

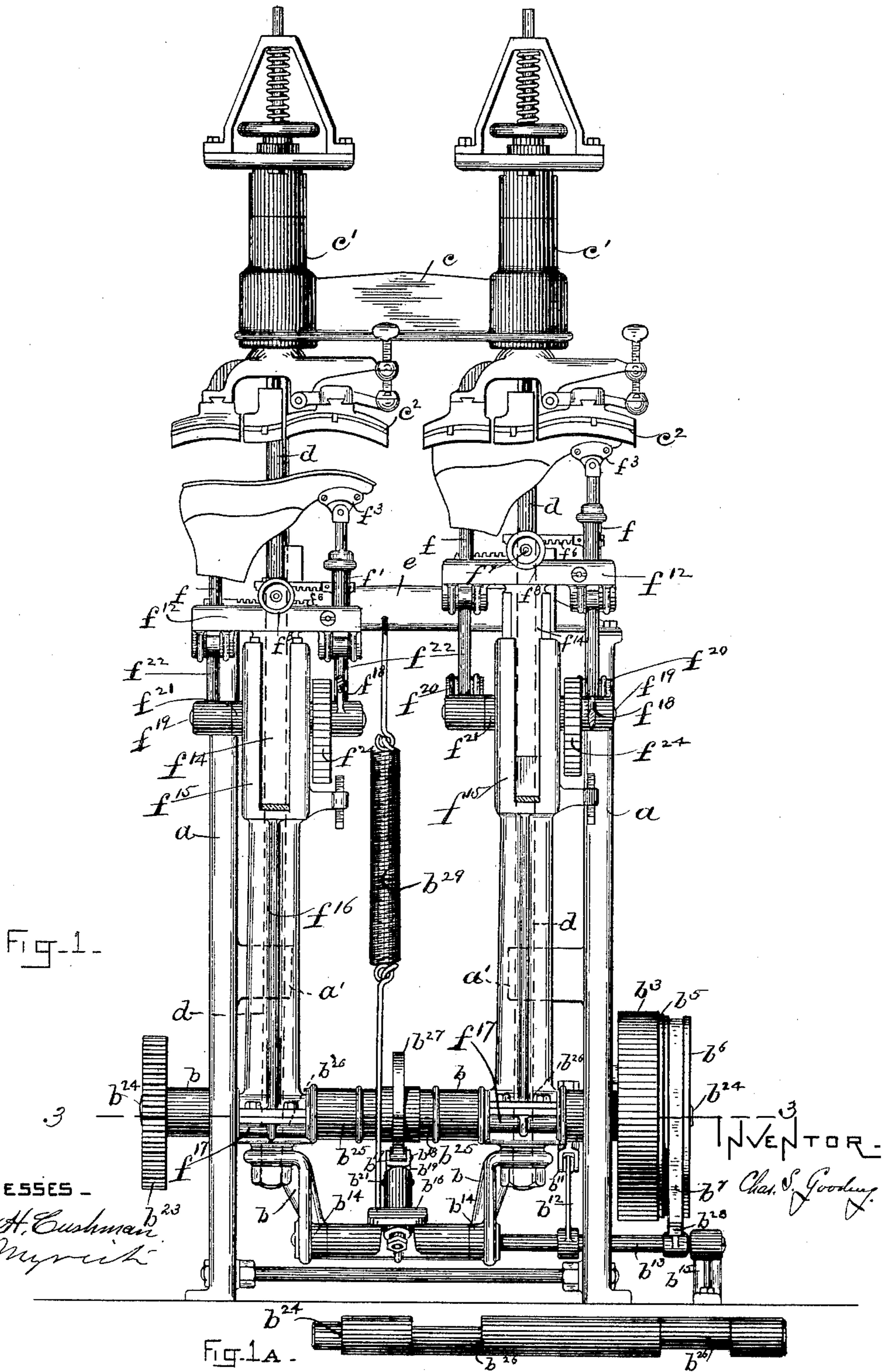
(No Model.)

4 Sheets—Sheet 1.

C. S. GOODING.
SOLE LAYING MACHINE.

No. 595,097.

Patented Dec. 7, 1897.



(No Model.)

4 Sheets—Sheet 2.

C. S. GOODING.
SOLE LAYING MACHINE.

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Patented Dec. 7, 1897.

Fig-6-

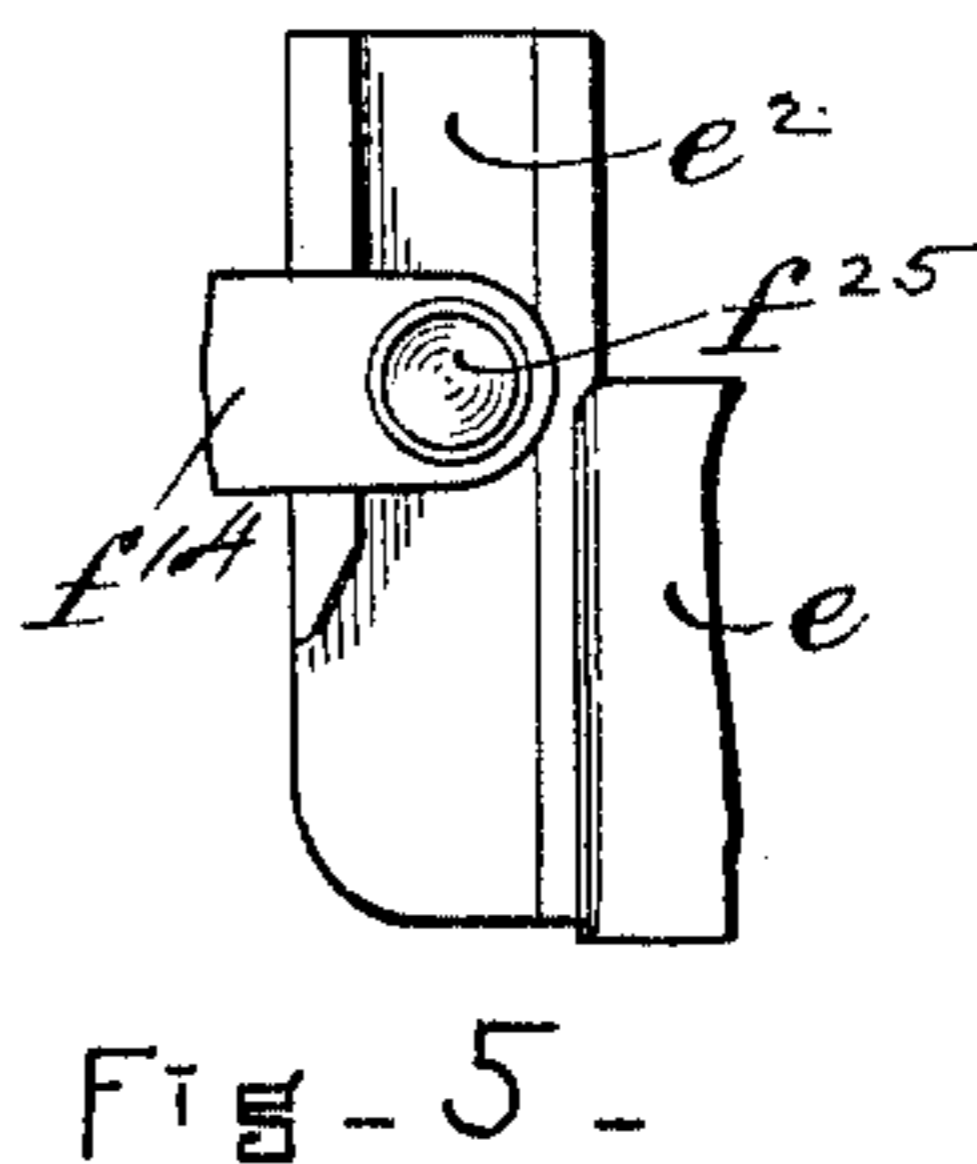
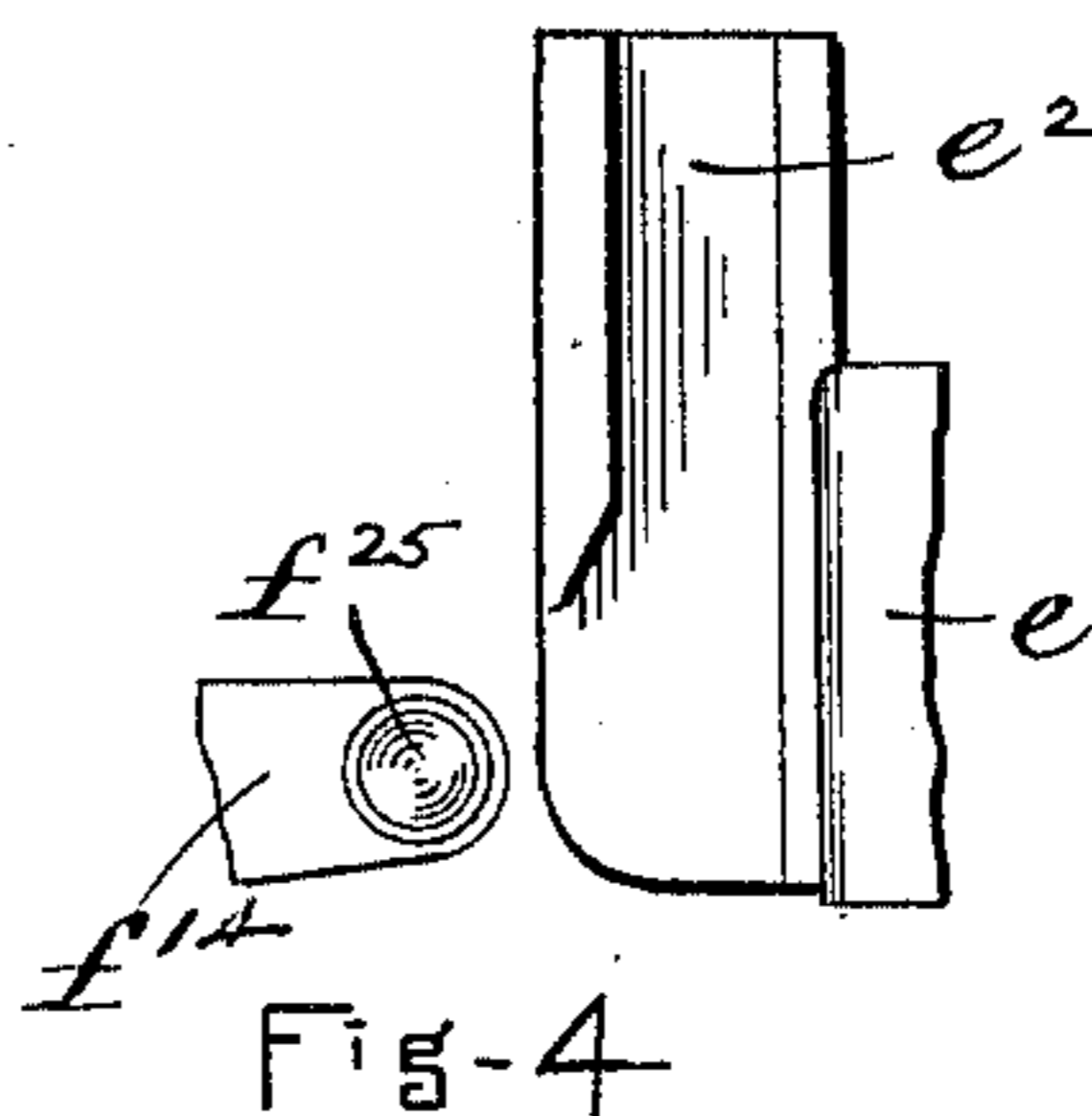
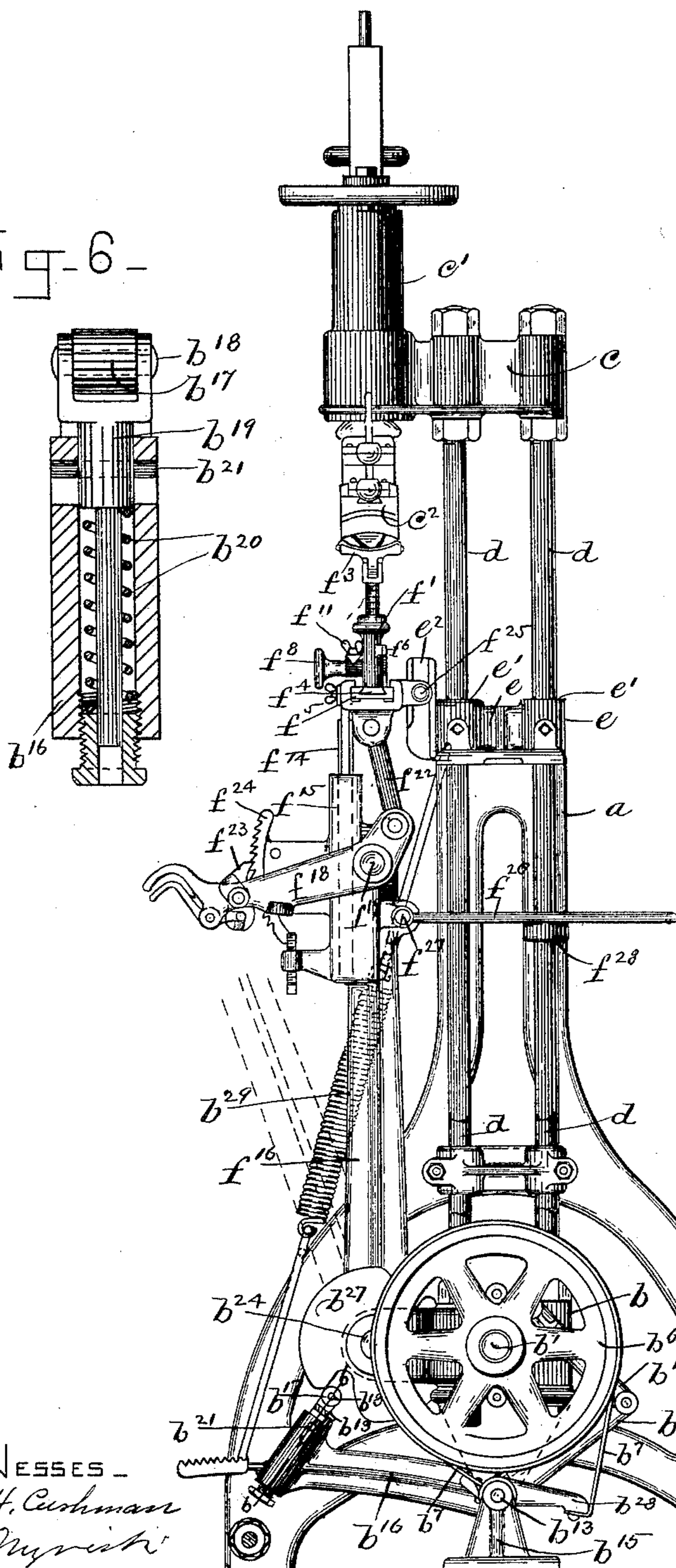


Fig-5-

Fig-2-

WITNESSES -
Geo. H. Cushman
J. Myrski

INVENTOR -
Chas. S. Gooding

(No Model.)

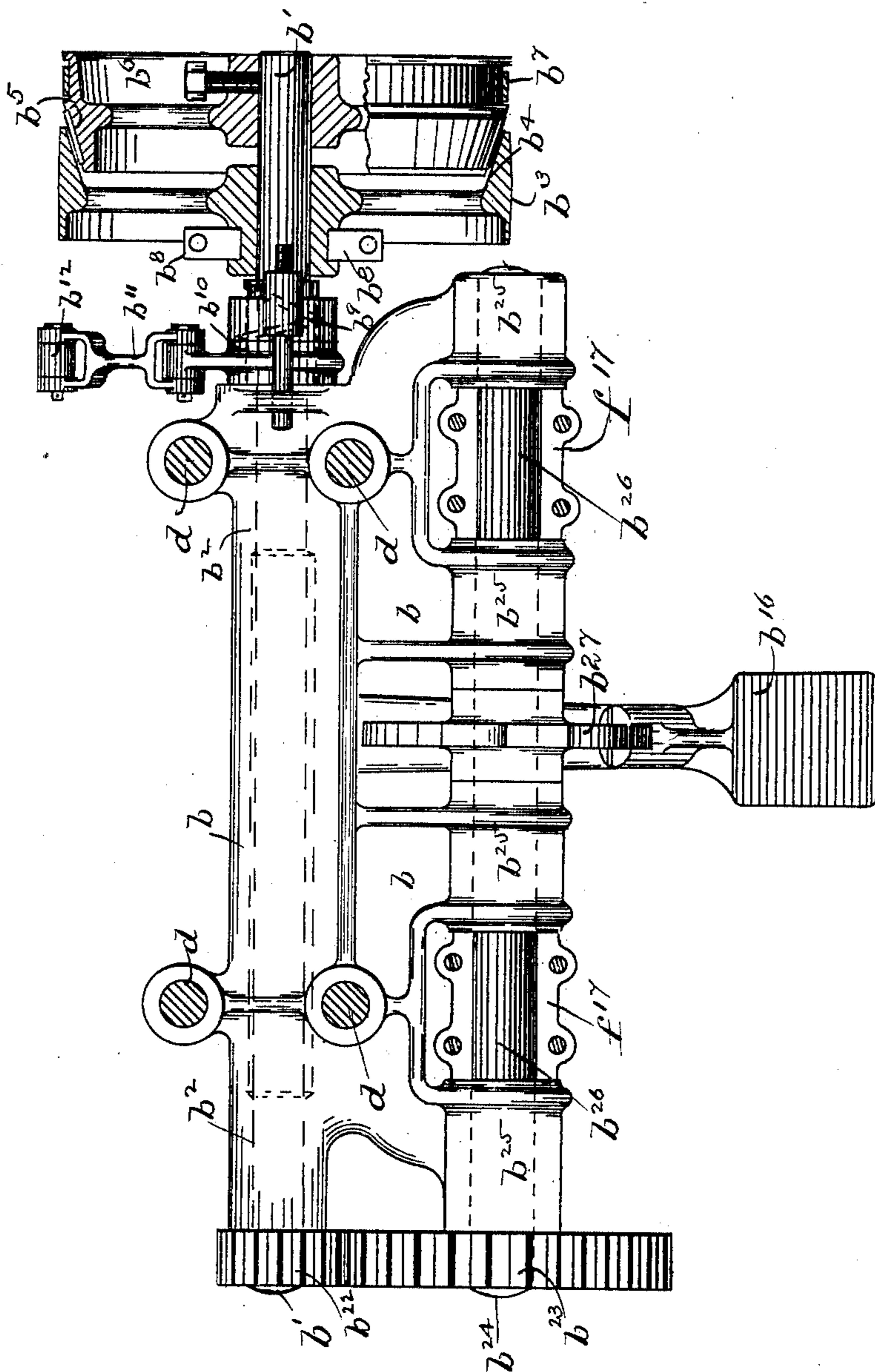
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FIG-3.



WITNESSES.
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(No Model.)

4 Sheets—Sheet 4.

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FIG-8-

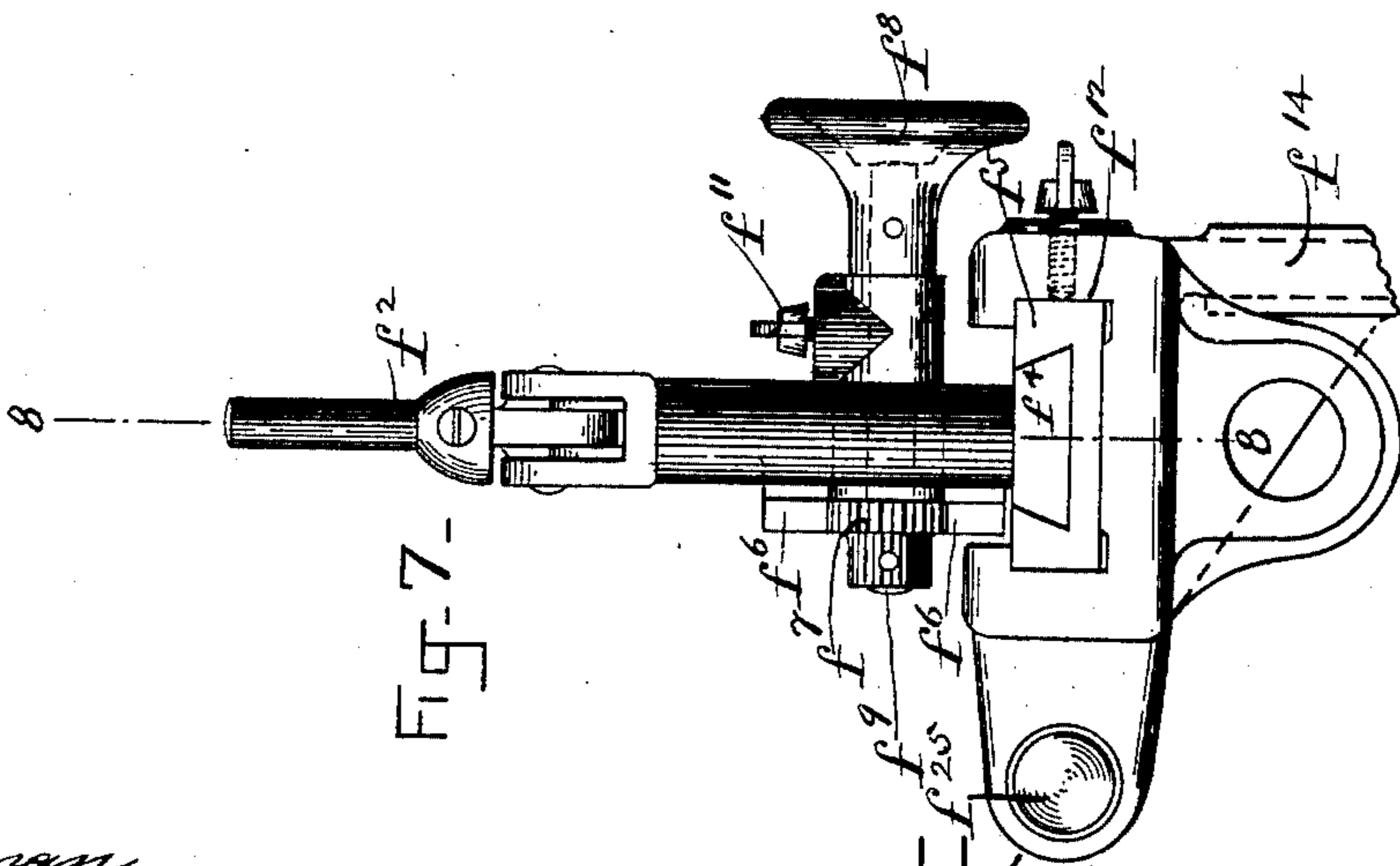
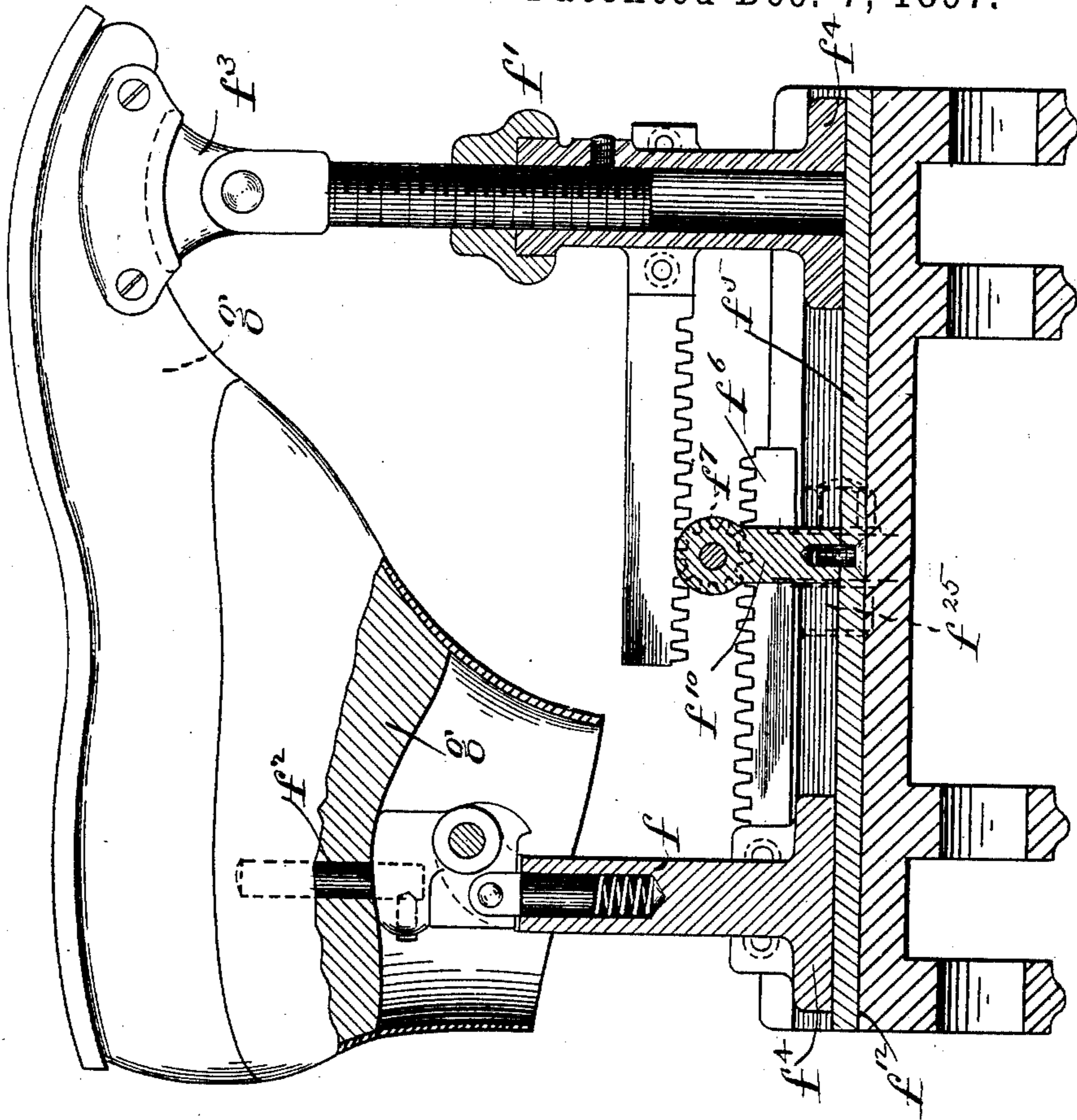


FIG-7-

WITNESSES-

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UNITED STATES PATENT OFFICE.

CHARLES S. GOODING, OF BROOKLINE, MASSACHUSETTS, ASSIGNOR TO
E. C. JUDD AND H. E. CILLEY, OF BOSTON, MASSACHUSETTS.

SOLE-LAYING MACHINE.

SPECIFICATION forming part of Letters Patent No. 595,097, dated December 7, 1897.

Application filed October 9, 1896. Serial No. 608,401. (No model.)

To all whom it may concern:

Be it known that I, CHARLES S. GOODING, of Brookline, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Sole Laying or Pressing Machines, of which the following is a specification.

This invention relates particularly to machines for pressing cement-coated outer soles against lasted uppers of boots and shoes and holding the soles against the uppers while the cement is setting or hardening.

The invention consists in certain improved mechanism for jacking the shoe by hand and also for applying power to press the shoe-sole against the upper after it has been "jacked."

The invention further consists in certain improvements in the jack or holder for the lasted boot or shoe, whereby the same may be quickly and easily adjusted to conform to various sizes and shapes of lasts.

Referring to the accompanying drawings, forming a part of this specification, Figure 1 is a front elevation of my improved sole-laying machine, one of the jacks being shown raised and the other depressed. Fig. 1^a is a detail view of the crank-shaft. Fig. 2 is a side elevation of the machine, one side of the supporting-frame being removed in order more clearly to illustrate the mechanism. Fig. 3 is an enlarged plan, partly in section, taken on line 3 3, Fig. 1. Figs. 4 and 5 are detail elevations illustrating the guide-roll of the jack-carrying arm in different positions. Fig. 6 is a section on line 6 6, Fig. 2. Fig. 7 is an enlarged end elevation of my improved jack. Fig. 8 is a longitudinal section of the jack, taken on line 8 8, Fig. 7.

Like letters refer to like parts throughout the several figures of the drawings.

In the drawings forming a part of this specification, *aa* represent side standards or frames which serve to support the working parts of the machine. The lower cross-head *b* is connected to the upper cross-head *c* by the stay-rods *d d*. The stay-rods *d d* are clamped at *a' a'* to the standards *aa* and are fastened at *e' e'* to the middle cross-head *e*. The cross-head *c* is formed with turrets *c' c'* to receive flexible pressers or forms *c² c²*, said pressers being of any suitable construction.

The driving-shaft *b'* rotates in bearings *b² b²* in the cross-head *b*. At one end of the shaft *b'* is a pulley *b³*. Said pulley rotates loose upon the shaft *b'* and is provided with a conical face *b⁴*, adapted to engage the conical face *b⁵* upon the clutch-pulley *b⁶*. The pulley *b⁶* is fast to the shaft *b'* and is encircled by a brake or friction strap *b⁷*.

The pulley *b³* is forced lengthwise of the shaft *b'* into contact with the clutch-pulley *b⁶* or out of contact therewith by means of the collar *b⁸*, screw-threaded sleeve *b⁹*, and nut *b¹⁰*. The nut *b¹⁰* is connected by the link *b¹¹* to the arm *b¹²*. Said arm *b¹²* is fast to the rock-shaft *b¹³*. The rock-shaft *b¹³* has bearings at *b¹⁴ b¹⁴* in the lower cross-head *b* and in the bracket *b¹⁵*, said bracket being fastened to the floor.

The treadle *b¹⁶* is fast to the rock-shaft *b¹³* and is provided with a friction-roll *b¹⁷*, which turns on a pin *b¹⁸* in a sliding pin *b¹⁹*. The sliding pin *b¹⁹* fits in a recess formed in the treadle *b¹⁶* and is pushed upwardly against a cam *b²⁷* by the spring *b²⁰*. A cross-pin *b²¹* prevents the pin *b¹⁹* from turning in the treadle *b¹⁶*.

Upon the driving-shaft *b'* is a pinion-gear *b²²*, which meshes with a gear *b²³*. Said gear is fast to a shaft *b²⁴*, having bearings at *b²⁵ b²⁵* in the cross-head *b*. Upon the shaft *b²⁴* are formed two cranks *b²⁶ b²⁶* at an angle of one hundred and eighty degrees with each other.

The cranks *b²⁶ b²⁶* are in line with the center line of the turrets *c' c'* and each receive and impart motion to a jack. Each jack comprises two last-supporting standards *f f'*. The standard *f* is provided with a spring-pin *f²* and supports the heel portion of the last *g*. The standard *f'* is provided with a toe-piece *f³* to support the toe of the same, the toe-piece *f³* being adjustable vertically to conform to varying shapes and sizes of lasts.

The standards *f f'* are each formed with a rectangular base *f⁴*, dovetailed to fit a groove or guide in the rectangular slide-block *f⁵*. Upon each of the standards *f f'* is fastened a rack *f⁶*, which meshes a gear *f⁷*, the racks being upon opposite sides of the gear. The gear *f⁷* is fast to a spindle *f⁹* and is turned by means of a hand-wheel *f⁸*. The spindle *f⁹* has a bearing in the bracket *f¹⁰*, said bracket being fastened by screws to the slide-block *f⁵*. It is evident that by turning the handle

f^8 the gear f^7 will be rotated and the standards f, f' will be caused to approach or recede from each other in order to fit varying sizes of lasts. When the standards have been brought to the desired distance from each other, they are locked in position by the set-screw f^{11} .

The slide-block f^5 is formed to slide in horizontal ways f^{12} upon the upper end of a vertical slide f^{14} . Said slide f^{14} is guided in ways f^{15} upon a swinging arm f^{16} , the lower end of which is attached to the crank b^{26} by the cap f^{17} . The slide f^{14} is moved up or down upon the arm f^{16} by the lever f^{18} and arm f^{20} . f^{18} and f^{20} are pinned to the rock-shaft f^{19} , said rock-shaft having bearings f^{21}, f^{21} on the arm f^{16} , and are connected to the slide f^{14} by the links f^{22}, f^{22} . The lever f^{18} is locked in position by the spring-pawl f^{23} , which engages the rack f^{24} , fast to the arm f^{20} . A guide-roll f^{25} upon the slide f^{14} engages a groove e^2 upon the cross-head e when the arm f^{16} is in a vertical position and the slide f^{14} is raised, as shown in Figs. 2 and 5. When the slide f^{14} is lowered, the roll f^{25} passes out of the groove e^2 , and the arm f^{16} may then be tipped forward upon the crank b^{26} into the position shown in dotted lines, Fig. 2, as hereinafter explained.

The operation of the machine as a whole is as follows: The arm f^{16} being tipped out in the position shown by dotted lines, Fig. 2, the operator places the cement-covered shoe thereon. He then places the outer sole upon the shoe in its proper location and pushes the arm into a vertical position, as shown in Fig. 1, on the left-hand side of the machine. The operator holding the arm in position with the left hand pushes down upon the handle of the lever f^{18} with the right hand, thus raising the shoe to the position shown in Fig. 2 and in the right-hand side of Fig. 1, bringing the shoe-sole against the presser c^2 by means of the links f^{22} and locking it in position by the pawl f^{23} and rack f^{24} . When in this position, it will be observed that the link f^{22} and the short arm of the lever f^{18} form a toggle-joint, so that when the last is raised in the position shown in Fig. 2 the link and the short arm of the lever approach a straight line, joining the points at which they are pivoted to the slide f^{14} and the swinging arm f^{16} , respectively. It will thus be seen that the shoe can be firmly pressed against the presser-pad c^2 by a comparatively slight pressure upon the end of the long arm of the lever f^{18} . Having jacked the shoe, as described, the operator depresses the treadle b^{16} , thus forcing the conical face of the pulley b^3 against the conical face of the clutch-pulley b^6 by means of the rock-shaft b^{13} , arm b^{12} , link b^{11} , nut b^{10} , sleeve b^9 , and collar b^8 . The friction-strap b^7 is at the same time released by means of the arms b^{28}, b^{28} , fast to the rock-shaft b^{13} , their outer ends being secured to the strap b^7 . When the treadle is depressed, the cam-roll b^{17} is withdrawn from the depression in the cam b^{27} until the periph-

ery of the roll nearly clears the outer periphery of the cam. The pulley b^3 , through the clutch, turns the shaft b' , and through the gears b^{22}, b^{23} the crank-shaft b^{24} is rotated, forcing one of the arms f^{16} , with its last and shoe, upward against its corresponding presser-pad and lowering the other arm and releasing it from the pressure applied by power. The shoe which is released is then lowered still farther by unlocking the pawl f^{23} and raising the outer end of the lever f^{18} until the guide-roll f^{25} clears the groove e^2 , when the operator pulls the arm f^{16} toward him, tipping said arm upon the crank b^{26} into the position shown in dotted lines, Fig. 2, the arm being stopped at this point from falling forward by the link f^{26} , which is pivoted to the arm f^{16} at f^{27} and encircles the stay-rods d, d , a collar f^{28} upon one of the stay-rods serving to hold up the link f^{26} . When the arm f^{16} is brought to the position shown in dotted lines, Fig. 2, and while the shoe upon the other arm or jack is under pressure, the operator removes the shoe from the jack, which is tipped forward, places another thereon, and repeats the above-described operation.

The clutch is automatically thrown out and the rotation of the machine stopped by the cam b^{27} , as follows: As soon as the operator has lowered the treadle until the clutch is thrown in, as described, the cam turns and locks the treadle down and the clutch in until another depression upon the cam, located at one hundred and eighty degrees from the first depression, comes opposite the cam-roll, when the spring b^{29} on the treadle raises the same and the roll enters the depression in the cam, throwing out the clutch and applying the friction brake or strap b^7 to overcome the momentum of the machine. In order to keep the clutch firmly pressed together and to allow for slight variations due to wear, the roll b^{17} does not quite clear the outer periphery of the cam when the operator depresses the treadle, so that when the cam is turned by the clutch the roll b^{17} is pressed down, compressing the spring b^{20} and holding the clutch firmly in place until the roll comes opposite the next depression in the cam, as described.

What I claim, and desire by Letters Patent to secure, is—

1. The jack or last support, composed of an arm, f^{16} , having a vertical slide f^{14} thereon, provided with two standards, f, f' , one having a jack-spindle f^2 and the other a toe-rest f^3 , a lever f^{18} pivoted to said arm and connected by toggle-links f^{22}, f^{22} with the vertical slide f^{14} whereby the slide may be moved up or down upon the arm, substantially as described for the purpose specified.

2. The jack or last support, composed of an arm f^{16} , having a vertical slide f^{14} thereon, provided with two standards f, f' one having a jack-spindle f^2 and the other a toe-rest f^3 adjustable simultaneously toward or away from each other, a lever f^{18} pivoted to said arm and connected by toggle-links f^{22}, f^{22} with

the vertical slide f^{14} and means for locking the slide against downward movement upon the arm, substantially as described for the purpose specified.

5 3. The jack or last support composed of an arm f^{16} having a vertical slide f^{14} thereon provided with two standards f, f' one having a jack-spindle f^2 and the other a toe-rest f^3 , adjustable simultaneously toward or away
10 from each other, and also capable of adjustment upon said slide while maintaining their relative distance apart, a lever f^{18} pivoted to said arm and connected by toggle-links f^{22}, f^{22} with the vertical slide and means for lock-
15 ing the slide against downward movement upon the arm, substantially as described for the purpose specified.

4. In a sole-laying machine, a sole-presser, a crank-shaft, an arm f^{16} pivoted to the crank-
20 shaft, a slide f^{14} provided with two standards f, f' one having a jack-spindle f^2 and the other a toe-rest f^3 , a lever f^{18} pivoted to said arm and connected by toggle-links f^{22}, f^{22} with a vertical slide f^{14} whereby the slide may be
25 moved up or down upon the arm substantially as described for the purpose specified.

5. In a sole-laying machine, a sole-presser,

a crank-shaft, an arm f^{16} pivoted to the crank-shaft, a slide f^{14} provided with two standards f, f' , one having a jack-spindle f^2 and the
30 other a toe-rest f^3 adjustable simultaneously toward or away from each other, a lever f^{18} pivoted to said arm and connected by toggle-links f^{22}, f^{22} with the vertical slide f^{14} and means for locking the slide against downward
35 movement upon the arm, substantially as described for the purpose specified.

6. In a sole-laying machine a sole-presser, a crank-shaft, an arm f^{16} pivoted to the crank-
shaft, a slide f^{14} provided with two standards
40 f, f' one having a jack-spindle f^2 and the other a toe-rest f^3 , adjustable simultaneously toward or away from each other, and also capable of adjustment upon said slide while maintaining their relative distance apart, a
45 lever f^{18} pivoted to said arm and connected by toggle-links f^{22}, f^{22} with the vertical slide f^{14} and means for locking the slide against downward movement upon the arm, substan-
tially as described for the purpose specified. 50

CHARLES S. GOODING.

Witnesses:

GEO. H. CUSHMAN,
WM. H. VARNUM.