

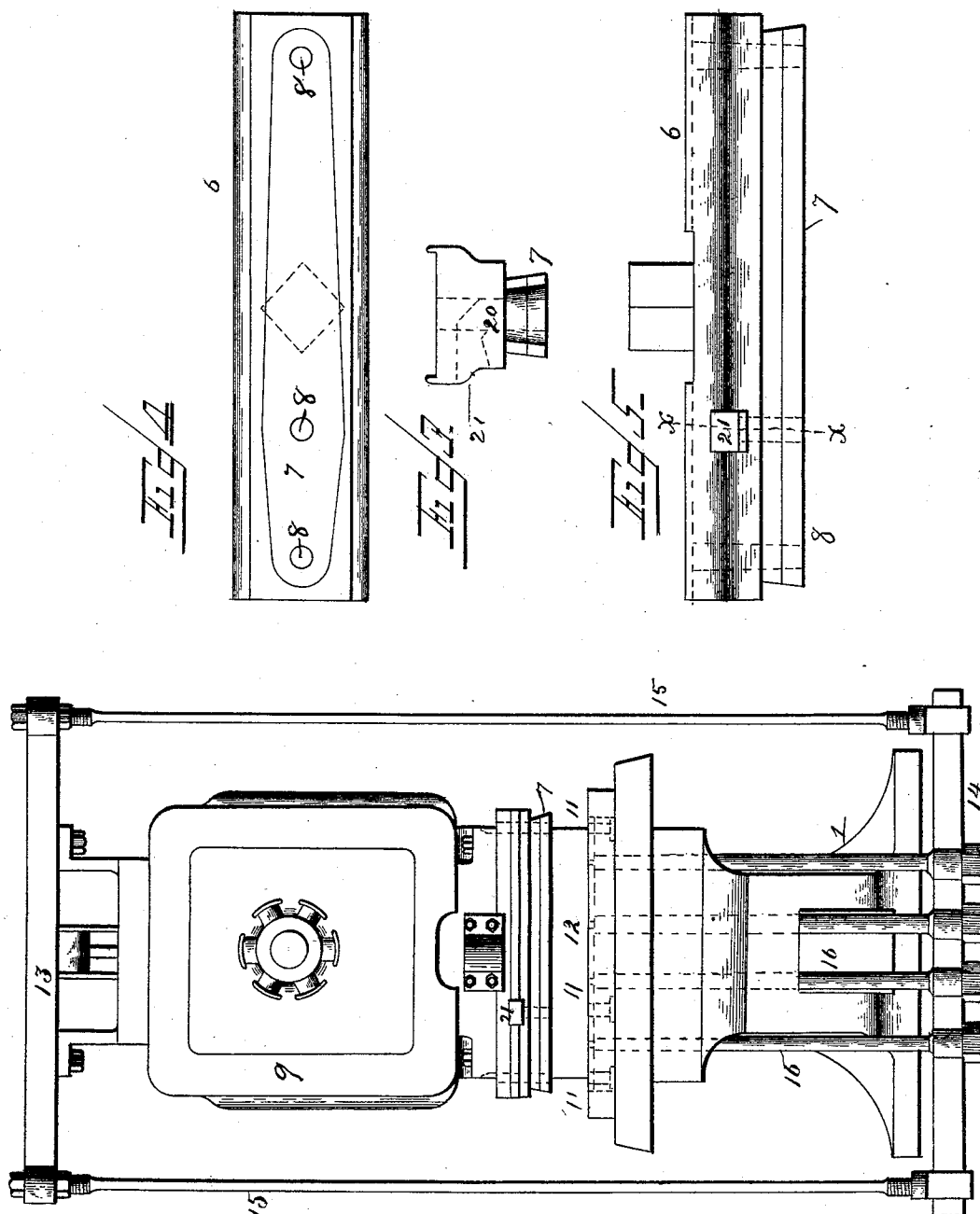
(No Model.)

2 Sheets—Sheet 1.

J. LONG.
PUNCHING MACHINE.

No. 481,574.

Patented Aug. 30, 1892.



WITNESSES

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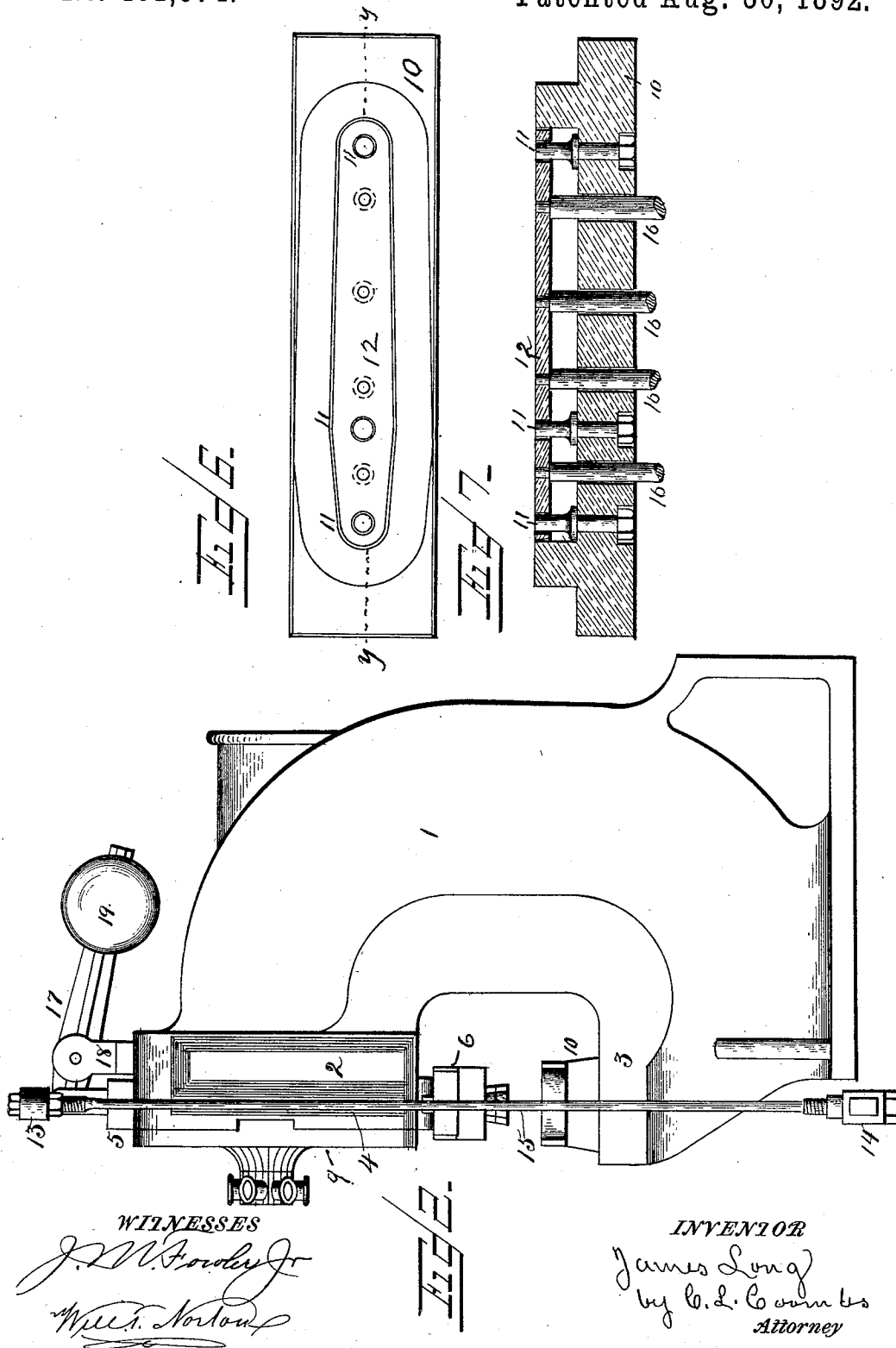
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2 Sheets—Sheet 2.

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UNITED STATES PATENT OFFICE.

JAMES LONG, OF PACKERTON, PENNSYLVANIA.

PUNCHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 481,574, dated August 30, 1892.

Application filed January 16, 1892. Serial No. 418,265. (No model.)

To all whom it may concern:

Be it known that I, JAMES LONG, a citizen of the United States, residing at Packerton, in the county of Carbon and State of Pennsylvania, have invented certain new and useful Improvements in Punching-Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to certain improvements in machines for punching metals generally, and particularly to machines for punching brake-levers, hasps, face-plates for draw-heads, and other articles and parts of machinery.

The invention, broadly, has for its objects to punch a series of apertures simultaneously at a single stroke of the punch-die and to discharge the wads or disks from the article punched, as more fully hereinafter specified, and particularly pointed out in the claim.

The above-mentioned objects are attained by the means illustrated in the accompanying drawings, in which—

Figure 1 represents a front elevation of the machine complete; Fig. 2, a side elevation thereof; Fig. 3, a transverse vertical section taken on the line *xx* of Fig. 5; Fig. 4, a face view of the punch-block detached; Fig. 5, a side elevation of the punch-block detached; Fig. 6, a face view of the punching-die and guide-plate to guide the punched wads to the openings in the punch-block, and Fig. 7 a longitudinal vertical sectional view taken on the line *yy* of Fig. 6.

Like reference-numerals indicate similar parts in the respective figures of the drawings.

Referring to the drawings, the numeral 1 indicates the frame of the machine, which is constructed, substantially, of metal and formed with upper and lower jaws 2 and 3. The upper jaw is provided with vertical ways 4, between which is arranged a vertically-reciprocating plunger 5, to the lower end of which is secured the punch-block 6, having a plate 7 on its lower face, provided with apertures 8, corresponding in number to the apertures to be punched. The front of the upper

jaw is provided with a plate 9 for confining the plunger between the ways. The lower jaw forms a seat for the die 10, which is provided with a series of punches 11, corresponding in number to the apertures to be punched and arranged to register with the apertures in the plate 7, before mentioned.

The numeral 12 indicates a lifting-plate having apertures corresponding in number to the punches and oversetting the same, the said plate being capable of a vertical movement in a recess in the upper face of the die 10. The upper end of the plunger is connected to a cross-bar 13 above the upper jaw, and said cross-bar is connected to a similar cross-bar 14 below the lower jaw by means of the vertical rods 15.

The numerals 16 indicate a series of bars, which are arranged to work vertically in vertical recesses in the lower jaw. The lifting-plate 12 is secured to the upper ends of said bars 16, so as to be moved vertically thereby.

The numeral 17 indicates a lever fulcrumed at 18 to the upper part of the frame 1 and weighted at one end, as indicated by the numeral 19. The other end of said lever is pivoted under the cross-bar 13, so as to elevate the two bars after the downward movement thereof.

The punch-block is provided with vertical passages 20 and lateral passages 21, corresponding in number to the punches, and through said passages the wads or disks punched from the material are discharged.

The plunger and working parts of the machine may be operated in any convenient manner and by any suitable mechanism to give the punching stroke.

The operation of my invention will be readily understood in connection with the above description, and is as follows:

The article to be punched is placed upon the die 10 between the same and the punching-block, and the said block is then depressed, forcing the article down upon the punches, which pass through the article, the wads passing upward through the apertures in the plate 7, the lifting-plate descending as the punch-block is brought down. When the article is punched, the pressure on the plunger is released, permitting the weight to reverse the movement of the parts and causing

the lifting-plate to rise and strip the article from the punches, so that it may be readily removed. The wads pass upward into passages 20 and are discharged through the passages 21.

5 Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

10 The combination, with the supporting-frame having upper and lower jaws, of the punch-block having discharge-apertures for the wads, the cutting-plate provided with apertures registering with the apertures in the punch-block, the punch-die, and punches,
15 the lifting-plate and the movable bars 16, supporting the lifting-plate, the cross-bar 14, sup-

porting the vertically-movable bars, and the cross-bar 13, secured to the reciprocating plunger, the connecting-bars between the cross-bars, and the weighted lever engaging 20 the upper cross-bar, whereby the plate is operated to strip the article from the punches and the working parts of the machine restored to normal position, substantially as specified. 25

In testimony whereof I affix my signature in presence of two witnesses.

JAMES LONG.

Witnesses:

H. T. SMAWLEY,
F. PIERCE LENTZ.