

(No Model.)

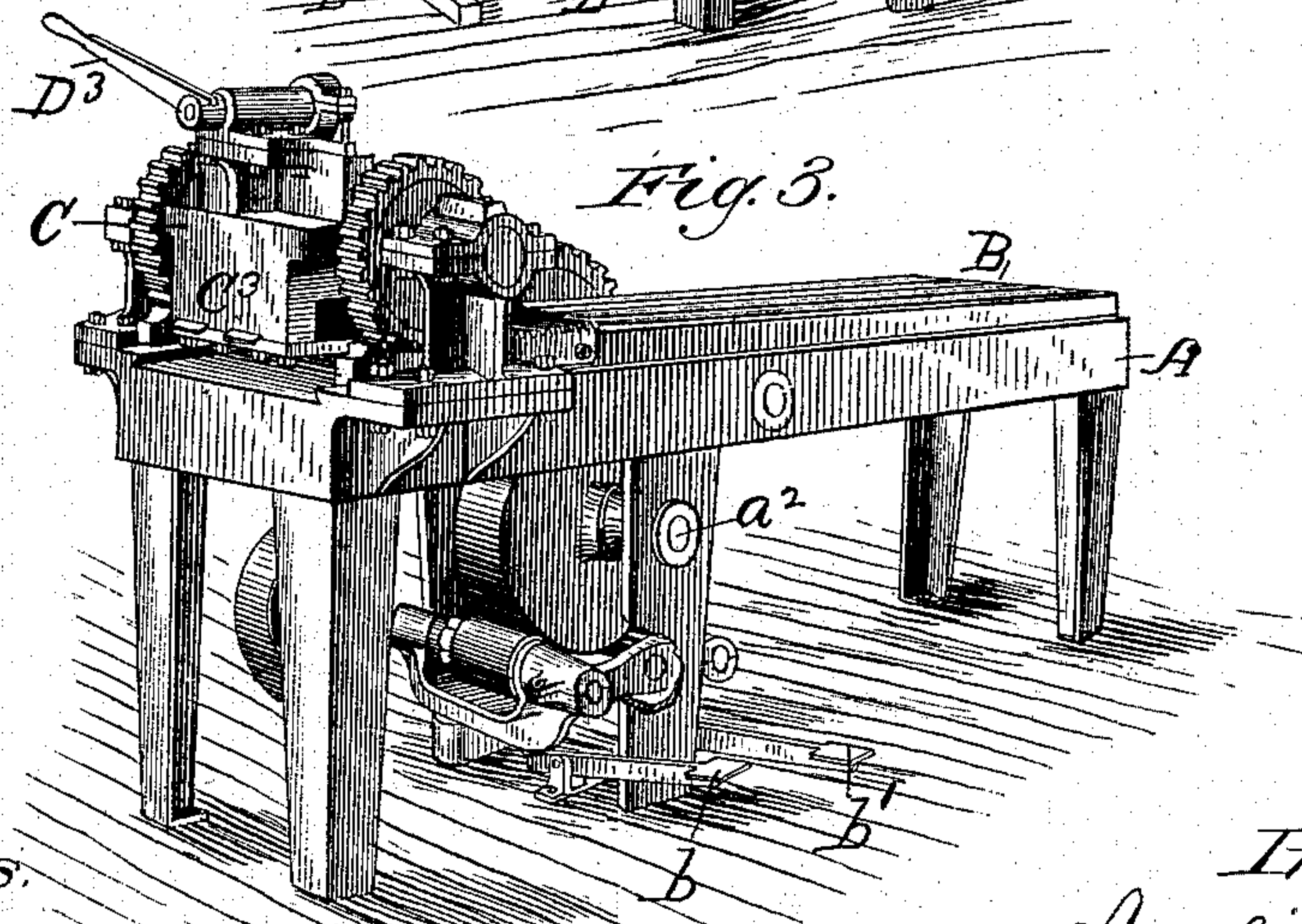
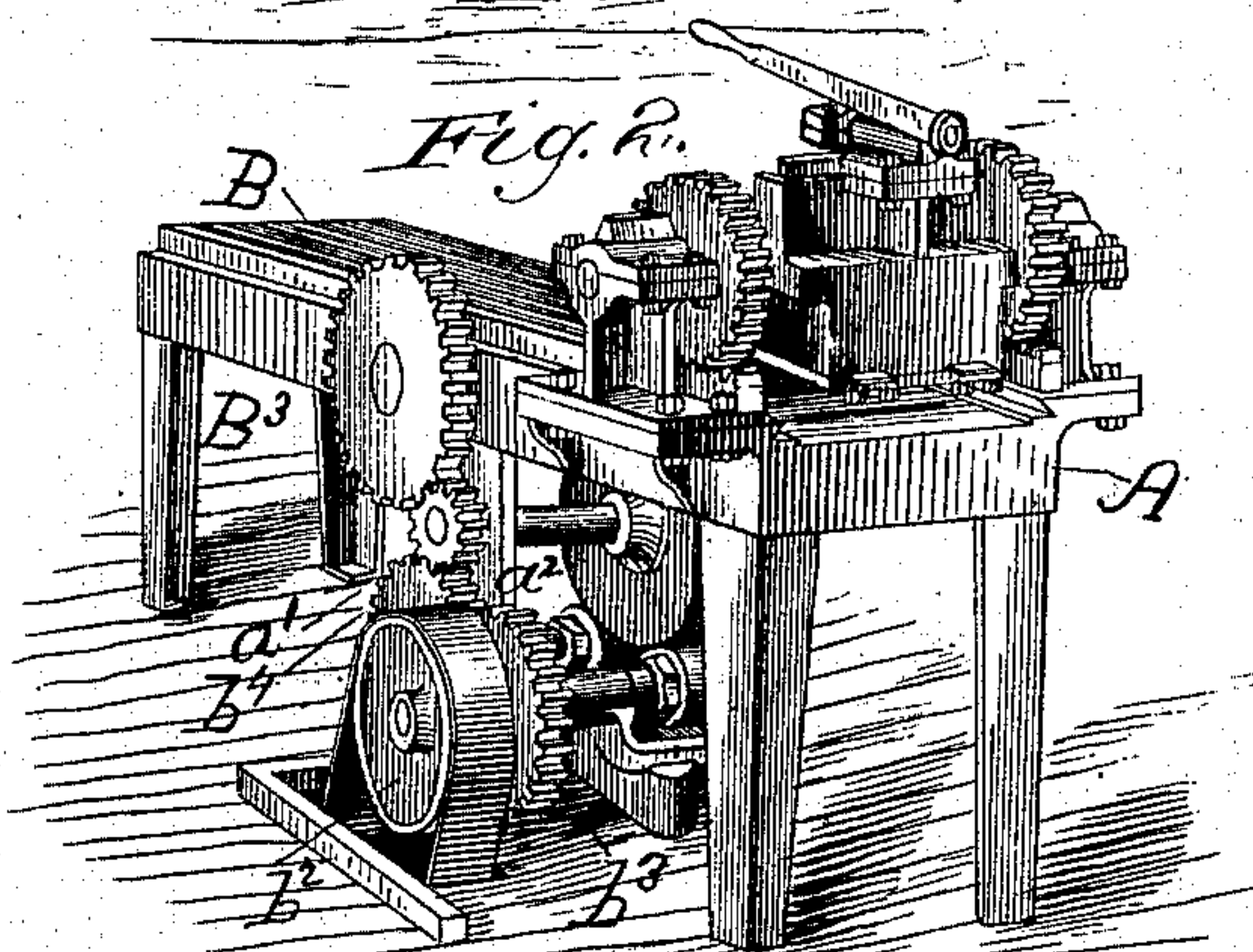
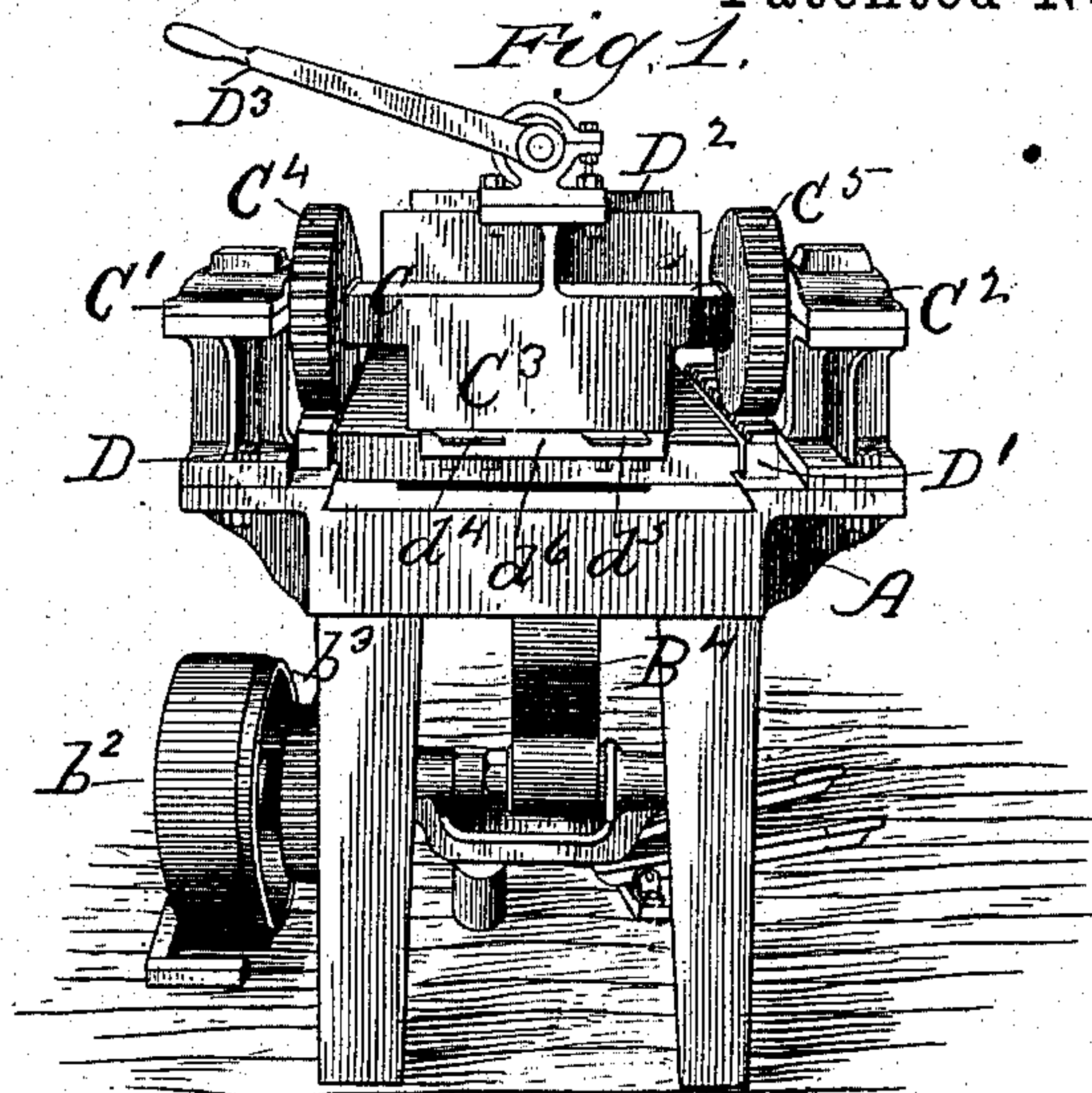
3 Sheets—Sheet 1.

A. KEHLER.

MACHINE FOR BENDING PLOW HANDLES.

No. 288,576.

Patented Nov. 13, 1883.



Witnesses.

Wm. R. Quohndra.  
L. M. Freeman.

Inventor  
Amos Kehler  
By G. B. Coupland & Co  
Attys



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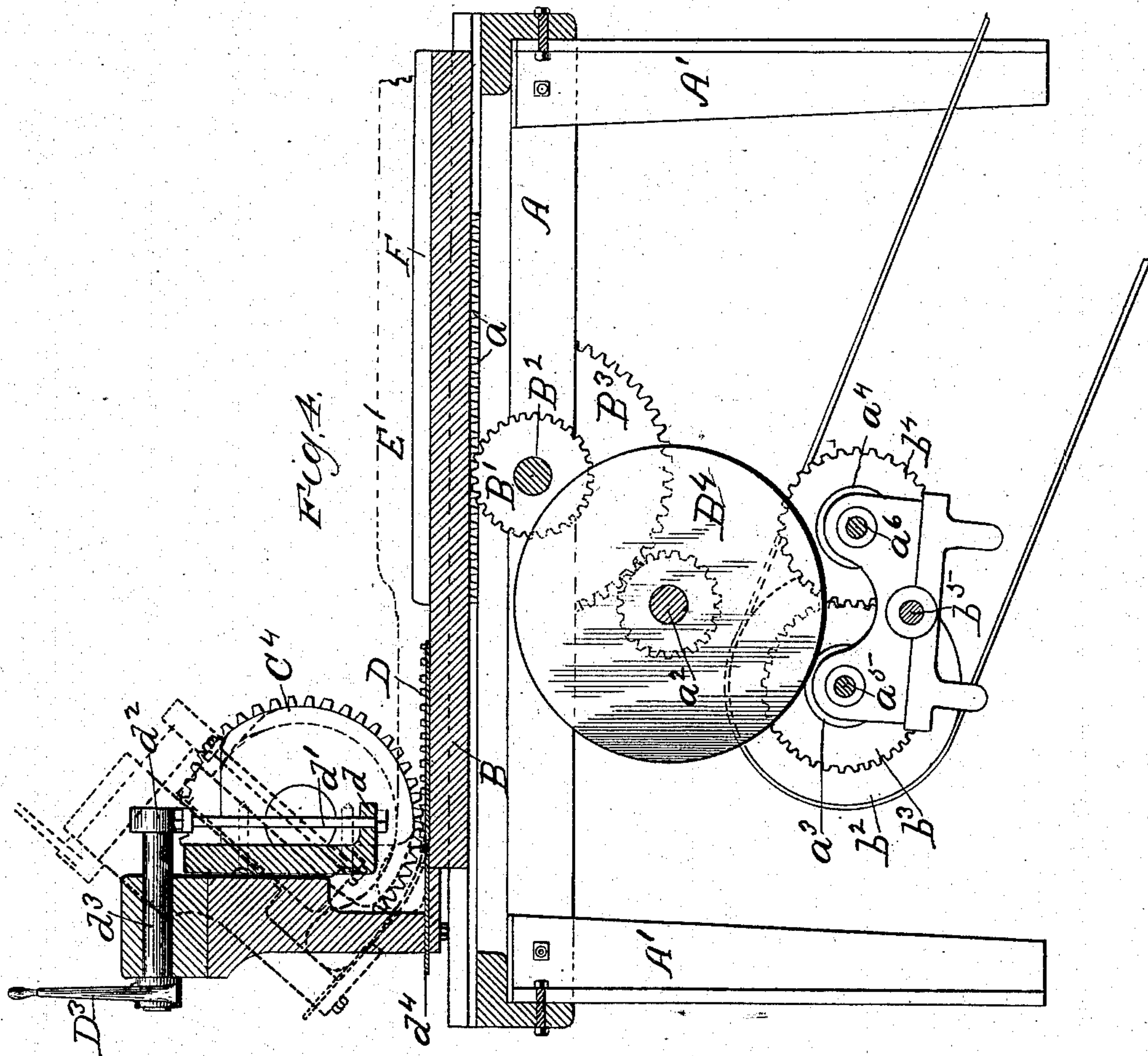
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Wall R. Quahundro  
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Atty's

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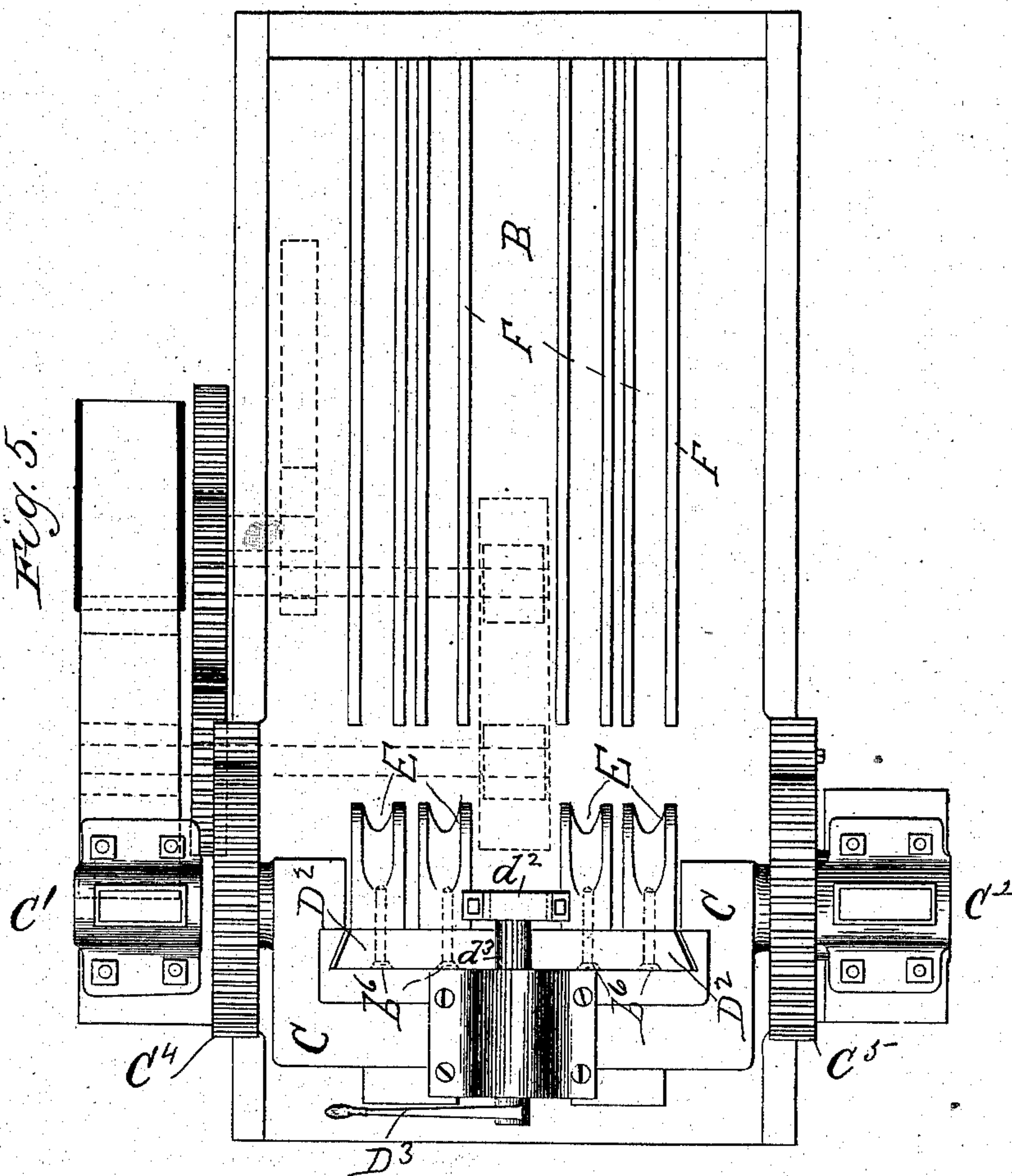
3 Sheets—Sheet 3.

A. KEHLER.

MACHINE FOR BENDING PLOW HANDLES.

No. 288,576.

Patented Nov. 13, 1883.



Witnesses.

Will R. Bushnell  
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# UNITED STATES PATENT OFFICE.

AMOS KEHLER, OF WARSAW, INDIANA, ASSIGNOR OF ONE-HALF TO  
GABRIEL B. LESH, OF SAME PLACE.

## MACHINE FOR BENDING PLOW-HANDLES.

SPECIFICATION forming part of Letters Patent No. 288,576, dated November 13, 1883.

Application filed August 4, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, AMOS KEHLER, of Warsaw, county of Kosciusko, and State of Indiana, have invented certain new and useful Improvements in a Machine for Bending Plow-Handles, of which the following is a full, clear, and exact description, that will enable others to make and use the same, reference being had to the accompanying drawings, forming a part of this specification.

This invention relates to improvements in mechanism for bending plow and other handles; and it consists of certain novel features in the construction, arrangement, and operation of the parts, as will be hereinafter more fully set forth in detail.

Figure 1 is an end elevation of a machine embodying my improved features; Fig. 2, a view in perspective of the same; Fig. 3, a view in perspective of the opposite side; Fig. 4, a vertical longitudinal central section, and Fig. 5 a plan view.

Referring to the drawings, A represents a stationary bed, and A' the legs supporting the same and the operating mechanism.

B is a traveling carriage adapted to have a reciprocating movement on the top of the bed. The under side of this carriage is provided at each side with the series of teeth  $a$ , forming a rack, with which the pinions B' engage. Two of these pinions are used, being placed at each end of the shaft B<sup>2</sup>, and just inside of the framework composing the stationary bed A, as shown in Fig. 1 of the drawings. The gear-wheel B<sup>3</sup> is placed on the outer projecting end of the shaft B<sup>2</sup>, and engages with the pinion  $a'$  on the shaft  $a^2$ , carrying the friction-drum B<sup>4</sup>. Underneath and on each side are placed the friction-rollers  $a^3 a^4$ , which are so supported and arranged on the shafts  $a^5 a^6$  as to be alternately brought into contact with the drum B<sup>4</sup>, at the will of the operator, through the medium of the treadles  $b b'$ . The opposite end of the shaft  $a^5$  supports the band-pulley  $b^2$ , which has a belted connection with the motor mechanism. The shaft  $a^5$  is also provided with the gear-wheel  $b^3$ , placed close to the band-pulley, as shown in Figs. 1 and 2 of the drawings. This gear-wheel engages with the companion gear-wheel,  $b^4$ , on the shaft  $a^6$ . Now, when pressure is applied to the treadle  $b$ , the roller

$a^3$  is brought in contact with the friction-drum B<sup>4</sup>, and a forward movement is imparted to the carriage B, while a pressure on the treadle  $b'$  brings the companion roller in contact with the friction-drum, and the carriage is moved back to its normal position. The friction-rollers  $a^3 a^4$  are supported so as to have a slight oscillating movement on the pivot  $b^5$ .

At the head of the machine is placed the angular shaft C, having journal-bearings C' C<sup>2</sup>. The shaft C is also provided with the downward-projecting part C<sup>3</sup>. The gear-wheels C<sup>4</sup> C<sup>5</sup> are rigidly secured to the shaft C, and engage with the rack-bars D D', secured to the sides of the traveling carriage. The former-plate D<sup>2</sup> has a dovetailed bearing on the inner side of the angular shaft, and the downward-projecting part thereof, and is adapted to have a vertical movement therein. To this plate is attached, by means of the bolts  $b^6$ , the series of curved and grooved formers E, shown in Fig. 5 of the drawings. The lower part of the former-plate is provided with the projecting toe  $d$ , to which is connected the lower end of the rod  $d'$ , the upper end being connected to the eccentric-strap  $d^2$ , inclosing the cam end of the shaft  $d^3$ . The opposite end of this shaft is provided with the operating-lever D<sup>3</sup>, by means of which the former-plate is raised up or thrown down into a clamping position.

The steel plates  $d^4 d^5$  are placed on the top of the traveling carriage, the front ends passing underneath the downward-projecting part of the angular shaft. The front ends of these plates are secured to the under side of the downward-projecting part by means of the clamping-plate  $d^6$ , secured by suitable tap-bolts. Each one of these steel plates is of sufficient width to cover the width of two formers. By this arrangement the front ends of these plates are made to conform to and follow the change of position of the parts, as indicated by the dotted lines in Fig. 4 of the drawings.

E' represents the handle placed in position to be bent, which is prevented from having a lateral movement by means of the series of guide-strips F.

By bringing the operating-lever D<sup>3</sup> to nearly a horizontal position, as shown in Fig. 1 of the drawings, the former-plate is raised, so



that the ends of the handles to be bent are inserted under the same, the ends being in contact with the part projecting down from the angular rock-shaft C. After the articles to be bent are placed in position the lever D<sup>3</sup> should be moved upward, when the formers will be brought down and clamp the handles into position, and, as the carriage moves forward, the forming mechanism has a tipping movement imparted to it by means of the devices described, which has the effect of imparting the required curvature to the handle. By this arrangement the handles are firmly and positively secured to the bed or carriage, and having just so much space to pass through, they must necessarily conform to the required change and come out very nice and smooth. The opposite ends of the handles, at the back part of the bed, are securely clamped against an endwise movement or backing away from the formers by means of an eccentric-shaft and presser-bar arranged transversely at the back end and on top of the traveling carriage. The presser-bar is beveled on the side next the ends of the handles, between which are then inserted wedges, and the whole firmly clamped by a movement of the eccentric-shaft, which is operated by a suitable lever placed at one end. When the handles have received the desired shape, they are easily released by simply throwing the eccentric-shaft in the opposite direction.

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

1. In a machine for bending plow-handles, the combination, with a traveling carriage provided on the under side, at each edge, with a

row of gear-teeth, two pinions adapted to engage with said teeth, a shaft running transversely underneath said carriage, and having said pinions mounted on the ends thereof, a gear-wheel mounted centrally on said shaft and engaging with the pinion *a'* on the companion shaft, *a''*, a friction-drum mounted on said companion shaft, the operating-treadles *b b*, and the intermediate mechanism for transmitting motion to said drum from said treadles, whereby a reciprocating movement is imparted to the traveling carriage, substantially as set forth.

2. In a machine for bending plow-handles, the combination, with a traveling carriage, of an angular shaft provided with the downward-projecting part C<sup>3</sup>, a former-plate adapted to have a vertical adjustment in said angular shaft, a number of formers bolted to said plate, a cam-shaft, an operating-lever, and means for connecting said cam-shaft with the series of formers, substantially as and for the purpose set forth.

3. In a machine for bending plow-handles, the combination, with a traveling carriage having a reciprocating movement, of two rack-bars located at each side and on top of said carriage, two gear-wheels adapted to engage with said rack-bars, and an angular shaft having said gear-wheels mounted on the ends thereof, whereby a tilting movement is imparted to the bending mechanism, substantially as set forth.

AMOS KEHLER.

Witnesses:

L. M. FREEMAN,  
L. B. COUPLAND.