

(No Model.)

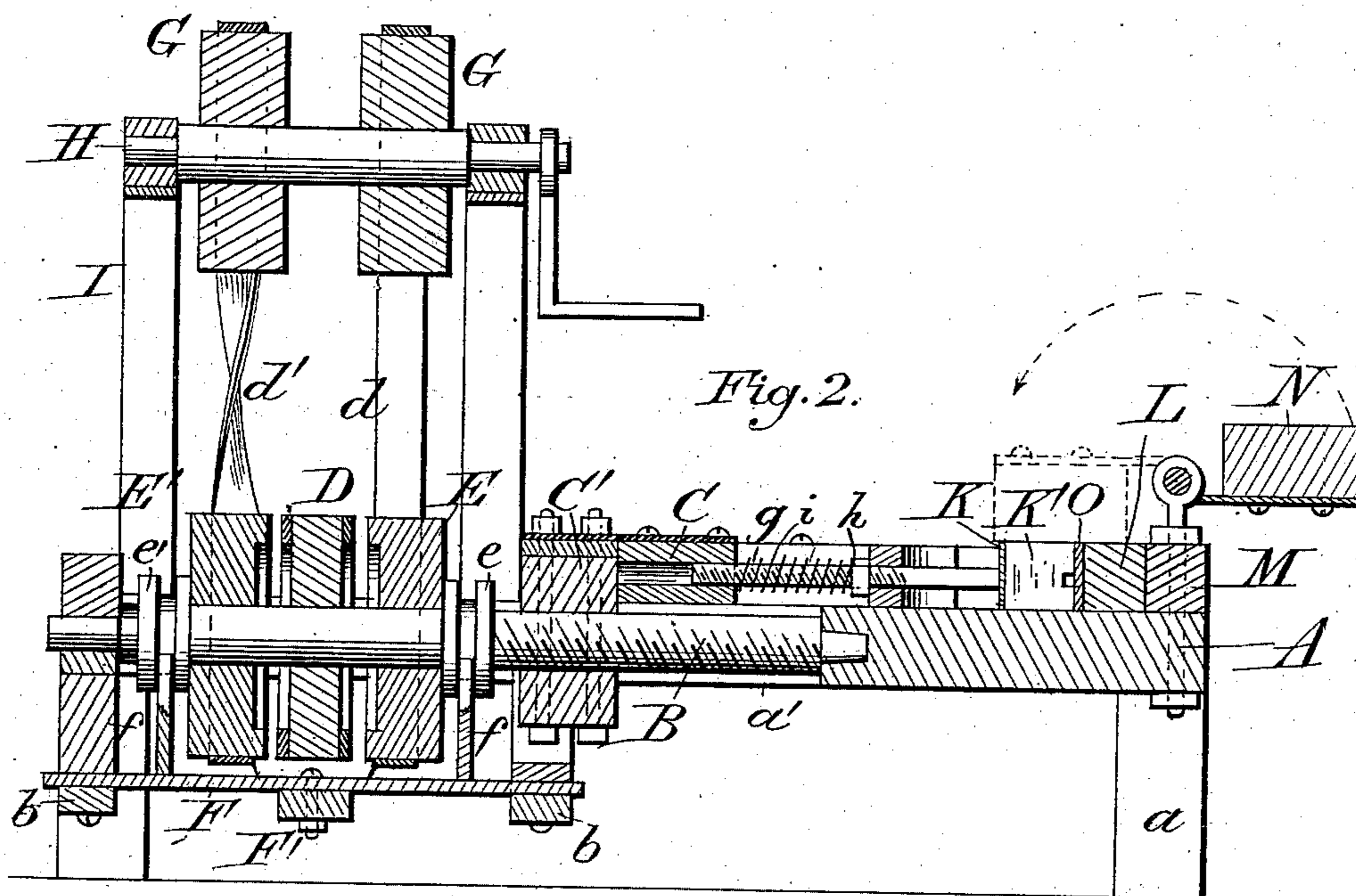
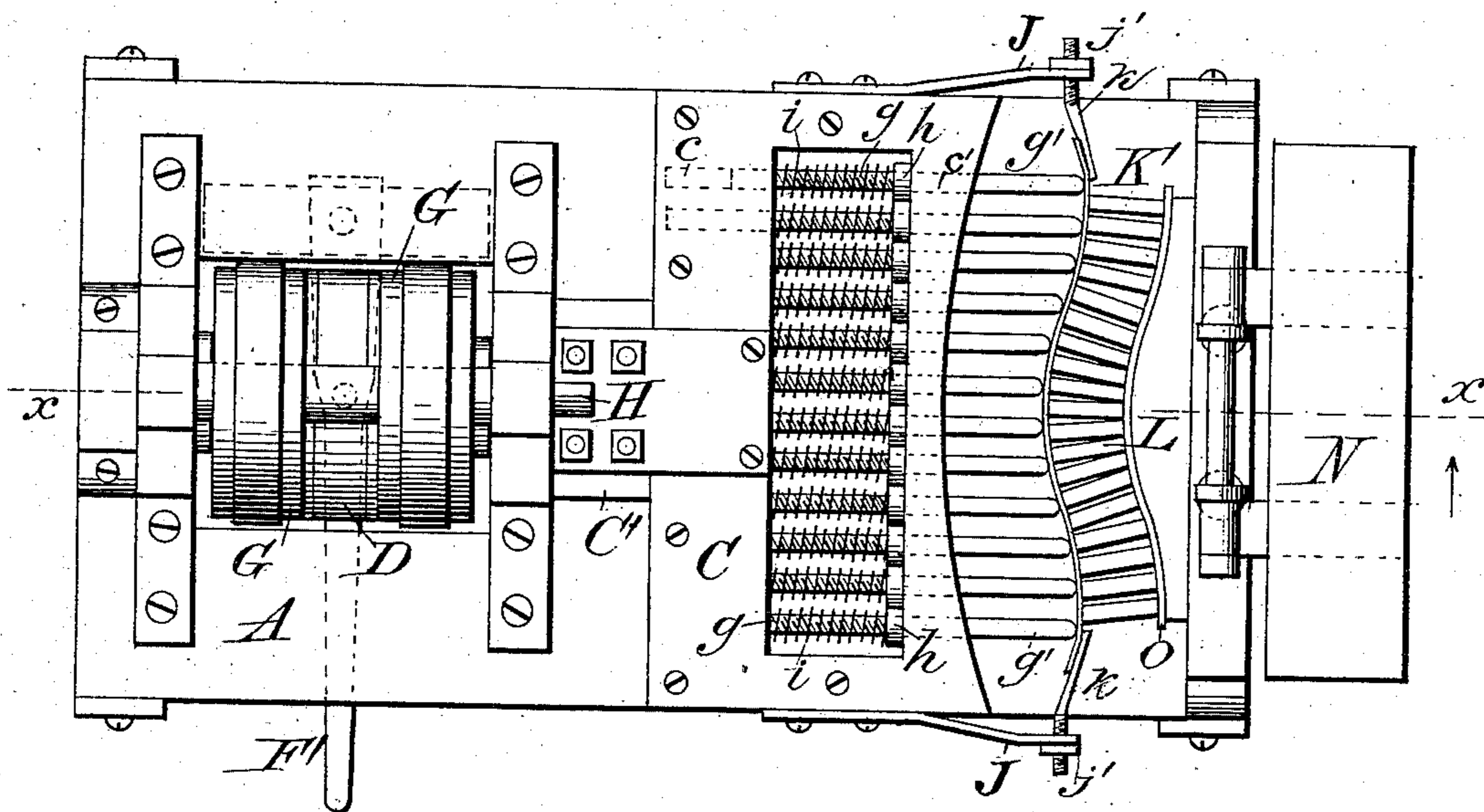
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C. LEWIS.
Spring Fitting Machine.

No. 238,934.

Patented March 15, 1881.

Fig. 1.



Witnesses:

H. H. Schott,
A. R. Brown.

Per

Inventor
Charles Lewis
per C. H. Watson & Co
Attorneys.

(No Model.)

2 Sheets—Sheet 2.

C. LEWIS.
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No. 238,934.

Patented March 15, 1881.

Fig. 3.

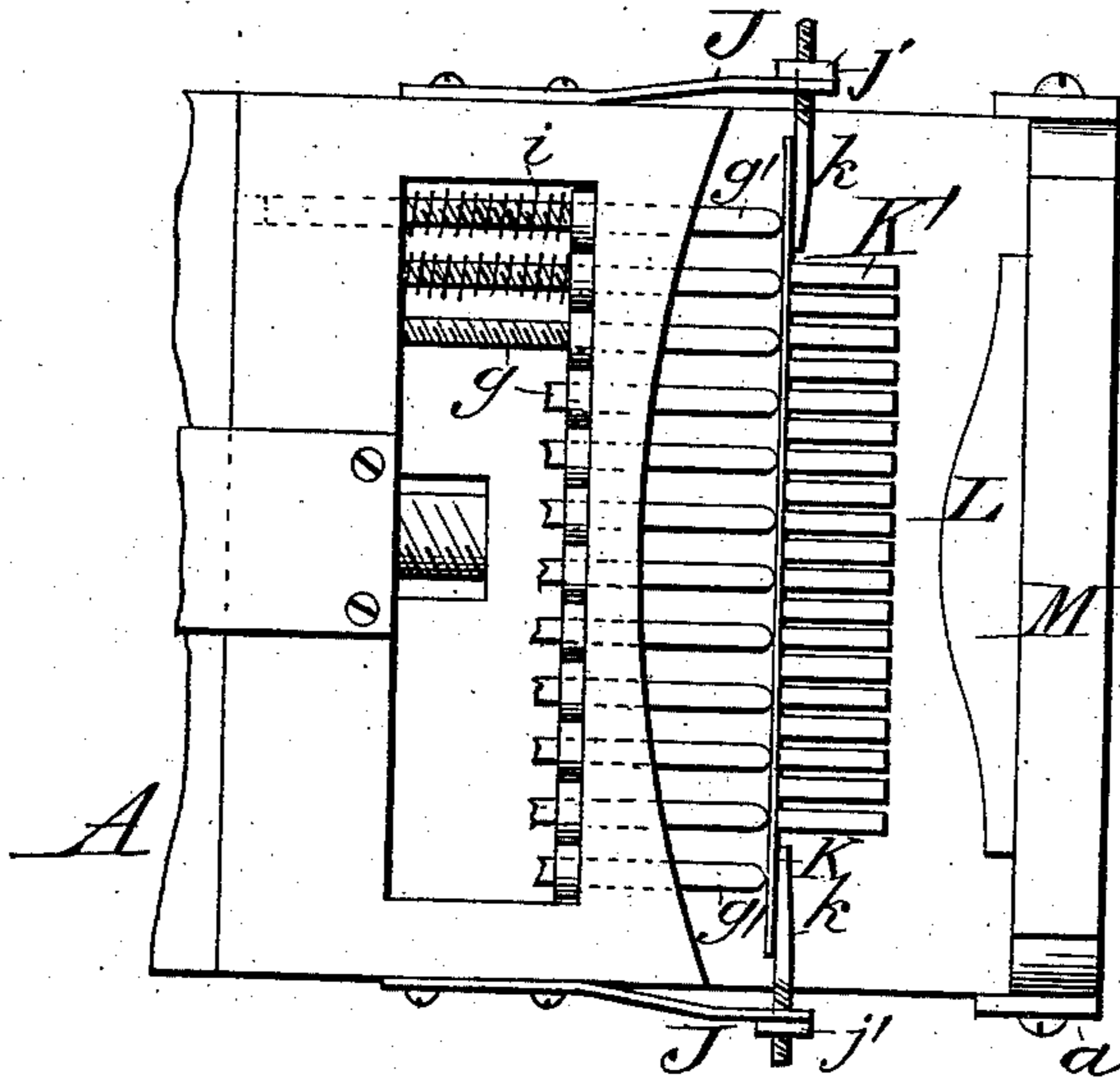


Fig. 4.

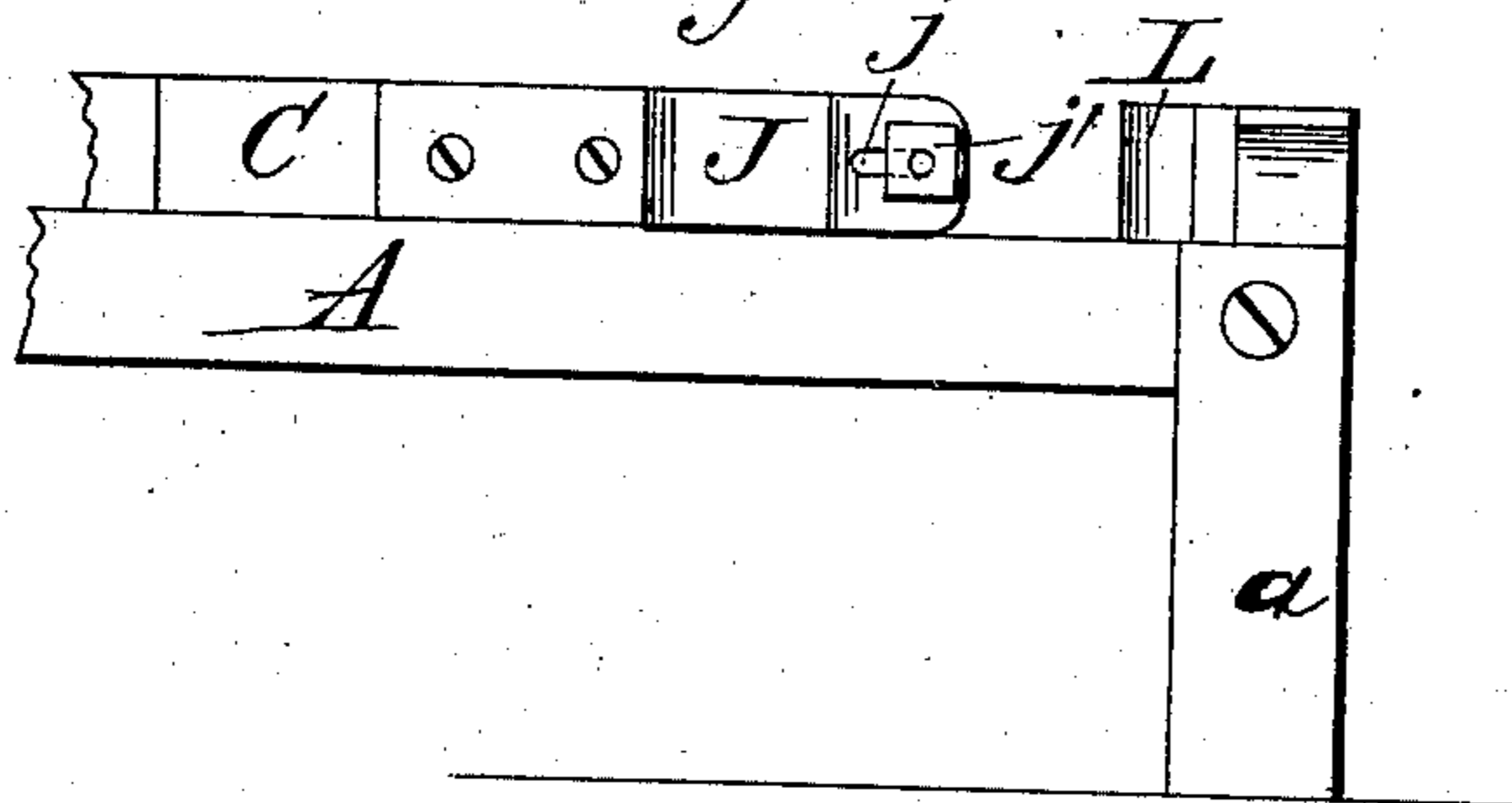


Fig. 5.

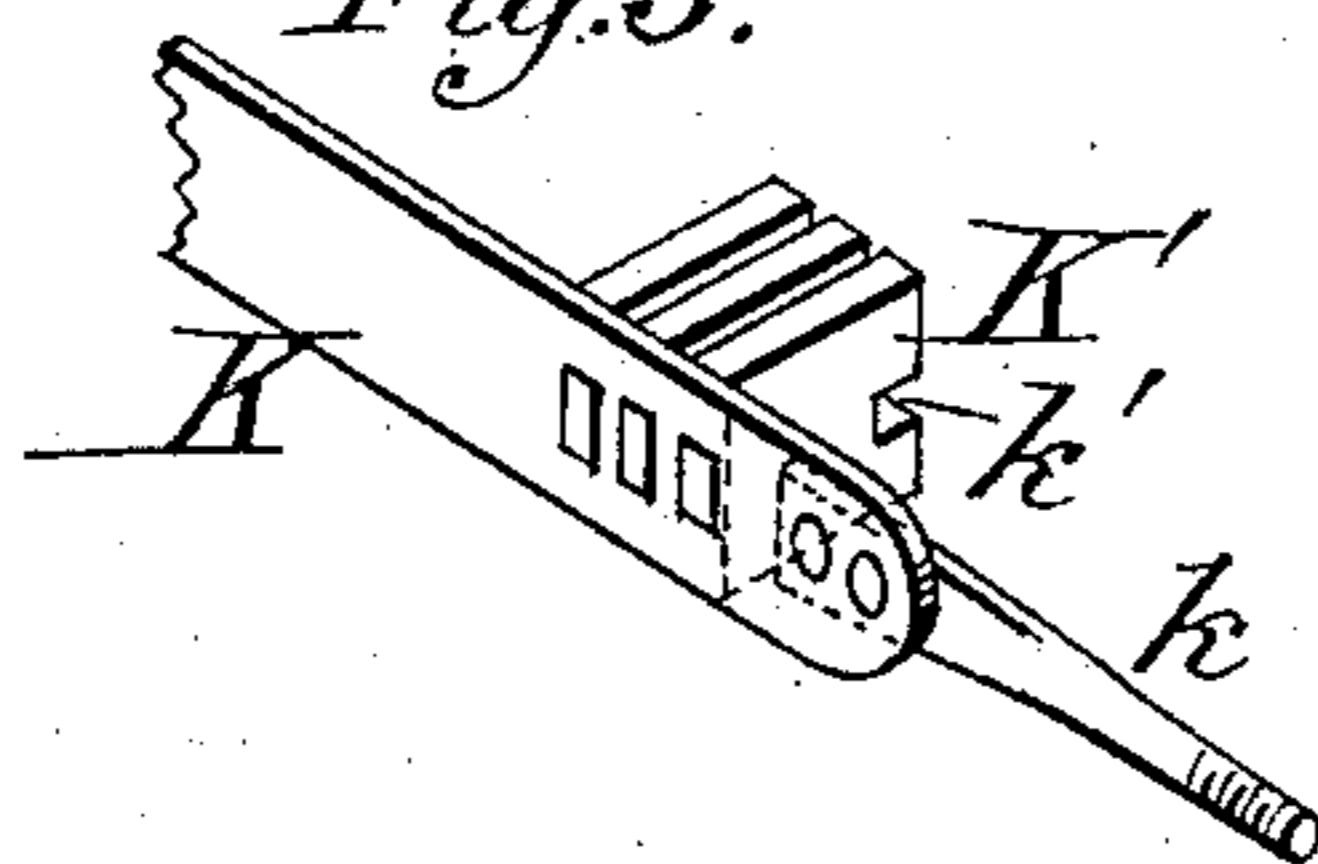
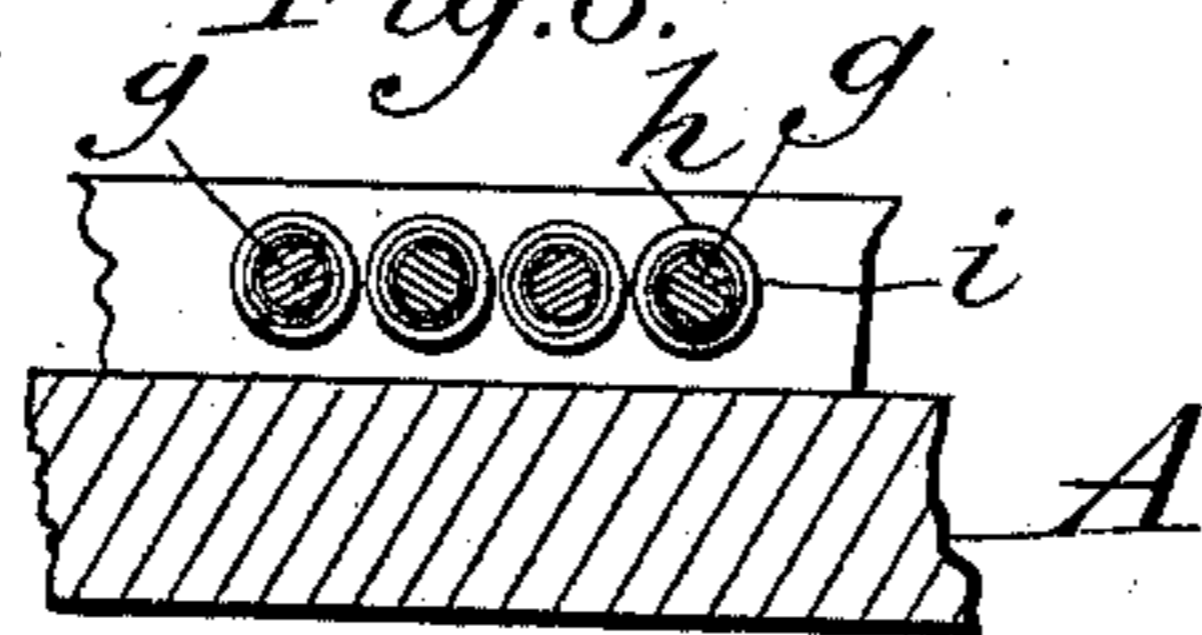


Fig. 6.



Witnesses:

H. H. Schott,
A. R. Brunn,

g h g'
Per

Inventor
Charles Lewis
By C. H. Watson & Co.
Attorneys.

UNITED STATES PATENT OFFICE.

CHARLES LEWIS, OF AMSTERDAM, NEW YORK, ASSIGNOR TO DAVIS W. SHULER, OF SAME PLACE.

SPRING-FITTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 238,934, dated March 15, 1881.

Application filed December 7, 1880. (No model.)

To all whom it may concern:

Be it known that I, CHARLES LEWIS, of Amsterdam, in the county of Montgomery and State of New York, have invented certain new and useful Improvements in Spring-Fitting Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to machines for forming springs of different degrees of curvature; and it consists in the construction and arrangement of devices, as hereinafter more fully described and claimed.

In the annexed drawings, in which similar letters indicate like parts in the several views, Figure 1 is a top view of my improved machine. Fig. 2 is a longitudinal section on the line *x x*. Fig. 3 is a top view of the movable and stationary formers. Fig. 4 is a side view of the same, and Figs. 5 and 6 are details.

A represents the bed of the machine, which is supported on suitable standards, *a*, and provided with a central opening or slot, *a'*, having an enlargement at its rear end. Extending from end to end of this slot, and supported in suitable bearings, is a shaft, B, the front end of which is screw-threaded for engagement with a corresponding opening in the head of the sliding frame C.

On the shaft B, toward its rear end, is secured a friction-clutch, D, on each side of which are journaled loosely the pulleys E E'. These pulleys are provided on their outer sides with grooved seats *e e'* for the reception of the vertical arms *f f'* of the pulley shifter or bar F, which is supported in bearings *b b* beneath the bed A, and has a lever, F', by means of which either pulley may be made to engage with the clutch D. The pulleys E E' receive their motion, by means of the belts *d d'*, from the pulleys G G on the crank-shaft H, which is supported in a bracket or frame, I, arranged above the rear end of the bed.

The sliding frame C is detachably connected to the head C', through which passes the screw-

threaded end of the shaft B. This frame affords bearings *c c'* for the rods *g*, which are formed at their front ends into lugs or bearings *g'*, while the rear part of each rod is screw-threaded and provided with an adjustable collar, *h*, and spiral spring *i*.

Attached to each side of the sliding frame C, and projecting forward, is a bent arm or bearing, J, which is provided at its end with a slot, *j*, for the reception of a screw-threaded shank, *k*, on the end of a metallic strip, K, which is held in place and adjusted by means of the thumb-nuts *j'*. The strip K forms the backing of a flexible belt composed of the metallic blocks K', each of which is provided on its front face with a notch, *k'*, thus forming a continuous groove across the face of the belt, or from end to end, which fits over the bead on the spring to be curved.

The stationary former L may be of any desired curvature to correspond with the form to be imparted to the spring. This former is detachably secured to the bed A, so as to rest firmly against the inner side of the fixed cross-bar M, to the top of which is pivoted a hinged weight, N, that may be folded over and brought to bear upon the upper edge of the spring O, so as to press it firmly down against the bed A, and thus secure parallel edges.

When motion is imparted properly to the shaft B it will be seen that the sliding frame C is made to move forward, carrying with it the flexible belt K K', and thus compressing the metal plate O of which the spring is formed between the blocks K' and the stationary former L. By varying the outlines of the former L and adjusting the collars *h* on the rods *g* any practicable degree of curvature may be readily given to the spring.

The construction of the sliding frame and flexible belt is such as to combine simplicity with a great degree of elasticity and strength. The parts are not apt to become disarranged or broken, and may be readily replaced when required.

It will be observed that the sliding frame C may be moved either forward or backward without changing the direction in which the motive power is applied to the shaft H. This is done by means of the lever F' in bringing

either the pulley E or the pulley E' in contact with the clutch D, according to the direction in which it is desired to revolve the screw-threaded shaft B, the pulley E being driven
5 in one direction by the open belt *d*, while the pulley E' is driven in the opposite direction by the cross-belt *d'*.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the sliding frame C, rods *g*, having collars *h* and springs *i*, flexible belt K K', and former L, substantially as and for the purpose set forth.
- 15 2. The combination of the slotted bed A, having cross-bar M, sliding frame C, having adjustable rods *g* and springs *i*, flexible belt

K K', stationary former L, and hinged weight N, substantially as and for the purpose specified.

3. The combination of the slotted bed A, longitudinal shaft B, sliding frame C, clutch D, adjustable pulleys E E', slotted bearings J J, flexible belt K K', having shanks *k k*, and former L, substantially as shown and described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

CHARLES LEWIS.

Witnesses:

M. L. STOVER,
WM. S. SHULER.