

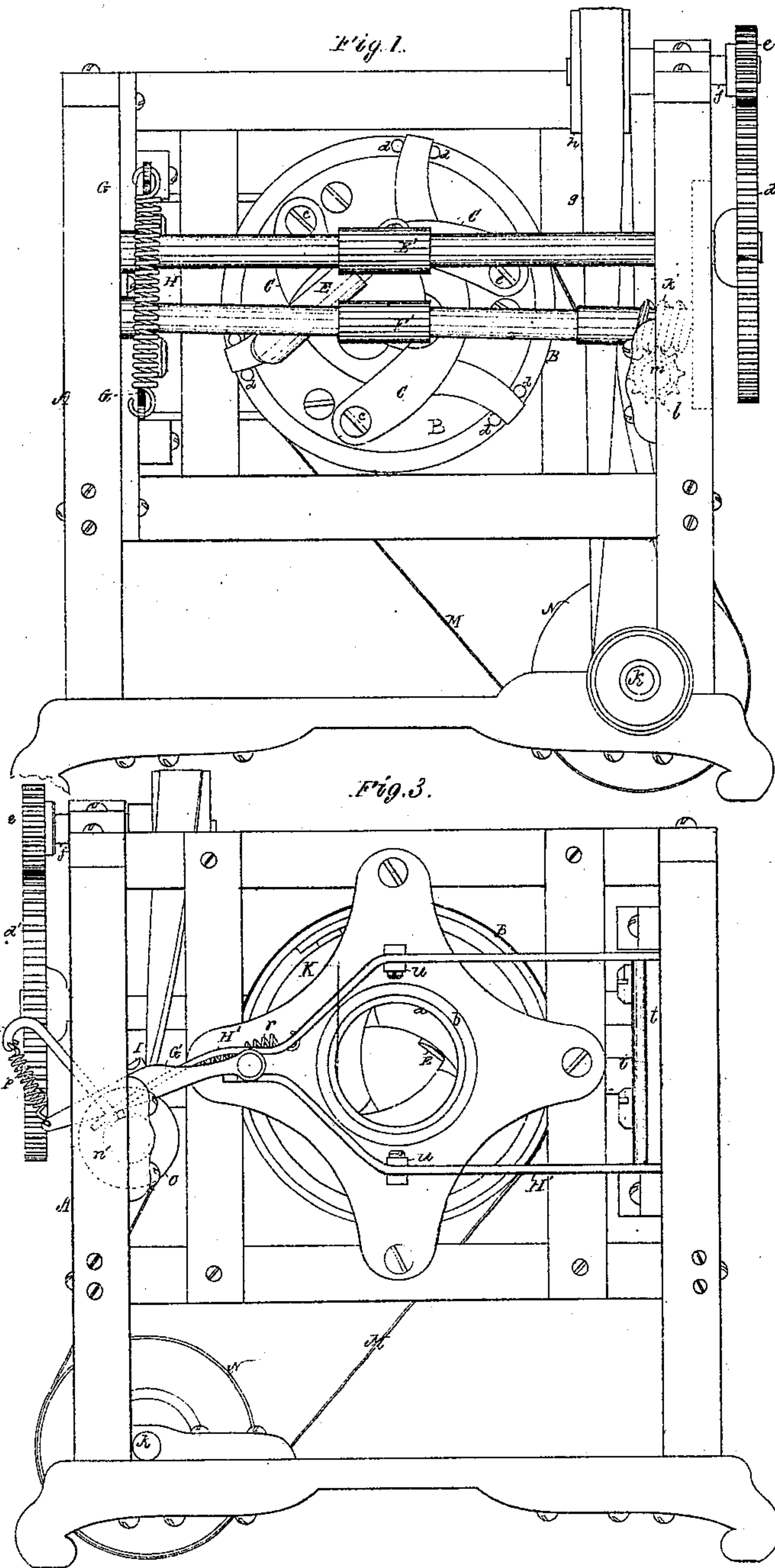
S. U. King

2. Sheets. Sheet. 1.

Lathe.

No. 109,912.

Patented Dec. 6. 1870.



Witnesses
S. A. Piper.
J. Brown

S. U. King.
by his attorney
R. H. Eddy

S. U. King,

2. Sheets, Sheet 2.

Inventor.

No. 102,912.

Patented Dec. 6. 1870.

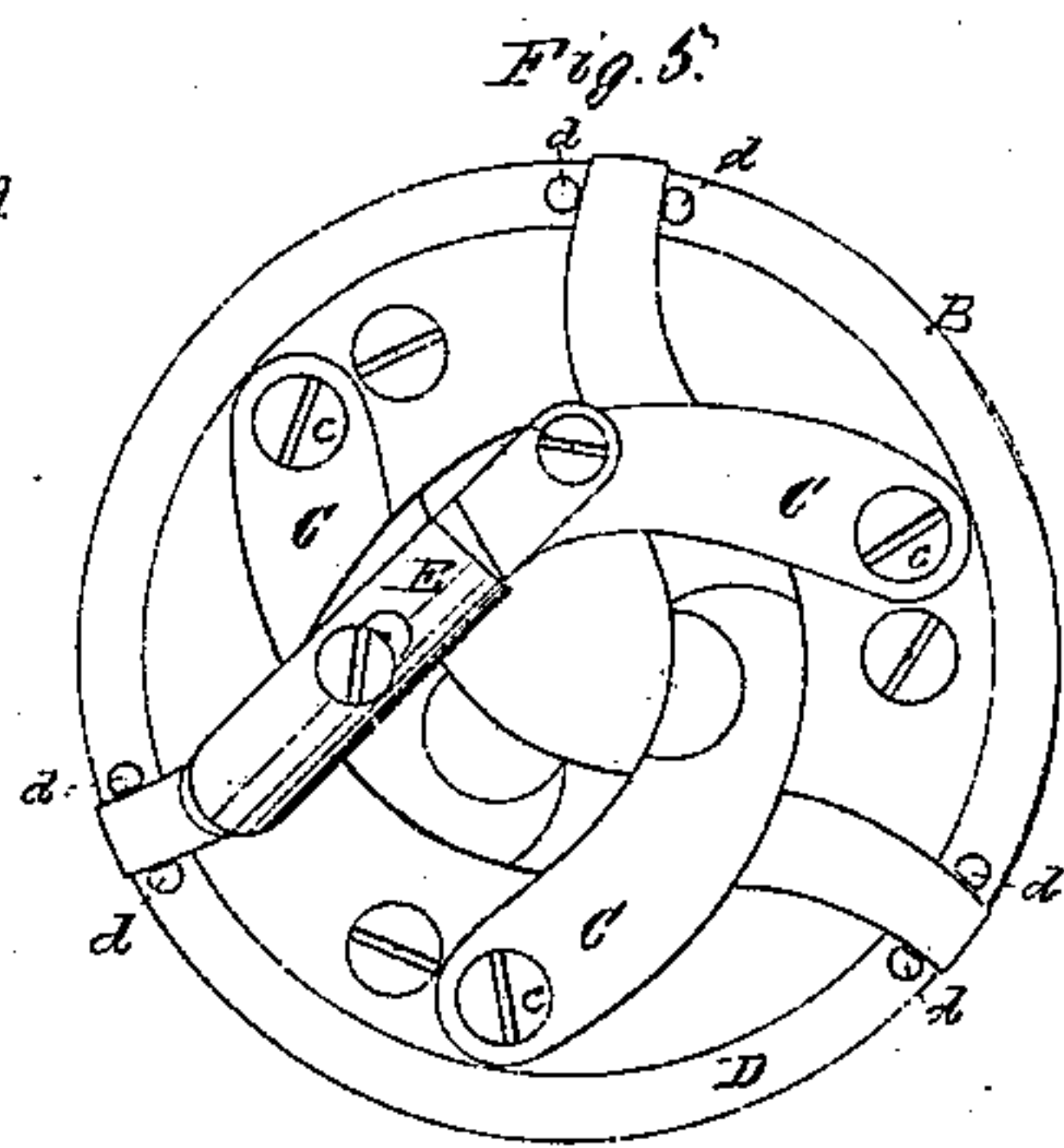
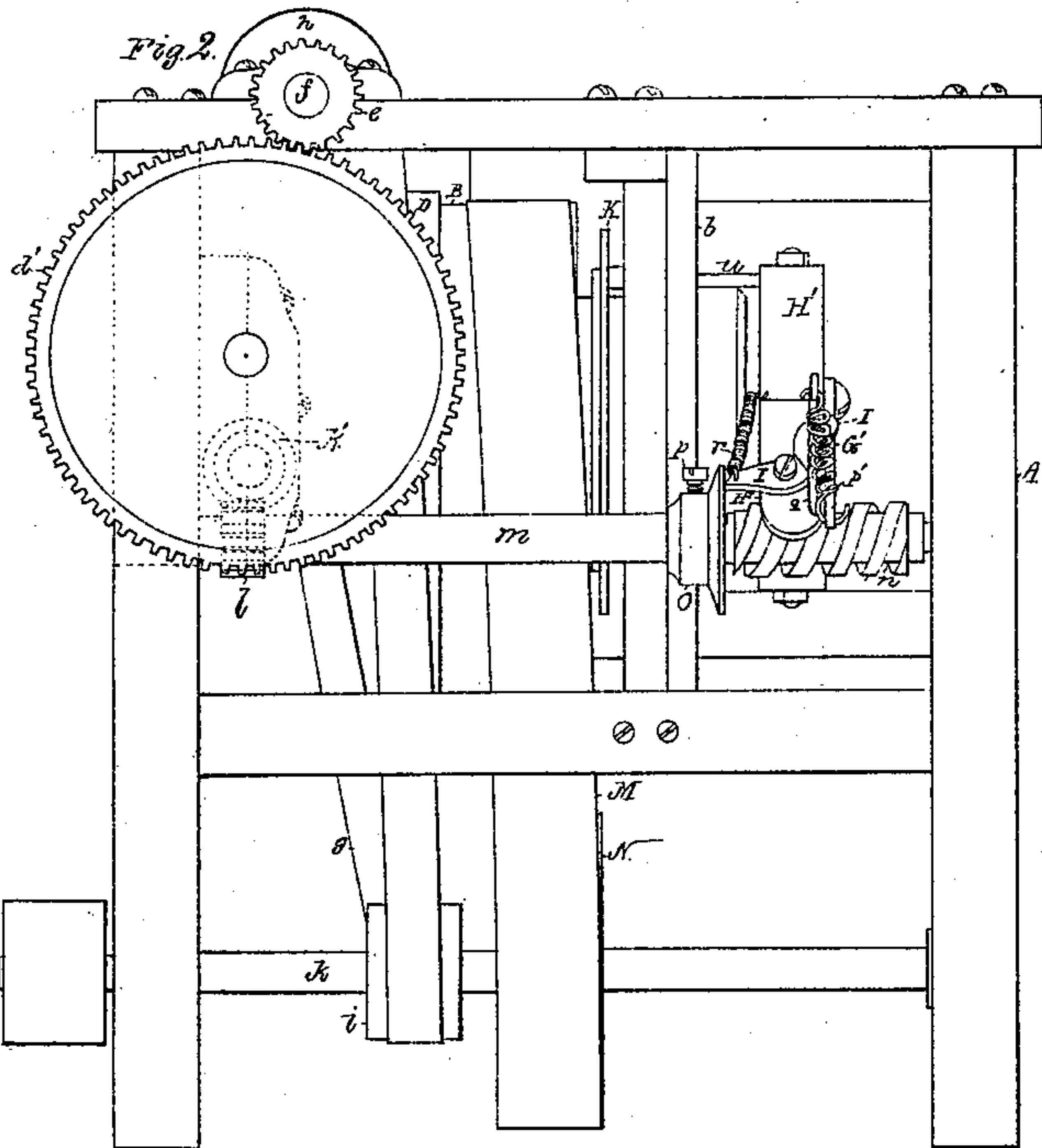
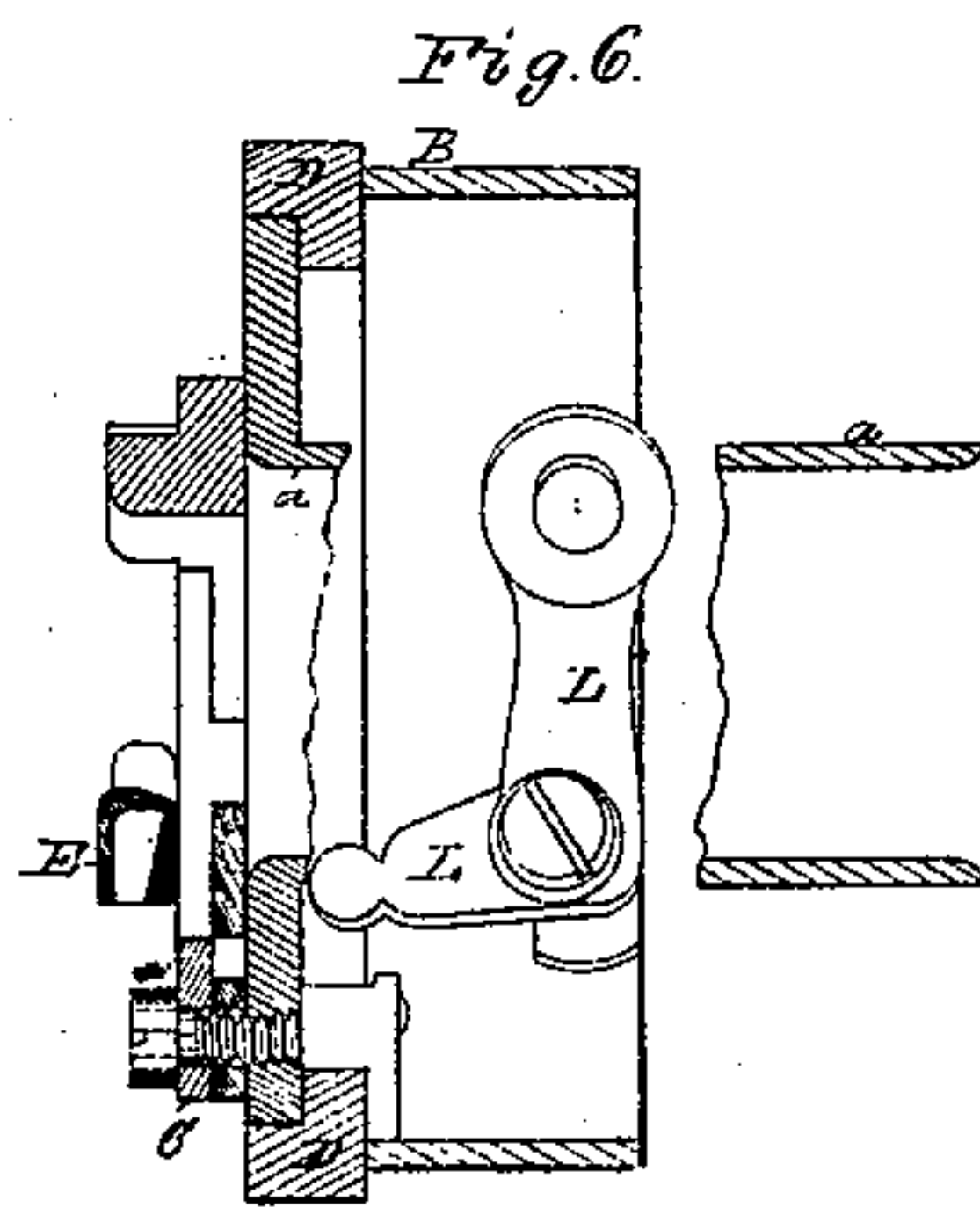
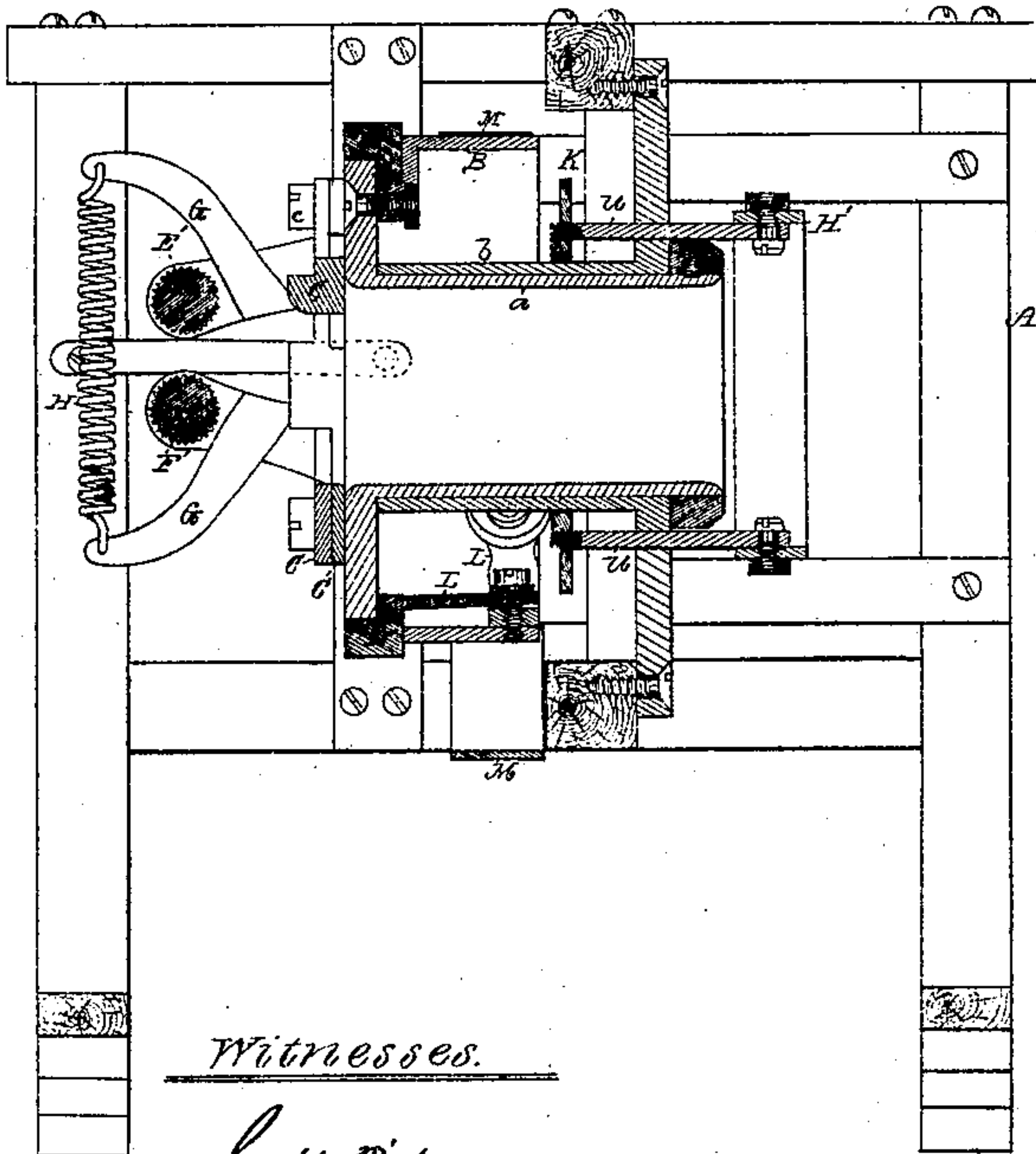


Fig. 4.



Witnesses.

S. N. Piper

J. R. Snow

S. U. King.

by his attorney.

R. H. Eddy

United States Patent Office.

SAMUEL U. KING, OF WINDSOR, VERMONT.

Letters Patent No. 109,912, dated December 6, 1870.

IMPROVEMENT IN LATHES.

The Schedule referred to in these Letters Patent and making part of the same,

To all persons to whom these presents may come:

Be it known that I, SAMUEL U. KING, of Windsor, of the county of Windsor and State of Vermont, have invented an improved Machine for Rounding Crooked or Tapering Sticks; and do hereby declare the same to be fully described in the following specification and represented in the accompanying drawing, of which—

Figure 1 denotes a front elevation;

Figure 2, a side elevation;

Figure 3, a rear elevation; and

Figure 4, a vertical and longitudinal section of it.

Figure 5 is a front view; and

Figure 6, a section of the rotary head or reducer.

This latter figure shows the lever that is within such head, and serves to operate the ring or annulus of the head.

In carrying out my invention I combine with the mechanisms for feeding the stick (or scythe-snath blank, for instance,) and reducing or rounding it, a mechanism, substantially as hereinafter described, for regulating, by the movement of the stick, the inward movement of the stick, guides, and cutter, the object of such being to prevent the stick, in case of stoppage of the feeding mechanism, from being improperly cut or reduced, the stock, guides, and cutter ceasing to move inward, and stoppage of the feed of the stick, they being controlled by the action of the stick.

In the drawing—

A denotes the frame of the machine, as provided with a rotary cutter-head, B, whose tubular journal, *a*, is supported in a stationary box or bearing, *b*.

Three bent levers, C C C, are pivoted to the front end of the said head, and are arranged to cross one another, in manner as shown. Their pivots or fulcrums are represented at *c c c*.

Each of the levers at its free end extends between a pair of studs, *d d*, extended from a ring, D, which turns on and is concentric with the head.

On one of the levers there is fixed a cutter, E, for reducing the stick. By turning the ring on the head the levers may be made to contract or expand relatively to each other.

In front of the cutter-head and the set of levers or stick-guides C C C is a pair of fluted feed-rollers, F, F, whose shafts at two next adjacent ends are supported on levers G G, provided with a connection-spring, H, the same being so as to enable the feed-rollers to move apart and grasp firmly and accommodate themselves to a stick when introduced between them and into the cutter-head. At their other ends the two feed-roller shafts are supported in stationary bearings, and there is a gear, *d'*, fixed in the upper of such shafts.

The said gear *d'* engages with a pinion, *e*, fixed on another shaft, *f*, arranged as represented.

An endless belt, *g*, going around a wheel, *h*, fixed

on the shaft *f*, and also about a wheel, *i*, fixed on a driving-shaft, *k*, serves to put the shaft *f* in revolution, thereby causing rotary motion to be transmitted to the upper feed-roller E.

The roller F, though termed a feed-roller, does not perform the function of feeding the stick into the cutter-head, but serves rather to support it and press it up to the upper roller, which is essentially the feeding-roller.

There is fixed on the shaft of the lower feed-roller a worm, *k'*, which engages with a worm-gear, *l*, fixed on a long shaft, *m*, arranged as represented.

The shaft *m* is provided with a helical groove or screw, as shown at *n*, and also with an adjustable collar or head, *o*, the latter being fixed in place by a set-screw, *p*.

A short lever, G', pivoted to a longer lever, H', (see figs. 2 and 3,) enters the helical groove.

At its free end the lever G' has a lifter-spring, *p'*, that extends down from a standard, *q*, erected on the free end of the lever H'.

Furthermore, there is on and pivoted to the lever H' a lever-catch, I, which is formed and arranged as represented, its purpose being to project over the lever G' and hold it in engagement with the helical groove, which it will by the action of a spring, *r*, fastened at one end to the lever H', and at the other to the tail of the lever-catch. But when the helical groove, by the revolution of its shaft, moves the levers G' and H' so as to force the tail of the catch-lever against the collar or bend *o*, the said catch-lever will be turned off the lever G', so as to enable the spring *p'* to raise it out of engagement with the helical groove.

The lever H', pivoted as represented, is pivoted at one end to the frame A, or has a vertical shaft, *t*, for its fulcrum.

An annulus, K, arranged to slide freely on the box or bearing of the journal of the cutter-head, is connected with the lever H' by two arms, *u u*, pivoted to the lever and extended from the annulus.

The said annulus is to operate a bent lever, L, pivoted to the inner periphery of the cutter-head, and having one arm extending into a recess in the ring D, hereinbefore mentioned.

An endless belt, M, going around the cutter-head and a wheel, N, fixed on the driving-shaft, serves to aid in revolving the cutter-head.

A snath-blank or other stick to be rounded is to be introduced butt foremost between the feed-rollers and into the cutter-head and the lever-guides of the latter, after which the lever H' is to be moved so as to cause the guides to grasp the stick and bring the cutter in contact with it. The lever G' being next thrown into engagement with the helical groove, and the upper feed-roller and the cutter-head being put in revolu-

tion, the stick will be fed along through the head, and will be rounded in the meantime. The guide-levers C C C, by the action of the annulus K, the lever L, and the ring D, will be caused to gradually close upon the stick as it may progress, thereby supporting it, the cutter being in the meanwhile brought in contact with the stick, so as to effect its reduction.

Finally, after the stick may have been nearly rounded, the catch-lever I, by being carried in contact with the head or collar o, will be forced off the lever G', thereby allowing the spring p' to raise it out of engagement with the helical groove, in which case the further reduction of the stick will cease.

From the above it will be seen that the lower feed-roller will be turned entirely by the stick, and when the latter may cease its forward movement the said lower feed-roller will cease to revolve. It will also be observed that the lower feed-roller composes part of the mechanism for operating or contracting the guides and cutter upon the stick. Therefore, should the upper feed-roller cease to revolve, or the feed of the stick be interrupted from any cause, there can be no contraction of the guide-levers and the cutter upon the stick, and, consequently, no reduction of the stick so long as the feed may be arrested.

It frequently happens in other machines for rounding scythe-snaths that, during interruption of the feed of the stick or snath, there will be no interruption of

the feeding of the cutter, in consequence of which the stick will be improperly grooved, or nearly severed transversely.

The object of my invention is to prevent such an accident or injury to the stick.

I therefore claim—

1. In combination with the upper feed-roller E and its operative mechanism, and with the cutter-head B and the guide-levers C C C and cutter E thereof, as described, a mechanism, substantially as specified, (or its equivalent,) combined with the lower feed-roller, and to operate with each for contracting the guide-levers and knife upon the stick, by rotary motion imparted to the lower feed-roller by the stick while being fed along by the upper feed-roller, as explained, the said mechanism consisting of the ring D, the bent lever I, the annulus K, the levers G' H', the helical groove n, the catch I, collar o, springs p' r, worm k, and worm-gear l, all arranged as specified.

2. The combination, as described, for effecting contraction of the guide-levers and cutter by the action of the stick on the lower feed-roller, while such stick may be in the act of being fed along by the upper feed-roller.

SAMUEL U. KING,

Witnesses:

R. H. EDDY,
S. N. PIPER.