

(No Model.)

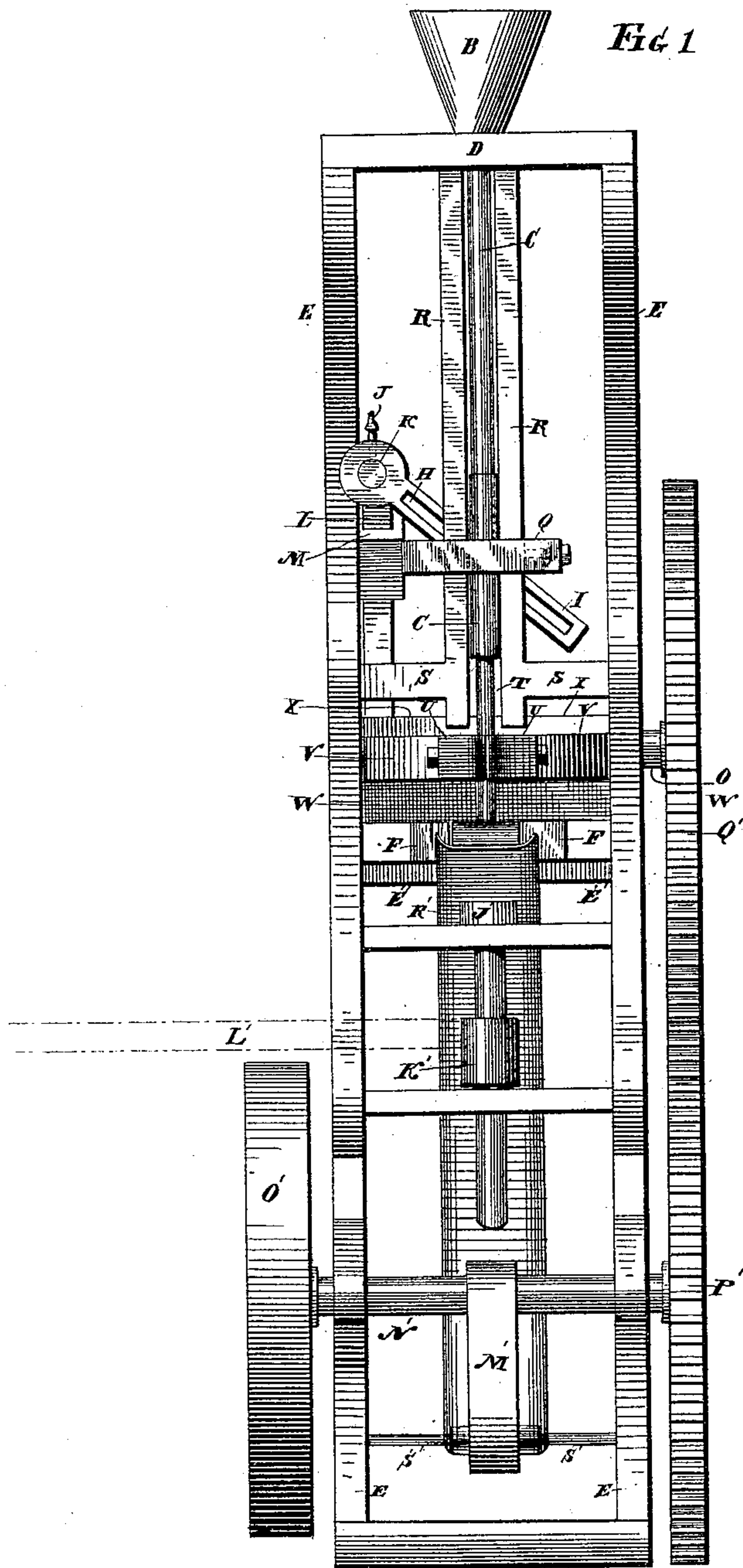
2 Sheets—Sheet 1.

E. N. BEECHER.

MACHINE FOR THREADING AND POINTING BOLT BLANKS.

No. 354,089.

Patented Dec. 14, 1886.



WITNESSES:

C. L. Swan Jr.
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INVENTOR

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Fig 3

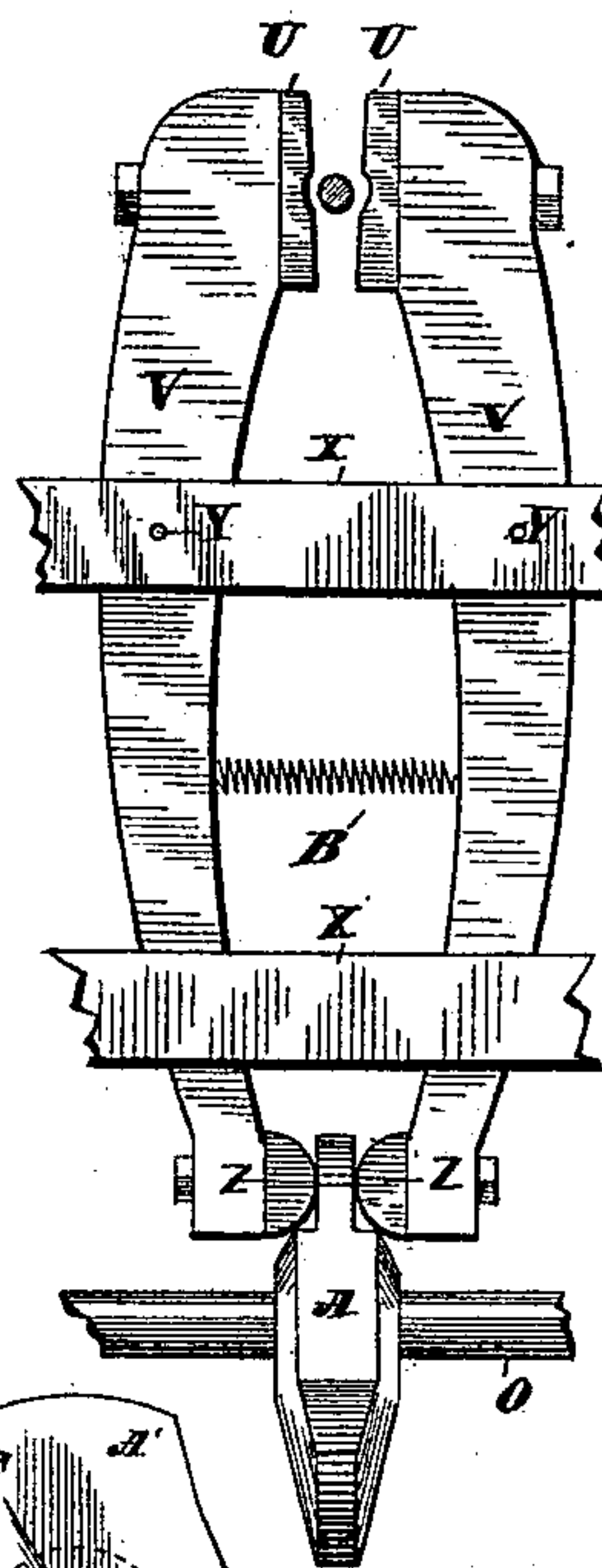
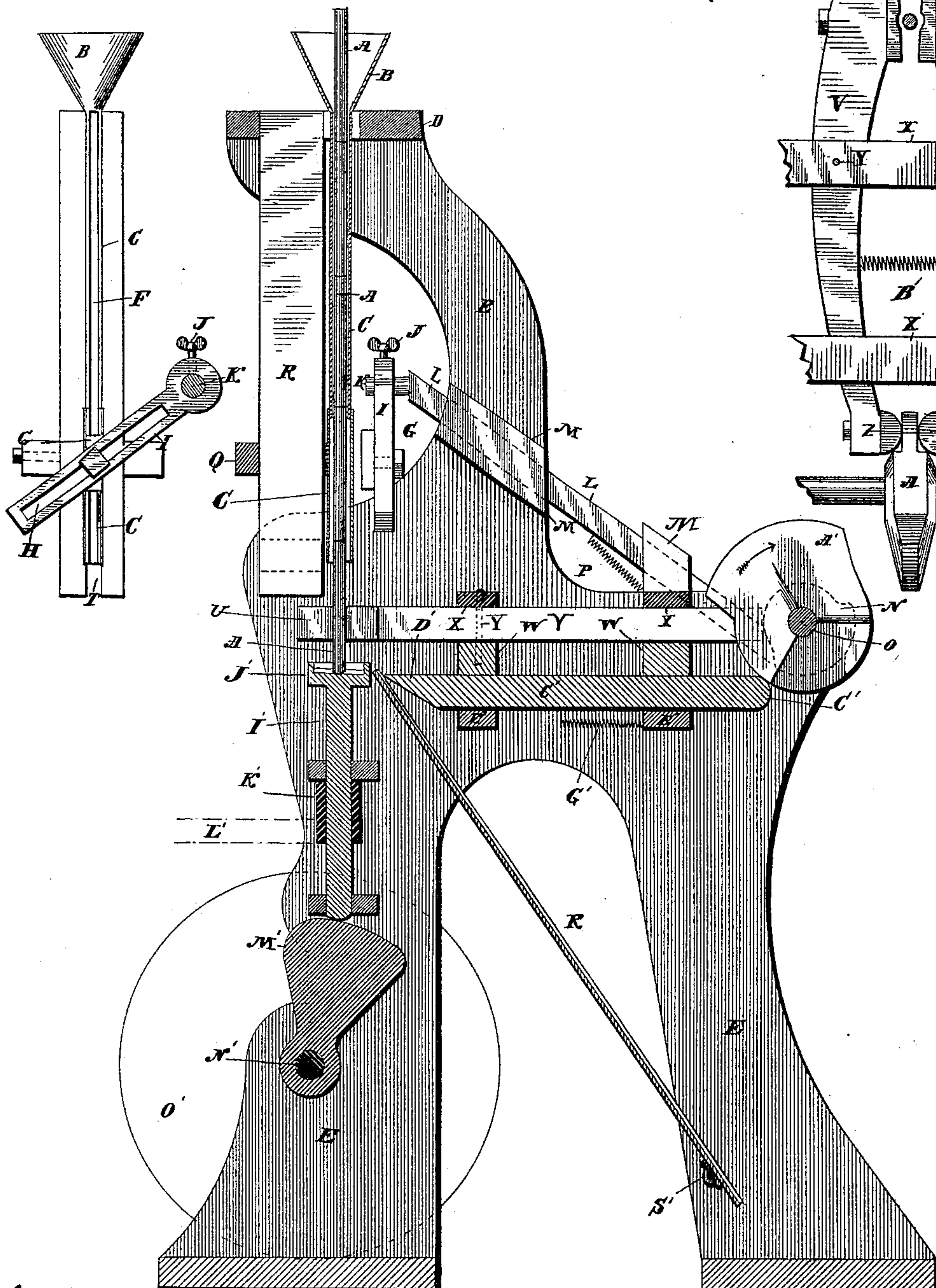


Fig 2

Fig 4



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UNITED STATES PATENT OFFICE.

EDWIN N. BEECHER, OF SOUTHTON, CONNECTICUT.

MACHINE FOR THREADING AND POINTING BOLT-BLANKS.

SPECIFICATION forming part of Letters Patent No. 354,089, dated December 14, 1886.

Application filed May 19, 1886. Serial No. 202,626. (No model.)

To all whom it may concern:

Be it known that I, EDWIN N. BEECHER, residing at Southington, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Machines for Pointing or Threading Blanks and Bolts; and I do declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to an improvement in machines for pointing or threading bolt or other similar blanks, the object being to produce an automatic machine of simple and durable construction, efficient operation, and large capacity for work.

With these ends in view my invention consists in certain details of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view, in front elevation, of a machine embodying my invention. Fig. 2 is a view thereof in vertical section. Fig. 3 is a detached plan view of the jaws and the cam for operating them; and Fig. 4 is a detached view, in rear elevation, of the feed-tube and the blank-check.

The blanks A are received in a hopper, B, located at the upper end of a vertical telescopic feed-tube, C, supported through its upper end, which is mounted in the center of the cross-piece D of the frame E of the machine. A slot, F, extending throughout the rear face of the tube exposes the blanks therein to periodical engagement by a blank-check, G, which supports the column of blanks in the tube while the pointed or threaded lower blank is being discharged. The said blank-check consists of a narrow block adapted to enter the slot aforesaid and engage with the blanks in the tube, and mounted to swivel and to be longitudinally adjusted in the elongated slot H of an arm, I, provided with a thumb-screw, J, and mounted for vertical and lateral adjustment upon the stud K of an arm, L, reciprocating in guides M, and operated in its forward motion through a cam, N, secured to the shaft O and engaging with its rear end, and retracted, after being advanced by such cam, by a spring, P, arranged substantially as shown.

The tube is supported, against the pressure of the check tending to deflect it forward by a block, Q, located in front of it and secured to and vertically adjusted conformably with the location of the check upon a frame composed of two parallel uprights, R R, supported by the cross-piece D aforesaid, and by lateral arms S S, joining the side pieces of the frame of the machine, and located in front of and on opposite sides of the tube, with an opening, T, in line with the same and of sufficient width to permit the upper ends of the blanks to fall forward into it and between the uprights as they leave the tube.

The clamping-faces U U of a pair of horizontal jaws, V V, are located directly beneath the lower end of the tube. Such jaws are fulcrumed upon pins Y Y, between horizontal cross-pieces W W and X X, joining the opposite sides of the frame of the machine. The inner faces of the rear ends of these jaws are provided with removable rounded bearing-faces Z Z, respectively engaging with the opposite faces of a cam, A', mounted upon the shaft O aforesaid. A spring, B', connecting the two jaws to the rear of their fulcrum, maintains their bearing-faces Z Z in engagement with the said faces of the cam and operates to separate their clamping-faces U U after the drop of the cam has passed the said wedge-faces.

A horizontal reciprocating gage, C', having the under face of its outer end beveled, as at D', is mounted, below the jaws described, upon cross-pieces E' E' and between guides F' F', extending transversely to such cross-pieces, and shown in Fig. 1 of the drawings. This gage is actuated in its forward movement by the cam A', with the edge of which its rear end engages, and in its return movement by a spring, G', attached to its under face and to the rear of the two cross-pieces E', as shown.

A tool-carrier is located below and in line with the tube and the clamping-faces of the jaws, and consists of a reciprocating shaft, I', provided at its upper end with a head, J', adapted to receive the cutting-tools, and with a pulley, K', carrying a belt, L', through which it is rotated and lifted and supported, while the tools in the head are doing their work, by a cam, M', engaging with its lower end and mounted upon a shaft, N', carrying at one end

a driving-pulley, O', and at the other end a cog-wheel, P', meshing into a similar wheel, Q', secured to the shaft O aforesaid.

The pointed or threaded blanks are discharged from the machine through an inclined chute, R', pivotally mounted at its lower end upon a rod, S', extending between the side pieces of the frame of the machine, its upper end being raised and lowered by the reciprocating shaft and extending over the head of the same when lowered.

Having described my improved machine in detail, I will now proceed to set forth the mode of its operation.

As shown in Fig. 1 of the drawings, a blank has just descended from the feed-tube onto the gage, which has been advanced by the cam A under the tube to limit or gage the descent of the blank. The clamping-faces of the jaws are now brought together to firmly clamp the exposed blank through the separation of their rear ends by the said cam. The gage is now retired by its spring, leaving the lower end of the blank entirely free. Simultaneously with the retirement of the gage, as described, the vertical shaft, rapidly rotating, is lifted to bring the cutting-tools carried by the head at its upper end into range with the work, and in lifting lifts and retires the upper end of the chute, as shown in Fig. 2 of the drawings. The tools now dwell upon the work until the lower end of the blank has been pointed or threaded, as the case may be. The vertical shaft then drops and allows the chute to fall back over its head and take a position directly under the lower end of the blank, and the blank-check being engaged with the blank next that above the blank held by the jaws, the clamping-faces of the same separate and permit the lower blank to drop, in doing which its lower end strikes the chute and is deflected to the rearward, whereby its upper end is thrown forward into the space between the parallel uprights, which serve to prevent it from being laterally deflected. In such deflected position the blank slides down the chute with the minimum of displacement in the active parts of the machine for its discharge. The gage now advances under the feed-tube, from the rear face of which the blank-check is now withdrawn, allowing the column of blanks to drop and the lower blank to pass between the separated clamping-faces of the jaws and below the same until arrested by the gage. The jaws now clamp and hold the newly-exposed blank, the gage retires, the tool-shaft rises, and the tools dwell on the work, and so on, as above described.

The machine is adapted for blanks of different lengths by shortening or lengthening the telescopic feed-tube, this being accompanied by appropriate adjustments of the blank-check and the bearing-block located in front of the tube.

By deflecting the blanks from the vertical as they leave the tube they are discharged from the machine with less retirement of the verti-

cal shaft than could otherwise be avoided and with an obvious economy of time, followed by an increase in the capacity of the machine for work. It is to be noted, also, that headed as well as plain blanks may be pointed or threaded in my improved machine. I would have it understood that I do not limit myself to the exact construction and arrangement of parts shown and described, but hold myself to make such changes and alterations as fairly fall within the spirit and scope of my invention.

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

1. In a machine for pointing or threading blanks, the combination, with a vertical feed-tube, of horizontal jaws located below it and adapted to clasp and hold the blanks, a gage located below the jaws and limiting or gaging the descent of the blanks in the tube, and a vertical reciprocating tool-carrier located in line with the tube and below the gage, substantially as set forth.

2. In a machine for pointing or threading blanks, the combination, with a vertical feed-tube, of horizontal jaws located below it and adapted to clasp and hold the blanks as they issue from such tube, a gage located below the jaws and gaging the descent of the blanks through the same, a tool-carrier located in line with the tube and below the gage, and a chute operated by or from the said tool-carrier, substantially as set forth.

3. In a machine for pointing or threading blanks, the combination, with a vertical feed-tube, of horizontal jaws located below it and adapted to clasp and hold the blanks, a gage located below the jaws and limiting the descent of the blanks, a vertical reciprocating tool-carrier located in line with and below the tube, and an inclined chute operated by or from the carrier and extending over the same when depressed, substantially as set forth.

4. In a machine for pointing or threading blanks, the combination, with a vertical feed-tube provided with an opening in its side, of horizontal jaws located below it and adapted to clasp and hold the blanks, a gage located below the jaws and gaging the descent of the blanks in the tube, a tool-carrier located below and in line with the tube, and a blank-check periodically engaging with the blanks through the opening in the tube, whereby the column of blanks therein is supported, substantially as set forth.

5. In a machine for pointing or threading blanks, the combination, with a vertical feed-tube provided with an elongated slot, of horizontal jaws located below it and adapted to clasp and hold the blanks, a gage located below the jaws and gaging the descent of the blanks in the tube, a tool-carrier located below and in line with the tube, and an adjustable blank-check periodically engaging with the blanks through the opening in the tube, whereby the column of blanks therein is supported, substantially as set forth.

6. In a machine for pointing or threading blanks, the combination, with a vertical feed-tube, of a frame located in front of the tube and provided with an opening into which the upper ends of the blanks are deflected as they leave the tube, jaws located below the tube, a gage located below the jaws, a tool-carrier located below the gage and in line with the tube, and a chute extending over the tool-carrier when the same is depressed, substantially as set forth.

7. In a machine for pointing or threading blanks, the combination, with a vertical feed-tube provided in its rear face with an elongated slot, of a blank-check periodically engaging with the blanks in the tube through the slot therein, and a bearing-block located in front of the tube and supporting the same against deflection by the blank-check, substantially as set forth.

8. In a machine for pointing or threading blanks, the combination, with a vertical feed-tube, of horizontal jaws located below it and adapted to clamp and hold the blanks, a gage for limiting the descent of the blanks, a vertically-reciprocating tool-carrier, and a cam constructed and arranged to operate the jaws and gage from its sides and edge, respectively, substantially as set forth.

9. In a machine for pointing or threading blanks, the combination, with a vertical feed-tube provided in its rear face with an elongated slot, of a blank-check periodically engaging with the blanks in the tube through the slot therein, and a cam for operating such check, substantially as set forth.

10. In a machine for pointing or threading blanks, the combination, with a vertical feed-tube having a slot, of a blank-check periodically engaging with the blanks in the tube through the slot therein, a bearing-block located on the opposite side of the tube from the slot and supporting the tube from deflection by the blank-check, jaws located below the tube, a gage located below the jaws, a reciprocating shaft located below the gage and in line with the feed-tube, a chute rising and falling with the tool-shaft, and a cam for operating the said shaft, substantially as set forth.

11. In a machine for pointing or threading blanks, the combination, with a vertical feed, of a clamping device adapted to clamp and hold the blanks while the same are being pointed or threaded, means for limiting or gaging the descent of the blanks through the clamping device, and a vertical reciprocating tool-carrying shaft, substantially as set forth.

12. In a machine for pointing or threading blanks, the combination, with a vertical feed, of a clamping device adapted to clamp and hold the blanks and operated by a cam, a gage for limiting the descent of the blanks, and a vertically-reciprocating tool-carrier, substantially as set forth.

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

EDWIN N. BEECHER.

Witnesses:

LEWIS D. WHITING,
EDWIN S. TODD.