

No. 659,995.

Patented Oct. 16, 1900.

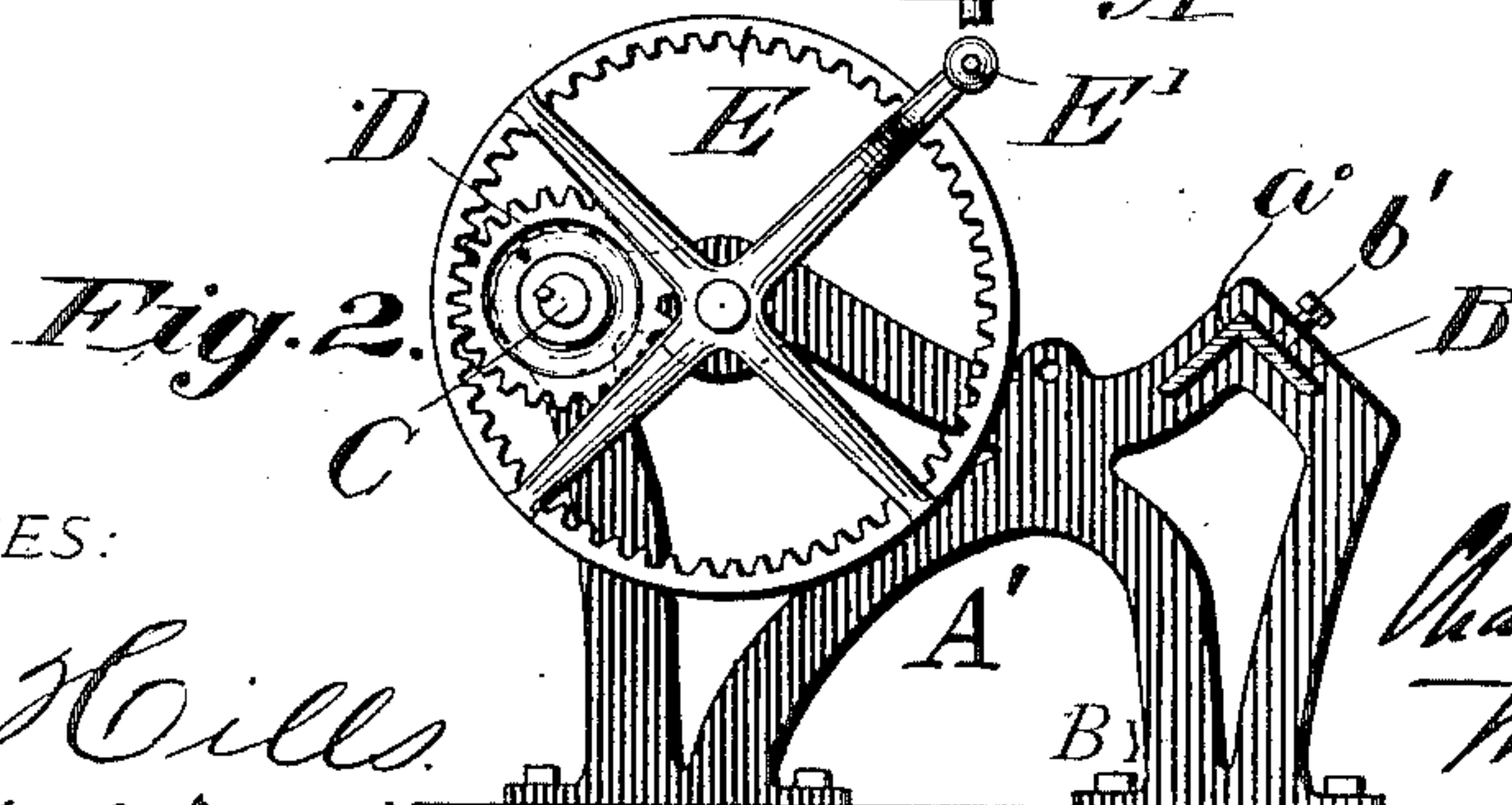
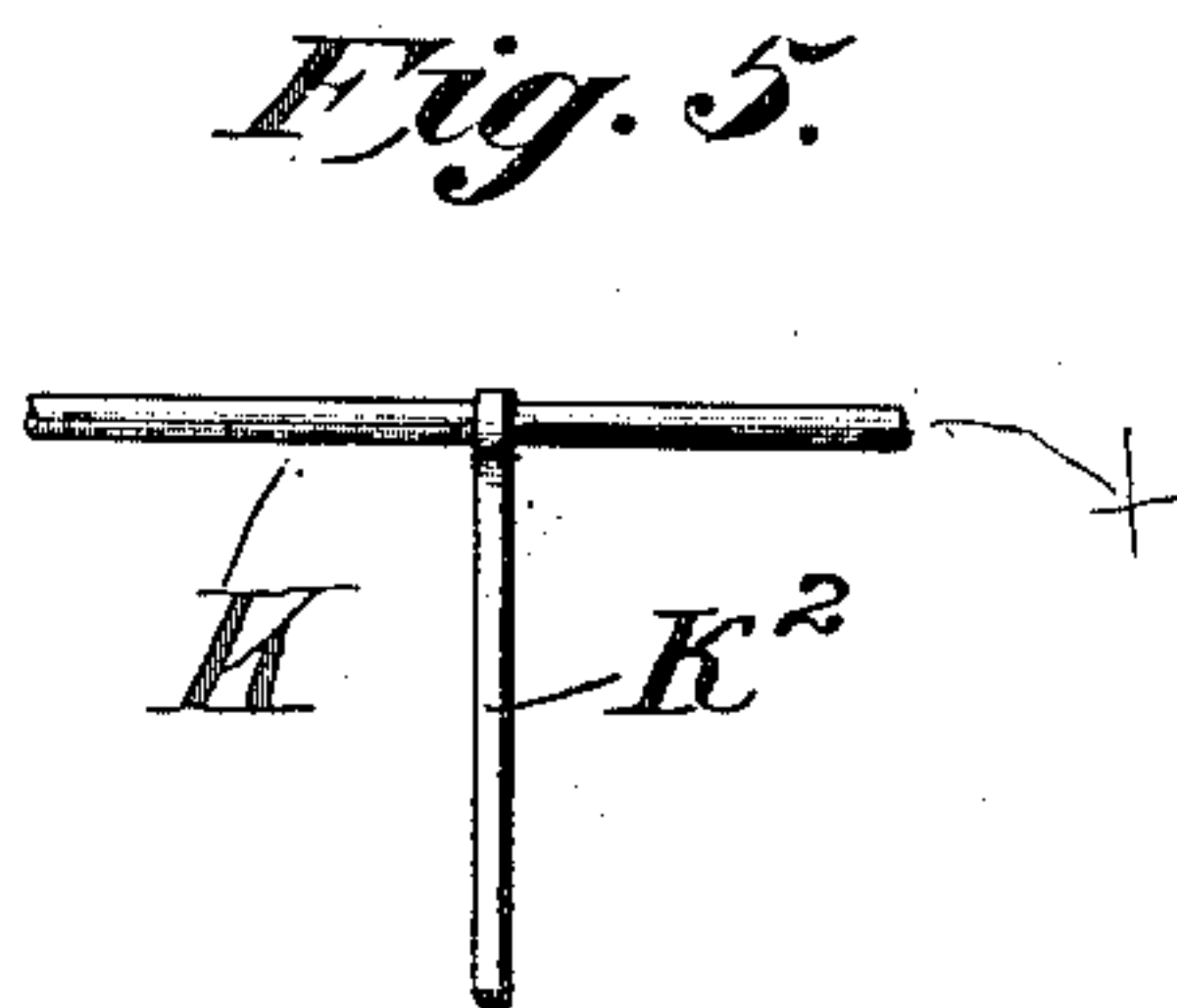
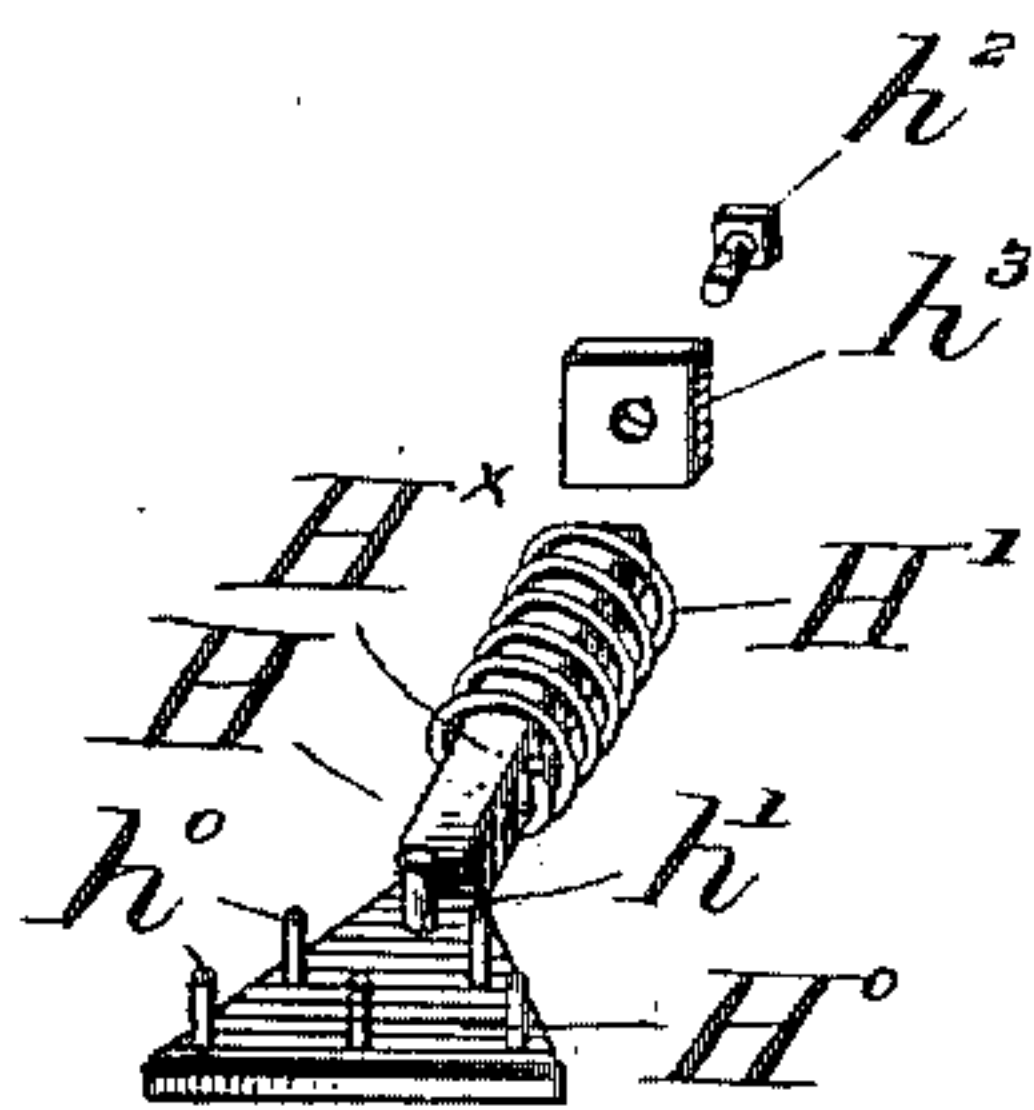
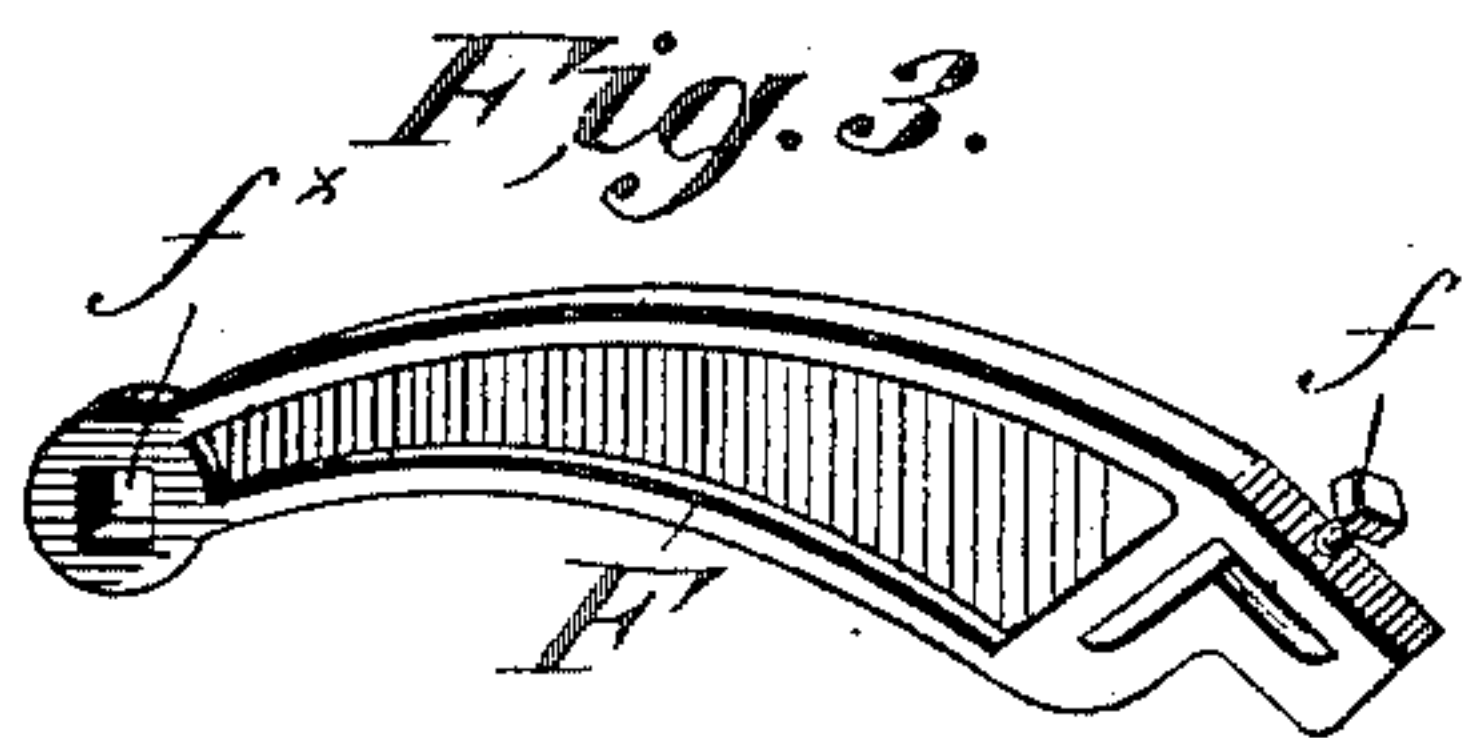
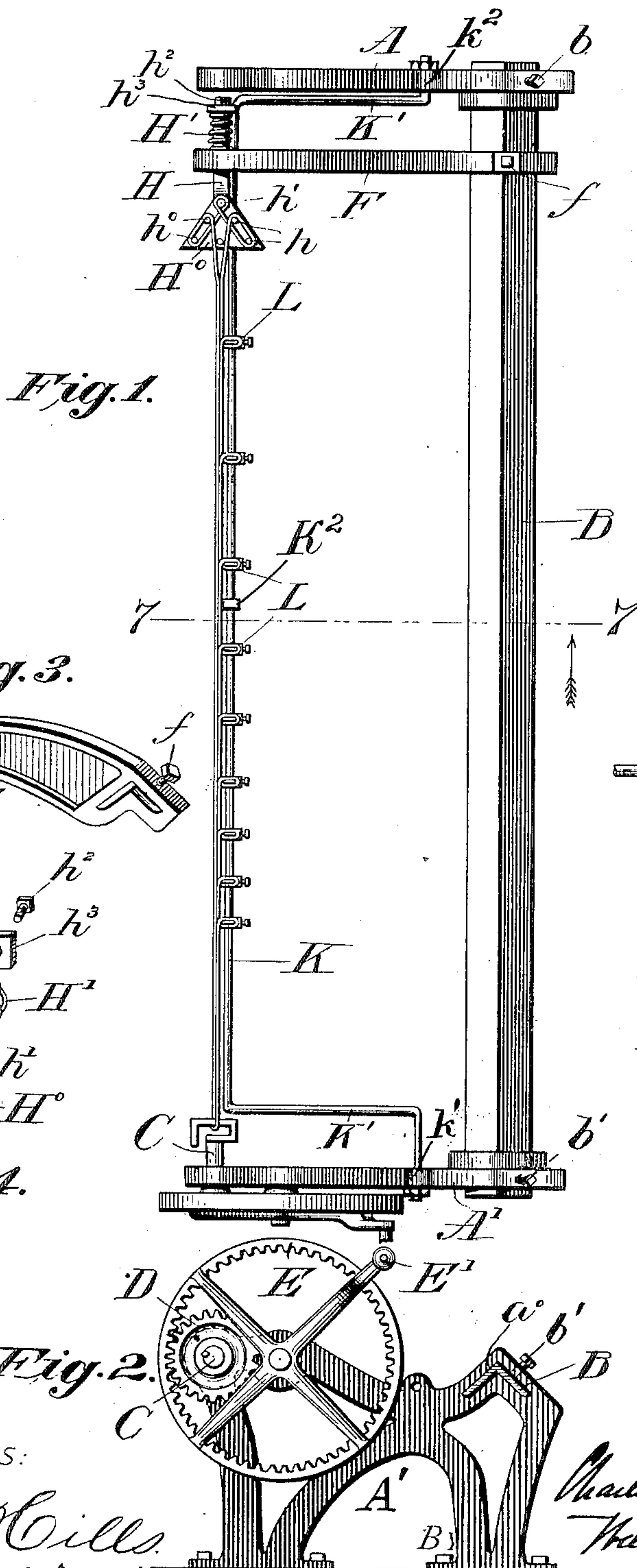
C. E. WINTRODE.

MACHINE FOR MAKING WIRE FENCE STAYS.

(Application filed June 6, 1900.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:

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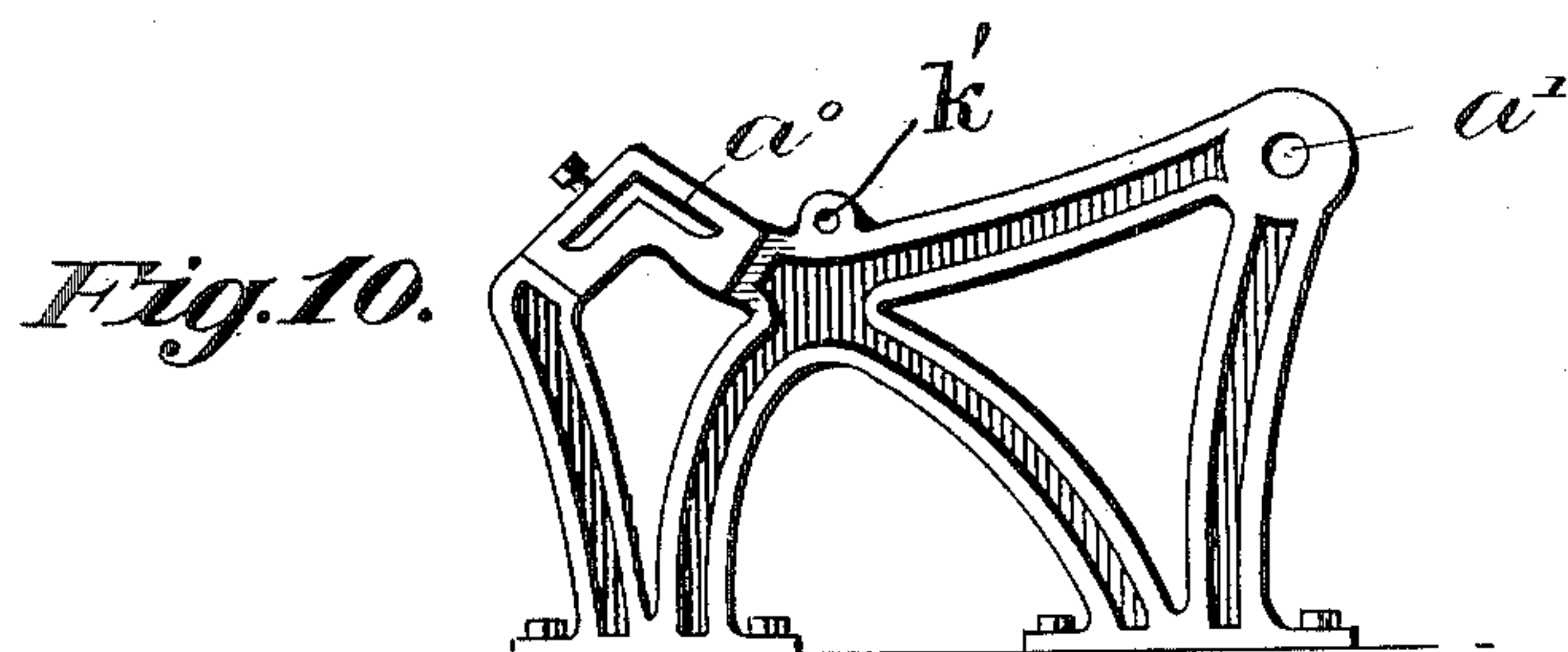
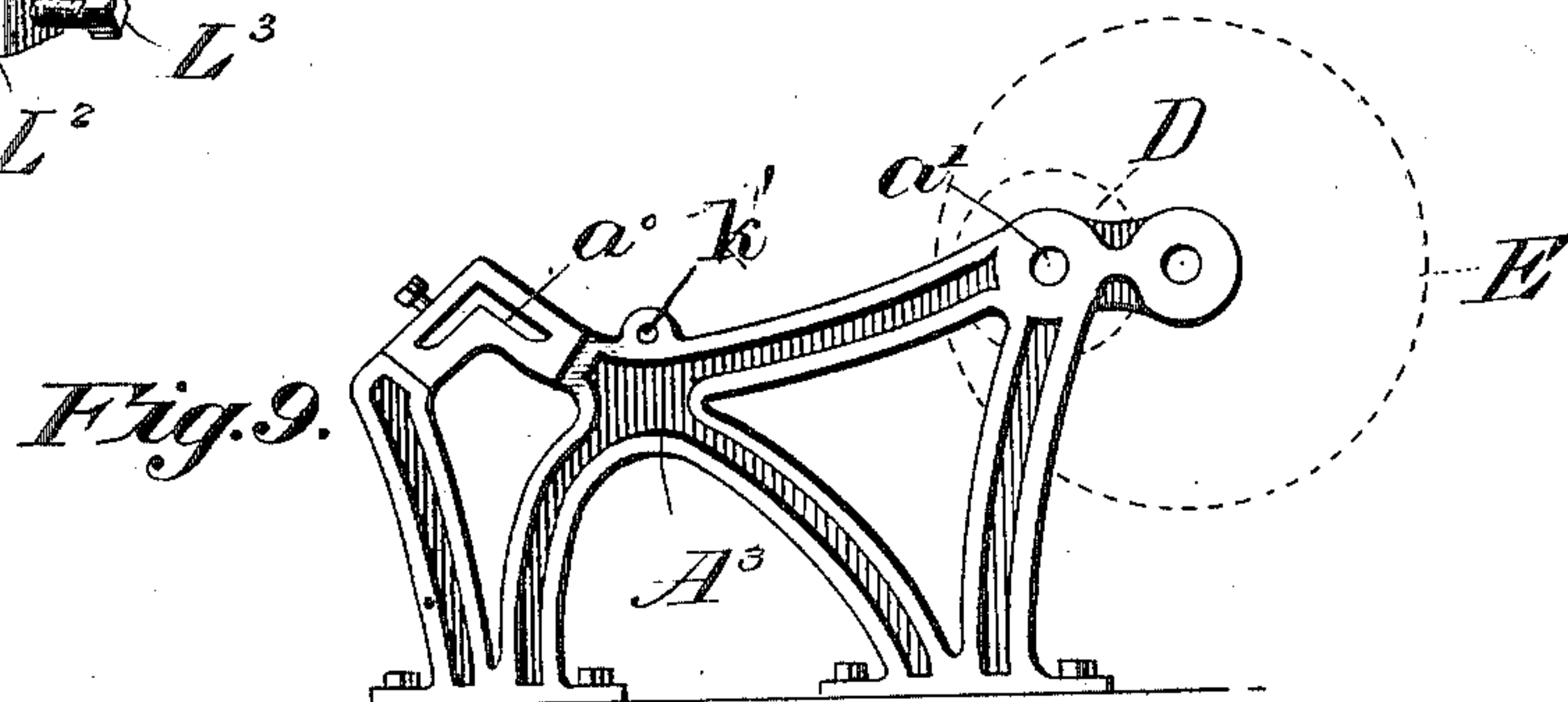
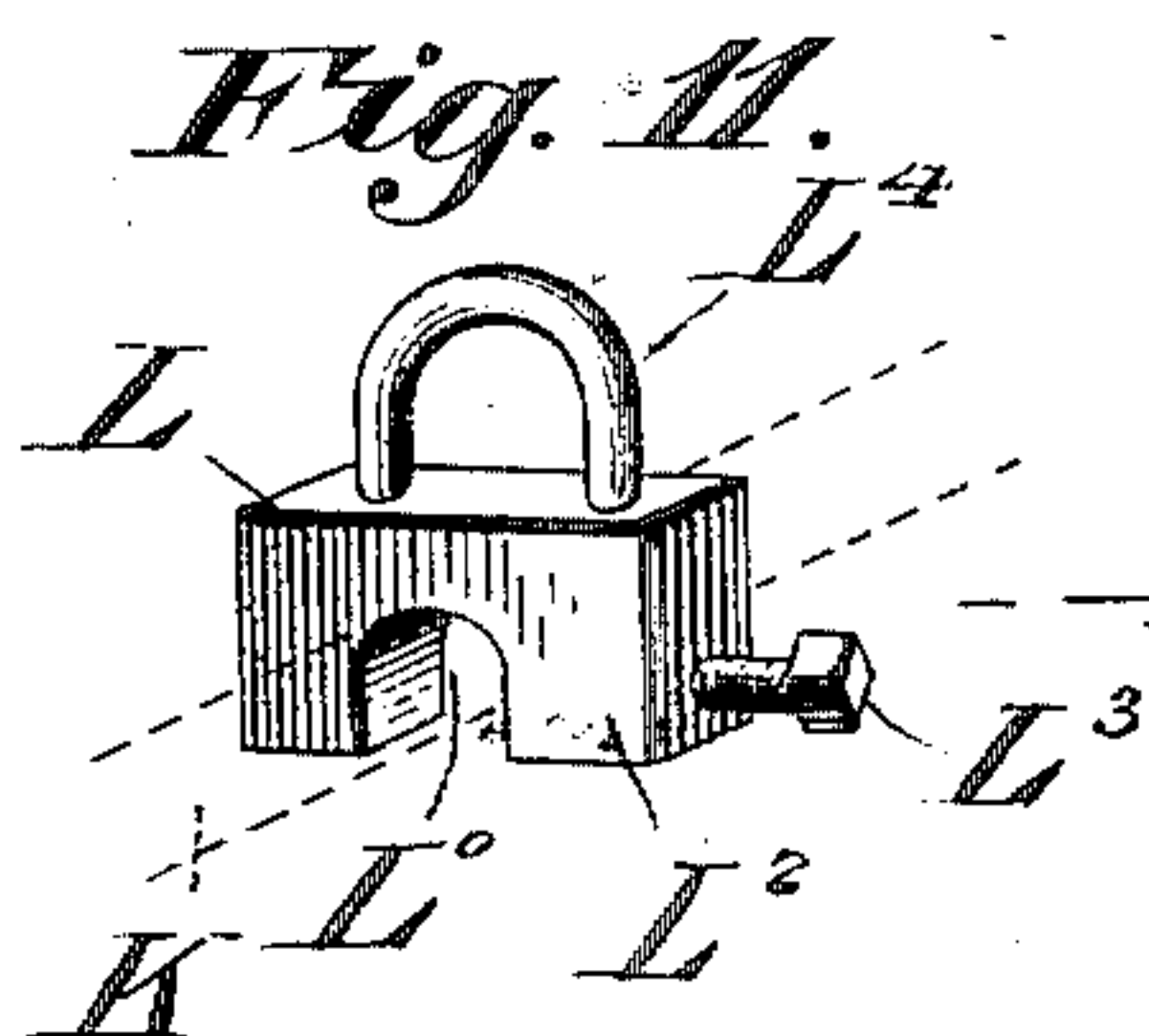
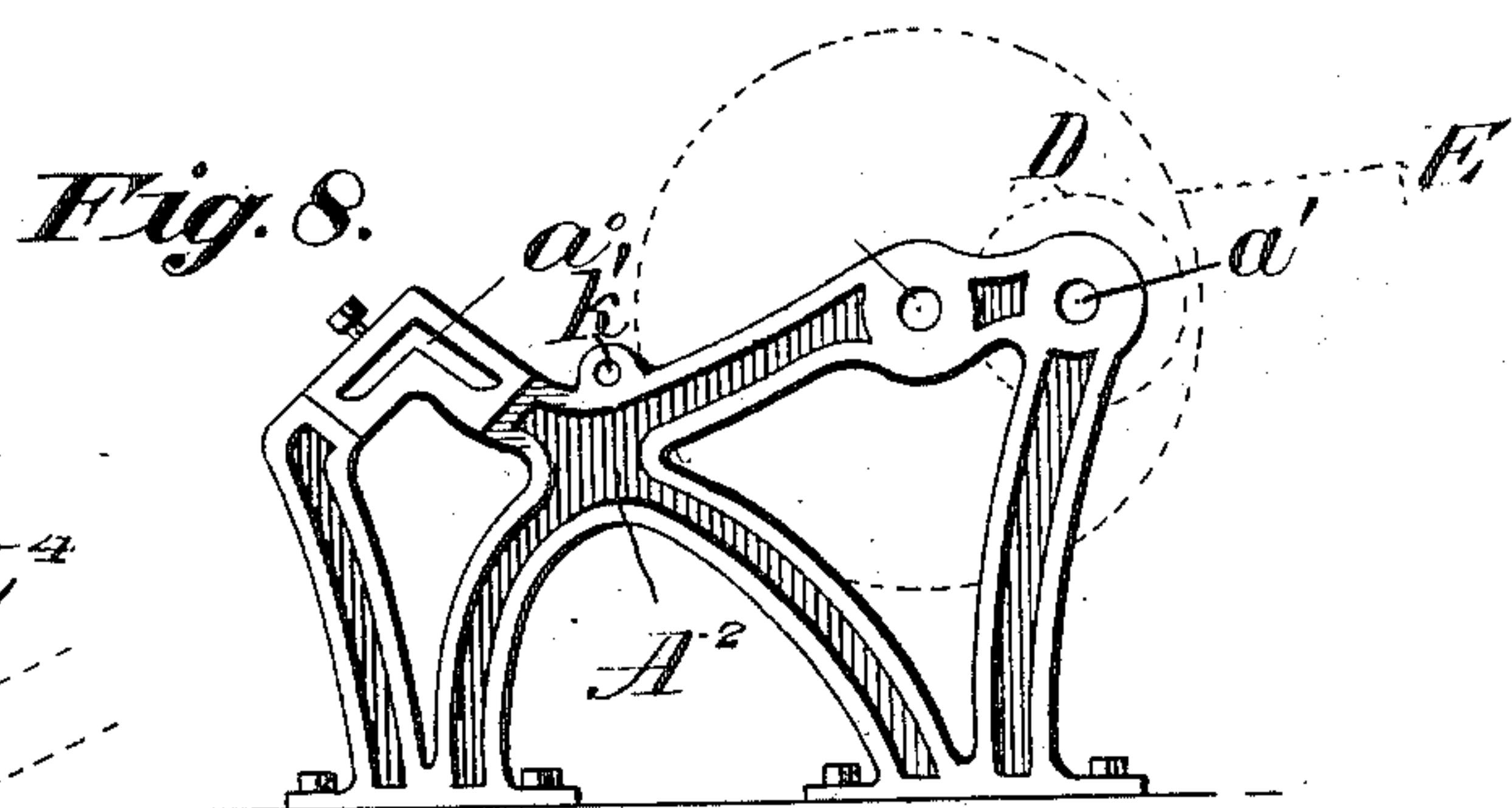
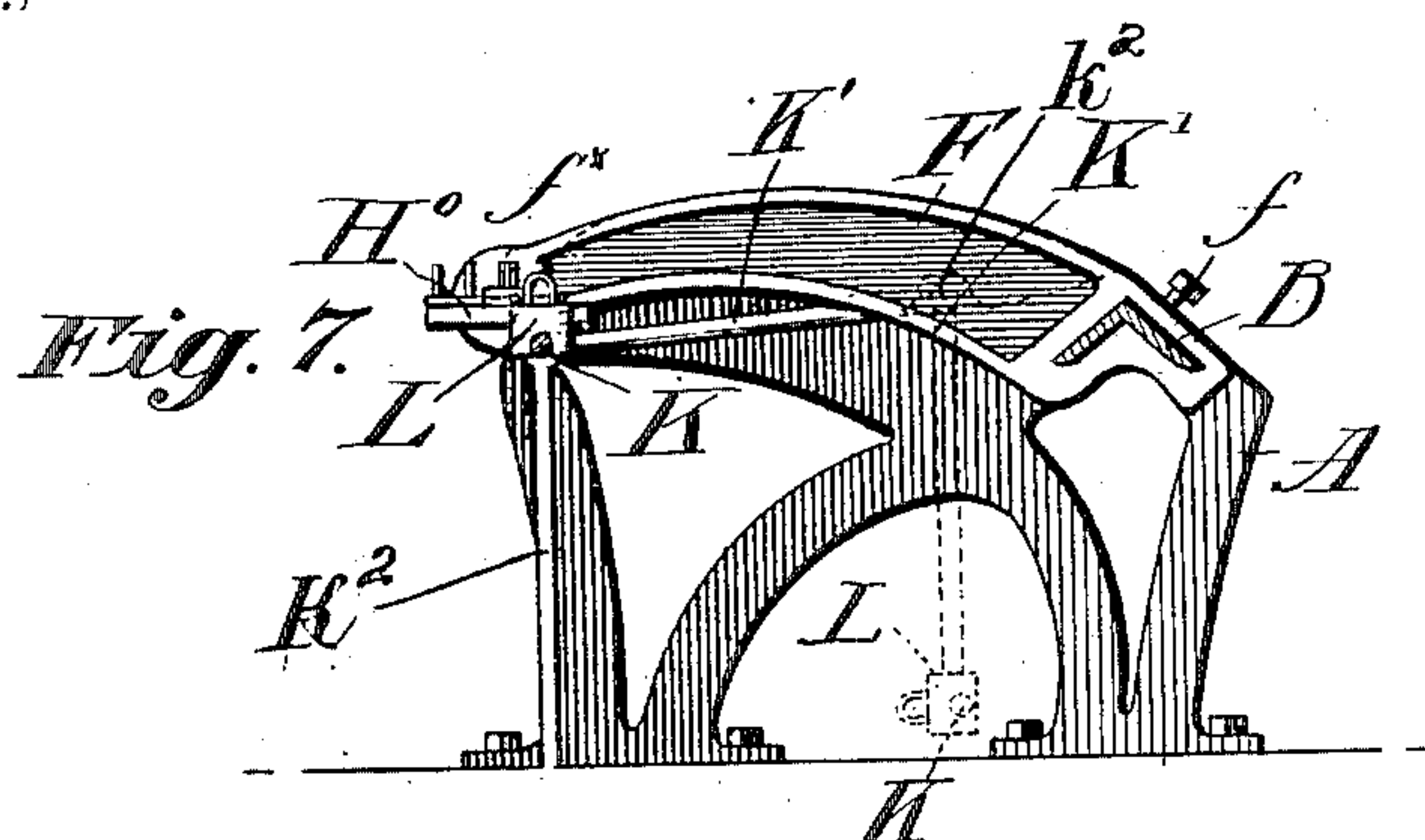
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(No Model.)

2 Sheets—Sheet 2.



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# UNITED STATES PATENT OFFICE.

CHARLES E. WINTRODE, OF HUNTINGTON, INDIANA.

## MACHINE FOR MAKING WIRE-FENCE STAYS.

SPECIFICATION forming part of Letters Patent No. 659,995, dated October 16, 1900.

Application filed June 6, 1900. Serial No. 19,284. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES E. WINTRODE, a citizen of the United States, residing at Huntington, in the county of Huntington and State of Indiana, have invented certain new and useful Improvements in Machines for Making Wire-Fence Stays; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in devices for forming and twisting wire-fence stays or similar articles; and it has for its object particularly the production of a machine for forming wire-fence stays of the general construction shown and described in Letters Patent of the United States granted to me March 29, 1898, numbered 601,540; but I do not wish to be restricted to the particular use hereinafter described.

My invention will be understood by reference to the accompanying drawings, wherein the same parts are indicated by the same letters throughout the several views.

Figure 1 represents a top plan view of my machine complete. Fig. 2 is an end view of the same as seen in Fig. 1 looking toward the top of the sheet. Fig. 3 is a detail perspective view of one of the adjustable supporting-arms used in connection with my machine for carrying the headpiece for holding the stay shown in Fig. 4. Fig. 4 is a detail perspective view of the headpiece provided with a tension-spring used for holding the top end of the stay. Fig. 5 is a detail view of a short arm which supports the frame upon which the loop-formers are carried. Fig. 6 is a detail perspective view of the twisting-hook or tailpiece which is mounted at the opposite end of the machine from the headpiece shown in Fig. 4. Fig. 7 is a sectional view taken on the line 7 7 in Fig. 1 looking in the direction of the arrow, the dotted lines indicating the position of the pivoted frame which carries the loop-formers after having been released. Fig. 8 is a detail side elevation of one form of the end standard, the dotted lines showing the arrangement of the gears and their mounting in the said standard. Fig. 9 is a similar view of a modified form of standard. Fig. 10 is a similar view of a still further modified

form of standard. Fig. 11 is an enlarged detail perspective view of one of the adjustable loop-formers.

A and A' are two stationary standards in the form of skeleton frames, in which is mounted a longitudinal beam B, preferably in the form of an angle-iron, as shown in Figs. 1 and 2. This beam B is securely clamped in the said standards by means of set-screws *b* and *b'*. The standard A is simply provided with an opening for the reception of one end of the beam B, while the opposite end standard A' is provided, in addition to the opening *a*<sup>0</sup> for the reception of the said beam B, with an opening or bearing *a'* for the passage of the cylindrical shank of the hooked tailpiece or twister C. (Shown in detail in Fig. 6.) This hooked tailpiece is held in the said opening *a'* (see Figs. 8, 9, and 10) by means of a crank or a gear-wheel mounted upon the end of the shank thereof. The crank may be mounted upon a squared portion on the end of the shank *c* of the hooked twister C (shown in Fig. 6) should it be desired to use the crank for turning the said hooked twister C. I prefer, however, to use the arrangement shown in Fig. 2, in which a pinion D is keyed upon the shank of the said twister C and an internal gear E, mounted upon the standard A' and provided with a hand-crank or handle E', gears with the said pinion for rotating the latter. This arrangement is preferable for the reason that greater speed may be acquired and greater rapidity in twisting the stay effected.

Fig. 10 shows a view of a standard such as would be used if the hand-crank on the end of the twister were alone used; but either standard A' (shown in Figs. 1 and 2) or standard A<sup>2</sup> (shown in Fig. 8) or the standard A<sup>3</sup> (shown in Fig. 9) may be used when the pinion and gear are preferred. The construction of the standards A' and A<sup>2</sup> is substantially the same, the principal difference being in the arrangement of the gears; but the construction of the standard A<sup>3</sup> is different, as will be seen from an inspection of said figure. The construction of the standard and the arrangement of the gears shown in Figs. 1 and 2 are preferred.

F represents an arm which is adjustably mounted at one end upon the angle-beam B and



provided with a set-screw  $f$ , by means of which the said arm may be clamped upon the said beam at any desired adjustment. This arm F is provided at its free end with a squared opening  $f^x$  for the reception of the squared shank  $H^x$  of the headpiece H. This headpiece H has a widened or flaring portion  $H^0$ , upon which are fixed a group of rigid pins or studs. One of these pins  $h'$  should preferably be stouter and stationary to receive the extreme uppermost loop in the stay, and the remaining pins  $h^0$  may be lighter and may be made adjustable or removable in order, if desired, that the form of the ornamental loops at the head of the stay may be varied. The shank  $H^x$  of the headpiece H is preferably elongated, and over this shank is fitted a coil-spring  $H'$ , which is retained upon the said shank by means of a bolt  $h^2$  and washer  $h^3$  or by means of a cotter-pin or any other suitable equivalent device preferred. The spring bears against the side of the arm F and serves to give a tension to the stay as it is being formed.

K is a frame which is preferably formed of a bent rod having right-angled extensions  $K'$ , which are pivoted at one end, as at  $k'$ , in the end standard  $A'$ , and at its opposite end, as at  $k^2$ , in the end frame A. In Fig. 5 is shown means for retaining the frame K in the horizontal position, as seen in Fig. 1, and yet allowing the said frame to be dropped to a pendent position, as seen in dotted lines in Fig. 7, when it is desired to twist the stay after having formed the loops thereon. Any suitable means may be used; but I have shown in Figs. 1, 5, and 7 a standard or rod  $K^2$ , pivotally mounted upon the frame K and arranged to support the latter when set upright, but to let the frame fall when the foot of said standard is knocked out laterally.

Mounted upon the frame K are a succession of adjustable loop-formers L. (Shown in detail in Fig. 11.) These loop-formers are preferably in the form of blocks, such as  $L^2$ , provided with a recess  $L^0$  in its under side to fit over the frame or rod K and provided with a set-screw  $L^3$  for clamping the said block at any adjustment upon the said frame or rod. The blocks  $L^2$  may be made of wood or metal—preferably iron for the sake of strength—and upon the upper side of these are mounted staples or space-studs, about which the wire may be looped. The staple such as shown at  $L^4$  in Fig. 11 is preferable, because it may be formed with an arch to facilitate the application of the wire and also the disengagement of the loop-former from the formed loop, as will be readily understood.

The operation of the machine in forming a fence-stay is as follows: The end of a strand of wire is engaged with the hooked twister C and is carried forward to the headpiece H, where it is looped about the pins  $h'$  and  $h^0$  thereon in such manner as to form the particular ornamental design desired, and is thence brought backwardly toward the hook-

twister, being looped once about each of the loop-formers L, which latter may be arranged at any desired regular or irregular intervals. After being looped about each of the loop-formers L in succession the wire is secured to the hooked twister C. The pivoted frame K is then released and dropped to its pendent position, thus disengaging the loop-formers from the loops in the wire. The stay is then twisted by a continuous rotation of the gears or the crank used for rotating the twister, and the stay is finished and may be disengaged from the machine by having its head slipped off the studs on the headpiece H and then disengaged at its bottom and from the twister C.

The adjustability of the arm F permits the use of the machine for making stays of any desired length within the limits of the length of the machine, and the spring on the headpiece supplies the desired tension to the stay at all times during its formation.

The many advantages of my machine will be apparent to any one skilled in the art and need not be herein specifically referred to.

While I have simply shown a machine as used for making fence-stays, I do not wish to be understood as limiting myself to such use, as it will be perfectly apparent that it may be applied to many different uses of the same general nature.

I do not wish to limit myself to the details of construction herein described and shown in the accompanying drawings, as many modifications and variations therein might be made which could be used without departing from the spirit of my invention.

Having thus described my said invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a machine for forming wire-fence stays, the combination with a longitudinal support; a laterally-extending arm adjustably mounted upon said longitudinal support; a headpiece non-rotatably mounted in said arm, and means thereon for the engagement of the head of the stay; of a rotatable tailpiece provided with means for engaging the foot of the stay; means for rotating said tailpiece; a swinging frame; loop-formers carried by said frame; and means for retaining said swinging frame in position for the engagement of said loop-formers by the stay, substantially as described.

2. In a machine for forming wire-fence stays, the combination with a longitudinal support; a laterally-extending arm mounted upon said longitudinal support; a longitudinally-movable headpiece non-rotatably mounted in said arm, and means thereon for the engagement of the head of the stay; a spring tending to retract said headpiece; of a rotatable tailpiece provided with means for engaging the foot of the stay; means for rotating said tailpiece; a swinging frame; loop-formers carried by said frame; and means for retaining said swinging frame in position



for the engagement of said loop-formers by the stay, substantially as described.

3. In a machine for forming wire-fence stays, the combination with a longitudinal support; a laterally-extending arm adjustably mounted upon said longitudinal support; a headpiece non-rotatably mounted in said arm, and means thereon for the engagement of the head of the stay; of a rotatable tailpiece provided with means for engaging the foot of the stay; means for rotating said tailpiece; a swinging frame; loop-formers separately and adjustably carried by said frame; and means for retaining said swinging frame in position for the engagement of said loop-formers by the stay, substantially as described.

4. In a machine for forming wire-fence stays, the combination with a longitudinal support; a laterally-extending arm adjustably mounted upon said longitudinal support; a headpiece non-rotatably mounted in said arm, and means thereon for the engagement of the head of the stay; of a rotatable tailpiece provided with means for engaging the foot of the stay; means for rotating said tailpiece; a swinging frame; loop-formers carried by said frame; and a catch on said frame for retaining said swinging frame in position for the engagement of said loop-formers by the stay, substantially as described.

5. The combination with the adjustable supporting-arm; of the headpiece having an elongated shank non-rotatably mounted thereon; a spring inclosing said shank, and confined against said arm; and a rotatable tailpiece or twister, substantially as described.

6. The combination with the adjustable supporting-arm; of the headpiece having an elongated shank non-rotatably mounted thereon; a spring inclosing said shank, and confined against said arm; a tailpiece or twister having a shank journaled in a fixed bearing; a pinion on said shank; and a gear meshing with said pinion for rotating the latter, substantially as described.

7. The combination with the adjustable supporting-arm; of the headpiece having an elongated shank non-rotatably mounted thereon; a spring inclosing said shank, and confined against said arm; a tailpiece or twister having a shank journaled in a fixed bearing; a pinion on said shank; and an internal gear meshing with said pinion for rotating the latter, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES E. WINTRODE.

Witnesses:

HERBERT A. HUFF,  
H. L. HUFF.