

H. BEHN.  
Sewing Machine.

No. 18,880.

Patented Dec. 15, 1857.

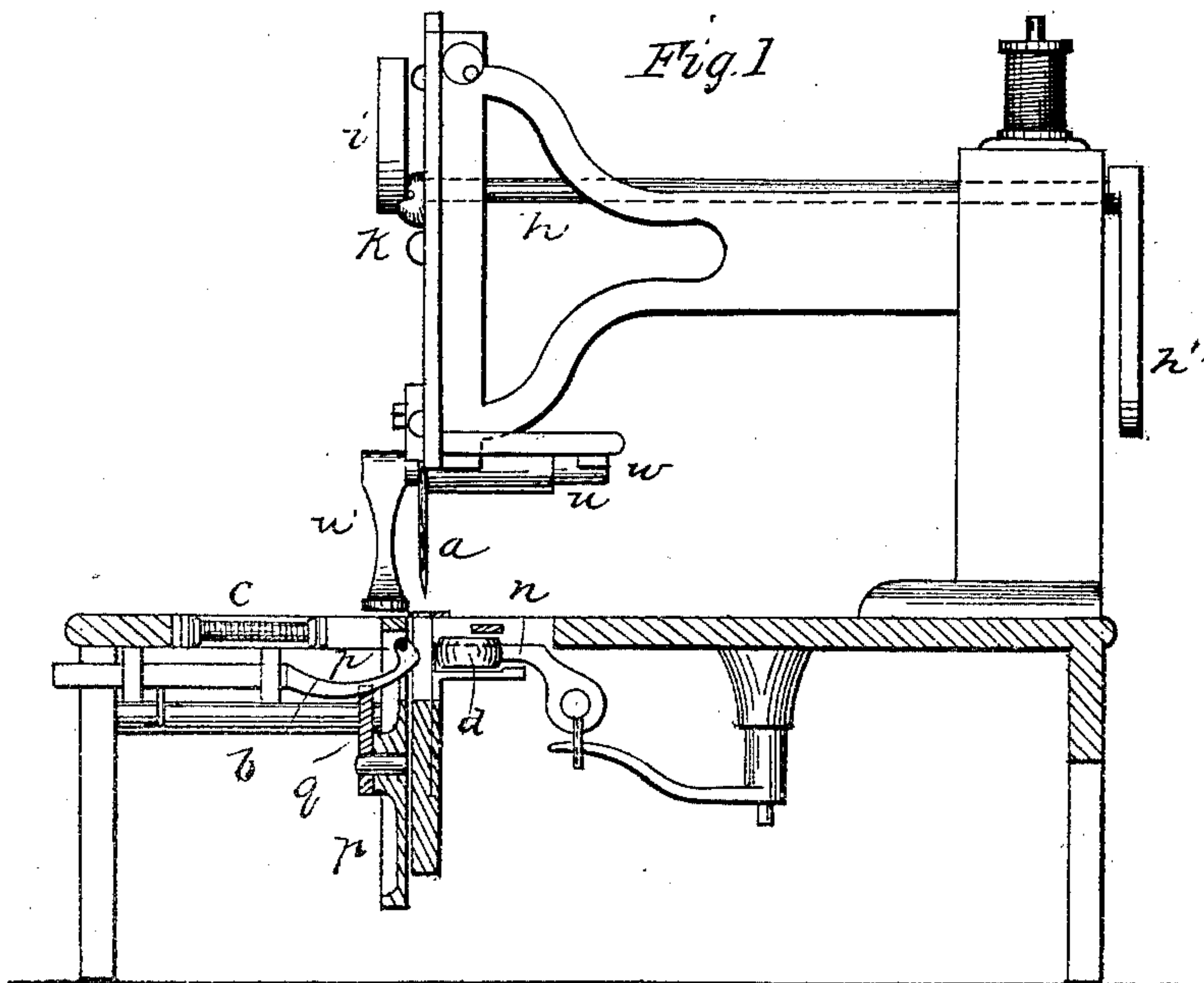
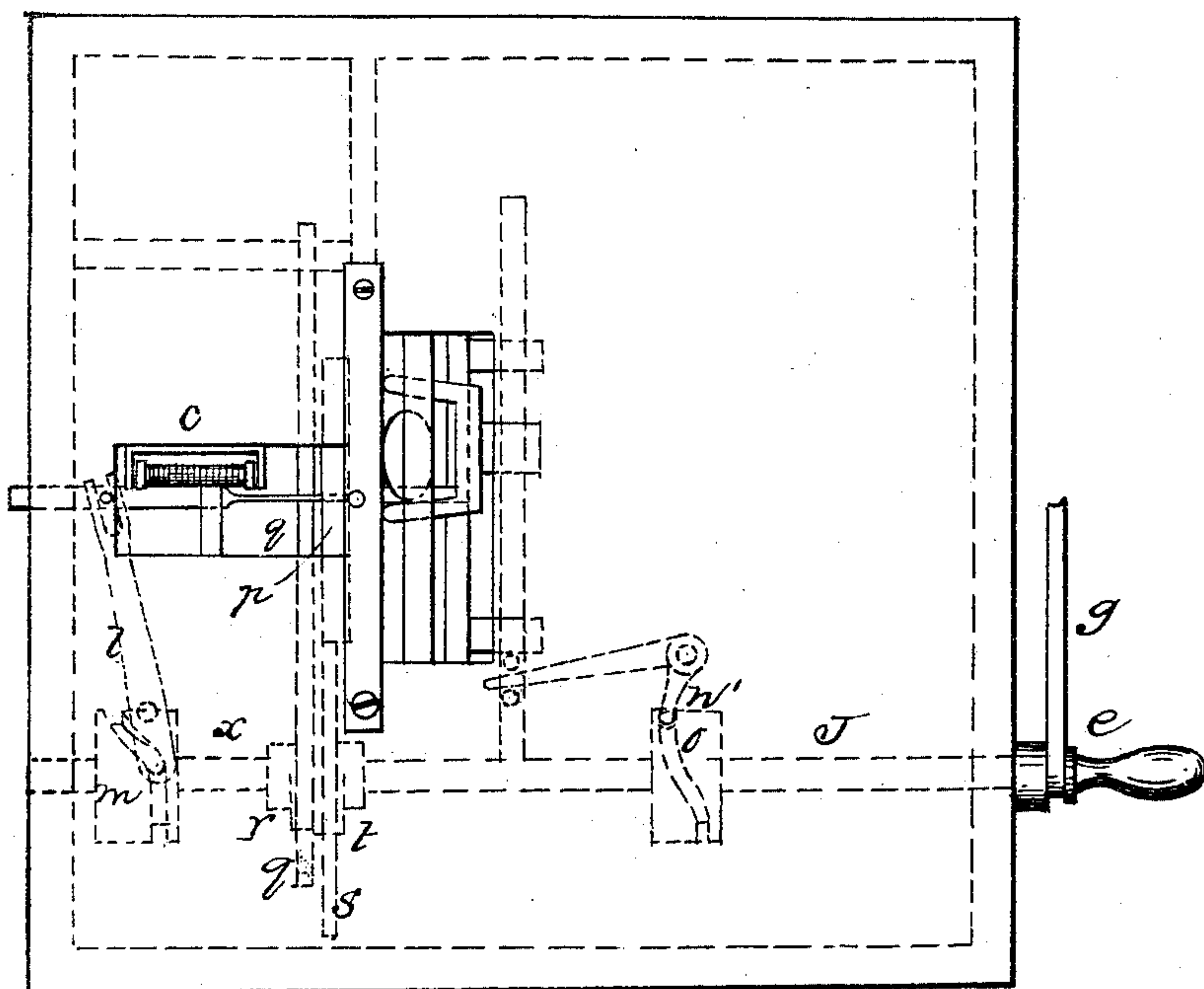


Fig. 2

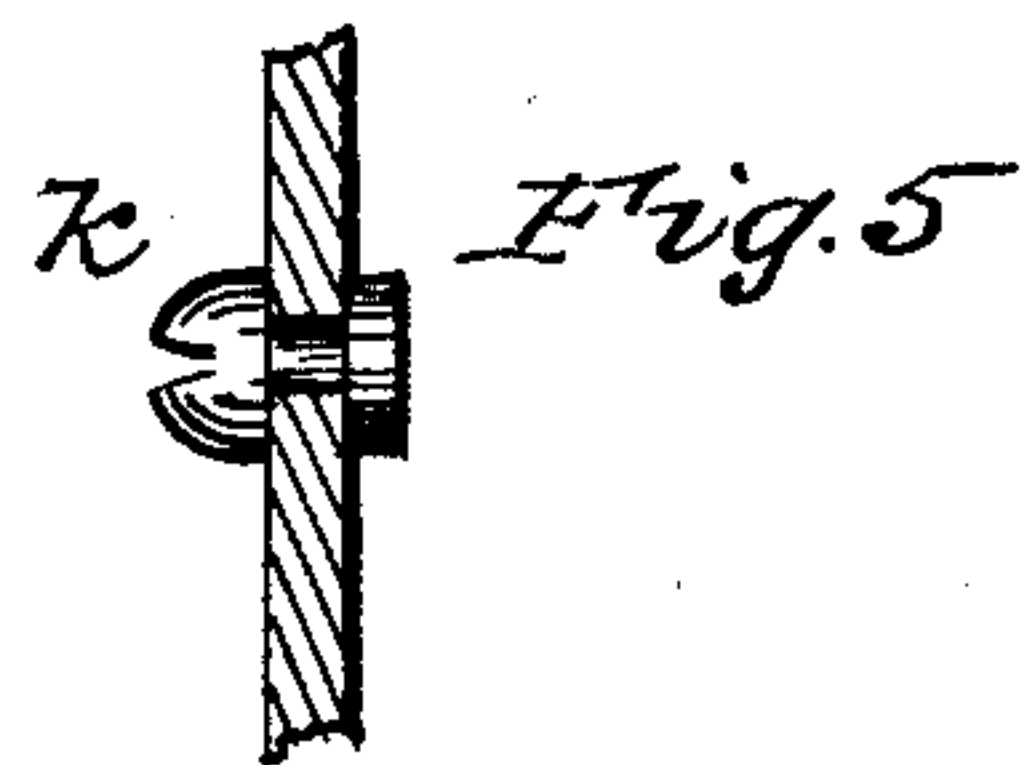
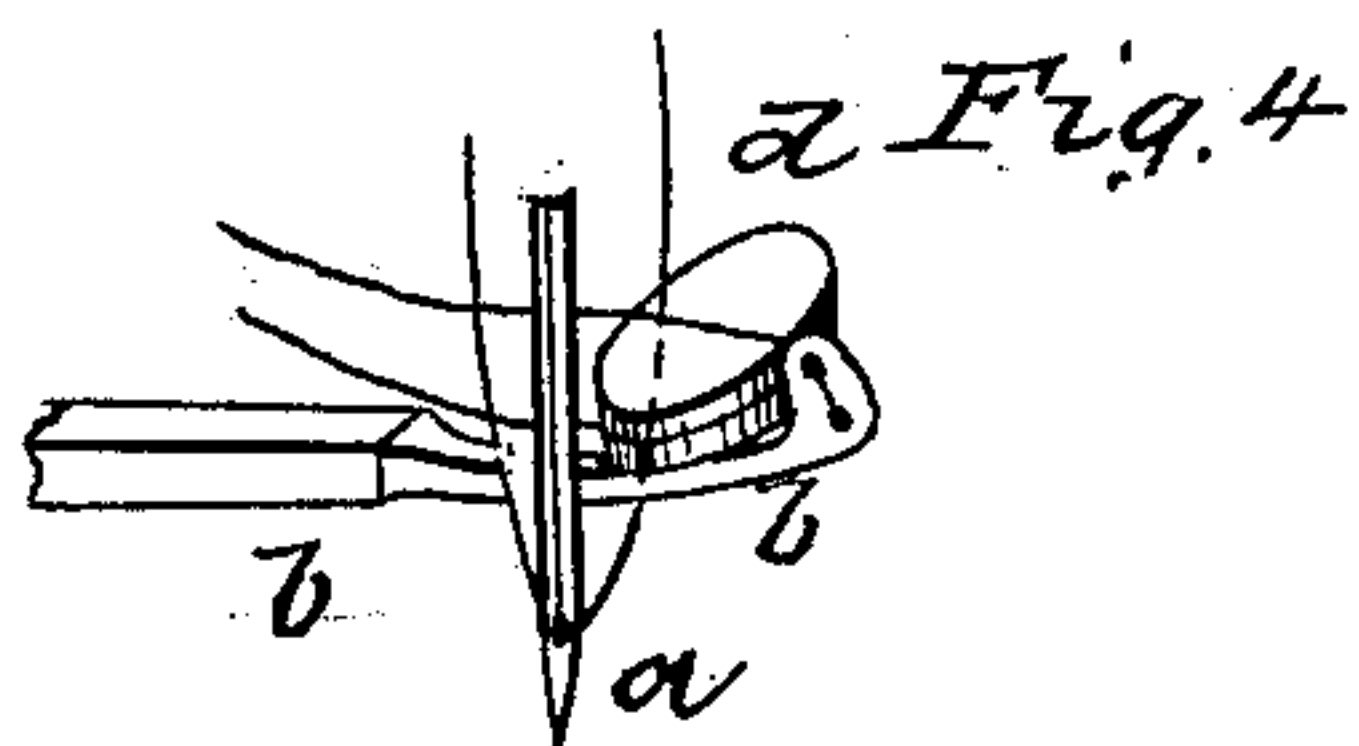
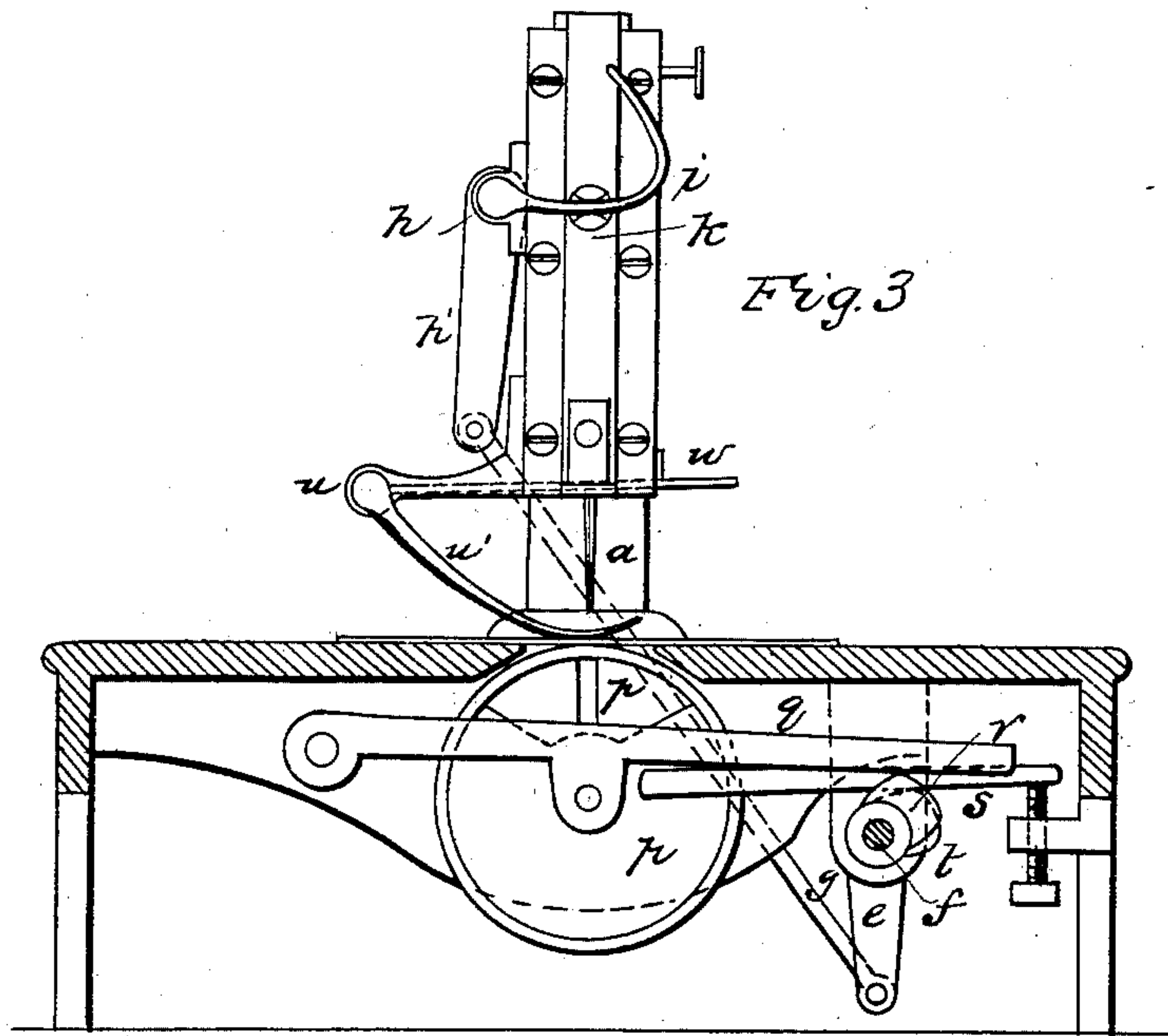


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# UNITED STATES PATENT OFFICE.

HENRY BEHN, OF NEW YORK, N. Y., ASSIGNOR TO HIMSELF AND THOMAS SEWELL, OF SAME PLACE.

## IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 18,880, dated December 15, 1857.

*To all whom it may concern:*

Be it known that I, HENRY BEHN, of the city, county, and State of New York, have invented certain new and useful Improvements in the Construction of Sewing-Machines; and I do hereby declare and ascertain the said improvements, referring therein to the drawings, in which—

Figure 1 is a vertical section from front to back. Fig. 2 is a top plan, with the parts below the table in dotted lines. Fig. 3 is a vertical section at right angles to Fig. 1. Fig. 4 shows the needle, thread-carrier, and shuttle in the act of making a stitch. Fig. 5 is the split pin for the needle-motion.

My improved machine consists of an apparatus for making a three-threaded stitch, as will hereinafter more clearly appear.

The construction is as follows: On a suitable platform or table of metal I affix an upright standard, with a horizontal arm extending out therefrom above and parallel with the table, as in many sewing-machines is common. At the end of the horizontal arm there is a slide, which works up and down in a vertical line, to the lower end of which a needle, *a*, is attached, as in the common needle-and-shuttle machines, the needle being of ordinary form, with the eye near the point. At right angles to this needle I place a thread-carrier, *b*, having a broad, flat, spear-shaped point, in which are two or more holes, into which a thread passes from a spool, *c*. This thread-carrier *b* slides in guides below the table, and the spool *c* is also below that point. Opposite to the thread-carrier *b* will be seen a shuttle, *d*, which runs in a race back and forth, similar to an ordinary shuttle. The motion is imparted to the needle *a* from the hand-crank *e* on the shaft *f* by means of a connecting-rod, *g*, which gives a vibrating motion to a shaft, *h*, that is suspended at the side of the horizontal arm of the standard by being connected with the end of an arm, *h'*. At the front end of shaft *h* there is a curved arm, *i*, (most clearly shown at Fig. 3,) which plays in a split-headed pin, *k*, (seen detached at Fig. 5,) in the needle-slide. This motion is simple and effective. The movement of the thread-carrier *b* is imparted from the shaft *f*

by means of a lever, *l*, (shown in dotted lines in Fig. 2,) actuated by a grooved cam, *m*, on the shaft *f*. The shuttle is moved by the usual fork, *n*, vibrated by means of the bent lever *n'*, (dotted in at Fig. 2,) one arm, *n'*, of which enters a groove in another cam, *o*, on the same shaft, *f*. The various motions of these several parts are as follows: First, the needle *a* descends through the cloth to be sewed, carrying its loop of thread with it. It then stops, and the thread-carrier runs its thin end through the loop of the needle, as seen in Fig. 4, carrying a loop of thread with it in an open position and passing by the end of the shuttle, which is then thrust through the loop, when the thread-carrier retreats and catches the thread on the shuttle, and, lastly, the needle rises from the cloth, ready for a succeeding operation.

The cloth is fed forward by the following feeding apparatus, (principally shown at Fig. 3:) A wheel, *p*, is suspended on a lever, *q*, of the second order, the fulcrum of which is at *q'*. The opposite end of this lever *q* passes over the shaft *f*, upon which there is a cam, *r*, that the end of lever *q* rests on, and by which it is raised at intervals, carrying up with it the feed-wheel *p*, and bringing its flat periphery against the under side of the article to be stitched. After the feed-wheel is thus raised it is caused to revolve on its axis a sufficient distance to feed the article forward the length of a stitch. This is effected by an arm, *s*, centered at the axis of the wheel. This arm *s* has its outer end also resting on a cam, *t*, on shaft *f*, beside the preceding cam, so that when the wheel is raised up the next action will be upon this arm *s*, by raising which the wheel will be revolved enough to feed, the wheel and arm being connected. I find this a very simple and efficient feed, and sure in its action. To hold the article down to its place while sewing, I affix a little axis, *u*, to the lower end of the head of the horizontal arm of the standard, and from its front end projects down a finger, *u'*, that bears upon the face of the article. (See Figs. 1 and 3.) At the opposite end there is another arm, *w*, by which it can be lifted or held down.

Having thus fully described my improved

sewing-machine, what I claim as my invention, and for which I desire to secure Letters Patent, is—

1. The combination of the needle *a*, thread-carrier *b*, and shuttle *d*, constructed, arranged, and operating substantially in the manner and for the purposes described.

2. The method of operating the needle by

means of the bent arm *i* on the vibrating shaft *h*, actuating the slide to which the needle *a* is affixed.

HENRY BEHN.

Witnesses:

AUG. BEHN,  
WM. H. STANSBURY.