

J. H. AMES.
DIE STRIPPER.

APPLICATION FILED MAY 11, 1909.

938,940.

Patented Nov. 2, 1909.

3 SHEETS—SHEET 1.

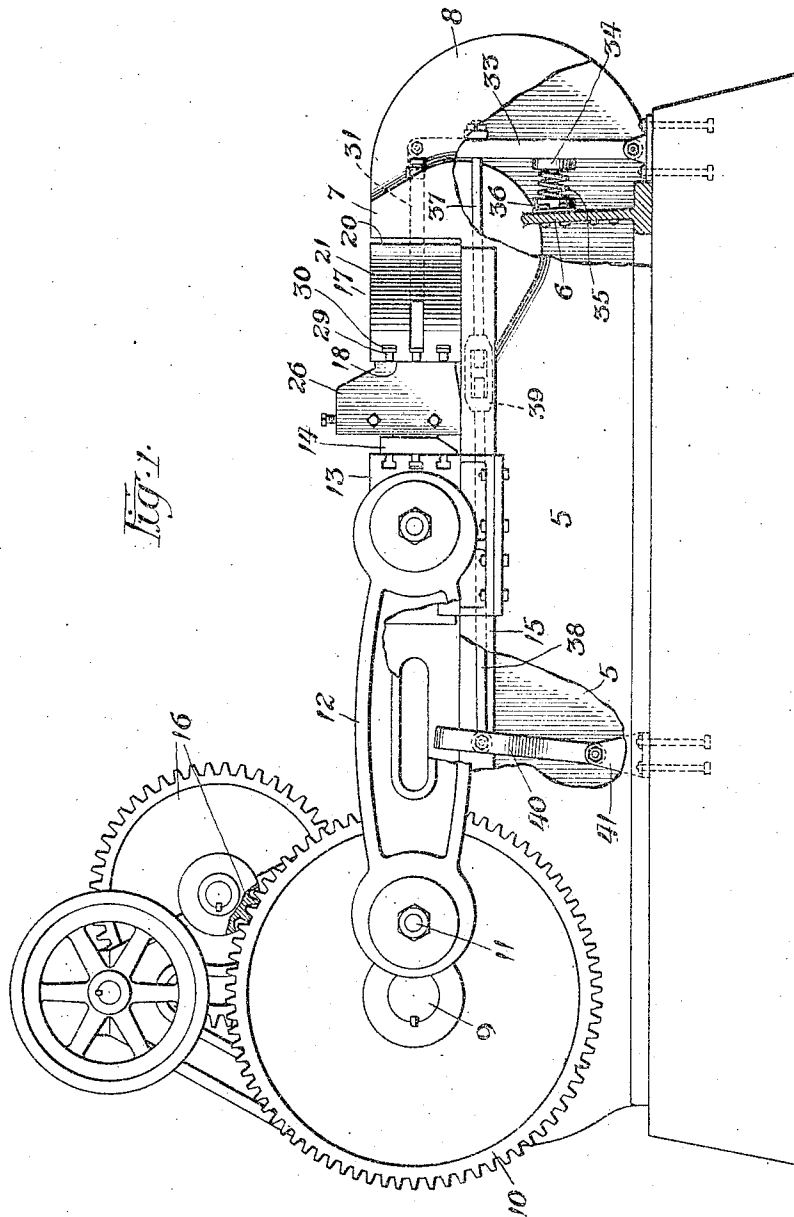


Fig. 1.

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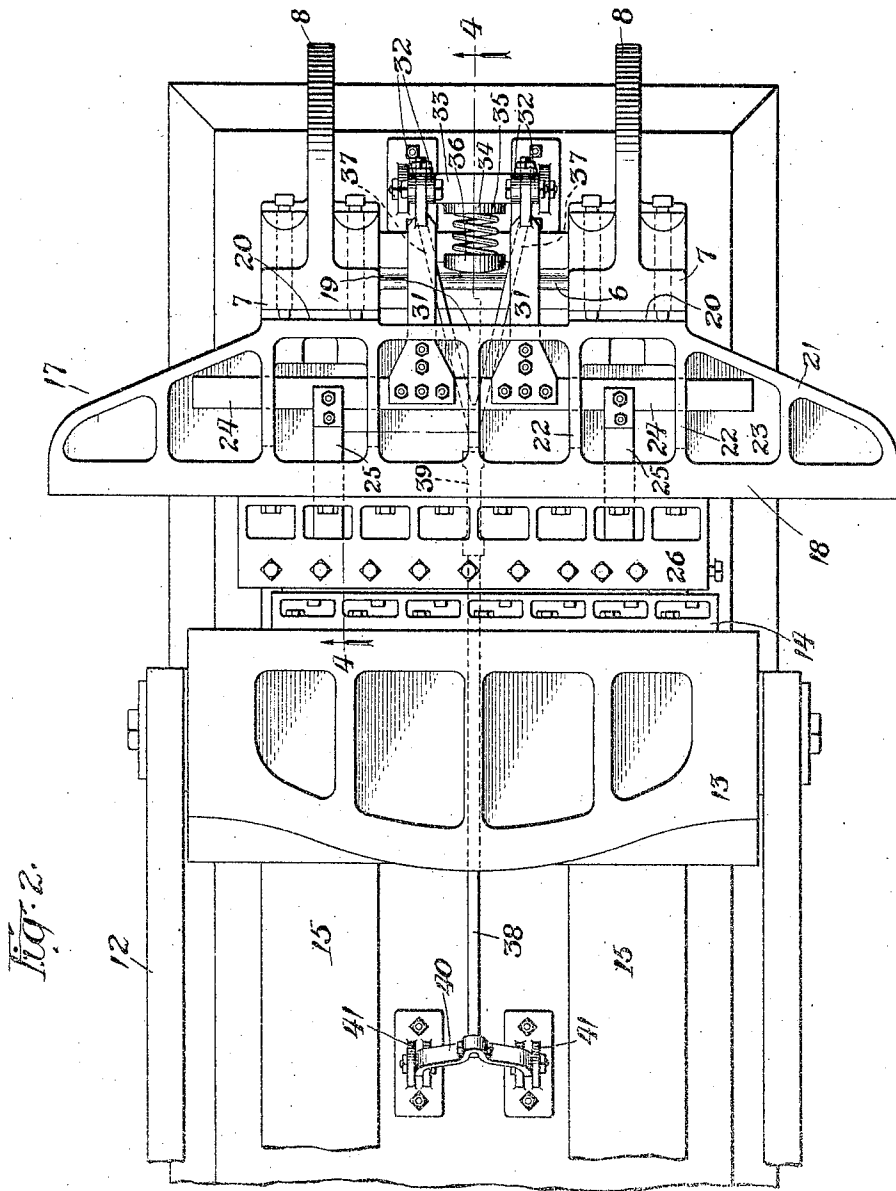
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

Fig. 4.

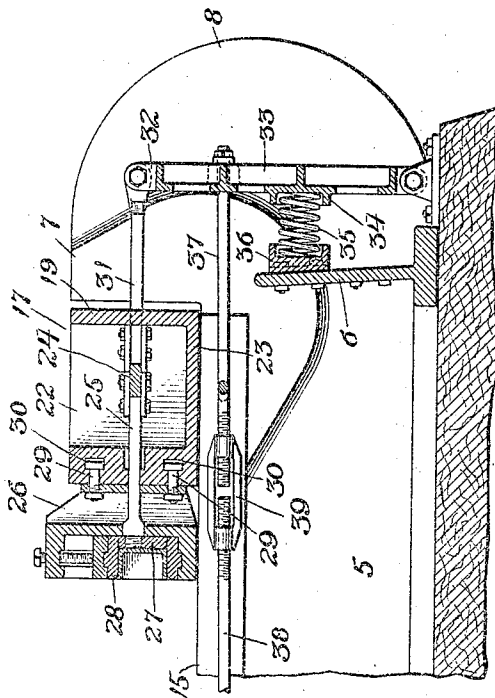
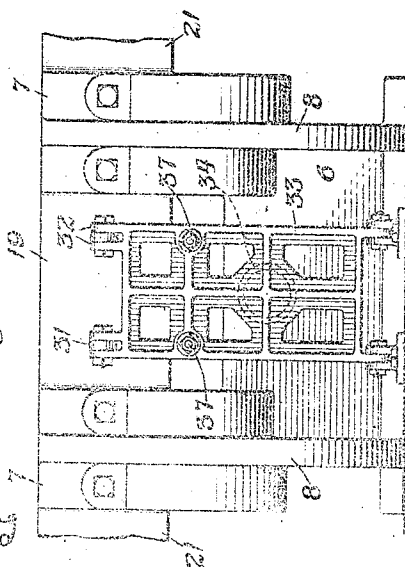


Fig. 3.



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UNITED STATES PATENT OFFICE.

JOSEPH H. AMES, OF OAK PARK, ILLINOIS, ASSIGNOR TO AMERICAN CAR & FOUNDRY COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF NEW JERSEY.

DIE-STRIPPER.

938,940.

Specification of Letters Patent.

Patented Nov. 2, 1909.

Application filed May 11, 1909. Serial No. 495,348.

To all whom it may concern:

Be it known that I, JOSEPH H. AMES, a citizen of the United States, residing at Oak Park, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Die-Strippers, of which the following is a specification.

The stripper of the present invention is intended to be applied to and operated by a bulldozer adapted for heavy swaging work; and the object of the invention is to so construct, arrange and operate the stripper that it will serve to act upon dies of various sizes, and may be adjusted to various positions within the bulldozer.

A further object of the invention is to so construct the stripper that it will be sufficiently strong and rigid to withstand the onerous conditions of heavy usage, and so that it may be applied to bulldozers of standard type, without radical change or modification.

Further objects will appear from a detailed description of the invention, which consists in the features of construction and combination of parts hereinafter described and claimed.

In the drawings, Figure 1 shows a bulldozer of standard type, with the dies applied thereto and the casing partly broken away to illustrate the connections for operating the stripper; Fig. 2 a top or plan view of the same; Fig. 3 a rear end elevation of the same; and Fig. 4 a sectional elevation of one end of the bulldozer, showing the stripper connections and associated parts, taken on line 4—4 of Fig. 2, looking in the direction of the arrow.

The invention is applied to a bulldozer having a frame comprising side walls 5, a rear end wall 6, and rear cross abutments 7, reinforced by heavy ribs 8 which spring upwardly from the base of the frame and constitute, in effect, extensions of the side walls, leaving between them an open space for the accommodation of the stripping mechanism to be hereinafter described. At the opposite end of the bulldozer is journaled a power shaft 9 having keyed thereto a main gear wheel 10 provided with a wrist pin 11 which serves to mount a crank arm

12, the forward end of which is pivoted to a male die block 13 which carries a male die 14. The die block is slidably mounted on side guide rails 15. The main gear wheel is driven at the desired speed by a train of gearing 16. The above features are common to bulldozers of standard formation, and need not be described with great particularity.

In front of the rear cross abutments is located a die backing frame 17, which rests upon the side walls of the bulldozer and comprises a straight faced inner wall 18, and a substantially straight faced outer wall 19 of less length than the inner wall, and provided at its ends with offset bosses 20 which find a bearing against the inner faces of the cross abutments.

The inner and outer walls of the frame are connected by diagonally disposed end walls 21, and by a plurality of cross ribs 22 which spring from a bottom floor 23, as best shown in Fig. 4. The construction is one which affords great rigidity and strength and at the same time serves to lighten the construction to the desired extent. The cross ribs 22 are slotted to receive a main stripper bar 24 which is adapted to be moved back and forth with each operation of the machine. The main stripper bar furnishes an extended connection for the attachment thereto of a suitable number of plunger bars 25, which extend inwardly from and at right angles to the main stripper bar and have their inner ends projected through the outer wall of a female die frame 26 having a false bottom 27, to which the plunger bars are attached. The false bottom forms the floor, or a part of the floor, of a female die 28, which may be of built-up formation, as shown, or of any other desired formation. The length of the main stripper bar is such that the plunger bars can be attached thereto at any desired point to accommodate the length or position of the female die, the frame of which is secured to the inner face of the die backing frame by means of bolts 29, the heads of which are entered within T slots 30 in the face of the inner wall of the backing frame.

The main stripper frame has secured there-

to and rearwardly extending therefrom side arms 31, the inner ends of which are bolted, or otherwise secured, to the main stripper bar, and the outer ends of which are fitted between ears 32 on a hinged plate 33, provided, on its inner face, with a socket recess 34 which receives a coil spring 35, the opposite end of which is entered into a socket plate 36, bolted or otherwise secured to the rear cross wall 6. The hinged plate has entered therethrough the ends 37 of a bifurcated operating rod 38, which is provided with a turnbuckle 39, for purposes of adjustment, the opposite end of which operating rod is pivoted to an inverted Y lever 40, the arms of which are pivoted between ears 41, bolted or otherwise secured to the base of the bulldozer. The upwardly projecting stem of the Y lever is located in position to be engaged by the male die block 13 with each return movement, so as to impart a slight swing or oscillation to the Y lever as the bulldozer completes its return stroke.

In operation, the plate of metal to be swaged is laid across the face of the female die frame, and the advance of the male die begins. The continued movement of the male die forces the metal into and against the false bottom of the female die, which, at this stage of the operation, will be held in retracted position by the action of the coil spring 35, which forces back the hinged plate 33 and the main stripper bar, as shown in Figs. 1, 2 and 4. On the return movement of the male die, the stripper bar will remain in normal position, as shown, until near the end of the return stroke, at which time the die block will engage the inverted stem of the Y lever 40 and draw forward the lever, carrying with it the rod 38, which movement of the rod will swing forward the upper end of the hinged plate 33 against the tension of the spring 35, thereby projecting the main stripper bar and with it the plunger bars which act upon the false bottom or bottoms of the female dies. The stroke of the plunger bars will be so regulated, by the turnbuckle, as to serve the purpose of stripping the work from the female die. The female die backing frame, on its inner or supporting face, is of a length greater than the width of the bulldozer frame, so that die frames varying greatly in length can be accommodated. At the same time the backing frame serves as a rigid filling block between the female die frame and the cross abutments, and further serves as a guide or support for the main stripper bar, which can be of a length sufficient to permit the force necessary in the stripping operation to be directly applied to any desired portion of the female die.

The stripping mechanism is one which can be easily applied to bulldozers of the usual

standard type, without substantial change or modification.

What I regard as new and desire to secure by Letters Patent is:

1. In combination with a bulldozer or the like, having a reciprocating male die block, a female backing frame and a female die secured thereto, a main stripper bar extending transversely of the machine and mounted within the backing frame, a plunger bar connected with the main stripper bar and acting upon the bottom of the female die, arms connected with the main stripper bar near its center, a hinged plate to which the arms are pivoted, and an operating rod connected at one end to the plate and adapted to be drawn forward by the return movement of the male die block for actuating the stripper bar, substantially as described.

2. In combination with a bulldozer or the like, having a reciprocating male die block, a female backing frame and a female die secured thereto, a main stripper bar extending transversely of the machine and mounted within the backing frame, a plunger bar connected with the main stripper bar and acting upon the bottom of the female die, arms connected with the center of the main stripper bar, a hinged plate to which the arms are pivoted, an operating rod connected at one end to the plate and adapted to be drawn forward by the return movement of the male die block for actuating the stripper bar, and a spring acting on the plate to hold the same normally in retracted position, said spring being adapted to be compressed by the stripping movement of the plate, substantially as described.

3. In combination with a bulldozer or the like having a reciprocating male die block, a female backing frame extending transversely of the bulldozer and of a length to have its ends outwardly project laterally beyond the frame of the bulldozer, a female die secured thereto, a main stripper bar extending transversely of the machine and mounted within the backing frame, a plunger bar connected with the main stripper bar and acting upon the bottom of the female die, an arm connected with the main stripper bar near its center, and connections between said arm and the mounting for the male die block, for actuating the stripper bar with the return movement of the male die block, substantially as described.

4. In combination with a bulldozer or the like having a reciprocating male die block, a female backing frame extending transversely of the bulldozer and of a length to have its ends outwardly project laterally beyond the frame of the bulldozer, a female die secured thereto, a main stripper bar extending transversely of the machine and mounted within the backing frame, a plunger bar connected

with the main stripper bar and acting upon the bottom of the female die, an arm connected with the main stripper bar near its center, a hinged plate to which the arm is pivoted, and an operating rod connected at one end to the plate and adapted to be drawn forward by the return movement of the male die block, for actuating the stripper bar, substantially as described.

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