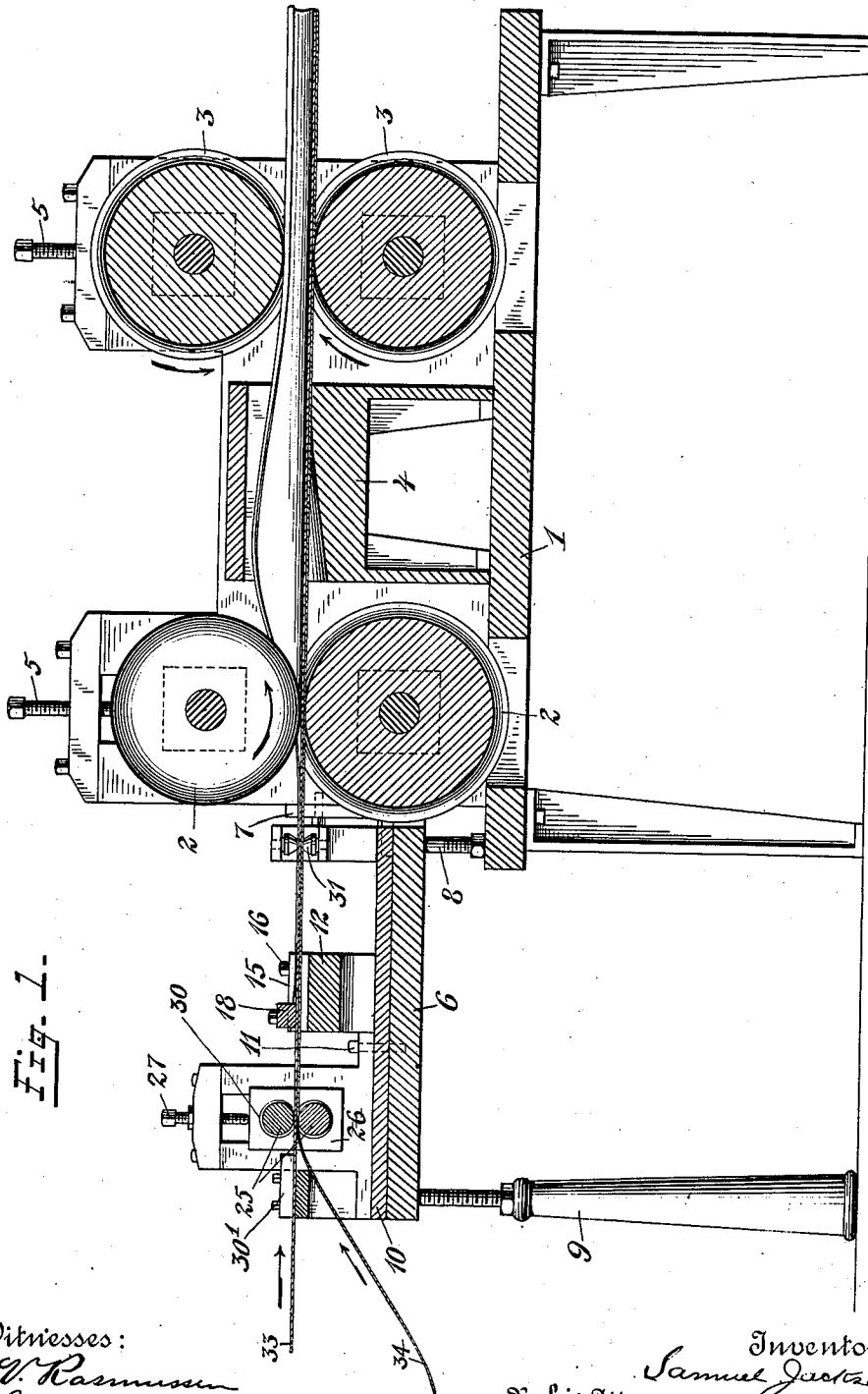


Fig. 1.

Witnesses:
G. V. Rasmussen
John A. Kehlbeck.

Inventor
Samuel Jackson
By his Attorneys
Friesen & Knauth

S. JACKSON.
MACHINE FOR MAKING METAL TUBING.
APPLICATION FILED JUNE 27, 1907.

953,955.

Patented Apr. 5, 1910.

3 SHEETS—SHEET 2.

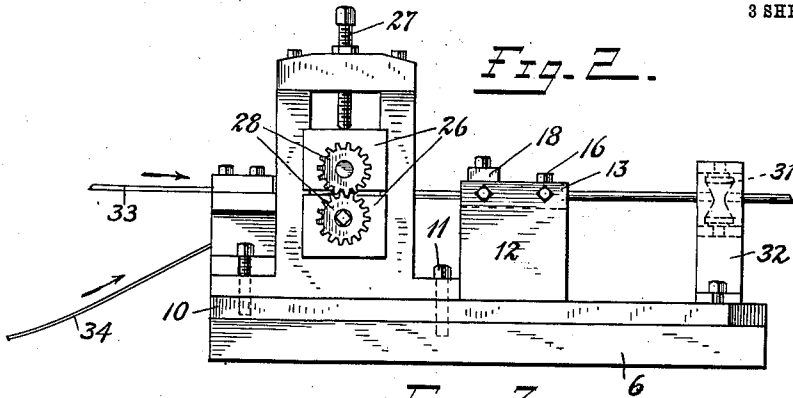


Fig. 3.

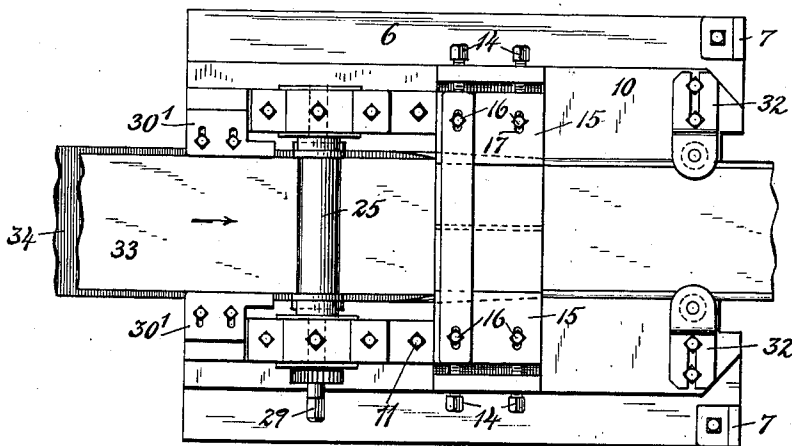


Fig. 4.

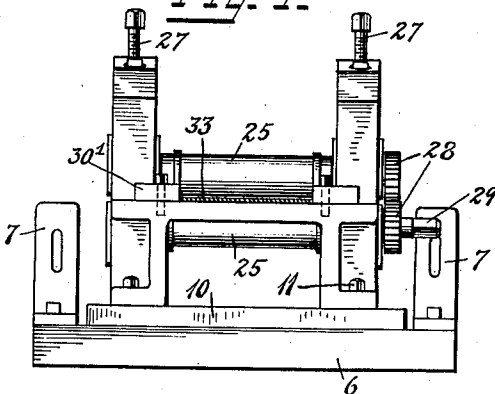
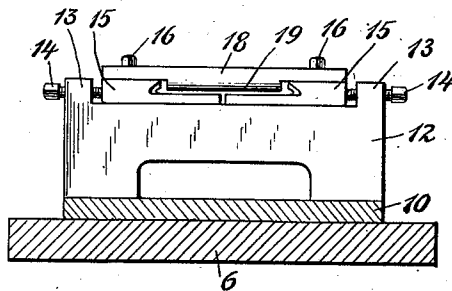


Fig. 5.



Witnesses:
G. V. Rasmussen
John A. Kellert.

Inventor
Samuel Jackson
By his Attorneys
Briesen & Knauth

S. JACKSON.
MACHINE FOR MAKING METAL TUBING.
APPLICATION FILED JUNE 27, 1907.

953,955.

Patented Apr. 5, 1910.

3 SHEETS—SHEET 3.

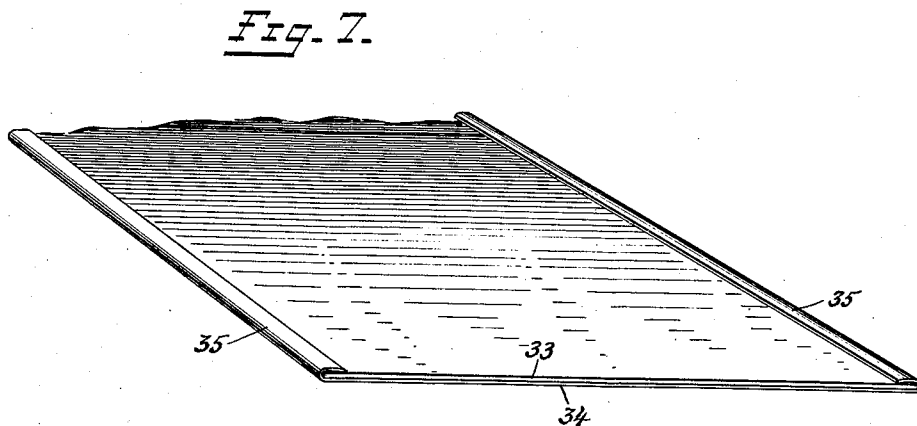
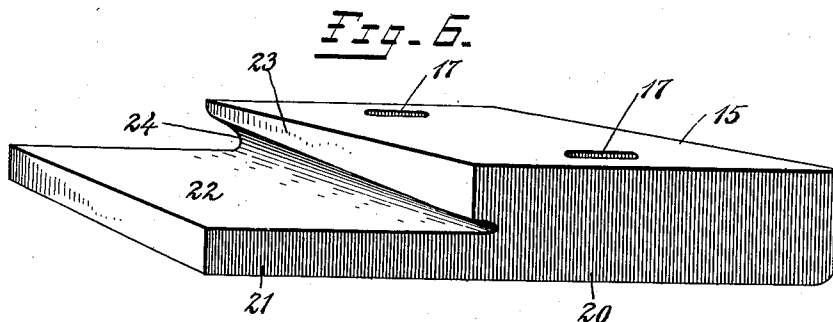


Fig. 8.

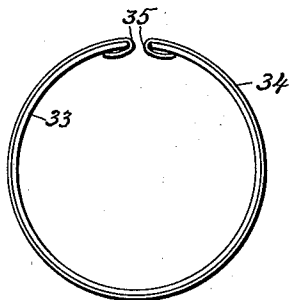


Fig. 9.

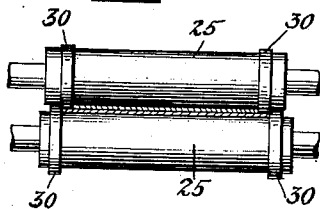
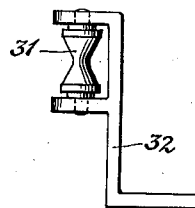


Fig. 10.



Witnesses:
G. V. Rasmussen
John A. Heilbrunn

Inventor
Samuel Jackson
By his Attorneys
Briesen & Knauth

UNITED STATES PATENT OFFICE.

SAMUEL JACKSON, OF NEW YORK, N. Y.

MACHINE FOR MAKING METAL TUBING.

953,955.

Specification of Letters Patent.

Patented Apr. 5, 1910.

Application filed June 27, 1907. Serial No. 381,021.

To all whom it may concern:

Be it known that I, SAMUEL JACKSON, a citizen of the United States, and residing in the borough of Brooklyn, in the city of New York, county of Kings, and State of New York, have invented a new and useful Improvement in Machines for Making Metal Tubing, of which the following is a specification, like numerals referring to like parts throughout.

The object of my invention is to provide a machine of this character which is especially adapted to the making of brass-tubing for bedsteads; to make tubing for this purpose that will have the appearance and strength of thick brass tubing yet which will require the use of comparatively little brass in its production; and which will also be very light in weight. In carrying out this idea the tubing is made with a steel inner shell and a thin brass outer shell secured together.

The details of my invention are shown in the accompanying drawings, in which—

Figure 1 is a vertical longitudinal section of the machine with some of the finishing parts removed; Fig. 2, a side view of a part thereof on a larger scale; Fig. 3, a plan view of the same; Fig. 4 an end view of the same; Fig. 5, a detail end view of the folder-blocks; Fig. 6, a full-size perspective view of one of the folder-blocks; Figs. 7 and 8, views of the tube at different stages in its production; Fig. 9, a detail view of the horizontal guide-rollers; and Fig. 10, a detail view of one of the vertical guide-rollers.

The machine consists of a table 1 which supports the bending and feeding rolls 2, 2 and 3, 3; and the funnel-like shaper 4. The rolls are driven by any suitable mechanism (not shown) in the direction of the arrows. These rolls are supported in suitable journal boxes shown in dotted lines, the upper ones of which are made adjustable by providing the set-screws 5. It will be noted that the rolls 2, 2, the upper one of which is shown entire, are made with their peripheries rounded into complementary curves with the upper one convex in character and the lower one concave. The result of the passage of the metal strips, hereinafter referred to, between these is obviously to give the latter a slight curvature. The two rolls, 3, 3, have their peripheries concaved and similar to the lower roll of 2, 2, but of more pronounced curvature so as to further add to the curvature of the metal strips as they leave the

shaper 4. Beyond these rolls there are still others of the same general character designed to more perfectly form the thus far partially shaped tubing, but as this part of the device is of a type known before, and since I do not wish to claim it as any part of my invention, in order to simplify the drawings and description I have omitted it altogether.

The part of the device in which my improvements reside is located in advance of all of the rollers above-described. This consists in an auxiliary table 6 clamped by means of the adjustable angle irons 7 to the main table 1 and supported for adjustment therefrom by the set screw 8 and supported at its other end from the floor by means of the screw-jack 9. This auxiliary table 6 has a bed-plate 10, attached to it by the screws 11. The bed plate 10 has made integral therewith the vertical frame 12, provided with the upstanding lugs 13, carrying the screws 14 designed to adjust the horizontal portions of the two folder-blocks 15, 80 which are held in their adjusted positions by the screws 16 passing through the slots 17. The screws 16 beside passing through the slots 17 in the folder-blocks, also serve to clamp down to the latter the guide-bar 18, which is provided with a rounded underside at 19, to assist in the passage of the upper strip of metal through the blocks and to maintain it in contact with the lower strip during said passage.

It will be noted that each folder-block consists of a thick part 20, having the above mentioned vertical slots 17 and the thin operative part 21, having a plane surface 22 on its upper side which is separated from the top of the thick portion 20 by the vertical wall 23, and the under-cut curved surface 24 so shaped that the upper surface of said curve is near to the plane surface 22 at the outlet or right-hand-end of the block while the depth of the channel produced by the curve also becomes less from one side of the block to the other in correspondence with the lessening height of the channel.

In advance of the folder-blocks 15 are located two horizontal guide-rolls 25, journaled in the boxes 26, the upper ones of which are adjustable through the agency of the said screws 27. These rolls, 25, are provided, at one end, with similar spur gears, 28, meshing into one another. The axis of the lower horizontal guide-roll is

extended beyond the gears 28, and is squared at 29, so as to permit the attachment thereto of a crank (not shown) when starting the machine, as described below. As shown in 5 Fig. 9, the horizontal guide-rolls are constructed with annular flanges 30, those on the upper roller being closer together than those on the lower one. Two adjustable guide plates 30' are situated in front of 10 these rolls; between them and thence to the rolls, 25, is fed the upper metal plate, 33, for which they serve as a guide. Behind the folder-blocks 15 are located two vertical guide-rolls 31, each of which is adjustably supported at the side of the auxiliary table 15 6 by the double-eared angle irons 32.

The operation of the machine is as follows: A narrow strip of strengthening metal preferably steel, superimposed above a 20 wider finishing strip, such as brass, is fed between the horizontal guide-rolls 25, which are turned by a crank to start the feeding of the strips until they have entered the machine far enough to be engaged by the 25 continuously rotated feed and bending-rolls, 2, 2. After said engagement has taken place, the crank is removed, and the making of the tubing from the sheet-metal is carried on continuously until the strips are ex- 30 hausted. During the process the upper strip is centered over the lower one by the horizontal guide-rolls and while the two are held in intimate contact they are fed into the folder-blocks, where the free edge of the 35 lower strip is folded over the upper strengthening strip as shown at 35, in Fig. 7. The two strips thus secured together after passing through the vertical guide rolls 31, are drawn into the bending-rolls 2, 40 where an initial curve is given to the double strip. Then the bent strip passes through the funnel-like shaper which brings the strips more nearly to the desired curvature. A further shaping is given the strip by its 45 passage through the rolls 3, 3. From this point the strip is passed through several devices not material to my invention for making it into a perfectly cylindrical tube as shown in Fig. 8. Subsequently, the two 50 free edges of this tube are brazed together by any approved method, making the periphery entirely continuous.

I do not wish myself to be limited by the above described details, but consider that

various changes may be made in the minor 55 details without departing from the principle of my discovery.

What I claim is:

1. In a machine for making metal tubing, the combination of flanged rolls adapted to 60 feed and guide two strips of metal one of which is superimposed upon the other of different widths, and a device for folding the edges of the wider strip over the edges 65 of the narrower strip, the rolls being arranged in advance of the folding device, substantially as described.

2. In a machine for making metal tubing, the combination of flanged horizontal guide and feed rolls, a folding device, and means 70 for bending the folded metal into tubing, the rolls being arranged in advance of the folding device, substantially as described.

3. In a machine for making metal tubing, guide plates and flanged horizontal guide 75 and feed rolls in advance of and in combination with means for bending the folded metal into tubing, substantially as described.

4. In a device of the character described, a folder block comprising two opposite con- 80 vergent and reëntrant channels of height decreasing from one end of the channel to the other, said block being divided intermediate of said channels into two parts each of which is provided with means for attach- 85 ment to a bed plate and adjustment thereon so as to vary the distance between the channels, substantially as and for the purpose described.

5. In a device of the character described, 90 a folder block comprising two opposite equally convergent and reëntrant channels of height decreasing continuously from one end of the channel to the other, said block being divided intermediate of said chan- 95 nels, into two parts each of which is provided with means for attachment to a bed plate and adjustment thereon so as to vary the distance between the channels, substantially as and for the purpose described. 100

In witness whereof I have hereunto set my hand in the presence of two subscribing witnesses, this 17th day of June, 1907.

SAMUEL JACKSON.

Witnesses:

JOHN A. KEHLENBECK,
ARTHUR WRIGHT.