

(No Model.)

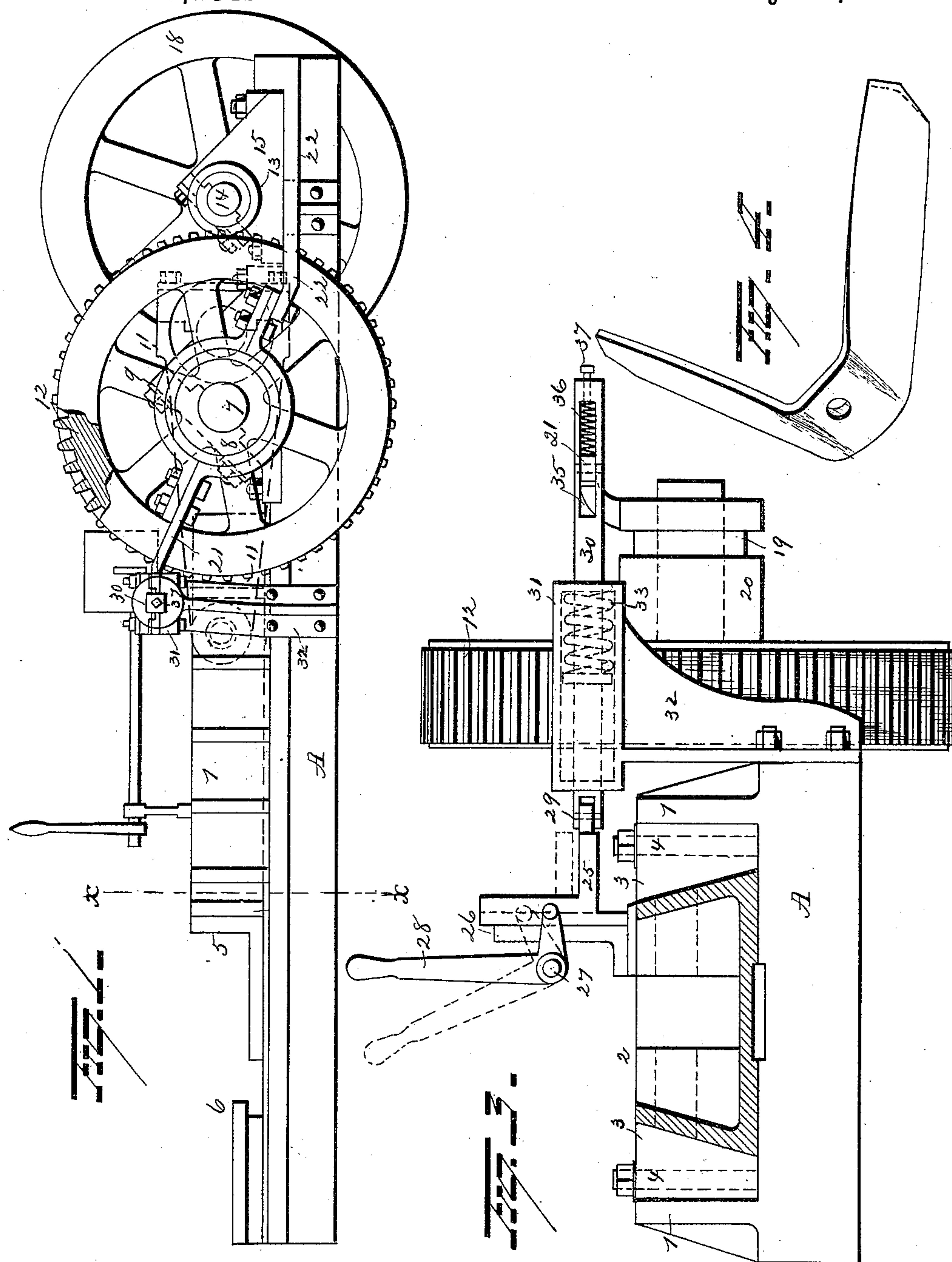
2 Sheets—Sheet 1.

W. W. SPEER.

PRESS FOR SHAPING PLOW IRONS.

No. 428,151.

Patented May 20, 1890.



Witnesses
S. H. Houghton
C. F. Downing

Inventor
William W. Speer

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Seybert and Seybert

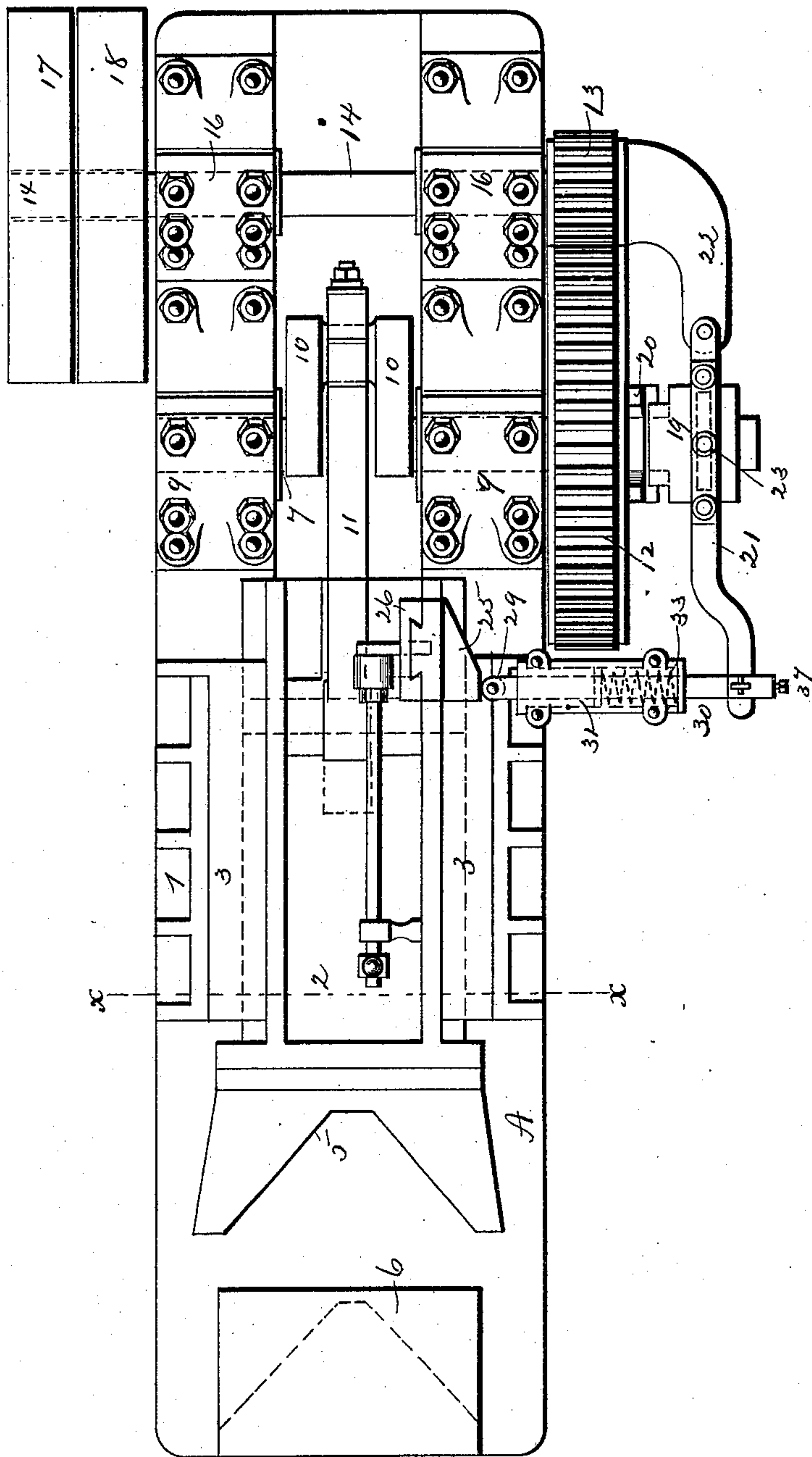
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Seagott & Seagott

UNITED STATES PATENT OFFICE.

WILLIAM W. SPEER, OF PITTSBURG, PENNSYLVANIA.

PRESS FOR SHAPING PLOW-IRONS.

SPECIFICATION forming part of Letters Patent No. 428,151, dated May 20, 1890.

Application filed February 7, 1890. Serial No. 339,532. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. SPEER, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain
5 new and useful Improvements in Presses for Shaping Plow-Irons; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable
10 others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in presses for shaping plow-irons, the object being to provide a powerful machine of simple construction for pressing these irons into
15 shape in a single operation of the machine; and to this end it consists in certain novel features of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

20 In the accompanying drawings, Figure 1 is a side elevation. Fig. 2 is a plan view. Fig. 3 is a transverse section on line *x x* of Figs. 1 and 2, and Fig. 4 is a view of one of the pressed or finished blanks.

25 A represents a bed-plate, upon which the various parts of the machine are mounted. This plate is provided at its edges with upwardly-projecting ribbed or braced flanges 1 1, which lie parallel with each other. A reciprocating ram 2 is loosely mounted on this
30 plate, and it is retained on the plate and guided in its reciprocations by means of the blocks 3 3, which have undercut inner edges, which constitute bearings for the bevel edges
35 of the ram. These blocks are retained rigidly in place by bolts or screws 4 4. A die 5, of the required shape, is removably secured to the outer end of the ram 2, and a counterpart die 6, of corresponding shape to die 5, is bolted
40 down or otherwise secured to the bed-plate in position to press the blank from the back as it is forced against it by the die 5 on the reciprocating ram.

A crank-shaft 7 is held in pillow-blocks 8 8
45 by means of cap-plates 9 9, securely bolted down over the pillow-blocks. This shaft has a crank 10 at or near its center, and a pitman 11 extends from this crank to the ram, so that when the shaft revolves the ram is reciprocated. The crank-shaft is provided on one
50 end with a gear-wheel 12, and the teeth of this wheel are meshed with the teeth of a

small pinion 13 on the corresponding end of drive-shaft 14. The latter is journaled in pillow-blocks 15 15, where it is retained by
55 cap-plates 16 16. The usual fixed and loose drive-pulleys 17 and 18 are mounted on the end of the drive-shaft opposite the pinion.

Clutch-section 19 is mounted on the outer end of the crank-shaft 7, and is connected
60 with it by means of a feather or equivalent device, which allows the clutch to slide on the shaft, but causes it to turn with it. The outer section 20 of this clutch is formed on the hub of the large gear-wheel 12, the object
65 being to impart the motion of the continuously-rotating gear-wheel to the crank-shaft or not, accordingly as it is desired to set the ram in motion or allow it to remain idle. The shipping of the clutch is done by the fol-
70 lowing mechanism: The strap 21, which is pivoted at one end to the rigid arm 22, encircles the clutch-section 19, and is provided with a set-screw or lug 23, which projects into a circumferential groove formed in the
75 clutch-section. By this connection the section 19 is shipped by swinging the strap on its pivot, and the clutch continues to turn by virtue of its connection with the strap.

Cam 25 has a sliding tongue-and-groove
80 connection with the upright plate 26 on the ram, and this cam is raised and lowered by means of the rocking shaft 27, mounted in boxes on the ram, and the shaft is rocked to raise and lower the cam by means of a handle
85 28, secured on its end. This cam when lowered furnishes a track or inclining track for the anti-friction roller 29 in the end of the slide-rod 30, the object being to force the
90 latter outward. Rod 30 is supported in a sleeve 31 on the upper end of bracket-arm 32, and a stout spiral spring 33, surrounding the rod within the sleeve, forces the rod forward toward the cam, the action of the two being
95 directly opposite each other. The outer end of this slide-rod is provided with an elongated slot 35, and the free end of the shipping-strap 21 extends into this slot. To allow the
100 strap 21 to have a slight yielding connection with the rod 30 beyond that given by the spring 33, a small spiral spring 36 is placed in the end of this rod back of the strap end, and the adjustment of its tension is provided for by the set-screw 37.

In operation the handle 28 is simply thrown to the position shown in dotted lines in Fig. 3 if it is desired to start the reciprocations of the ram, the effect being to throw the cam out of the track of the anti-friction roller and allow the clutch-sections to engage each other. The other position of the handle shown in full lines throws the cam in the track of the roller, which, by forcing the rod 30 back against the action of the spring, disengages the clutch-sections, and the crank-shaft and ram stop moving. The blank consists of a straight narrow strip of metal, such as is used in the manufacture of plows with a beveled lower edge. This is heated and placed between the dies and pressed into shape in one movement of the ram. Different-shaped dies to suit the work may be used at any time.

It is evident that slight changes might be resorted to in the form and arrangement of the several parts described without departing from the spirit and scope of my invention, and hence I do not wish to limit myself to the exact construction herein set forth; but,

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a bed-plate, a reciprocating ram, and a die stationed on the bed-plate and on the ram, of a crank-shaft connected with the ram, a gear-wheel loosely mounted on this crank-shaft, said wheel having a clutch-section on the hub, a sliding clutch-section mounted on the shaft, an adjustable cam on the ram, a sliding spring-actuated rod adapted to be operated upon by the cam, and a shipping-strap having connection with the movable clutch-section and with the sliding rod, whereby the said sliding clutch-section may be made to engage or disengage the section on the hub by the proper movement of the cam, substantially as set forth.

2. The combination, with a bed-plate, a reciprocating ram, a crank-shaft connected

therewith, and a gear-wheel loosely mounted on said shaft, said wheel having a clutch-section on its hub, of a clutch-section keyed to slide on the shaft, a shipping-strap having loose connection with this section, a spring-actuated slide-rod with which the free end of this strap has loose connection, and a cam adapted to operate on this rod to move the clutch, substantially as set forth.

3. The combination, with a bed-plate, a reciprocating ram, dies, and driving mechanism, of clutch mechanism connected with the latter, a shipping-strap, a spring-actuated slide-rod mounted in a supporting-sleeve, said rod having a slotted end in which the free end of the shipper extends loosely, a spring back of this end, a set-screw for regulating the tension of the spring, a cam, and means for throwing it in or out of the path of the inner end of the slide-rod, substantially as set forth.

4. The combination, with a bed-plate, a reciprocating ram, blocks having undercut bearing edges to retain the ram in place on the block, a crank-shaft, a pitman connecting the latter with the ram, and a drive-shaft having a pinion thereon meshed with a gear-wheel on the crank-shaft to impart motion thereto, of a clutch, one section being formed on the hub of the gear-wheel and the other arranged to slide on the shaft, a shipping-strap encircling the sliding section and pivoted at one end to an arm on the bed-plate, a spring-actuated slide-rod with which the other end of the shipping-strap is yieldingly connected, a vertically-movable cam on the ram, and a rock-shaft for moving this cam, substantially as set forth.

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

WILLIAM W. SPEER.

Witnesses:

THOMAS D. GRAHAM,
DAVID A. PITCAIRN.