No. 13,267. PATENTED JULY 17, 1855.

H. KELSEA.

TREBLING A SINGLE STRAND AND TWISTING SEWING THREAD.

4 SHEETS—SHEET 1

Fig: 1.

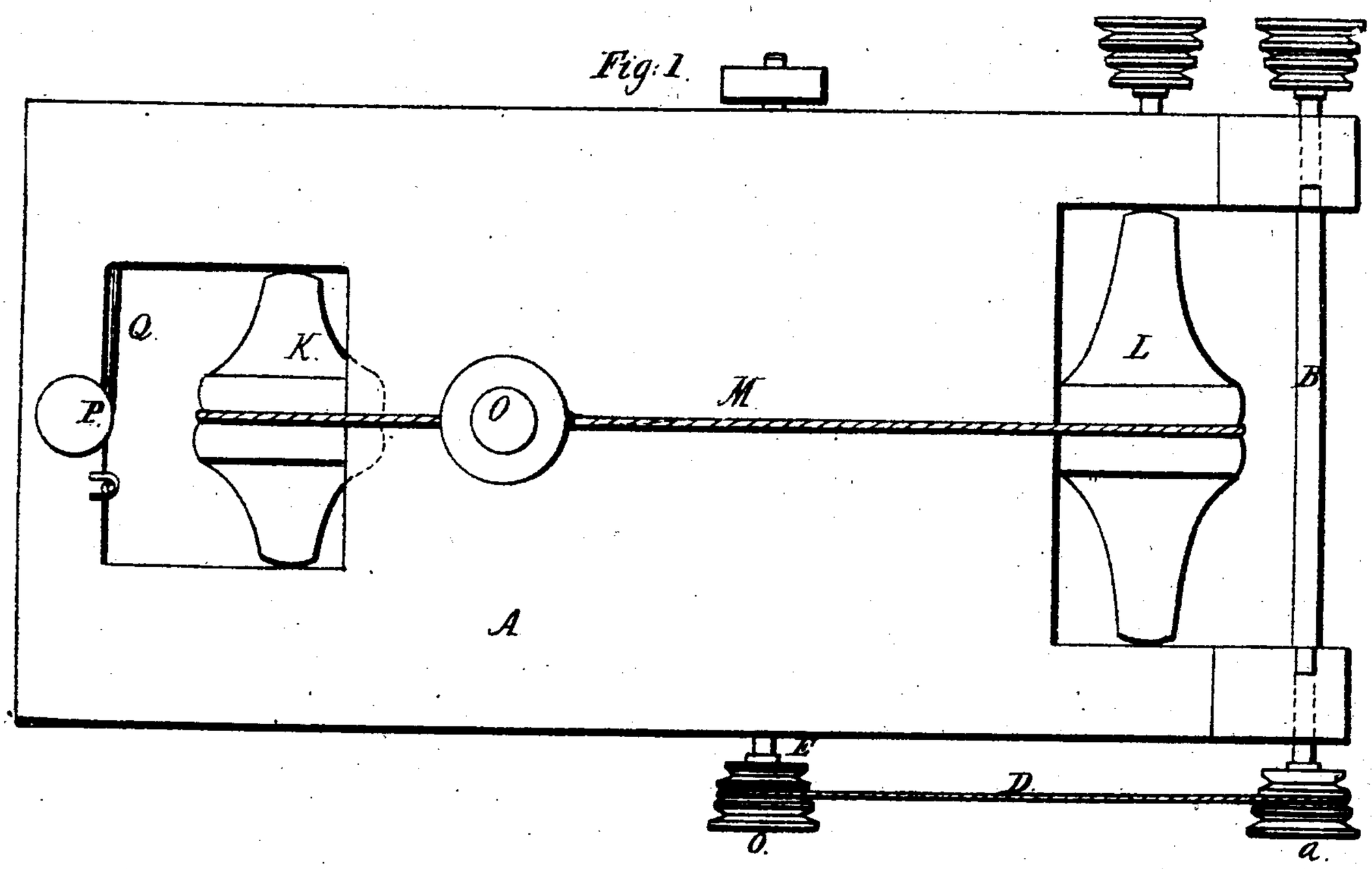
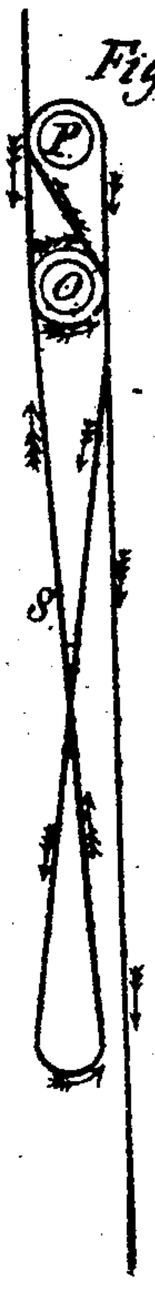


Fig: 5.

Fig: 6.



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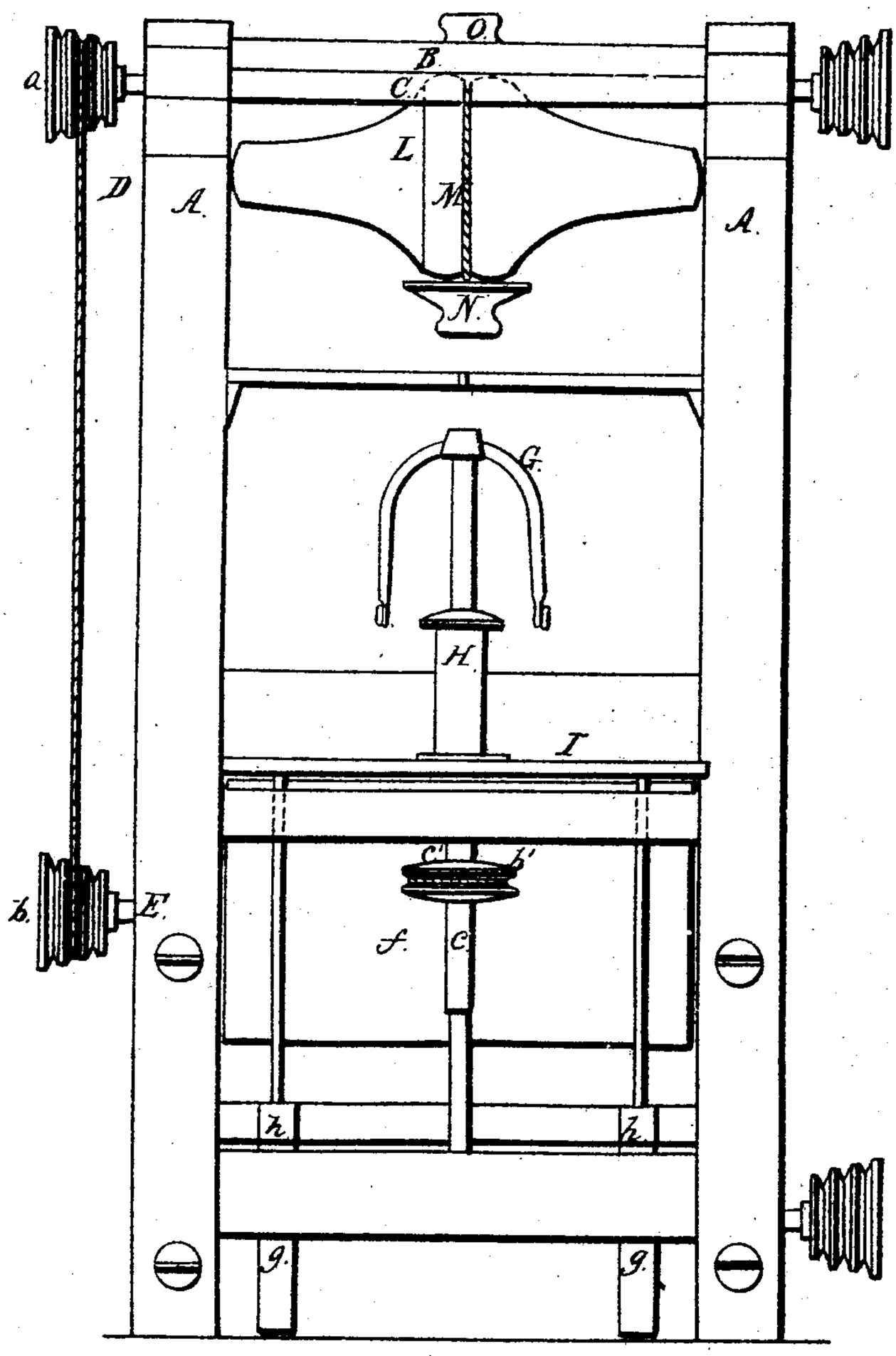
4 SHEETS—SHEET 2.

Fig. 2.



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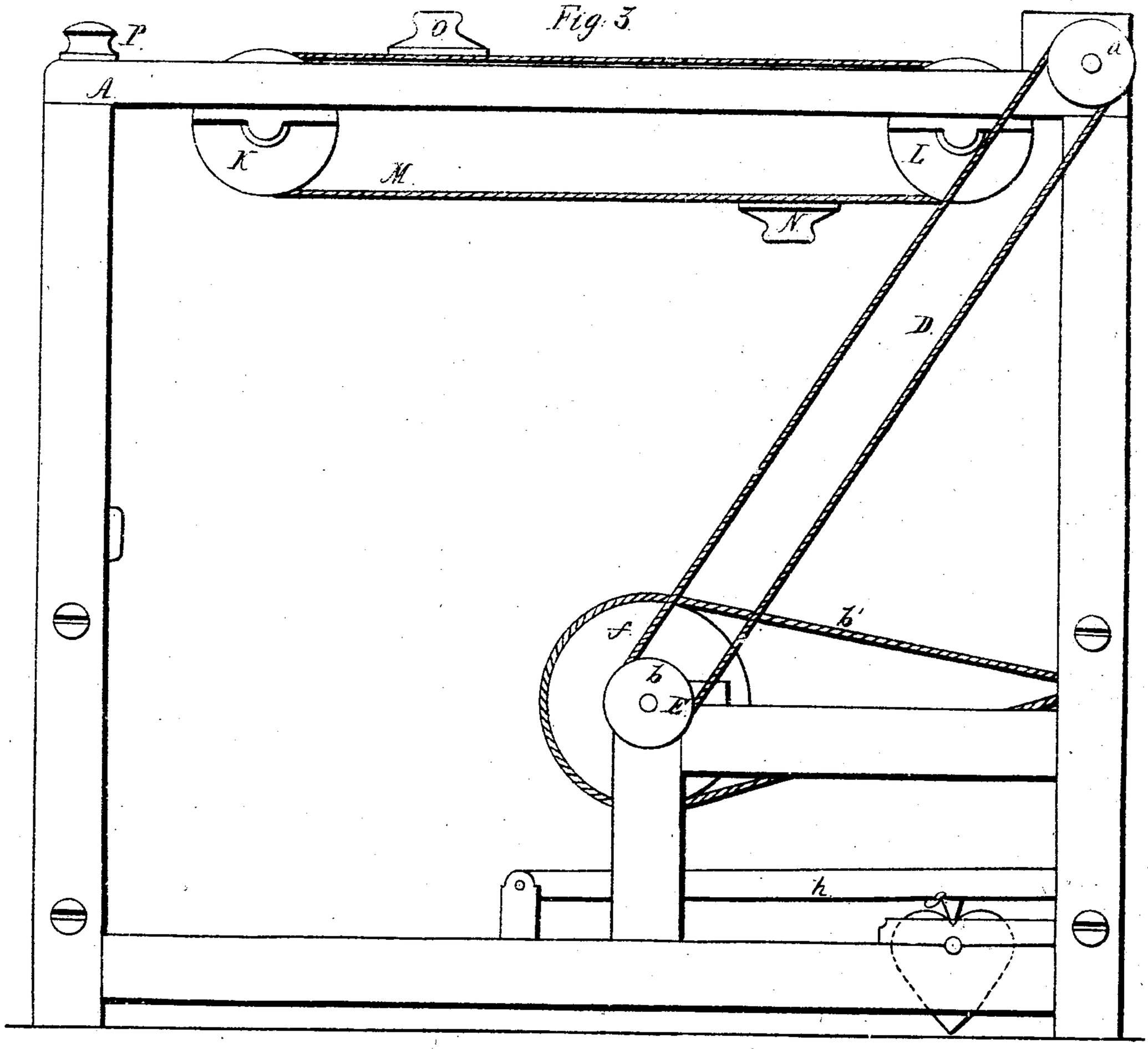
4 SHEETS—SHEET 3.

Fig. 3.



The specification in this is not in print.

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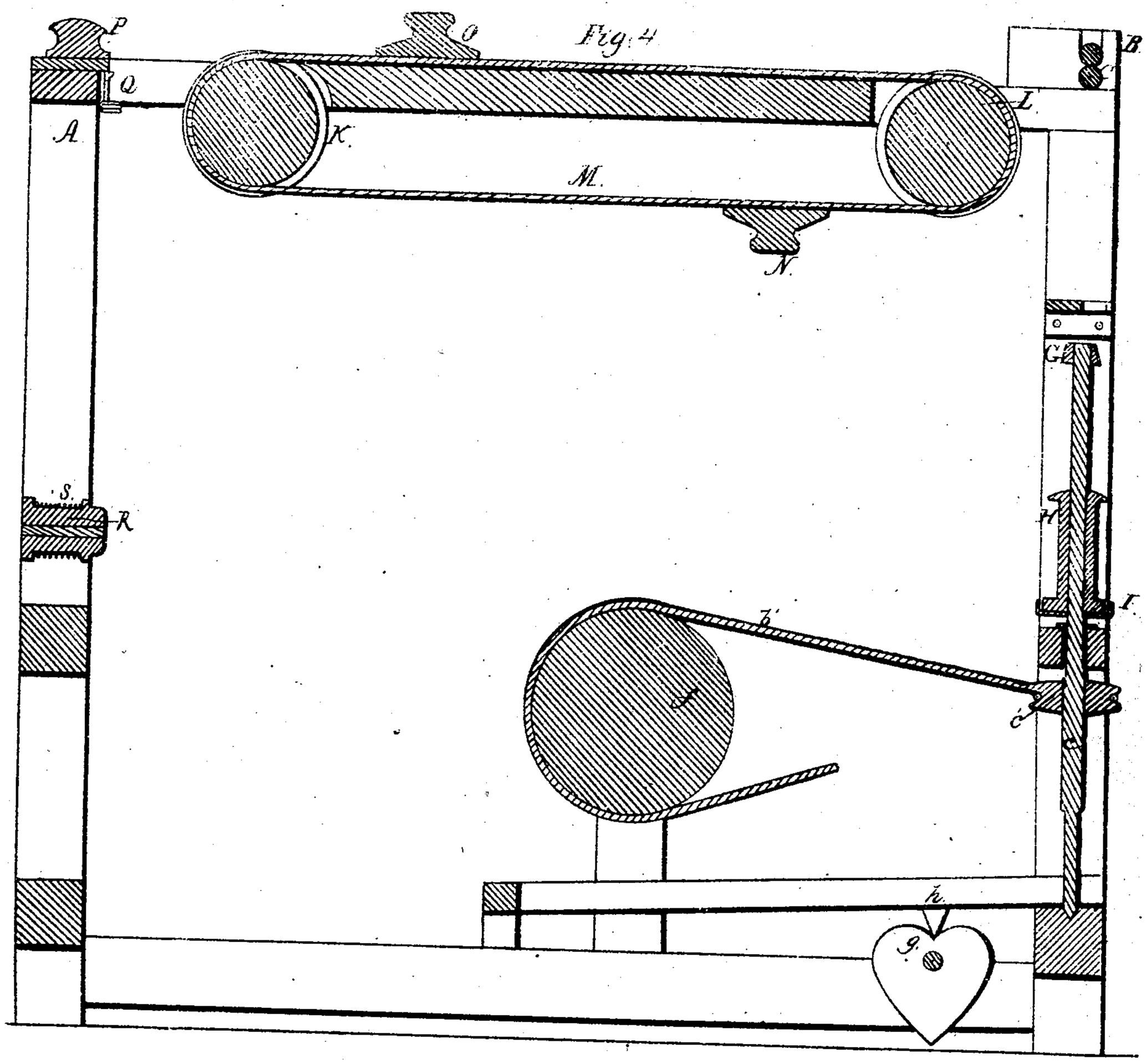
4 SHEETS—SHEET 4.

Fig: 4



UNITED STATES PATENT OFFICE.

HAROLD KELSEA, OF NORTH BRANCH, NEW HAMPSHIRE.

TREBLING A SINGLE STRAND AND TWISTING SEWING-THREAD.

Specification of Letters Patent No. 13,267, dated July 17, 1855.

To all whom it may concern:

Be it known that I, HAROLD KELSEA, of North Branch, in the town of Antrim, county of Hillsboro, and State of New Hampshire, have invented a new and useful Machine for Trebling Single Strand Preparatory to or While It is Being Twisted, my invention being particularly applicable to the manufacture of sewing-silk, twist or various kinds of thread; and I do hereby declare that the same is fully described and represented in the following specification, and the accompanying drawings, letters, figures, and references thereof.

Of the drawings, Figure 1, denotes a top view of the machine containing my improvement. Fig. 2, is a front end elevation of it. Fig. 3, is a side elevation of it. Fig. 4, is a vertical, central and longitudinal section of it.

In these drawings, A, denotes the frame work of the machine, which is to be made of suitable form and material for holding and supporting the operative parts connected with it. At the upper part of the front end of said frame there is arranged a set of drum rollers B, and C, which are moved by an endless band D, extending around two cone pulleys, *a*, *b*, one of which is fixed on the shaft of the lower drum roller, while the other is carried by the main driving shaft E, of the machine such driving shaft being rotated by any suitable means. Below the said feed rollers there is arranged a flier and bobbin, as seen at G, and H, in Figs. 2 and 4, they being operated by any suitable mechanism which will cause them to twist and wind up a strand trebled as hereinafter explained.

In the drawings I have exhibited the spindle, *c*, of the flier G, as driven by an endless band, *b*, working around a pulley, *c'*, (fixed on the spindle) and a drum, *f*, carried on the driving shaft. The bobbin, H, is exhibited in Figs. 2 and 4 as resting on a movable rail I, which by one or more cams, *g*, and levers *h*, or their mechanical equivalent or equivalents is raised and lowered as occasion may require in order to elevate or depress it upon its spindle.

In rear of the feed rollers and in the upper part of the frame, there are placed two drums or pulleys, K, L, (they being arranged as seen in Figs. 1, 3, and 4). Around such drums an endless band or cord M, travels, such band being provided with two hitching heads or knobs, N, O, which are fastened to and traverse around with it, they being arranged at equal distances apart. Directly in rear of the band M and supported by and upon the frame A, is another hitching head P, which for the sake of explanation may be termed the frame hitching head. This latter part or knob P, may be fastened to the frame so as to be immovable, but as a general thing it is better to have it so applied to such frame as to rest against a spring, Q, and to be movable toward the endless band M. Below the said hitching knob F, or some convenient part of the machine there may be arranged the bobbin from which the strand S, to be trebled and twisted may be taken.

In operating with the mechanism above described the strand on being applied to it is first to be drawn in a direction toward the flier and between the drum rollers. Next it is to be doubled or carried backward between the drum rollers and toward the rearmost of the hitching heads N, O, and passed half way around the same and carried again toward the flier. This trebles the thread. Next the strand so trebled is carried through the flier and attached to the bobbin. Next the workman or attendant upon the machine seizes that part of the strand which extends from the bobbin or spool R, toward the flier and draws it in the form of a loop and passes it underneath and between the portions of the strand that are held by the nearest hitching head of the endless band M. He next draws the loop against the said hitching head and backward toward the knob P, and hitches it over said knob.

Fig. 5, is a diagram representing the trebling of the strand as above described while Fig. 6, is another sketch showing the manner in which it is looped and passed through the other looped portion of the thread and hitched over the knob P.

I would observe that in a machine of the above description, I prefer to have the hitching knobs N, O, at not less than thirty feet apart, although they may be arranged at even a less distance asunder. The strand being disposed on the machine in the manner above described, the spindle and flier may next be put in revolution so as to cause it to be twisted and wound upon the bobbin. While being wound upon the bobbin, the draft on the hitching head *o*, will not only

cause the endless band to be moved on its drums, but the head or knob, *o*, to travel with said barrel toward the drum rollers. In passing downward around the front drum, K, the knob, *o*, will slip out of the loopings of the strand, leaving them enchained or connected together like two contiguous links of a chain. While the knob is passing down around the front roller or drum K, the other knob, N, will be coming upward around the back roller L, and as soon as it rises above the same the workman seizes the loop which is upon the knob, P, and removes it from said knob and loops it over the knob N. Next, he seizes that part of the strand coming directly from the bobbin and loops it around his finger and passes it in the form of a loop upward between the loop on the head N, and from thence carries it back and loops it over the head P, and so he continues this process of first unlooping from the head, P, and looping over the back hitching knob of the endless band and next forming a new loop and passing it through the loop on the back knob of the endless band and looping it over the knob, P, until the whole strand is drawn off the bobbin or spool R, and twisted and wound upon the flier bobbin.

I do not claim the combination of doubling, twisting and reeling mechanism, whereby a strand may be doubled, twisted and reeled so as to be made into a skein, but

I do claim—

The combination of the endless band M, its hitching heads or knobs N, O, and the stationary frame hitching knob, P, as applied together, to the drum rollers and twisting mechanism and made to operate so as to treble and enchain a strand substantially as hereinbefore specified.

In testimony whereof I have hereunto set my signature this second day of May A. D. 1855.

HAROLD KELSEA.

Witnesses:
R. H. Eddy,
F. P. Hale, Jr.