

(Model.)

J. W. LINGLEY.

SEWING MACHINE.

No. 368,538.

Patented Aug. 16, 1887.

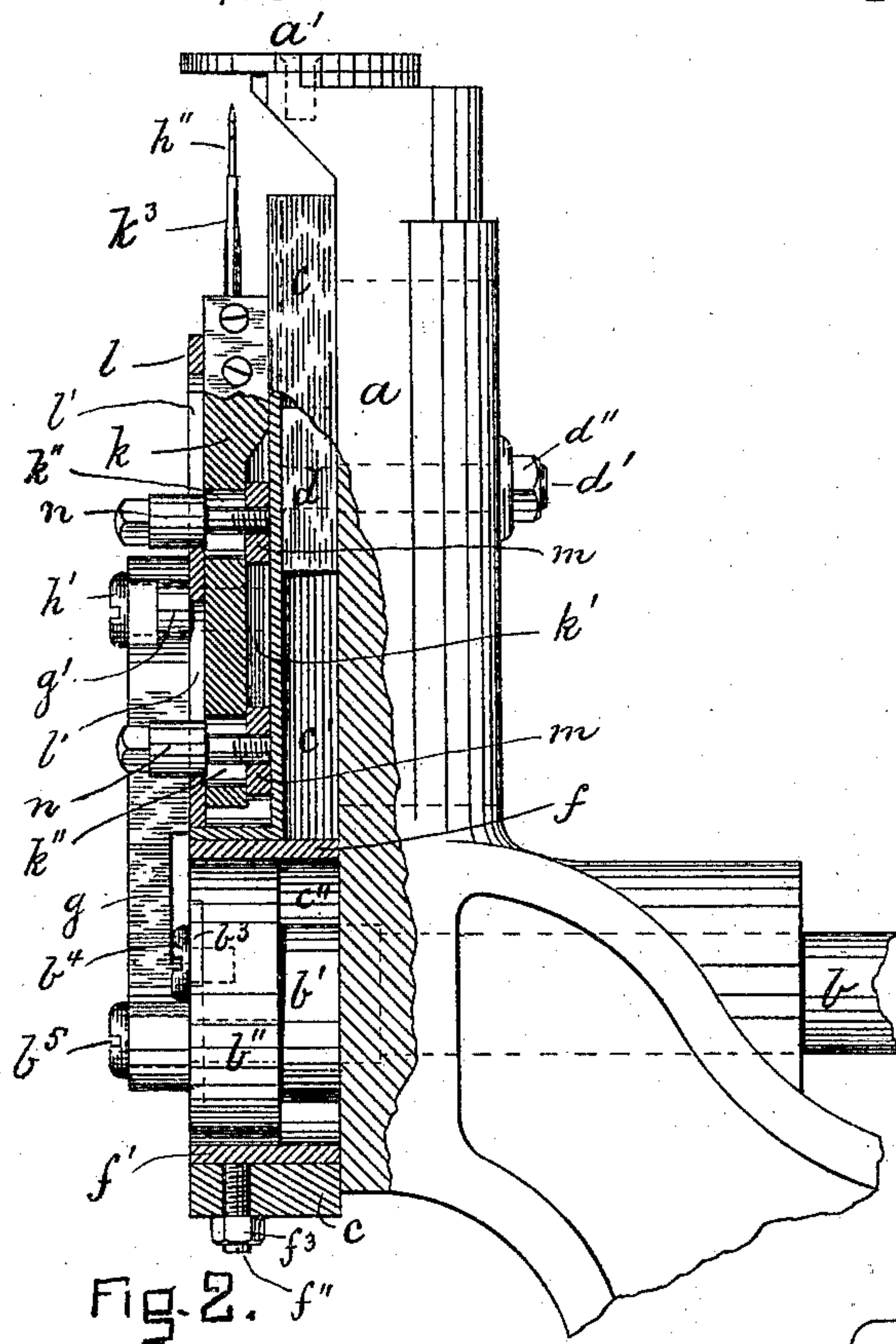


Fig. 2. f''

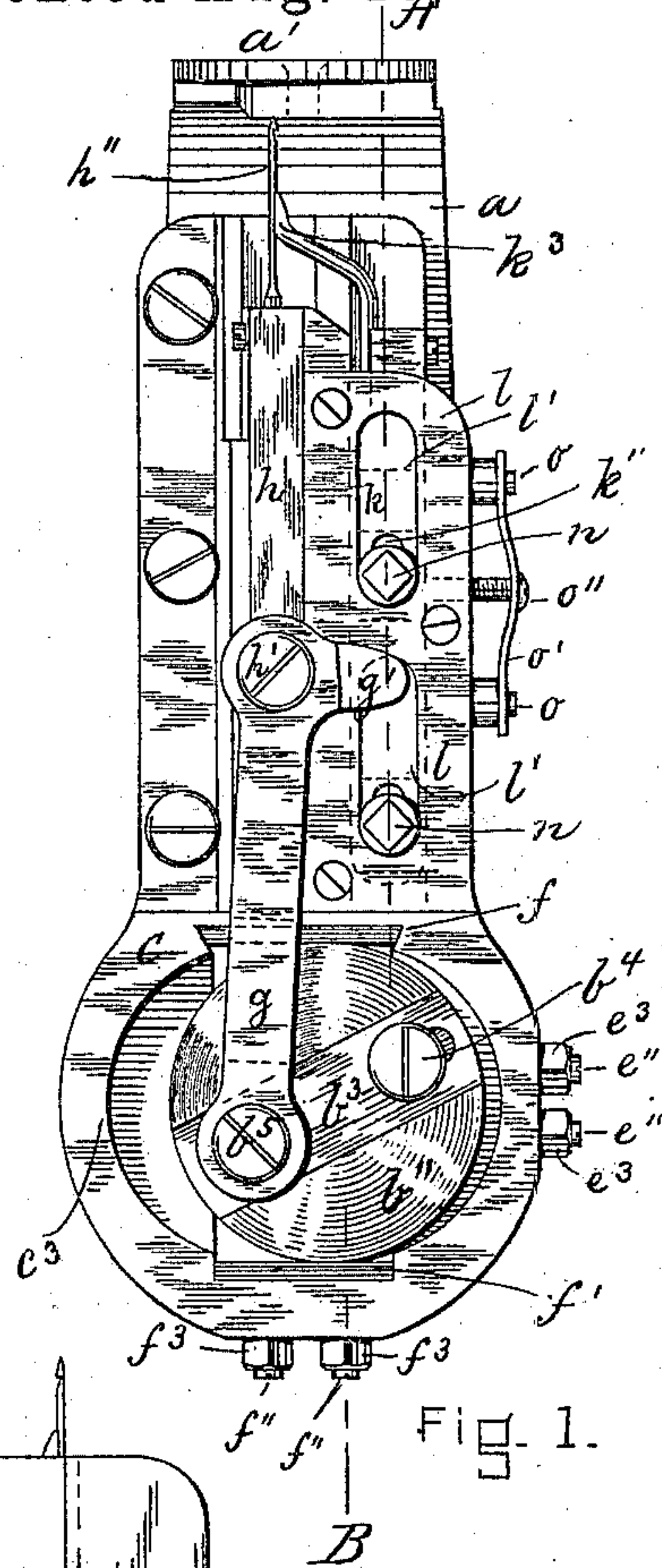


Fig. 1.

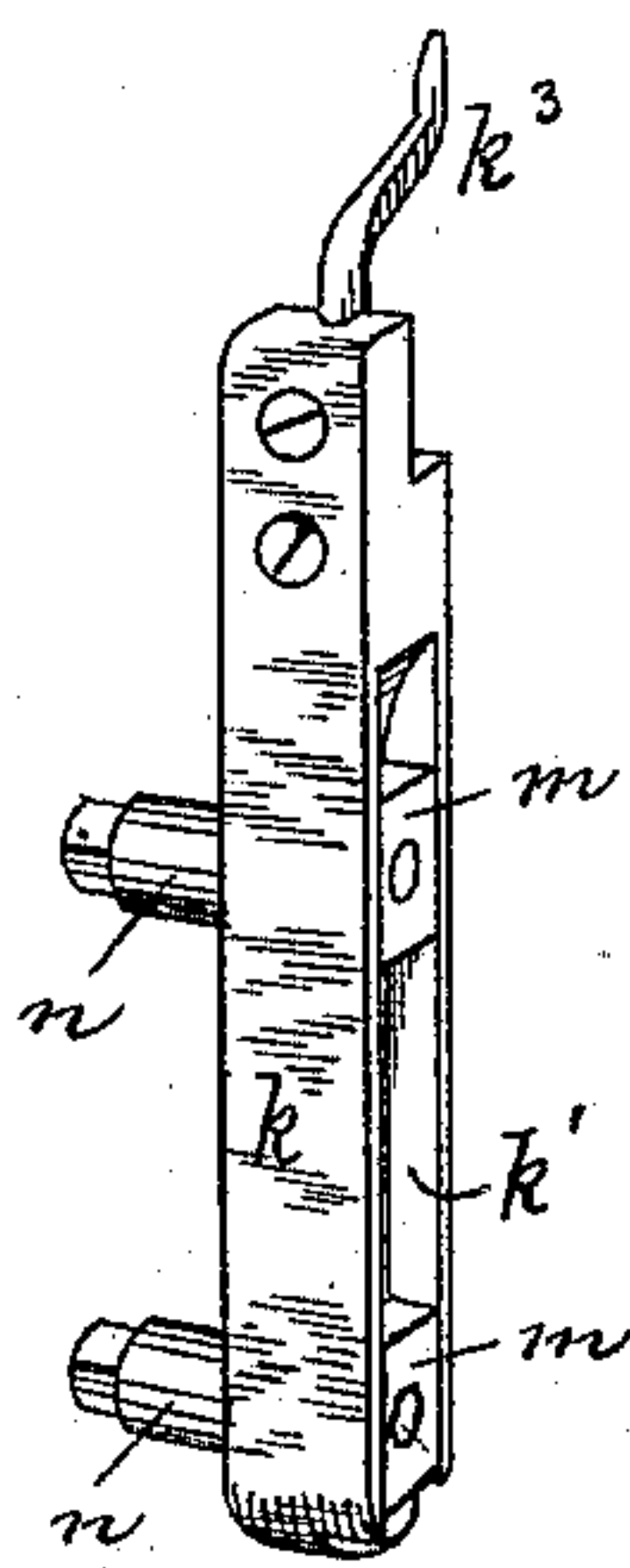


Fig. 4.

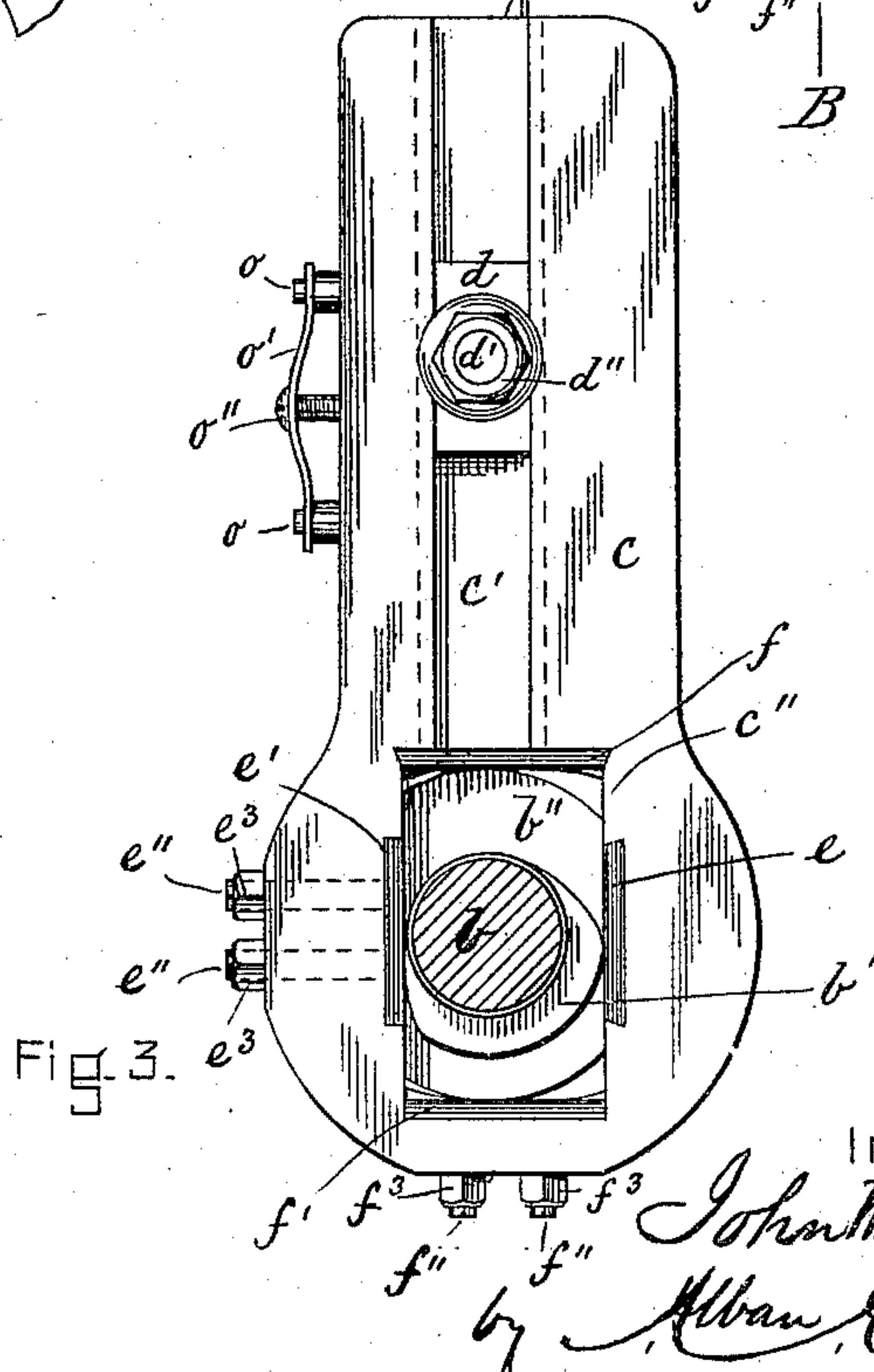


Fig. 3.

WITNESSES.
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UNITED STATES PATENT OFFICE.

JOHN W. LINGLEY, OF QUINCY, MASSACHUSETTS, ASSIGNOR TO DAVID WHITTEMORE, OF SAME PLACE.

SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 368,538, dated August 16, 1887.

Application filed December 11, 1886. Serial No. 221,280. (Model.)

To all whom it may concern:

Be it known that I, JOHN W. LINGLEY, a citizen of Canada, and a resident of Quincy, in the county of Norfolk and State of Massachusetts, have invented new and useful Improvements in Sewing-Machines, of which the following, taken in connection with the accompanying drawings, is a specification.

This invention relates to improvements in the feed-bar and cast-off bar for sewing-machines, and it is carried out as follows, reference being had to the accompanying drawings, where—

Figure 1 represents a front elevation of the feed-bar and its connections to the driving-shaft. Fig. 2 represents a sectional view on the line A B, shown in Fig. 1. Fig. 3 represents a rear view of the feed-bar; and Fig. 4 represents a detail perspective view of the cast-off bar.

Similar letters refer to similar parts, wherever they occur, on the different parts of the drawings.

a represents the work-supporting post on a sewing-machine, as usual, and *a'* is the work-supporting plate on top of it.

b is the rotary driving-shaft, as usual, such shaft being supported in a horizontal bearing in the lower part of the post *a* in the ordinary way.

c is the feed-bar, having on its rear side a vertical groove, *c'*, in which is up and down adjustable the block *d*, to which is pivoted the fulcrum-pin *d'*, passing through a vertical slot, as usual, in the post *a*, and secured to the latter by means of the nut *d''*. (Shown in Figs. 2 and 3.)

By adjusting the position of the block *d* in the groove *c'* and the bolt or fulcrum-pin *d'* in the slot in post *a* the desired amount of feed of the needle is obtained, as is common in sewing-machines of this kind.

To the driving-shaft *b* is secured the cam or eccentric *b'*, located in a vertical slot, *c''*, in the rear portion of the bar *c*, by which arrangement a rocking motion is imparted to the said feed-bar from the rotary driving-shaft *b*. For the purpose of imparting a positive rocking motion to said feed-bar, and also to enable the wear on the interior vertical sides of the slot

c'' (against which the cam *b'* acts) to be taken up from time to time, I secure permanently to one of the vertical sides of said slot *c''* a hardened-steel plate, *e*, preferably inserted in a dovetailed recess in the feed-bar, as shown in Fig. 3. In a groove or recess on the opposite side of said vertical slot *c''*, I locate an adjustable hardened-steel plate, *e'*, which is made adjustable in a horizontal direction by means of pressure-screws *e'' e''*, screwed through the side of the feed-bar *c*, their inner ends bearing against the outside of the steel plate *e'*, and their outer ends preferably provided with set-nuts *e³ e³*, as shown in Fig. 3.

To the front end of the shaft *b* is secured the concentric circular disk *b''*, on which is arranged in a groove the adjustable crank-bar *b³*, as usual, which bar is secured to the disk *b''* by means of the set-screw *b⁴*, that passes through a slot-hole in the crank-bar *b³*, as shown in Fig. 1. The bar *b³* is provided with the usual crank pin or screw, *b⁵*, to which the lower end of the needle-bar connection or link *g* is pivoted, as shown in Figs. 1 and 2.

The slot *c³* in the lower front end of the feed-bar *c* is long enough in a horizontal direction to permit said feed-bar to rock on the fulcrum-pin *d'* without the ends of such slot coming in contact with the disk *b''*. The vertical opening or extent of said slot *c³* is equal to the diameter of the disk *b''*, by which the feed-bar *c* is prevented from moving up or down, and to prevent such parts of the slotted feed-bar that are in contact with the disk *b''* from wearing out, as well as for the purpose of taking up the slack or wear, I insert at top of slot *c³* a hardened-steel plate, *f*, preferably in a dovetailed recess, as shown in Figs. 1, 2, and 3, and in a slot or recess in the lower part of the feed-bar *c*, I locate another hardened-steel plate, *f'*, which is adjustable toward the disk *b''* by means of screws *f'' f''*, screwed through the feed-bar *c*, their upper ends resting against the under side of the plate *f'*, as shown in Figs. 1 and 2.

f³ f³ are set-nuts on the projecting ends of the screws *f'' f''*, for the purpose of securing said screws firmly in positions after adjustment.

h is the needle-bar, as usual, vertically movable

ble in guides on the feed-bar, said needle-bar being hinged, by means of the pin or screw h' , to the upper end of the link g , as shown in Figs. 1 and 2.

5 The link g is provided in its upper end with a side projection, g' , (shown in Fig. 1,) which projection serves to impart a vertical intermittent reciprocating motion to the cast-off bar k , as will be hereinafter more fully described. The said cast-off bar k is vertically
10 movable in suitable guides on the feed-bar c , and it is prevented from dropping out of such guides by means of the cap plate or cover l , secured to the cast-off-bar guides or other stationary parts of the feed-bar c . The said cap
15 or cover l is provided with slotted perforations $l' l'$, to allow the projections on the cast-off bar to move freely therein.

The cast-off bar k has on its rear side a longitudinal groove, k' , (shown in Figs. 2 and 4,) in which are arranged the vertically-adjustable nuts $m m$, into which the inner ends of the studs or projections $n n$ are screwed after passing through the slot-holes $k'' k''$ in the front of
20 the cast-off bar k , as shown in Figs. 1, 2, and 4.

h'' is the needle secured, as usual, to the upper end of the needle-bar h , and k^3 is the cast-off secured in a suitable manner to the upper end of the cast-off bar k .

30 $o o$ are friction-blocks passing through perforations made in the side of the feed-bar c , their inner ends being pressed against the side of the cast-off bar k by means of the spring o' , secured in an adjustable manner to the feed-bar c by means of the set-screw o'' , or equivalent friction device, to hold the cast-off bar in the position within its guides in which it is left by the action of the link-projection g' , and until it is again reciprocated by the latter.

40 As the link g is moved up and down by the

action of the crank-pin b^5 , it comes in contact with the studs $n n$ on the cast-off bar k , and thus imparts an intermittent reciprocating motion to the latter.

By means of the nuts $m m$, groove k' , and slots $k'' k''$ in the cast-off bar the studs $n n$ may be adjusted up and down on the cast-off bar and firmly secured to the latter in positions according the desired throw of the cast-off bar relative to the motion of the needle-bar.
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Having thus fully described the nature, construction, and operation of my invention, I wish to secure by Letters Patent, and claim—

1. In a sewing-machine, the rotary shaft b , having crank-pin b^5 , the needle-bar h , and link g , pivoted to said crank-pin and needle-bar and having the projection g' , in combination with the cast-off bar k , provided with the studs $n n$, as and for the purpose set forth.
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2. The improved cast-off bar k , having the longitudinal groove k' , the nuts $m m$, adjustable within said groove, and the studs $n n$, secured to said nuts $m m$, as and for the purpose set forth.
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3. The feed-bar c , having a perforation in its lower end for the reception of the cam b' and disk b'' , in combination with said cam b' and disk b'' , and with the stationary plates $e f$ and adjustable plates $e' f'$ and their regulating screws and nuts $e'' e^3 f'' f^3$, as and for the purpose set forth.
65 70

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 6th day of December, A. D. 1886.

JOHN W. LINGLEY.

Witnesses:

ALBAN ANDRÉN,
W. L. WHITTEMORE.