

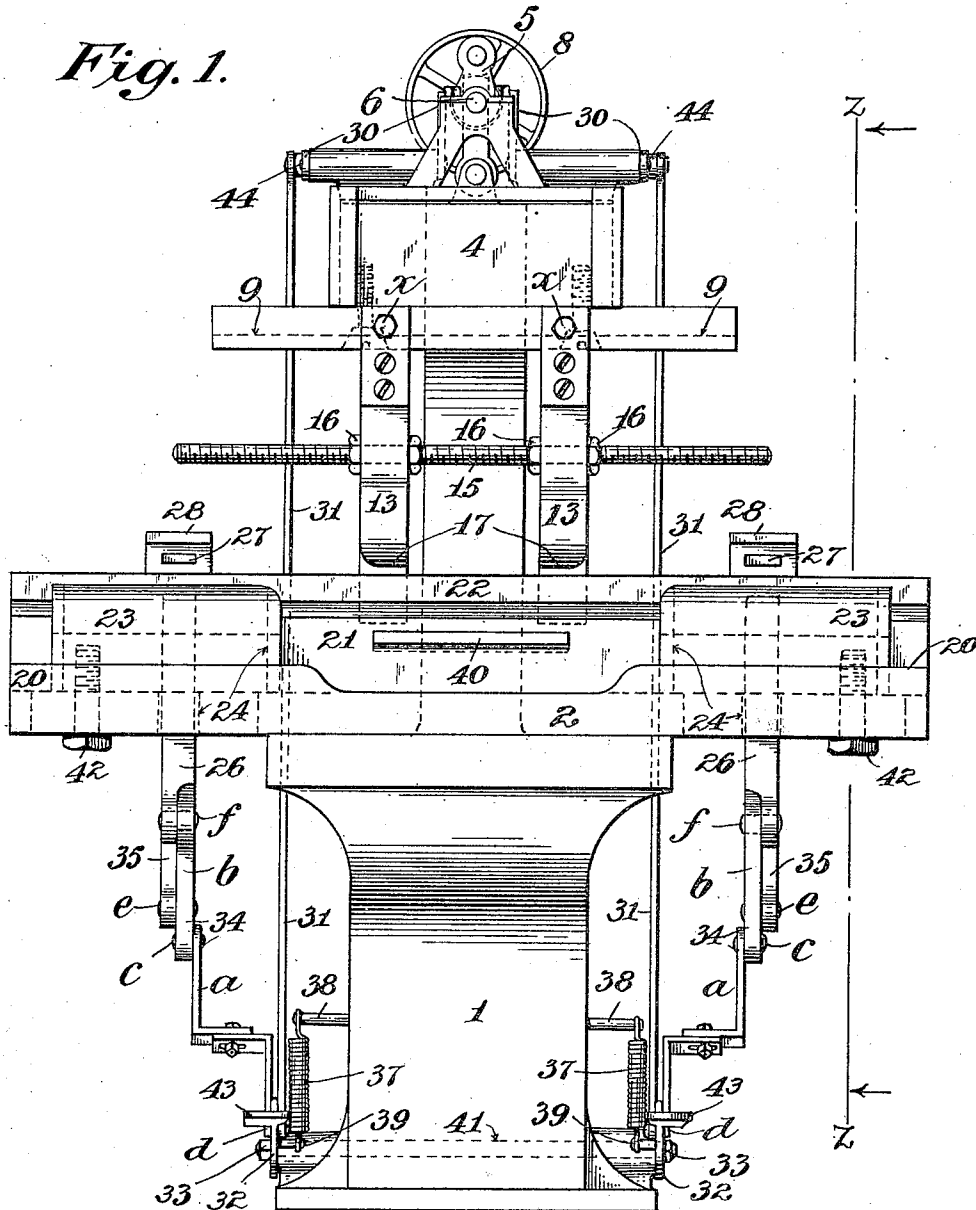
W. HANSEN.
MACHINE FOR SHAPING BRIDLE IRONS OR STIRRUP OR JOIST HANGERS.
APPLICATION FILED MAY 1, 1909.

934,168.

Patented Sept. 14, 1909.

2 SHEETS—SHEET 1.

Fig. 1.



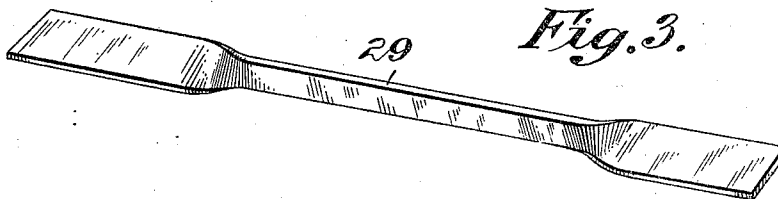
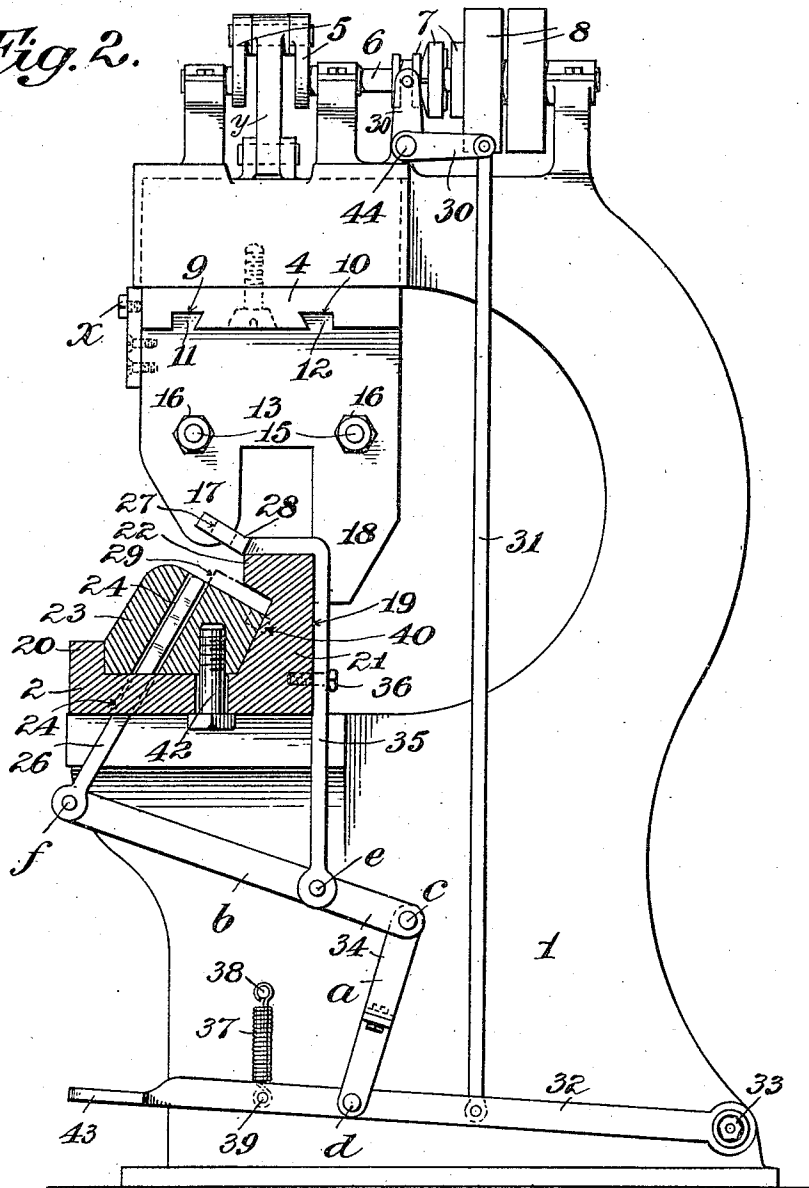
Attest:
Edgeworth Greene
Walter McGehee

by

Inventor:
William Hansen
James G. Lee Attys.

934,168.

Fig. 2.



Attest:
Edgeworth Greene
Nathan McGinn

by

Inventor:
William Hansen
James E. Lee Attys.

UNITED STATES PATENT OFFICE.

WILLIAM HANSEN, OF SOUTH BROOKLYN, NEW YORK.

MACHINE FOR SHAPING BRIDLE-IRONS OR STIRRUP OR JOIST HANGERS.

934,168.

Specification of Letters Patent. Patented Sept. 14, 1909.

Application filed May 1, 1909. Serial No. 493,385.

To all whom it may concern:

Be it known that I, WILLIAM HANSEN, a citizen of the United States, and a resident of No. 540 Fifty-fifth street, South Brooklyn, in the county of Kings, city and State of New York, have invented certain new and useful Improvements in Machines for Shaping Bridle-Irons, or "Stirrup or Joist Hangers," as they are also termed, of which the following is a specification.

My machine consists of an iron bed in which the iron bar to be twisted is placed at an angle against blocks forming the ends of said bed; a plunger to which is attached a die plate and dies, and means for suitably operating said plunger vertically with respect to the position of the bed. The dies are made preferably of cast steel so shaped that when brought in contact with the iron by the action of the plunger, at points between the said two blocks, they will, acting in conjunction with the suitably shaped blocks, twist the iron into the desired shape. The blocks are arranged on the bed and the die plates arranged on the plunger in such manner that the inner surfaces of the blocks may be moved to and from each other, and the inner surfaces of the die plates may be moved in like manner to regulate the width of the bridle-iron. The blocks and die plates having been adjusted with respect to their inner surface, are firmly held against lateral motion by set screws or other suitable means. The blocks are formed with slots or holes to permit the passage through them, automatically, of a pin or bolt operated by the action of a treadle or hand lever on rods suitably connected with the frame of the machine, and with the means for setting the plunger in motion. These pins or bolts, after passing through the blocks, engage with orifices in arms fastened to the back of the bed. These arms are fastened on the back of said bed opposite the point where the slot or hole in said blocks gives the greatest width to the portion of the iron bar lying between the twists. These arms are projected from the back of the bed over the blocks. The automatic engagement of the pins or bolts, passing through the blocks, with the arms, locks the iron bar in the jaw or recess, formed between the upper surfaces of the blocks and the lower surfaces of the back of the bed, and prevents the ends of the iron bar from being forced out-

ward, by the impact of the surfaces of the dies with the iron bar.

I am aware that a patent for a machine for shaping iron into bridle-irons or joist or stirrup hangers has been granted, showing a die plate movably supported on a plunger for the purpose of giving the dies a forward motion, conformable to the change of the plane of the surface of the iron to be bent, during the bending operation. The movability of the die plates on the plunger of my machine, as shown in the accompanying drawings, does not involve this feature. It is solely for the purpose of adjusting the distance between the inner surfaces of the die plates, in order to regulate the size of the bridle iron as to width.

My machine has the advantage over other machines of this nature that I am acquainted with, in that once the iron is inserted and the blocks and dies adjusted as to width, no further adjustment of parts is necessary, nor is any particular skill required in locking the blocks and setting the machine in motion by using the treadle, or as the case may be, the hand lever. By the use of my machine only one man is needed to insert the iron and set the machine in motion, and from its simplicity of operation my machine can produce more irons of the desired shape in a given time than any of the machines of similar character to which my attention has been called. It has the further advantage over the machine shown in the patent previously mentioned, viz: United States Letters-Patent issued to C. E. & O. M. Knutson, dated January 15th, 1907, No. 841,327 in that the shaping of the iron is completed on the downward stroke of the plunger, and thus the two operations shown in the patent referred to, and the readjusting of the position of the dies to complete the bending, is omitted.

Figure 1. is a front elevation of my improved bridle-iron machine. Fig. 2. is a side elevation of the same (section on dotted line *z, z*, of Fig. 1. Fig. 3. is the completed product.

Referring to the drawings, particularly to Fig. 1., numeral 1 designates a stand, preferably composed of cast iron, to which is attached the bed, numeral 2, also preferably composed of cast iron. The stand also supports the mechanism suitable for operating the plunger, numeral 4, as shown

for example on Fig. 2., by the crank shaft, numeral 6, double crank, numeral 5, connecting rod *y* to which the plunger 4 is attached, the clutches, numerals 7, 7, and the belt wheels and their projection numeral 8. The plunger 4 on its bottom surface has two grooves, numerals 9 and 10 in which the projections 11 and 12 of the die plates 13 are permitted to slide, laterally to adjust the width between the inner surfaces of the two die plates. When the width is adjusted the die plates held in position by set screws *x*, *x*, passing through the side of the die plates against the plunger, as shown on Fig. 2. Braces composed of threaded cylindrical iron bars, 15, and nuts 16, also hold the die plates firmly in the desired position. The die plates 13, 13, (Figs. 1 and 2) are projected at their rear to form guides 18, (Fig. 2). These guides 18, (Fig. 2) are in sliding contact with the back 19, (Fig. 2) of the bed 2, (Figs. 1 and 2), and serve to keep the dies 17, 17 (Figs. 1 and 2) in position as the plunger 4, (Figs. 1 and 2) moves down and up.

The bed 2 is flanged as shown in Fig. 2, numerals 20 and 21, and has a projection at its back shown by numeral 22. The ends of the bed are closed by sliding blocks 23, 23, and the blocks and bottom of the bed contain slots 24, 24, to permit the pins 26, 26, to pass through them and engage in the orifices 27, 27, of the arms 28, 28, projected from the back of the bed, as shown in Fig. 2. The blocks 23, are permitted to slide in the bed 2, to adjust their inner surfaces as to width; they are then fastened by set screws 42, 42, or other suitable means, to the bed 2, and stand 1. The iron bar 29 to be bent is inserted at an angle between the upper surfaces of the blocks 23, 23, and the lower surface of the projection 22, 22, of the back of the bed, as shown in Fig. 2.

Attached to the mechanism for transmitting motion to the plunger 4 at each side of the machine are joints 30, 30, pivoted on the stand at 44, 44, and attached to rods 31, 31, which rods 31, 31 are connected to each of the treadle bars 32, 32, which are pivoted by bolts 33, 33, to the base of the stand 1, as shown in Fig. 2. The treadle bars are connected by a rod 41, so that when one of the treadles is pressed down, both treadle bars act in unison. Fastened to the treadle bars 32, 32, are joints 34, 34, composed each of two parts, *a*, *a*, and *b*, *b*, jointed together at *c*, *c*. The lower arms *a*, *a*, are jointed at *d*, *d*, to the treadle bars 32, 32, and the upper parts *b*, *b*, are jointed at *e*, *e*, on the arms 35, 35, which are fastened by screws 36, 36, to the back of the bed 2. The front ends of the parts *b*, *b*, of the joints 34, 34, are jointed at *f*, *f*, to the pins 26, 26, which pass through the slots 24, 24, in the bed 2, and blocks 23, 23.

Springs 37, 37 are fastened to the base of the stand at points 38, 38, and to the treadle bars at points 39, 39, to cause the treadle bars to resume their original position after being pressed down. The iron bar 29 rests midway between the blocks on a support or stop 40, projecting from the back of the bed.

Having named the various parts, I will now describe in detail the operation of my machine. The iron bar 29 is inserted by the operator in a slanting position in the jaw or recess formed between the upper surfaces of the blocks 23, 23, and the lower surfaces of the projection 22 of the back of the bed, the middle of the bar resting on the support or stop 40. The operator then steps upon the treadle 43, forcing down the rods 31, 31, and the lower portions of the joints 30, 30. The ends of the joints 30, 30, at the ends of the rods 31, 31, are forced toward the belt wheels and bring the clutches 7, 7, into contact with the rotating projection of the belt wheels, and motion is transmitted to the crank and the crank shaft causing the plunger to descend. Simultaneously the parts *a*, *a*, of the joints 34, 34, are drawn down by the treadle bars 32, 32, and the parts *b*, *b*, to which the pins 26, 26 are attached, are caused to rise and drive the pins 26, 26, through the slots 24, 24 in the bed 2 and blocks 23, 23, and into the orifices 27, 27, in the arms 28, 28, projected from the back of the bed, thus locking the iron bar in the recess or jaw between the upper surfaces of the blocks and the lower surfaces of the flanged back of the bed, preventing the iron bar from being driven outward by the impact of the dies 17, 17. The dies 17, 17, descending with the plunger between the inner surfaces of the blocks 23, 23, strike the upper edge of the iron bar 29, and cause it to be bent outward from the back of the bed and twisted over the inner edge of the blocks 23, 23, into the desired shape. The treadle bars 32, 32, as soon as the operator releases the treadle 43, are drawn into their original position by the springs 37, 37. In this manner the pins are withdrawn from the bed and blocks, the clutch thrown out of contact with the rotating belt wheels, the machine is stopped and the operation completed.

It is obvious that the bed may be closed at one end in such a manner as to firmly hold that end of the iron bar in position, and the machine started from the other side only, without departing from the substance of my invention which is a mechanism for automatically setting the plunger, die plates and dies in motion, and automatically and simultaneously locking the iron in the bed.

What I claim as my invention, and desire to secure by Letters-Patent is—

1. The combination, in a machine for shaping bridle-irons, of a stand, a slotted

bed or anvil, with slotted ends, the ends suitably formed to shape the iron, a plunger, die plates and dies, and means for automatically operating the plunger, die plates and dies, and automatically and simultaneously locking the iron bar in the bed, substantially as described.

2. The combination, in a machine for shaping bridle-irons, of a stand, a bed having sides and ends, the ends and bottom of the bed having slots, and the ends being adjustably secured to the bed to adjust the width between their inner surfaces, a plunger, die plates and dies, the die plates being adjustably secured on the lower face of the plunger to adjust the width between their inner surfaces, means for transmitting motion to the plunger, die plates and dies, said means being suitably connected to levers to which are attached suitable means for raising pins and causing them to pass through the slots in the bed and its ends, locking the iron in the bed, substantially as described.

3. The combination, in a machine for shaping bridle-irons, of a stand, a cast iron bed having flanged sides and blocks forming the ends of said bed, the blocks and bottom of the bed having slots, and the blocks being suitably secured to the bed to adjust the width between the inner surfaces of the blocks, set screws to hold the blocks in position after the blocks are adjusted as to width, back of the bed flanged to form a recess between the upper surfaces of the blocks and the lower surface of the projection or flange of the back, projections from the back of the

bed having orifices, a plunger die plates and dies, the die plates adjustably secured on the lower face of the plunger to adjust the width between the inner surfaces of the die plates, set screws passing through the die plates against the plunger to hold the die plates in position when the width is adjusted, means for transmitting motion to the plunger die plates and dies, joints attached at each side of the machine to the means for transmitting motion to the plunger die plates and dies, the joints pivoted on the stand and attached to rods connected to treadle bars pivoted to the base of the stand, a rod connecting the treadle bars causing them to act in unison, joints fastened to the treadle bars each composed of two parts, jointed together, the lower arms jointed to the treadle bars, the upper parts jointed on arms fastened to the back of the bed, the upper ends of the joints jointed to pins passing through slots in the bed and blocks and into the orifices in the arms on the back of the bed, springs fastened to the base of the stand and to the treadle bars to cause the treadle bars to resume their original position after being pressed down, substantially as described.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

WILLIAM HANSEN.

Witnesses:

JACKSON W. ALWARD,
MILDRED L. BLUMENTHAL.