(No Model.) 3 Sheets—Sheet 1.

C. H. FARRINGTON.

UPPER MACHINE.

No. 446,674. Patented Feb. 17, 1891.

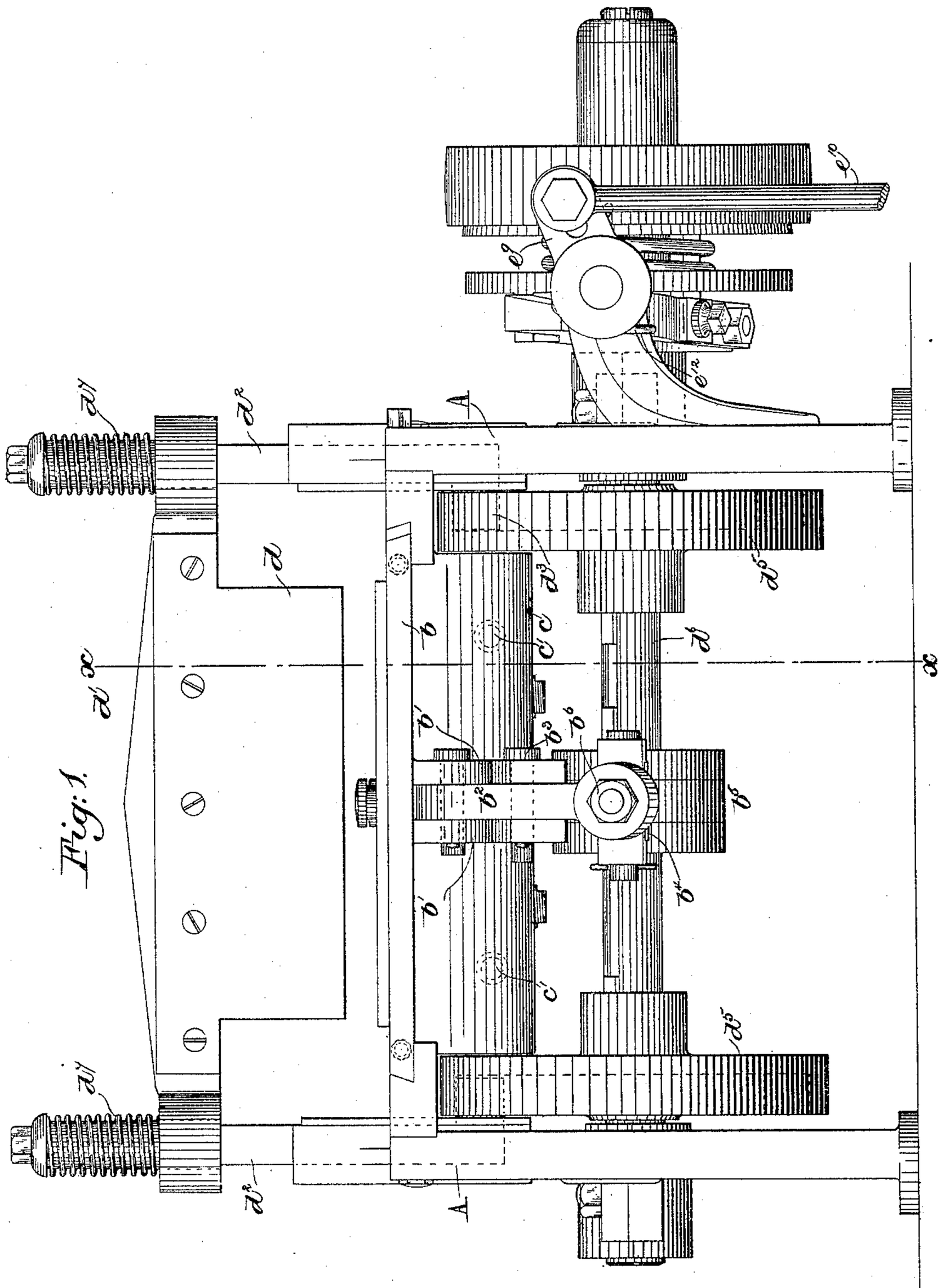

Fig. 1.

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(No Model.) 3 Sheets—Sheet 2

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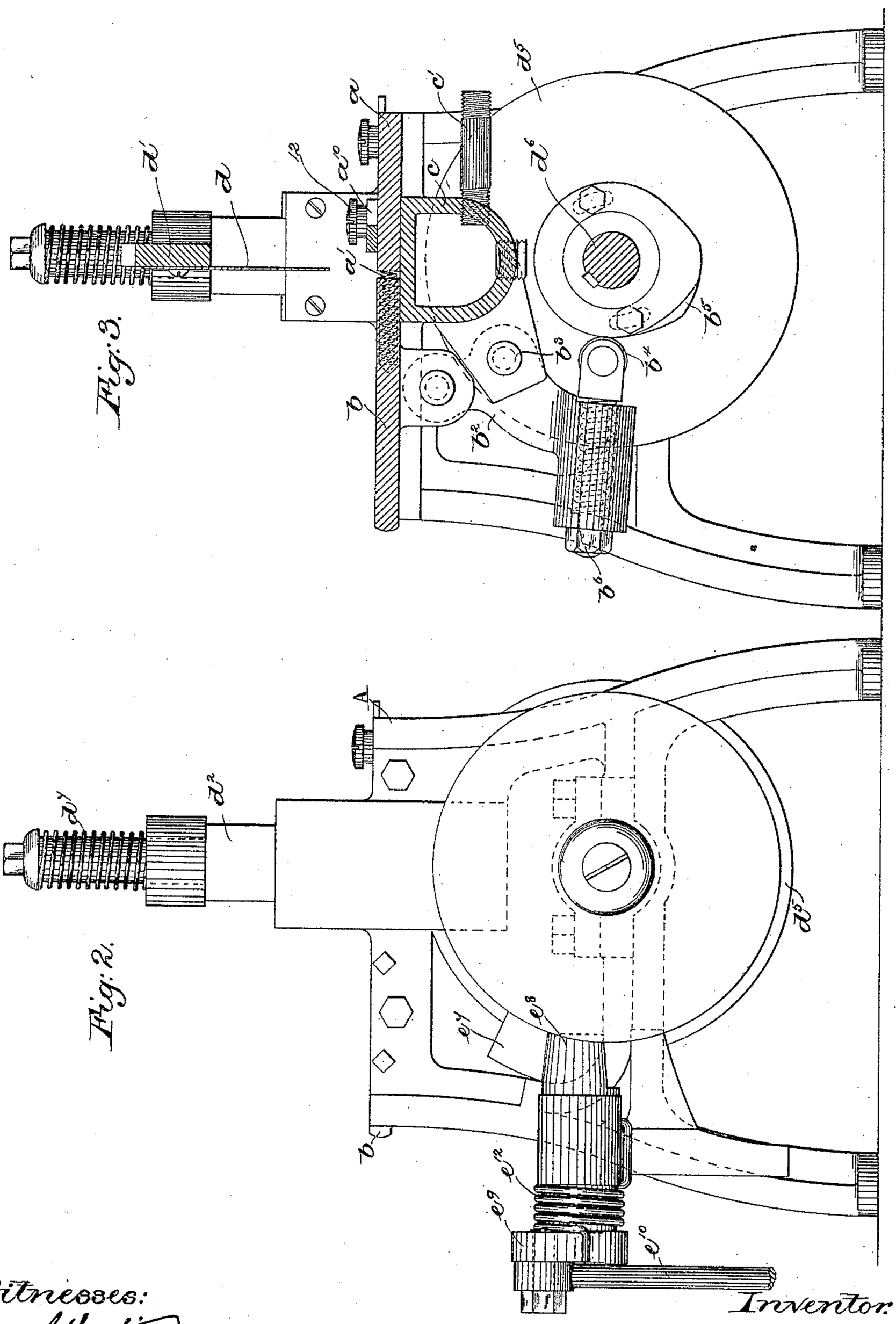

Fig. 3.

Fig. 2.

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(No Model.) 3 Sheets—Sheet 3.

C. H. FARRINGTON.

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Fig: 4.

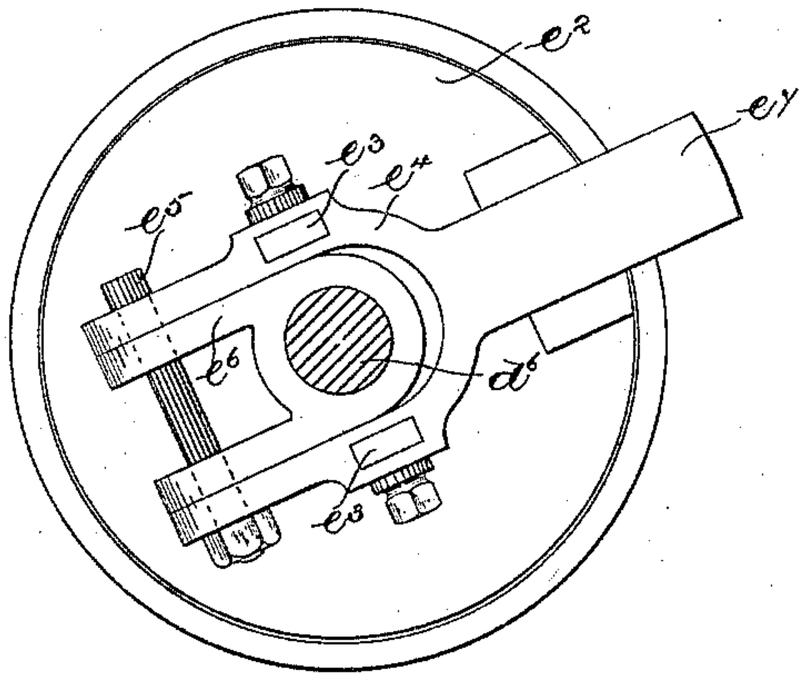


Fig: 5

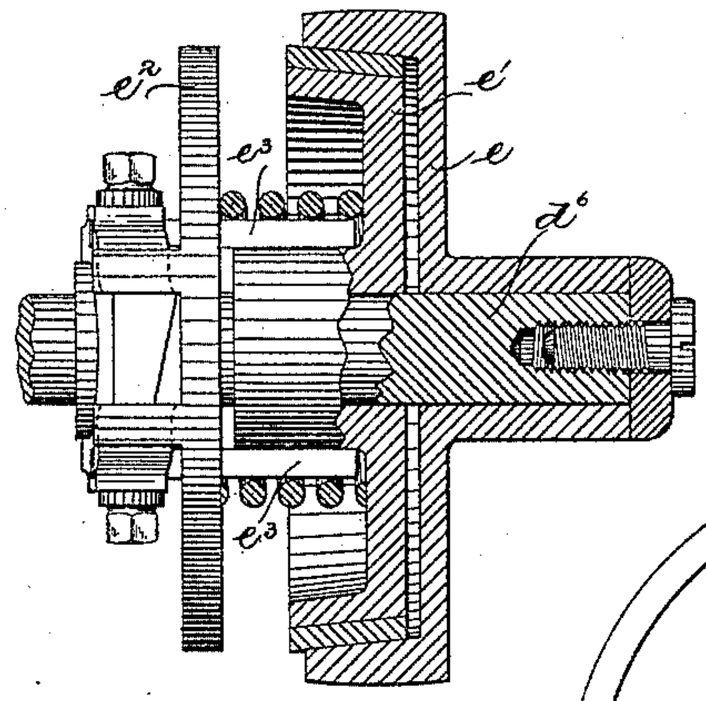
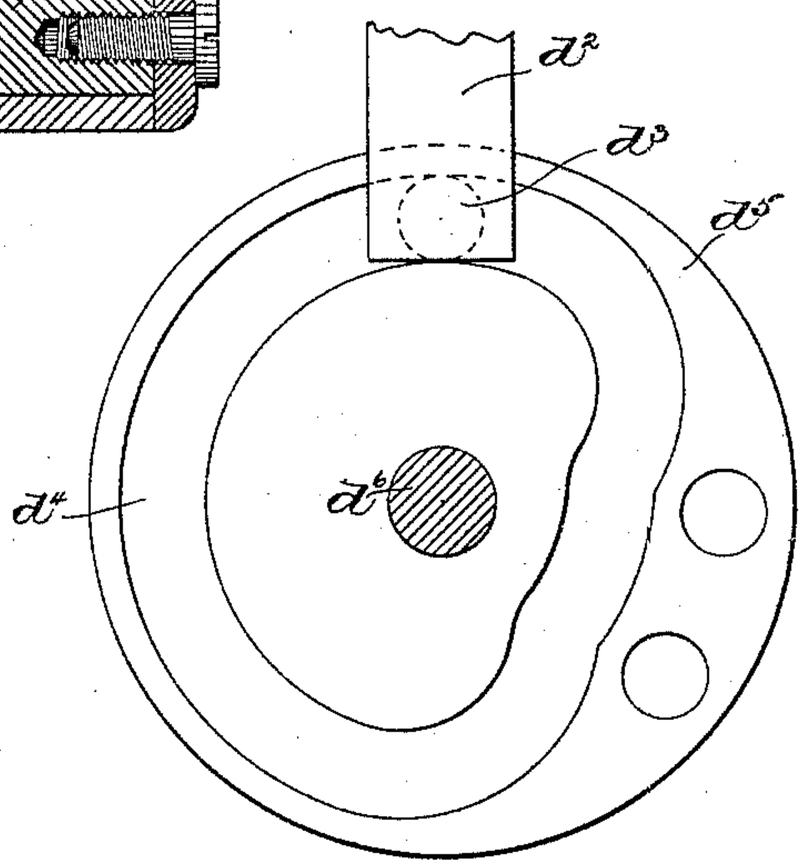


Fig: 6.



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UNITED STATES PATENT OFFICE.

CLARENCE H. FARRINGTON, OF MILFORD, MASSACHUSETTS.

UPPER-MACHINE.

SPECIFICATION forming part of Letters Patent No. 446,674, dated February 17, 1891.

Application filed July 24, 1890. Serial No. 359,725. (No model.)

To all whom it may concern:

Be it known that I, CLARENCE H. FARRINGTON, of Milford, county of Worcester, State of Massachusetts, have invented an Improvement in Machines for Folding Textile and other Materials, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention has for its object to construct a machine for crimping or folding linings for boots and shoes and for other purposes.

In accordance with this invention the lining is pressed down into a groove or recess by means of a blade or equivalent, and one wall of said groove is thereafter moved toward the opposite wall thereof to compress the material between them, the blade at such times being removed or withdrawn. A steam-box is arranged beneath the bed-plate of the machine, the top of which forms the bottom of said groove to heat the parts. Means are provided for moving the blade and thereafter one of the side walls of the groove in succession, and a suitable clutch mechanism is provided whereby the machine will make one operation at each time the said clutch is released.

Figure 1 shows in front elevation a machine embodying this invention; Fig. 2, a right-hand end view of the machine shown in Fig. 1; Fig. 3, a vertical section of the machine shown in Fig. 1, taken on the dotted line $x\,x$; Figs. 4 and 5, details of the clutch mechanism to be referred to, and Fig. 6 a detail of one of the cams employed to move the blade.

The main frame-work A is of suitable construction to support the operating parts. Mounted in the frame-work are two plates a b, (see Fig. 3,) one of which, as a, is herein represented as stationary, and the other, as b, is represented as movable. These plates a b serve as the bed-plate of the machine. Small spiral springs, as a', are interposed between the plates a b at their abutting edges, the tendency of which is to separate the said plates one from the other, the springs being placed one at each end of the movable plate.

The plates a b, thus separated by the springs, present a narrow groove. A steam-box c is secured to the frame-work beneath the plates a b, the top of said steam-box lying substantially flush with that portion of the frame on which the plates a b are supported to thereby serve as a bottom for the groove or space between said plates. The steam-box c has suitable inlet and outlet pipes c'. (See dotted lines, Fig. 1, and full lines, Fig. 3.)

A blade d is secured to a cross-bar d', attached to vertically-arranged posts d^2, having on them each a pin d^3, (see dotted lines, Fig. 1,) which enter, respectively, cam-grooves d^4, formed in disks d^5, secured to a shaft d^6, having its bearings in the main frame-work. Spiral springs d^7 are arranged on the posts d^2 on a cross-bar d', which allow the said cross-bar to yield when depressed. As the shaft d^6 is rotated, the cross-bar and its attached plate d are moved up and down, the lower edge of said plate entering the groove or space between the plates a b. The plate b has on its under side ears b', to which are loosely connected one end of a lever b^2, pivoted to the main frame-work at b^3, the lower end of said lever b^2 carrying a friction-roller b^4, which bears against a cam b^5, secured to the shaft d^6. To provide for adjusting the lever b^2, the friction-roll b^4 is journaled in a block fitted loosely in the lower end of and passing through the lever b^2. The opposite end of said block is provided with a nut b^6. A spiral spring encircles the shank of the block, the tendency of which is to force the block forward, so that its friction-roll shall bear against the cam b^5. By turning the nut b^6 in one direction the block is withdrawn against the tension of the spring, thereby shortening the lever. By means of this spring the block is enabled to yield to compensate for variations in thickness of material which is to be placed between the plates a b.

By means of the cam b^5 operating on the lever b^2 the plate b is moved toward and from the stationary plate a to compress any material which may be placed between them. To provide for adjustment of the said cam b^5 that it may hold the plate b in position to compress the material for a longer or shorter period of time, I have formed the same of three plates placed side by side, one of which is keyed to the shaft and the other two being

adjustably connected to the stationary one and adapted to be turned slightly to increase or decrease the length of the projecting portion of the cam. The cam-grooves d^4 in the disk b^5 are formed so that the blade d will be forced down into the space or groove between the plates $a\,b$ and withdrawn and held at rest a short time, during which the movable plate b is moved toward the stationary plate a. A gage or box a^{10} is secured to the plate a by means of a set-screw 12.

The material to be folded, creased, or crimped is placed on the bed-plates $a\,b$ and forced down into the groove or space by means of the blade d, and thereafter as the blade d is withdrawn the plate b is moved toward the plate a against the material placed between them, and the said plates being heated by means of the steam-box c the line or fold is defined.

The clutch mechanism herein shown consists of a pulley e, loosely mounted on the shaft d^6, it being released to receive the friction-pulley e', which is movable into and out of engagement with it. A disk e^2 is mounted on the shaft d^6 beside the friction-pulley e', said disk e^2 having ears or lugs e^3, to which is secured a yoke e^4, pivoted at e^5 to a yoke e^6, which is secured to the said shaft d^6. A strong spiral spring is interposed between the disk e^2 and the friction-pulley e'. When the yoke e^4 is moved on its pivot e^5, the disk e^2 will be moved toward and from the friction-pulley e', thereby compressing the spiral spring and allowing the same to distend and control the position of the friction-pulley e'. The yoke e^4 has on it a tongue e^7, which when in a position of rest engages a let-off e^8, which consists of a cylindrical stud cut away at one side and having secured to it a short arm e^9, to which is attached a treadle-rod e^{10}, by means of which the said stud e^8 is turned in one direction and a spring on said stud being employed to turn it in an opposite direction. When the treadle-rod e^{10} is depressed, the stud e^8 is partially turned, allowing the tongue e^7 to move toward the disk e^2 sufficiently to allow the friction-pulley e' to engage with the loose pulley e, and as soon as engagement is effected the said tongue is carried by the said stud e^8. The treadle-rod being returned to its normal position, the stud e^8 will be in position to obstruct the path of movement of the tongue as it completes its revolution, and at such times the tongue striking the curved side of said stud e^8 will be moved a little to one side to disengage the friction-pulley e' from the loose pulley e, thereby stopping rotation of the shaft d^6. In lieu of this form of clutch mechanism any other form suitable for accomplishing the desired results may be employed.

The machine herein described, while especially adapted for textile material, is also equally well adapted for leather, and by means of the adjustment shown the time during which the material is held between the heated plates may be determined as described, so as not to scorch or otherwise injure the material.

I claim—

1. In a machine of the kind described, the combination of the vertically-movable blade d, the bed-plate formed by the stationary plate a and movable plate b, springs, as a', interposed between them to normally present an open groove or space beneath said blade, and means, substantially as described, for moving said plate b toward the plate a, as and for the purpose set forth.

2. A movable blade and a bed-plate composed of two parts, one of which is movable with relation to the other, and an adjustable cam and a lever co-operating therewith for moving the movable portion of said bed-plate, substantially as described.

3. The movable blade and bed-plate composed of a stationary part a and a movable part b, combined with a lever b^2, pivoted at b^3 and connected to said movable plate b, and the cam for moving said lever, substantially as described.

4. A movable blade and a bed-plate composed of two parts, one of which is movable with relation to the other, a lever for said movable member bearing a yielding block and friction-roller, and a cam for said lever, substantially as described.

5. The vertically-movable blade and bed-plate composed of two parts, one of which is movable with relation to the other and normally-separated to present an open groove or space beneath the blade, the lever b^2 for said movable member and means for adjusting its length, and a cam for said lever, substantially as described.

6. In a machine of the kind described, the combination of the following instrumentalities, viz: a rising and falling blade and a bed-plate consisting of two parts, one of which is movable with relation to the other and normally separated from each other to present a groove or space between them, a cam for the movable member of the bed-plate, a rotary shaft, a friction-clutch, and treadle.

7. In a machine of the kind described, the combination of the following instrumentalities, viz: the vertically-movable blade d, the bed-plate consisting of two parts, one of which is movable with relation to the other and normally separated from each other to present a groove or space between them, a rotary shaft, a cam on it for moving said blade d, and another cam on it for moving the movable member of the bed-plate, all substantially as described.

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

CLARENCE H. FARRINGTON.

Witnesses:
GEORGE G. PARKER,
JOSEPH HANCOCK.