Jan. 6, 1942. S. R. SIUSZKO 2,268,628

MACHINE FOR BENDING METAL GUTTER HANGERS

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FIG. 1

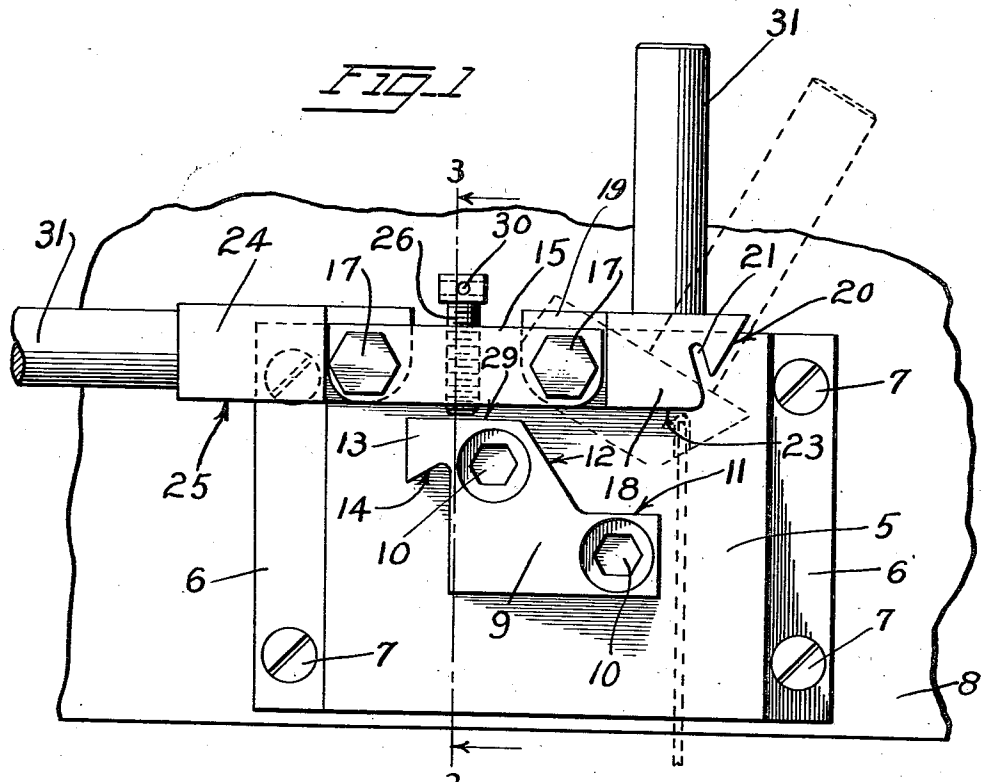


FIG. 2

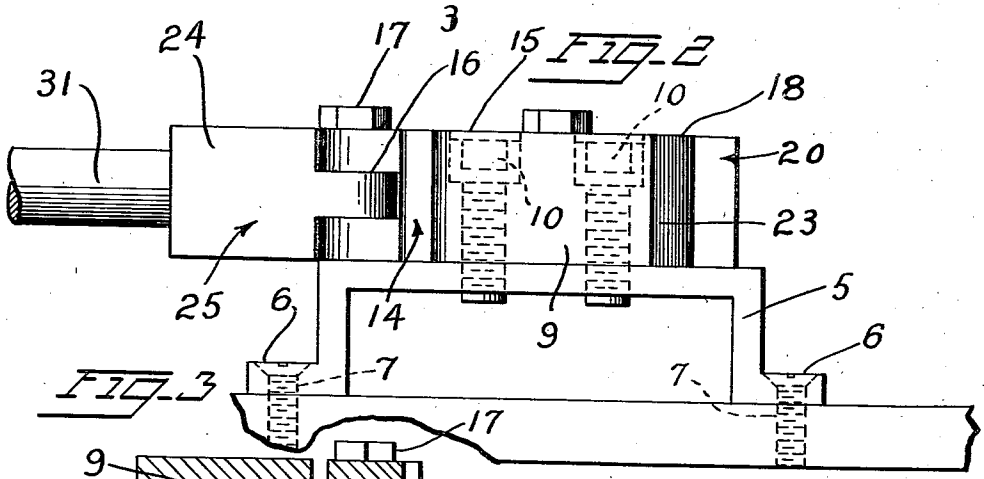
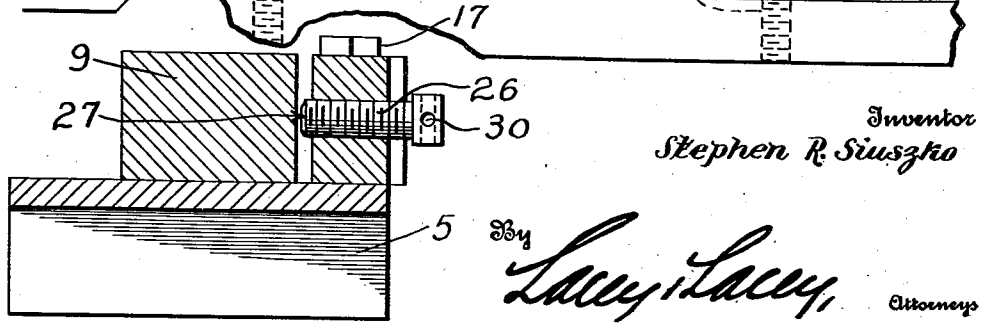


FIG. 3



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FIG. 4

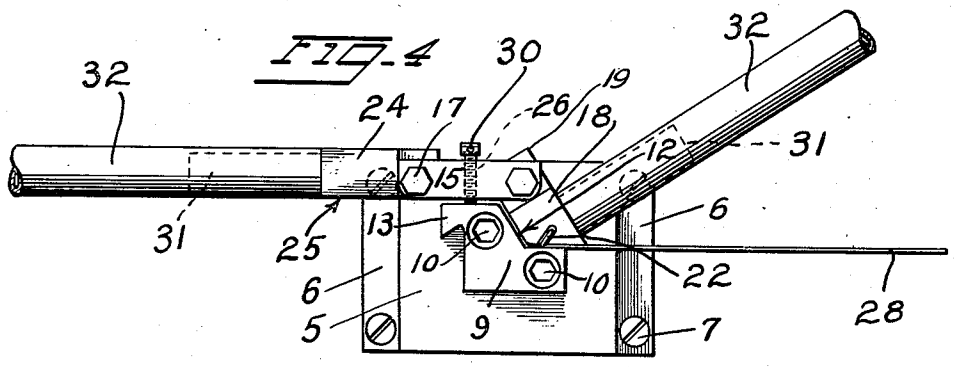


FIG. 5

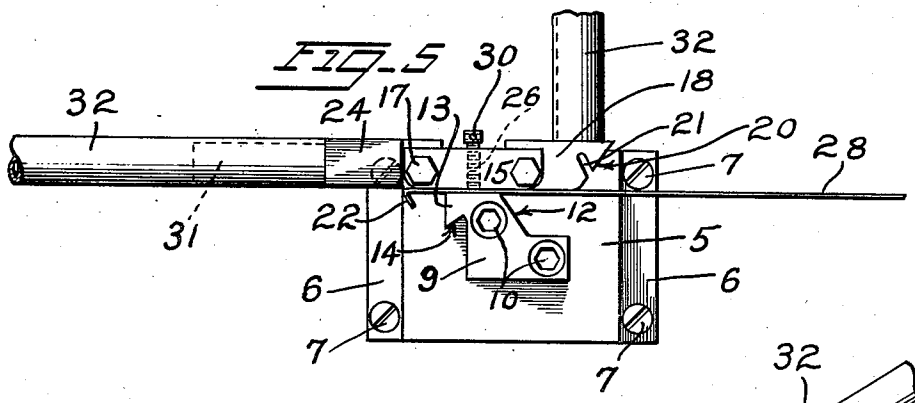


FIG. 6

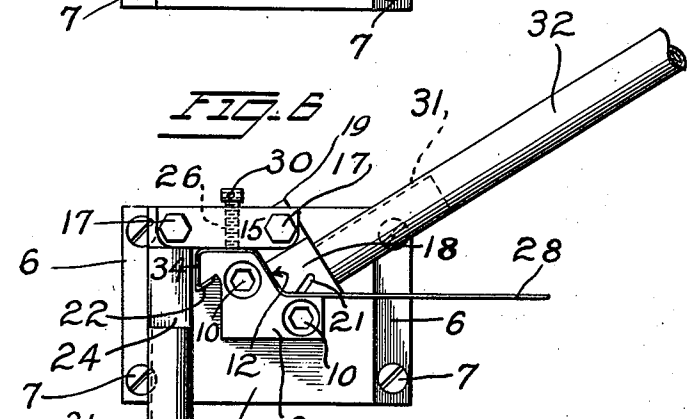
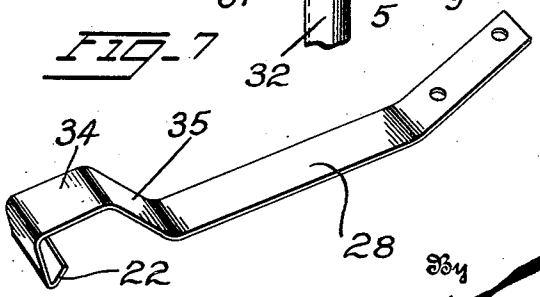


FIG. 7



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MACHINE FOR BENDING METAL GUTTER HANGERS

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Application July 18, 1939, Serial No. 285,170

3 Claims. (Cl. 153—16)

This invention relates to metal bending machines and more particularly to a machine especially designed for bending gutter hangers.

The object of the invention is to provide a metal bending machine of simple and durable construction, by means of which metal hangers for supporting gutters having an outside square bead, such as molding or box gutters, can be economically and expeditiously pressed into the desired shape.

A further object of the invention is to provide a metal bending machine comprising a supporting platform having a stationary die or shaping member mounted thereon and provided with pivoted shaping members movable into engagement therewith for imparting the desired shape to the metal hanger forming bar.

A further object is to provide one of the movable members with a slot or kerf for bending the outer terminal of the hanger bar into hook shape for engagement with the square bead of a gutter and means on the stationary die for pressing the hanger bar at the rear of said hook into angular form when the movable members are simultaneously swung inwardly against said stationary member.

A further object is to provide means for clamping the hanger forming strap iron against the stationary die to prevent buckling of said strap iron during the bending operation.

A still further object of the invention is generally to improve this class of devices so as to increase their utility, durability and efficiency.

In the accompanying drawings forming a part of this specification and in which similar numerals of reference indicate corresponding parts in all the figures of the drawings:

Figure 1 is a top plan view of a gutter hanger bending machine constructed in accordance with the present invention, the movable hook forming die being shown in dotted lines with the adjacent end of the strap iron seated in the kerf thereof and prior to being bent into hook shape,

Figure 2 is a front elevation,

Figure 3 is a transverse sectional view taken on the line 3—3 of Figure 1,

Figure 4 is a top plan view on a reduced scale showing the manner of forming the hook on the end of the hanger strap iron,

Figure 5 is a similar view showing the placement of the strap iron on the supporting platform and prior to bending said strap iron into angular shape,

Figure 6 is a similar view showing the pivoted die forming members swung inwardly to impart the desired angular form to the strap iron at the rear of the hook, and

Figure 7 is a perspective view of one of the gutter hangers detached.

The improved gutter hanger bending machine forming the subject-matter of the present invention comprises a hollow platform 5 having laterally extended attaching flanges 6 provided with openings for the reception of screws or similar fastening devices 7, by means of which the platform may be secured to a table, bench or other suitable support, indicated at 8. Mounted on the upper surface of the platform 5 at substantially the center thereof is a stationary die or shaping member 9 having vertically disposed threaded openings therein adapted to receive counter-sunk lag screws 10 for rigidly supporting said stationary die on the platform.

The stationary die is provided with a flat horizontally disposed surface 11 and an inclined surface 12 intersecting the rear end of the flat surface 11, as shown. Arranged opposite the inclined surface 11 is a shaping lug 13 having an under-cut surface 14, the purpose of which will be more fully set forth hereinafter.

Rigidly secured to the platform 5 at the rear of the stationary die 9 is a block or support 15 having its opposite ends bifurcated to form slots 16 through which pass bolts or similar fastening devices 17 with their lower ends engaging threaded openings in the platform. Pivotally mounted on one end of the support 15 is a movable shaping member 18 having a tongue 19 formed integral therewith and fitting within the adjacent slot 16, said tongue being provided with an opening for the reception of a bolt 17 which acts as a pivot and permits the member 18 to be swung laterally thereon to operative and inoperative positions. The free end of the movable shaping member 18 is provided with an inclined face 20 having a slot or kerf 21 formed therein and which serves to form an angular hook 22 on the strap iron when said movable member is swung inwardly against the stationary member 9. The member 18 is also provided with a flat face 23 which coacts with the inclined surface 12 of the stationary shaping member 9 for forming an angular bend in the strap iron constituting the hanger. Pivotally mounted on the other side of the support 15 in the same manner as the movable member 18 is a second movable shaping member 24 having an inner flat face 25 which coacts with the adjacent outer end face of the shaping lug 13 when said movable member is swung inwardly to operative position. Extending transversely through the support 15 is a threaded pin 26, the inner end 27 of which is adapted to engage the adjacent surface of the strap iron 28 and clamp said portion of the strap iron against a flat surface 29 on the stationary die so as to prevent buckling of the strap iron during the bending operation. The outer end of the clamping screw 26 is formed with an enlarged head having a series of openings 30 formed therein so that by inserting a nail or other suitable tool within the

openings 30 the screw 26 may be rotated to firmly clamp the strap iron against the flat surface 29 of the stationary die.

The movable shaping members 18 and 24 are provided with cylindrical extensions 31 over which are fitted pivoted tubular members or pipe sections 32 which constitute handles and permit the desired pressure to be exerted on said members when swung inwardly against the stationary shaping member.

In operation, the movable shaping member 18 is swung inwardly to the dotted line position shown in Figure 1 of the drawings, after which one end of the strap iron 28 is inserted in the slot or kerf 21 with the lower longitudinal edge of the strap iron resting on the supporting platform 5. By now exerting inward pressure on the operating handle 32, the member 18 will be moved in contact with the stationary shaping member 9, as shown in Figure 4, so as to cause the slot or kerf 21 to form the hook 22 on the outer end of the strap iron. The hook 22 of the strap iron is then removed from the kerf 21 and said strap iron reversed and again positioned in the machine with the hook portion of the strap iron registering with the adjacent end of the support 5, as shown in Figure 5, and with the intermediate portion of the strap iron bearing against the flat surface 29 of the stationary die forming member and in which position it is securely clamped by tightening the clamping screw 26. Both movable members 18 and 24 are then simultaneously swung inwardly toward the stationary shaping member 9 to the position shown in Figure 6. As the member 24 is swung inwardly, the flat face 33 thereof will press the hooked end of the strap iron laterally and a further inward movement of the member 24 will cause the hook 22 to engage the under-cut face 14 of the stationary shaping member 9 thereby forming an angular portion 34 on the hanger at the rear of the hook while at the same time the flat face 23 of the movable member 18 will press the strap iron against the faces 11 and 12 of the stationary shaping member and offset the hooked end of the hanger, as indicated at 35. After the hanger has been thus formed, the movable members 18 and 24 are swung laterally to released position and the hanger removed from the platform leaving the parts of the machine in position for forming another gutter hanger. It will here be noted that the support 15 not only forms a means for pivotally supporting the movable members 18 and 24 respectively but also forms, in effect, a gauge to properly position the hooked end 22 of the strap iron with respect to the handle so that, when said handle is swung inwardly, the strap iron will be bent around the lug 13 with the hook 22 thereof in contact with the under-cut surface 14.

From the foregoing description taken in connection with the drawings, it is thought that the construction and operation of the device will be readily understood by those skilled in the art and further description thereof is deemed unnecessary.

It will, of course, be understood that the machines may be made in different sizes and shapes and constructed of any suitable material without departing from the spirit of the invention.

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

1. A machine for bending sheet metal gutter hangers comprising a supporting table, a stationary shaping die mounted on the table for engagement with a metal hanger bar, said stationary shaping die having a flat rear face and a lug extending laterally from one side thereof and formed with an under-cut inner side edge face, the other side of the die being provided with a side edge face parallel to the rear face and offset therefrom by a diagonally extending edge face, a block carried by the table rearwardly of the stationary die, an adjusting screw threaded through the block for clamping a hanger bar against the flat rear face of the stationary die, and coacting movable dies pivotally mounted on the table for pressing the metal bar in engagement with the stationary shaping die, the movable dies being pivoted to opposite ends of the block and having flat edge faces disposed parallel to confronting edge faces of the stationary dies when the movable dies are swung inwardly to a shaping position.

2. A machine for bending metal gutter hangers comprising a table having laterally extending flanges for engagement with a support, a stationary shaping die mounted on the table and having one side thereof provided with a lateral lug flush with the rear edge face of the die and having an under-cut face, the other side of the die being formed with a longitudinally extending shaping face and a diagonal shaping face extending therefrom to the rear edge face, a support secured to the table at the rear of the stationary shaping die and spaced therefrom to permit the insertion of a metal hanger bar, an adjusting screw extending through the support for clamping the hanger bar against the rear edge face, and coacting movable shaping dies pivotally mounted on the support and each having an independent center of movement, one of said movable dies being provided with a flat inner side face and a diagonally extending face conforming to the angle of the longitudinal face and the diagonal bore of the stationary die, the said movable die being formed with a hook-forming kerf leading from its diagonal face and the other movable die having a flat inner side face, said movable dies being movable in the direction of the stationary shaping die for bending the secured end portion of the bar and imparting an angular shape to the said end portion of the bar.

3. A machine for bending sheet metal gutter and hangers comprising a supporting table, a stationary die mounted on the table and provided with flat edge faces for engagement with a metal bar offset from each other by a diagonally extending face, a support, and movable die-shaping members pivotally mounted on the support and each having an independent center of movement, one of the die-shaping members being provided with flat edge faces conforming to the angle of the edge faces of the stationary die and being formed with a hook-forming kerf and the other movable die having means for bending the bar whereby inward movement of one of said movable members will bend the bar to form a terminal hook thereon and simultaneous inward movement of both bars will press the bar at the rear of the hook into angular shape.

STEPHEN R. SIUSZKO.