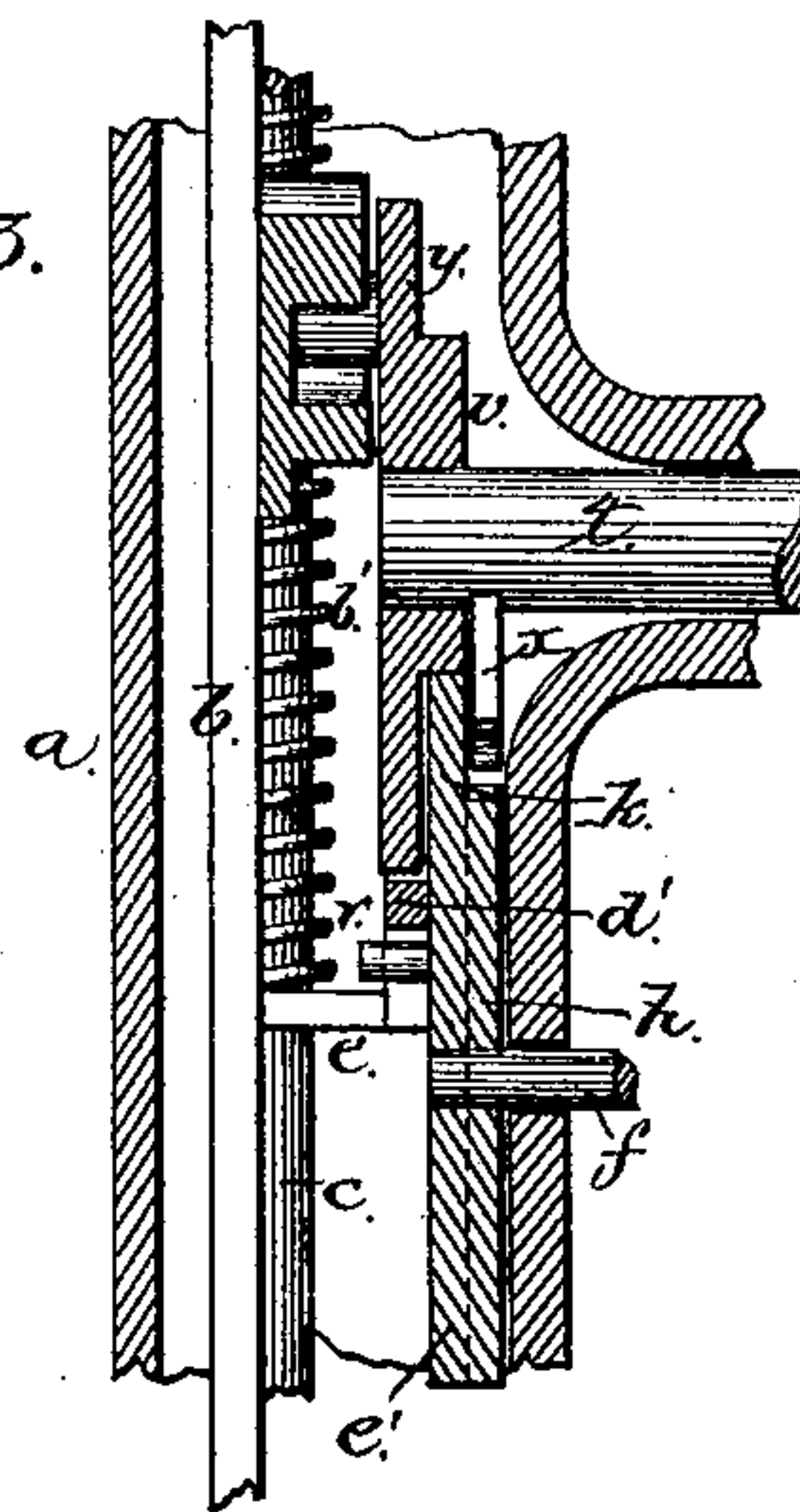
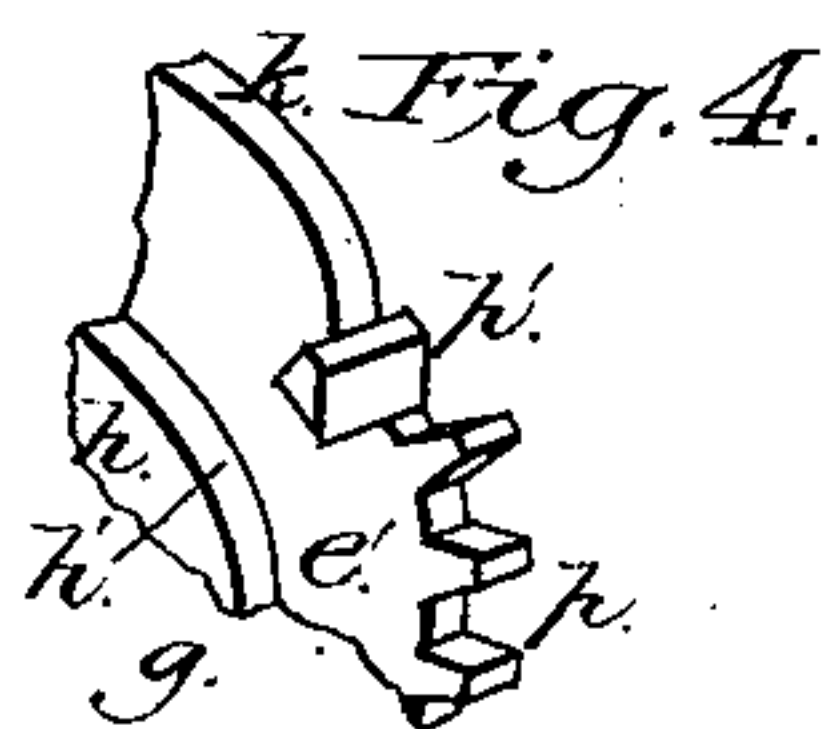
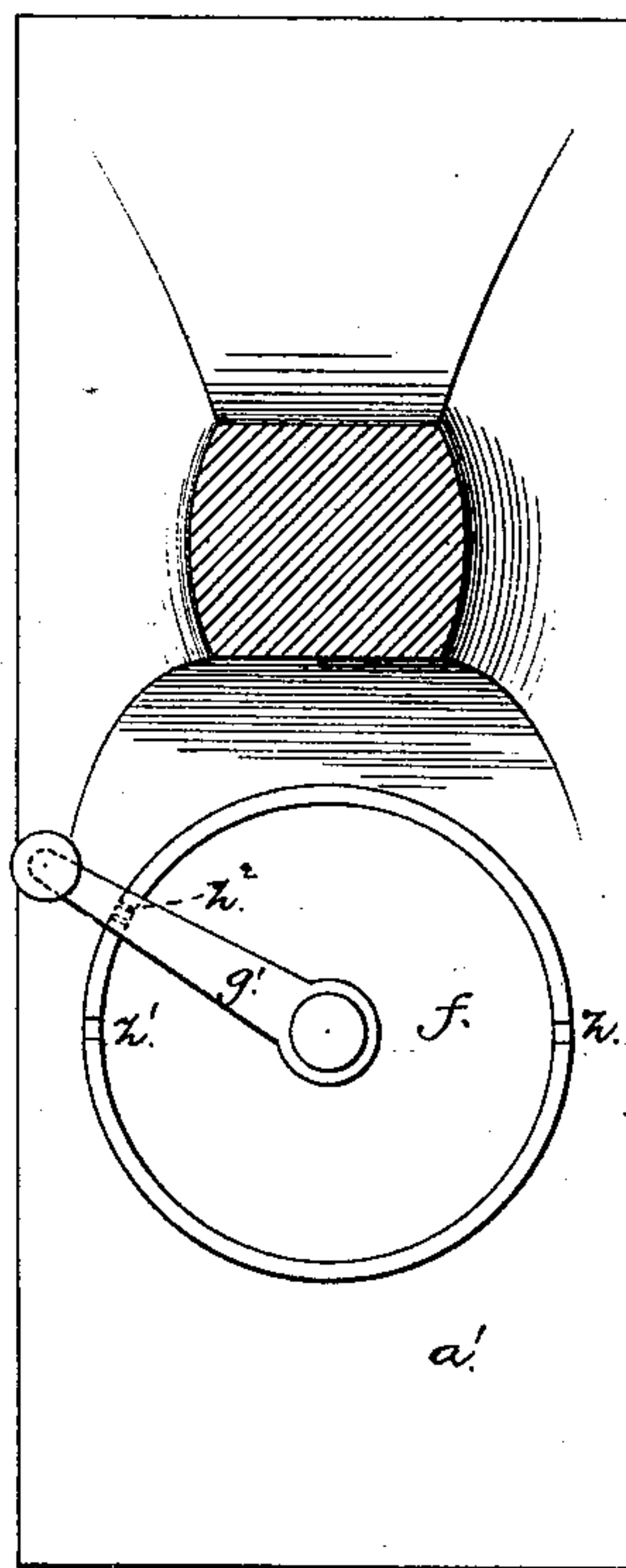
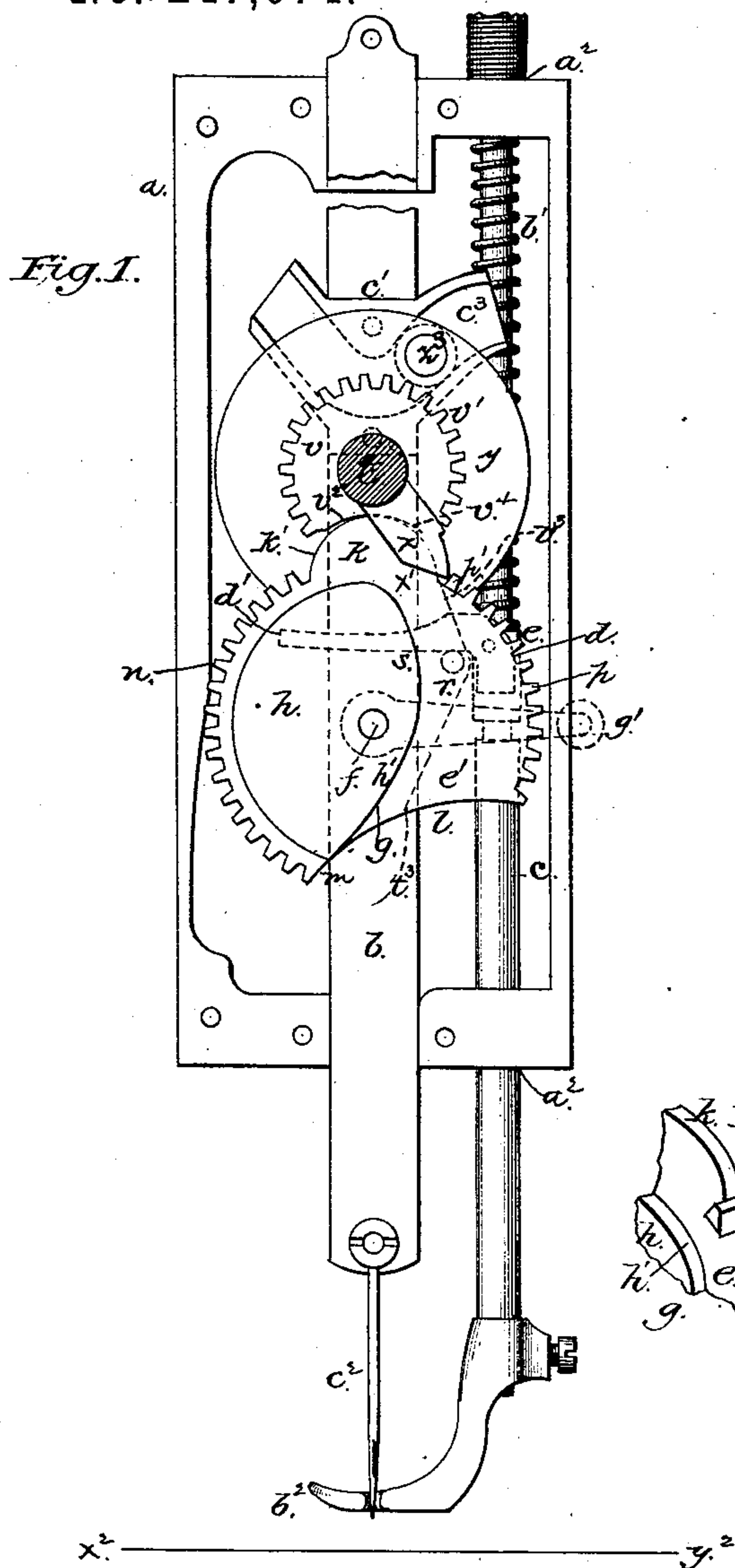


(No Model.)

T. LANSTON.
SEWING MACHINE.

No. 247,074.

Patented Sept. 13, 1881.



WITNESSES

John A. Ellis.
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UNITED STATES PATENT OFFICE.

TOLBERT LANSTON, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR
OF ONE-HALF TO ALBERT F. KINGSLEY, OF SAME PLACE.

SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 247,074, dated September 13, 1881.

Application filed May 4, 1881. (No model.)

To all whom it may concern:

Be it known that I, TOLBERT LANSTON, a citizen of the United States, resident of Washington, in the county of Washington and District of Columbia, have invented a new and valuable Improvement in Sewing-Machines; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of the face-plate of the head having the operating parts, looking from the rear. Fig. 2 is a rear view of the back plate, showing the handle. Fig. 3 is a vertical section taken across the head. Fig. 4 is a detail perspective.

This invention relates to improvements in sewing-machines, the object of which is the production of a device whereby the presser-foot and needle-bar, or the former alone, may be lifted from the work with a single movement and the machine started when desired.

To these ends the invention consists in a gear of peculiar construction placed in the machine-head, all as hereinafter set forth.

In the accompanying drawings, the letter *a* represents the outer or face plate of the head, having the rabbets for the needle-bar *b* and holes at *a*² for the presser-foot bar *c*, the former having secured to it the usual cam V-grooved plate, *c'*, and needle *c*², and the latter the encircling spring *b'* and presser-foot *b*².

Keyed to the bar *c* by its eye *e*, forming a bearing for the lower end of spring *b'*, is a bracket-arm, *d*, (shown in dotted lines, Fig. 1,) the right-angled arm *d'* of which extends across the head, inside of the needle-bar *b*, nearly to the other side of the head-recess.

Journaled by its spindle *f* in the rear plate, *a'*, a short distance below the arm *d'*, is a gear-wheel, *g*, having a plane of rotation between said arm and plate, a periphery extending beyond the arm, and an operating crank-handle, *g'*, outside of the plate on the spindle *f*. In Fig. 1 this wheel is shown in the position it would occupy in the machine, the handle *g'* being in dotted lines, showing its relative position.

The wheel *g* has two thicknesses—the thin

portion, *e'*, and a thicker one, *h*, forming a shoulder, *h'*, the thicker portion only needing to be sufficiently wide to give a good bearing of the wheel on its spindle, the portion *e'* extending beyond the portion *h* all around. This wheel *g* has formed at its periphery, at a right angle to the crank-handle *g'*, a lug, *k*, having the curved edge *k'* and a thickness the same as thin portion *e'*. Nearly diametrically opposite this lug, but extending more into the quadrant next the handle, is a curved recess, *l*, formed in the periphery of the wheel, and extending from a point, *m*, of the thicker portion *h*, and made entirely in the thin portion *e'*.

The remainder of the periphery of the wheel is provided with teeth, forming the two convex curved racks *n* and *p*, formed in the thin portion, one rack on the side of the other, opposite to the crank-handle. Secured to this wheel in the quadrant formed between the handle *g'* and lug *k*, and projecting from the inner face of said wheel, is a pin, *r*, which comes in under the arm *d'*.

Secured to the operating-shaft *t*, just above and in the plane of the thin portion of the wheel *g*, is another wheel, *v*, having teeth *v'* upon its periphery, except a portion at which is formed a recess, *v*², corresponding in shape to the lug *k*. The centers of these wheels are at such distance apart that when the said recess and lug are in such position that their middle radii are aligned the two wheels will be mutually locked. This locking of the wheels is effected as follows: The handle *g'*, which is of spring metal, is provided with a lug adapted to the notches *z* *z'* *z*² on the outside of the rear plate shown in Fig. 2. When the handle *g'* is in the position shown in Fig. 1 the lug thereon is sprung into the notch *z'*, and as said handle is rigidly secured to the spindle *f*, to which the wheel *g* is also fixed, said wheel is thus held at rest, and with it the intermeshing wheel *v*.

Fastened to the wheel *v* upon the same face as that of the larger wheel, on which is the shoulder *h'*, is a lug, *x*, having a slant, *x'*, which lug projects over the corner *v*⁴ of recess *v*².

Secured on the shaft *t* to the outside of wheel *v* is the disk *y*, carrying the crank-pin *z*³ for moving in groove *c*³ of plate *c'*, whereby the needle-bar is operated. The position of this

pin z^3 with relation to the wheel v is such that said pin will operate to hold the needle-bar up or at the end of the upward stroke when the geared wheels are interlocked, as stated before, and shown in Fig. 1.

The line $x^2 y^2$ represents the top of the table or platform for holding the work. When the machine is stopped the presser-foot is down on the work and the needle at the bottom, top, or midway of its stroke. With the mechanism described they both can be raised clear of the work.

From the drawings and description of parts it will be seen that their relation is such that when the presser-foot and needle both are down the curved lug k would hang vertically, the handle g have the position opposite to that of the handle in Fig. 1, and, by consequence, the teeth of rack n ready to engage those of the wheel v , said handle being held in notch z' .

To lift both needle and presser-foot, the handle g' is turned to the right, down, and up to the position shown in dotted line, Fig. 1. The pin r , catching under arm d' close to the presser-foot bar, raises the latter. At the same time the rack n , turning the wheel v and shaft t , raises the needle-bar until the lug k rests in recess v^2 , when the lug on the handle g' is sprung in notch z' on the outside of the rear plate, and the parts are locked, as before described.

If the needle should be in the midst of a stroke, the rack n will turn the wheel v and shaft t for the remainder of the stroke, and then the parts will lock. As the wheel g gives this partial movement to the wheel v the latter is turned until the recess v^2 has the position shown in Fig. 1. The wheel g is turned still farther until the projection k comes into the recess, as before described. As the partial movement is given the wheel v the throw of wheel g and its engagement with the wheel v would tend, by imparted motion, to drive the said wheel v so far that the teeth of this wheel would come into engagement with the rack n after the recess v^2 had been passed by this rack. The lug x prevents this, for, by bearing on the shoulder h back of the rack n , it keeps the wheel v from being thrown too far. If the needle be at the top of the stroke, the recess v^2 will be at the downward point, as shown in Fig. 1, when, of course, the rack would not, and is not intended to, affect its position. It will be seen that when the recess v^2 has this position, as shown in said Fig. 1, the lug x projects downwardly. As the wheel g turns, the lug x comes in contact with the thicker portion h above rack n and keeps the wheel v from turning. This contacting of the slant

x' of lug x with the wheel g occurs when the needle-bar is up, or partially so, and the teeth of wheel g would have a tendency to throw wheel v past the locked position, which contacting prevents this. When the needle is up, on stopping the machine the presser-foot alone is to be raised, and this is done by turning the handle up from the notch z' to the notch z^2 , which causes pin r to catch under the end of arm d' , thus lifting the presser-foot bar. The recess l , being now upward, allows of motion of wheel g without engaging with wheel v as the above movement is made, whereby the presser-foot is lifted without affecting the needle-bar at all. When the parts are raised and it is desired to start the machine, the handle g is turned up to the right all around to its position in notch z , which causes rack p to engage the teeth of wheel v , and by turning shaft t to start the machine. To insure the engagement of rack p with wheel v , the upper tooth of said rack is made thicker, as shown at p' , whereby it will strike lug x , and by partially rotating the shaft t insure the said engagement.

If desired, the starting device may be omitted and the mechanism be used only as a lifter, in which case the thin portion e' will be cut off at the dotted line $t^3 v^3$, leaving off rack p , which will be done for machines with short heads.

I claim—

1. The combination, with the needle and presser-foot bars of a sewing-machine, of devices, substantially as described, adapted to conjointly or independently engage said bars, and a convenient handle for operating said devices, whereby the said bars may be raised, as set forth.

2. The combination, with the driving-shaft having a gear-wheel secured thereto, of the needle and presser-foot bars and devices, substantially as described, adapted to engage said wheel and bars, whereby said driving-shaft may be turned and both bars simultaneously lifted, as set forth.

3. Wheel g , having rack n , lug k , and pin r , in combination with wheel v , having recess v^2 , and lug x , bracket d , and the needle and presser-foot bars, the whole forming a device for lifting and holding up the needle and presser-foot, as set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

TOLBERT LANSTON.

Witnesses:

PHILIP O. MASI,
W. H. SINGLETON.