

J. S. Perkins.

Making Knitting-Machine Needle-Shanks.

N^o 80,304.

Patented Jul. 28, 1868.

Fig. 1.

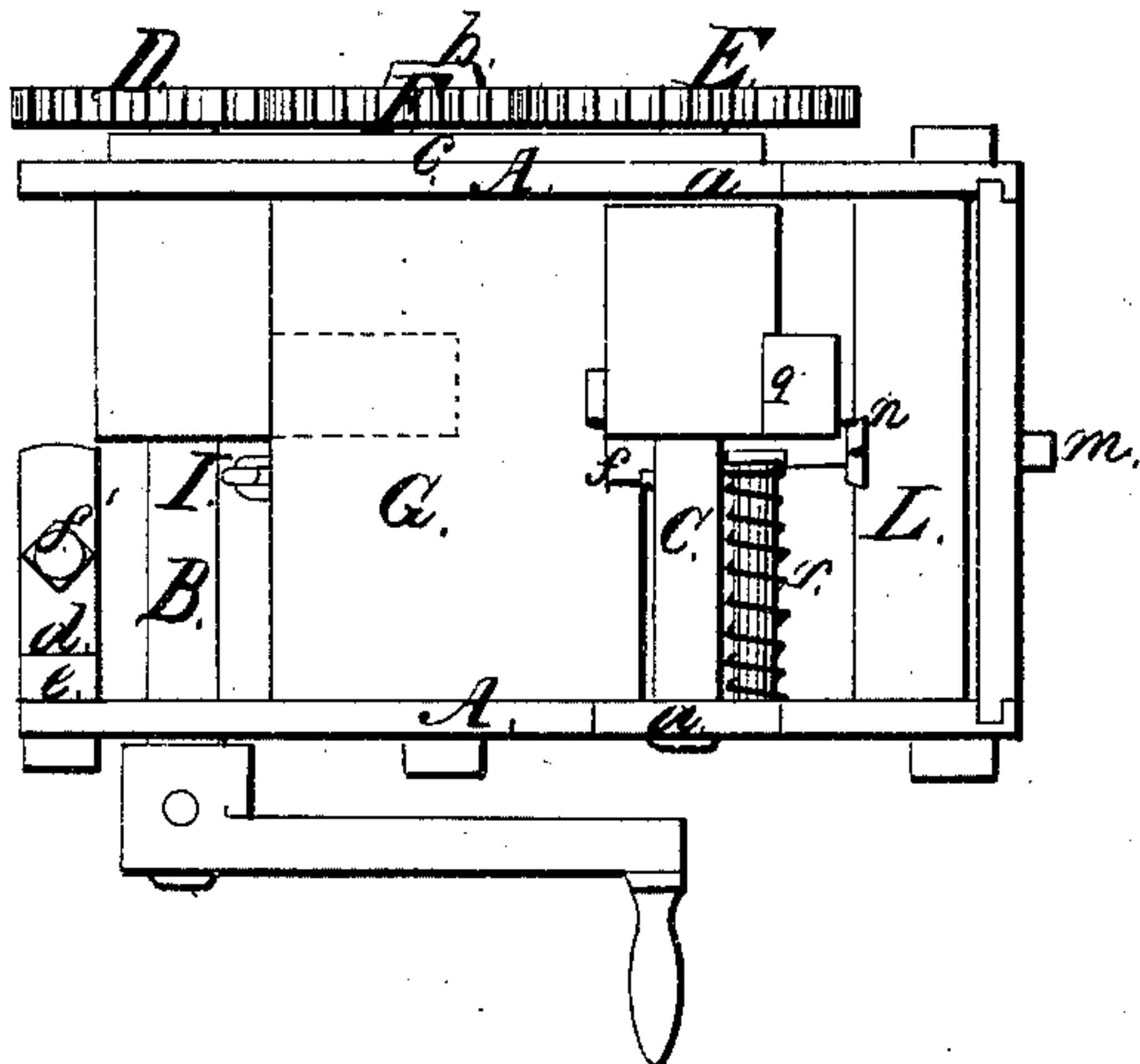


Fig. 2.

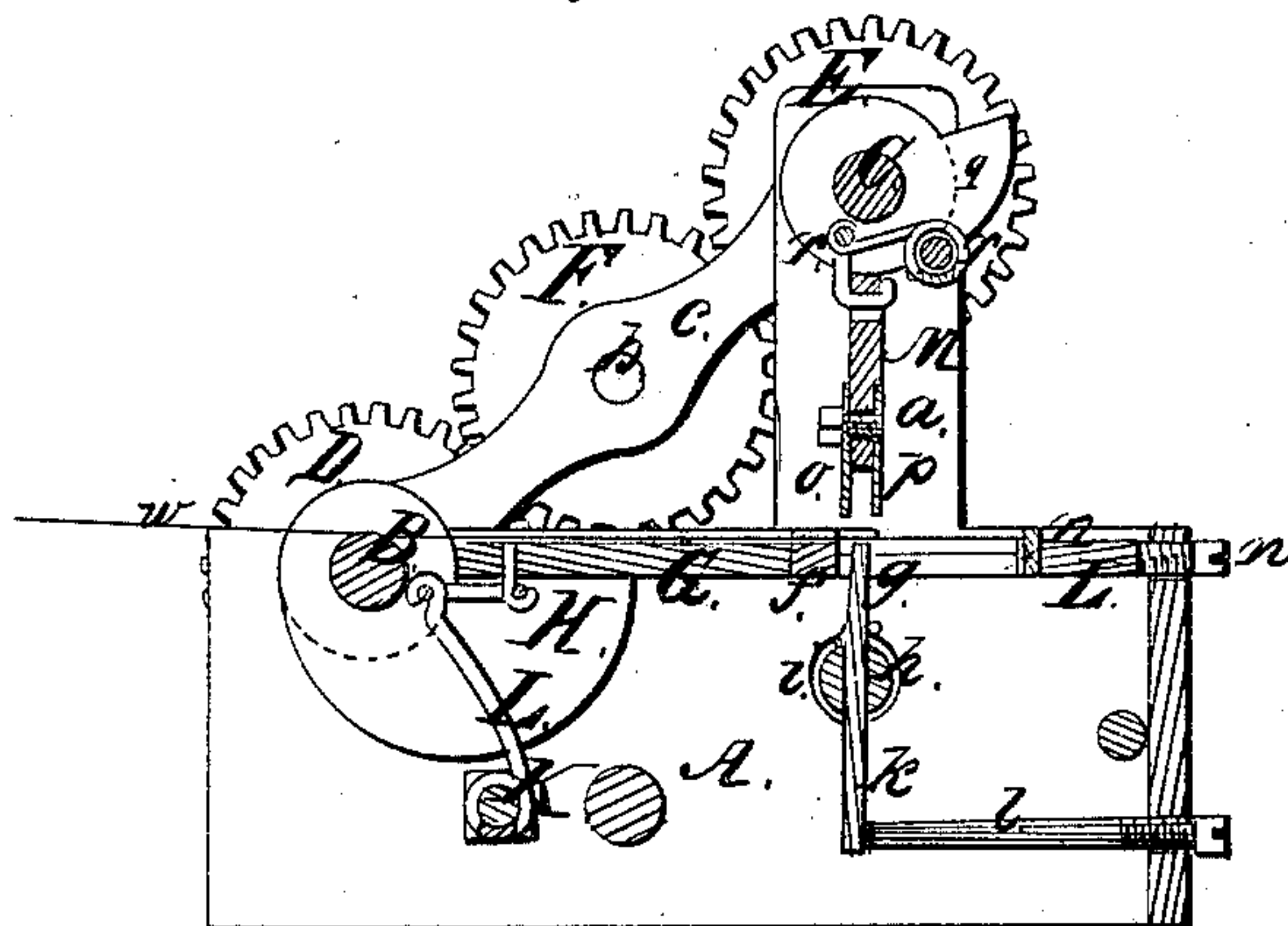


Fig. 3.

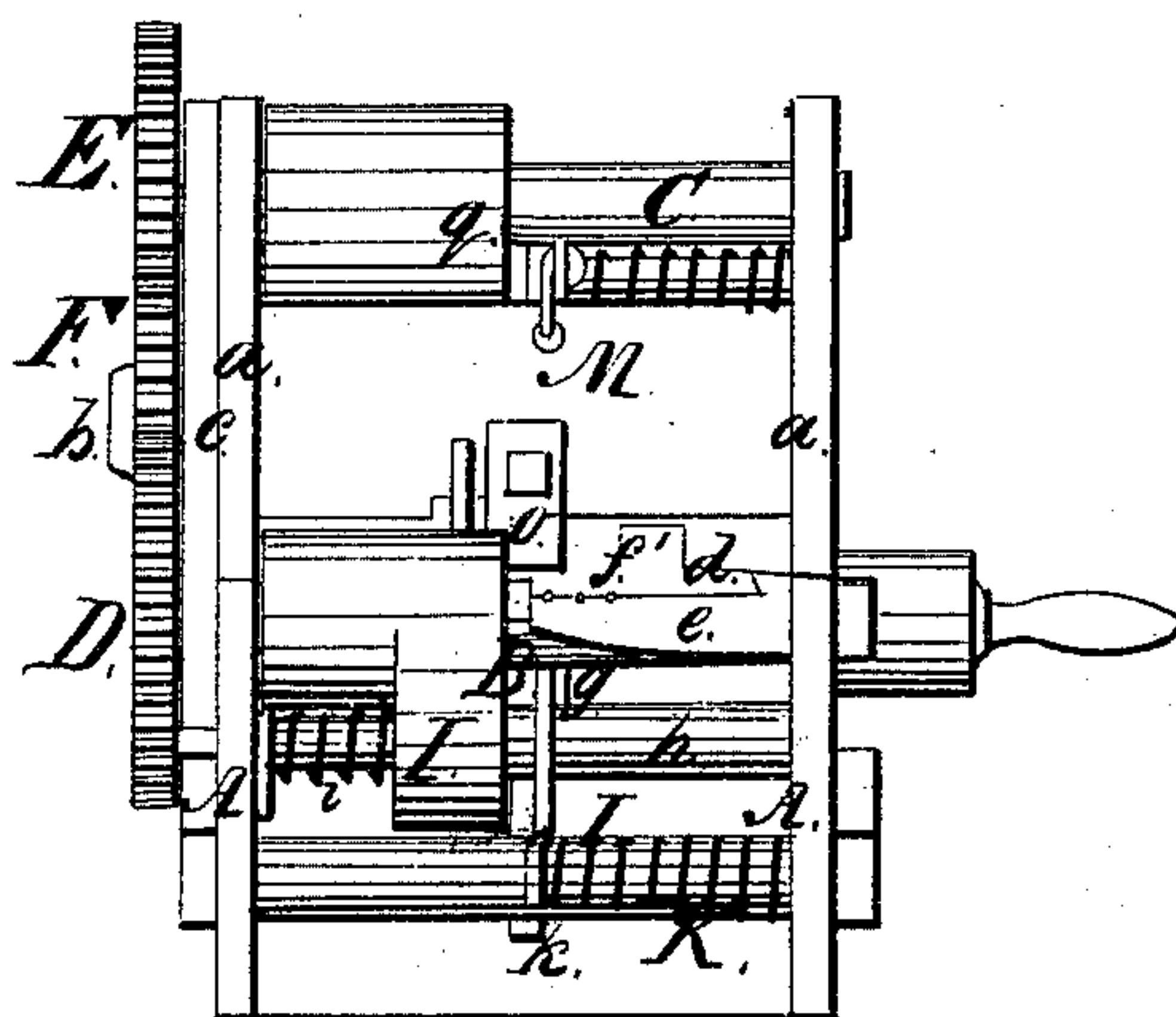
Fig. 4.



Witnesses:

J. W. Piper.

J. A. Snow.



Inventor:

Jesse S. Perkins.

by his attorney

R. V. Maddy

United States Patent Office.

JESSE S. PERKINS, OF LAKE VILLAGE, NEW HAMPSHIRE.

Letters Patent No. 80,304, dated July 28, 1868.

IMPROVEMENT IN MACHINE FOR MAKING KNITTING-MACHINE-NEEDLE SHANKS.

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, JESSE S. PERKINS, of Lake Village, of the county of Belknap, of the State of New Hampshire, have invented a new and useful Machine for Making from Wire the Blanks or "Shanks" of the Needles of Knitting-Machines; and I do hereby declare the same to be fully described in the following specification, and represented in the accompanying drawings, of which—

Figure 1 is a top view,

Figure 2 a longitudinal section, and

Figure 3 a rear end elevation of such machine.

The blank (or "shank," as usually termed by operatives,) which the machine makes, has the form as represented in side view in fig. 4. After having been so made from wire by the machine, the blank has to be flattened, slitted, pointed, notched, bored, and bent by other mechanism before it becomes in a proper form to receive the latch or tongue used for closing its hook usually made on the front end of the blank.

My machine forms each blank with a projection having the form as shown at *a* in fig. 4, and, besides this, my machine cuts the blank from the piece of wire from which it is to be made, the machine producing from a coil of wire a succession of such blanks, until such coil may be entirely cut up or converted into the blanks.

In the drawings, *A* denotes the frame of the machine, it having a driving-shaft, *B*, extended across it at its rear part. This frame also supports, in suitable uprights or standards, *a a*, another shaft, *C*, which is revolved by means of a train of gears, *D E F*, arranged as represented. The gears *D* and *E* are fixed on the two shafts, and the third gear is arranged between the other two, and supported by a journal, *b*, extended from an inclined bar, *c*, composing part of the frame.

At the rear end of the frame *A* are two jaws, *d e*, which are connected by a clamp-screw, *f'*, which goes through the upper and screws into the lower of such jaws, such lower jaw being projected from the frame.

The wire *W*, in its passage into the machine, first goes between the two jaws *d e*, and by them will be held by friction sufficient to prevent it from being forced backward during the retraction of the carriage *G* of the machine.

From the jaws the wire is extended through a die, *f*, projecting upward from and beyond the end of the movable carriage *G*, in manner as represented in fig. 2. This carriage is to be supported within the frame *A*, so as to be capable of being moved horizontally and longitudinally therein.

A cam, *H*, fixed on the driving-shaft, serves, when revolved by such shaft, to advance the carriage, which afterwards will be retracted by means of a spring, *I*, connected to it, and supported on an arm, *K*, arranged as represented in the drawings.

In advance of the die *f* is another die, *g*, which projects upward from a horizontal shaft, *h*, provided with a retractive spring, *i*, which is coiled around the shaft. One end of the spring is attached to the shaft, and the other to the frame. Furthermore, an arm, *k*, extended down from the shaft *h*, brings up against an adjustable stop, *l*, screwed through the front end of the frame.

Near the said front end of the frame is another movable carriage, *L*, which rests against the inner end of an adjusting-screw, *m*, and carries a die, *n*, formed and arranged in manner as shown in the drawings.

A third carriage, *M*, supported in grooves made in the two standards, *a a*, so as to be capable of being moved vertically, supports a bending-die, *o*, and a cutter, *p*, and is forced downward by a cam, *q*, and is retracted by a spring, *r*, the said cam *q* being fixed on the shaft *C*.

The operation of the machine may be thus explained:

The wire, after having been passed through the die *f*, and upon and beyond the top of the lower bender and cutter *g*, the carriage *M* will next descend, so as to force the upper bender *o* down upon the wire, and between the two dies *f g*. In the mean-time the wire will be cut off by the action of the two dies *g* and *p*, and the part in advance of the die *f* will be bent down into a U-form. This having been done, the carriage *M* will be immediately raised upward to its highest position, and the advance of the carriage *G* will follow. In going forward,

the carriage G will press against the front lower bending and cutting-die *g*, and move it out of the way, and pass in, and at the same time will draw the wire forwards, and force against the die *n* the part of the wire previously bent in the U-form. The legs of this portion will be compressed together, and thus the part *a*, shown in fig. 4, will be formed. Next, the carriage G will be retracted, the wire will remain at rest, and the die *f* will be moved back to its rearmost position. The carriage will next descend, and sever the blank from the wire.

I claim the combination of friction-jaws *d e*, or the equivalent thereof, and the dies and cutters *f g n o p*, arranged and provided with mechanism substantially as described, for operating them in manner and for the purpose as specified.

JESSE S. PERKINS.

Witnesses:

R. H. EDDY,

SAMUEL N. PIPER.