

D. C. ADDICKS.

MOLD PRESS.

APPLICATION FILED MAR. 18, 1909.

961,332.

Patented June 14, 1910.

3 SHEETS—SHEET 1.

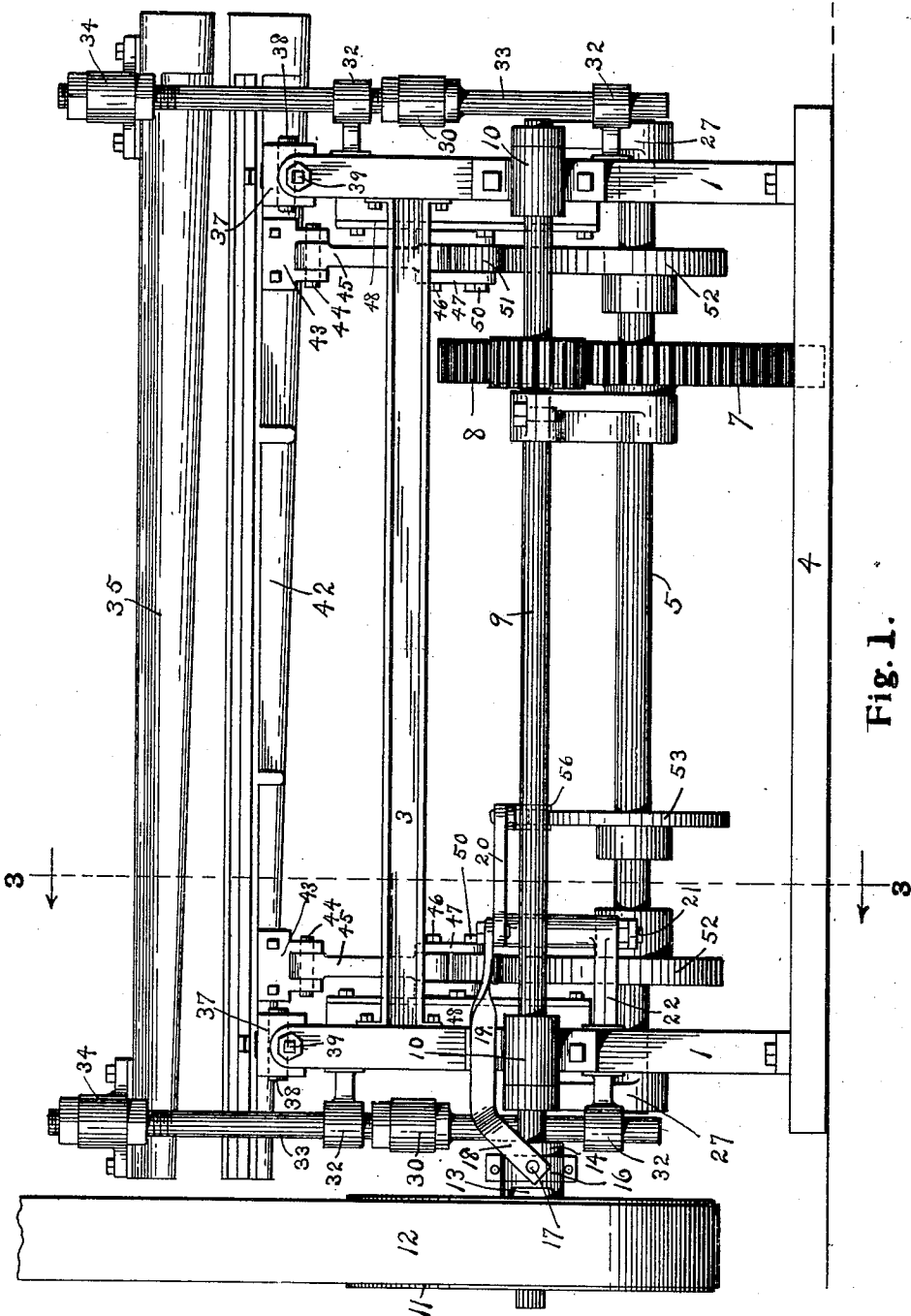


Fig. 1.

Witnesses

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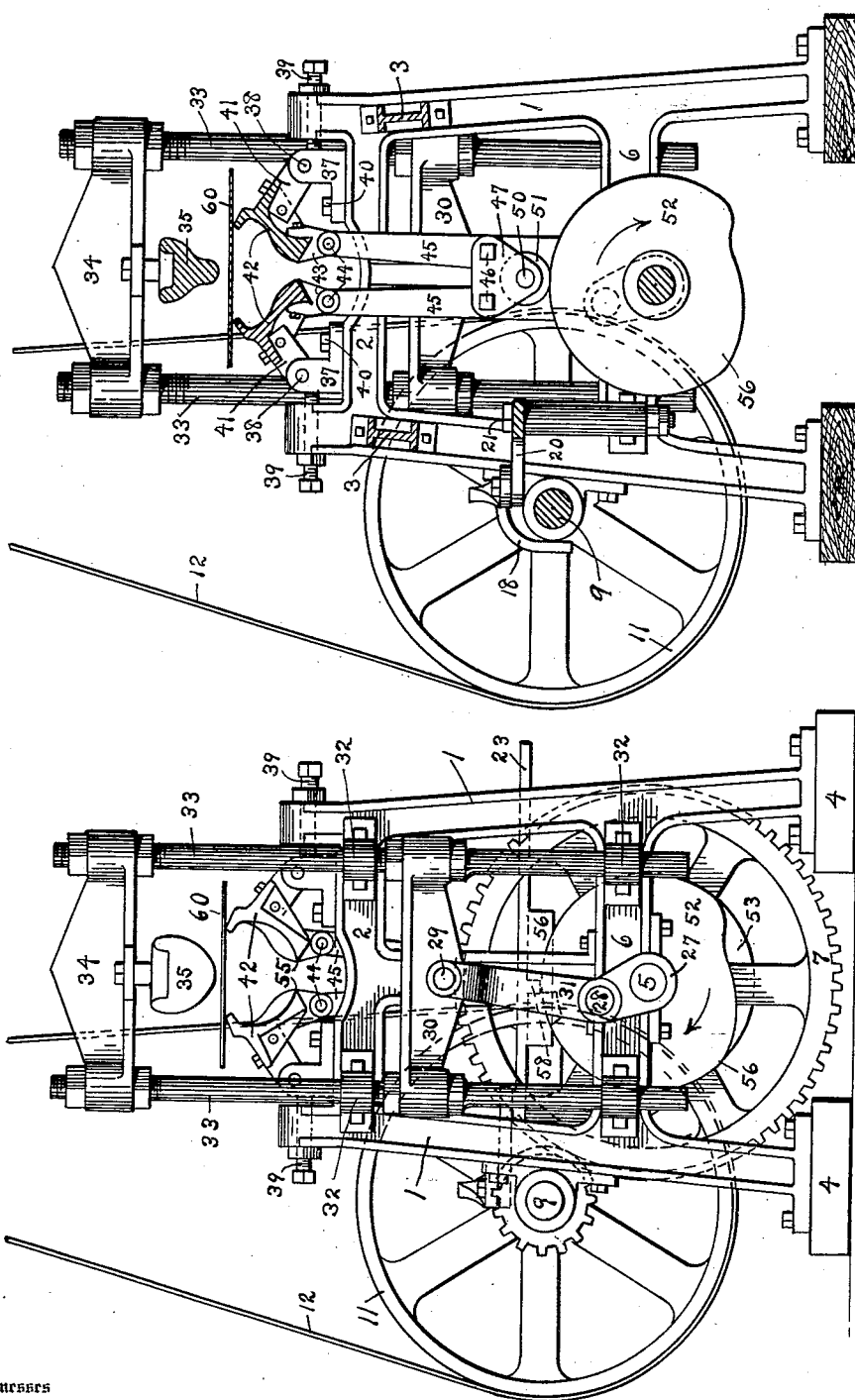


Fig. 3.

Fig. 2.

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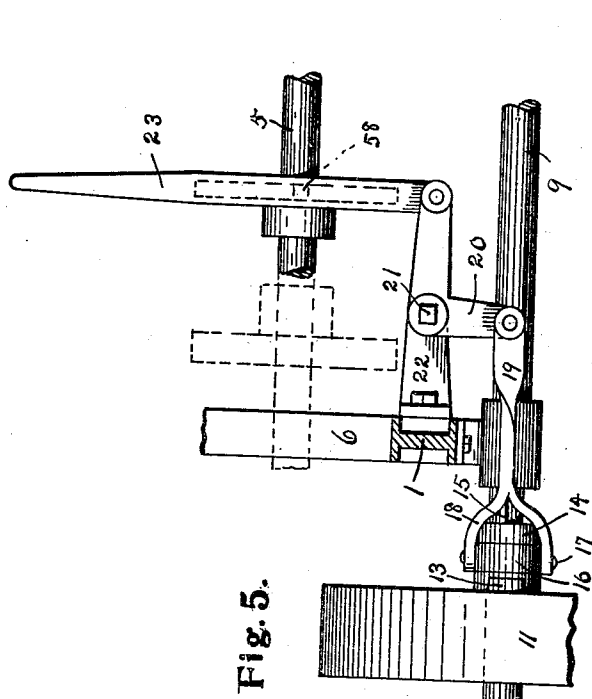


Fig. 5.

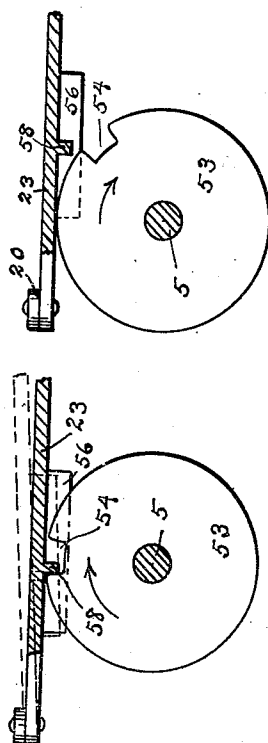


Fig. 7.

Fig. 6.

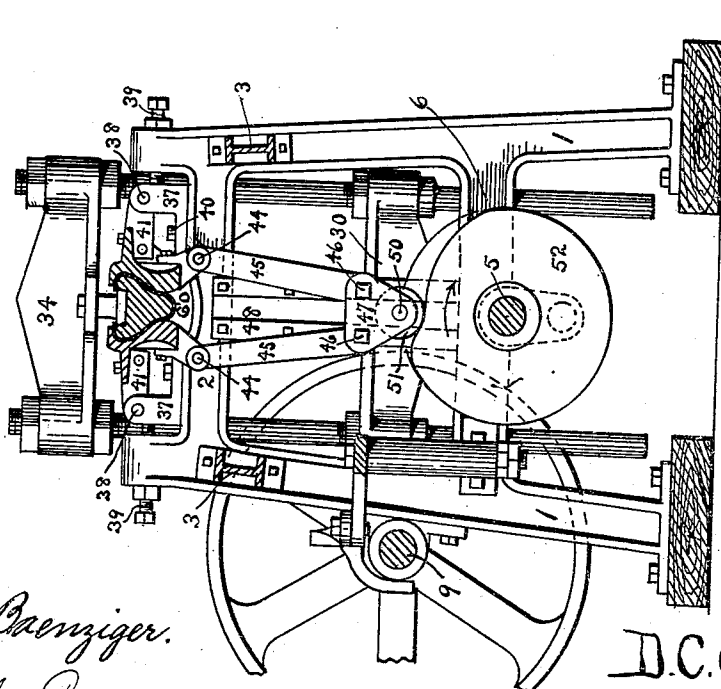


Fig. 4.

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UNITED STATES PATENT OFFICE.

DIEDRICH C. ADDICKS, OF STROH, INDIANA, ASSIGNOR TO IDEAL CONCRETE MACHINERY COMPANY, OF SOUTH BEND, INDIANA, A CORPORATION OF INDIANA.

MOLD-PRESS.

961,332.

Specification of Letters Patent.

Patented June 14, 1910.

Application filed March 18, 1909. Serial No. 484,221.

To all whom it may concern:

Be it known that I, DIEDRICH C. ADDICKS, a citizen of the United States, and a resident of Stroh, in the county of Lagrange and State of Indiana, have invented a new and Improved Mold-Press, of which the following is a specification.

This construction relates to machines for pressing sheet-metal between dies in order to give the same a predetermined form; and the object of this invention is to produce a machine for forming sheets of metal into molds for the manufacture of concrete fence posts, particularly such fence post molds as are shown in my previous Patent No. 846,641, dated March 12th, 1907.

My invention consists in a laterally movable member of a die, and a two-part member to co-act therewith, together with means for moving the parts of the die toward and from each other so as to wrap the sheet of metal around one of the members.

In the accompanying drawings Figure 1 is a side elevation of the entire machine. Fig. 2 is a right end view of the same. Figs. 3 and 4 are cross sections on the line 3—3 of Fig. 1, showing the parts in two different positions. Figs. 5, 6 and 7 are details of the clutch controlling device.

Similar reference characters refer to like parts throughout the several views.

In the drawings, the legs 1 of the frames of the machine are shown connected by upper transverse bars 2, lower transverse bars 3, longitudinal bars 3, and footing planks 4, which latter may be omitted when the machine has a good foundation. The main shaft 5 is mounted on the lower bars 6 of the frames, and carries a gear 7 which meshes with the pinion 8 on the driving shaft 9, which shaft is mounted in bearings 10 secured to the legs 1. A pulley 11 is revolvably mounted on one end of the shaft 9 and is driven by the belt 12. On the hub of this pulley are the jaws 13 of a clutch, while complementary jaws are carried by the sleeve 14 which is longitudinally slidable on the shaft 9 and on the feather 15. (Fig. 5). A collar 16 is loosely mounted in a groove in the clutch member 14, and has pins 17 which are engaged by a fork 18 on the end of the link 19. This link connects to one arm of the bell crank lever 20, which lever is mounted on the pin 21 carried by the bracket 22

extending inwardly from a cross bar 6 of the left end of the machine. This bell crank is swung by the operating handle 23 as will be hereinafter described.

Mounted on each end of the shaft 5 is a crank 27, having a pin 28 which connects to the pin 29 on the cross head 30 by means of the connecting rod 31. Secured to each end frame are sleeves 32 in which are vertically slidable the rods 33 mounted in the cross heads 30 and which have cross heads 34 secured at the upper ends. Extending between the cross heads 34 is the upper die which is moved up and down by means of cranks at each revolution of the shaft 5.

Secured to each of the transverse bars 2 of the end frames are two brackets 37 which are held in position by the bolts 40 and positioned by the set-screws 39, which set-screws are threaded through the upper ends of the legs 1. Pivoted on the pins 38 carried by these brackets are the arms 41 projecting from the portions 42 of the lower die. As shown in Figs. 3 and 4, these members are thus adapted to swing on the pivots 38. To each member 42 are connected two lugs 43 which carry pins 44. To each pin 44 is connected a link or connecting rod 45 which has its lower end engaged by a pin 46 carried by a block 47. Each block 47 is vertically movable, being guided by the guides 48 mounted between the upper cross bars 2 and lower cross bars 6 of each frame. Pins 50 on the blocks 47 carry rollers 51 which run on the faces of the cams 52 secured to the shaft 5 as shown in Fig. 1. A disk 53 having a notch 54 is also secured to the main shaft 5. Guide flanges 56, extending down from the handle 23, position this handle so it always rides on the disk 53. The handle is provided with a tooth 58 which is adapted to fall into the notch 54 in the disk.

The operation of the machine is as follows, it being understood that the shaft 5 makes one revolution for each operation. The parts being in the position shown in Fig. 2, the operator moves the handle 23 from the position shown in Fig. 7 to that shown in Fig. 5 and in dotted lines in Fig. 6, thereby throwing the clutch into operative engagement. The sheet of metal 60 shown resting on the members 42 of the dies has been cut to proper shape and is properly positioned, as shown, before the machine is

started. When the clutch is thrown in, the shaft 5 will revolve in the direction of the darts in Figs. 2, 3 and 4, and the die 35 will descend, carrying the sheet 60 with it between the members 42 of the lower die. During this time the wheels 51 run on the concentric portions of the cams 52. The upper die 35 continues to descend until contact is made at the points 55 in Fig. 2. At this instant the points 56 of the cams pass the rollers 51 permitting them to be depressed by means of the member 35. As the die members 42 are depressed they swing around the pivots 38 which carries them inward, until at the end of one half revolution the parts will be as shown in Fig. 4, that is, the sheet 60 will be folded and pressed around the upper member 35 by the lower members 42 of the dies. Continuation of the revolution of the shaft 5 causes the die 35 to move upward, but the cams are so formed that the parts 42 will open with sufficient speed to permit the die 35, together with the sheet which is wrapped around the same, to move upward. When the parts are in the position shown in Fig. 3 the notch 54 in the disk 53 will be immediately under the tooth 58 which will fall into the same. Continuation of the revolution will swing the handle 23, the bell crank and the link 19 to disengage the clutch and thereby stop the machine. The now properly formed post mold is then sprung off the upper die 35 and a new sheet is placed in position. Any other desirable mechanism may be employed to actuate these three members of the dies without departing from the spirit of my invention.

While this machine is especially designed for the forming of molds described in my aforesaid patent, it will be easily seen that troughs, gutters and molds of any desired cross section can be formed by this machine by the use of proper dies.

Having now explained my construction, what I claim as my invention and desire to secure by Letters Patent is:—

1. In a press for forming sheet metal, the combination of a frame, brackets secured thereto, means to adjust said brackets, pivots carried by said brackets, two die members mounted on said pivots, means to oscillate said die members toward and from each other, a second die, reciprocating means upon which said second die is mounted and means to move said die into and out of the

space between the two portions of the other die.

2. In a press for forming sheet metal, the combination of a frame, a driving shaft, an upper die horizontally mounted for vertical movement, connections between the shaft and die to actuate the same, a two-part lower die having laterally extending arms on each part, pivots for the ends of the arms, adjustable brackets to support said pivots, and connections between the shaft and the lower die members to oscillate the same, said connections including cams and connecting rods.

3. In a press for forming sheet metal, the combination of a frame, two vertical guides mounted thereon, a shaft mounted in said frame, two cams and two cranks mounted on said shaft, a block mounted in each guide, a roller mounted on each block and in engagement with the face of one of the cams, two links pivoted to each block, a longitudinally extending die member connected to the upper end of a link from both blocks, two arms on each die member, a pivot for each arm, a cross head at each end of the machine, connecting rods between the cranks and cross heads to reciprocate the same, a longitudinally extending die connecting said cross heads, and means to revolve the shaft to reciprocate the cross heads and the die connected thereto and to oscillate the two-part die.

4. In a press for forming sheet metal, the combination of a frame, a driving shaft, an upper longitudinally extending die mounted for vertical movement, connections between the shaft and die including cranks and connecting rods to actuate the die, a two-part lower die having laterally extending arms on each part, pivots for said arms carried by the frame, a bracket mounted on the frame to support each pivot, connections between the shaft and the lower die members including cams and links to actuate the die members, a driving mechanism for said shaft including a clutch, means to engage the clutch, and means mounted on said shaft to cause the disengagement of the clutch.

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

DIEDRICH C. ADDICKS.

Witnesses:

FRANK BAKER,
FRED SCHNEIDER.