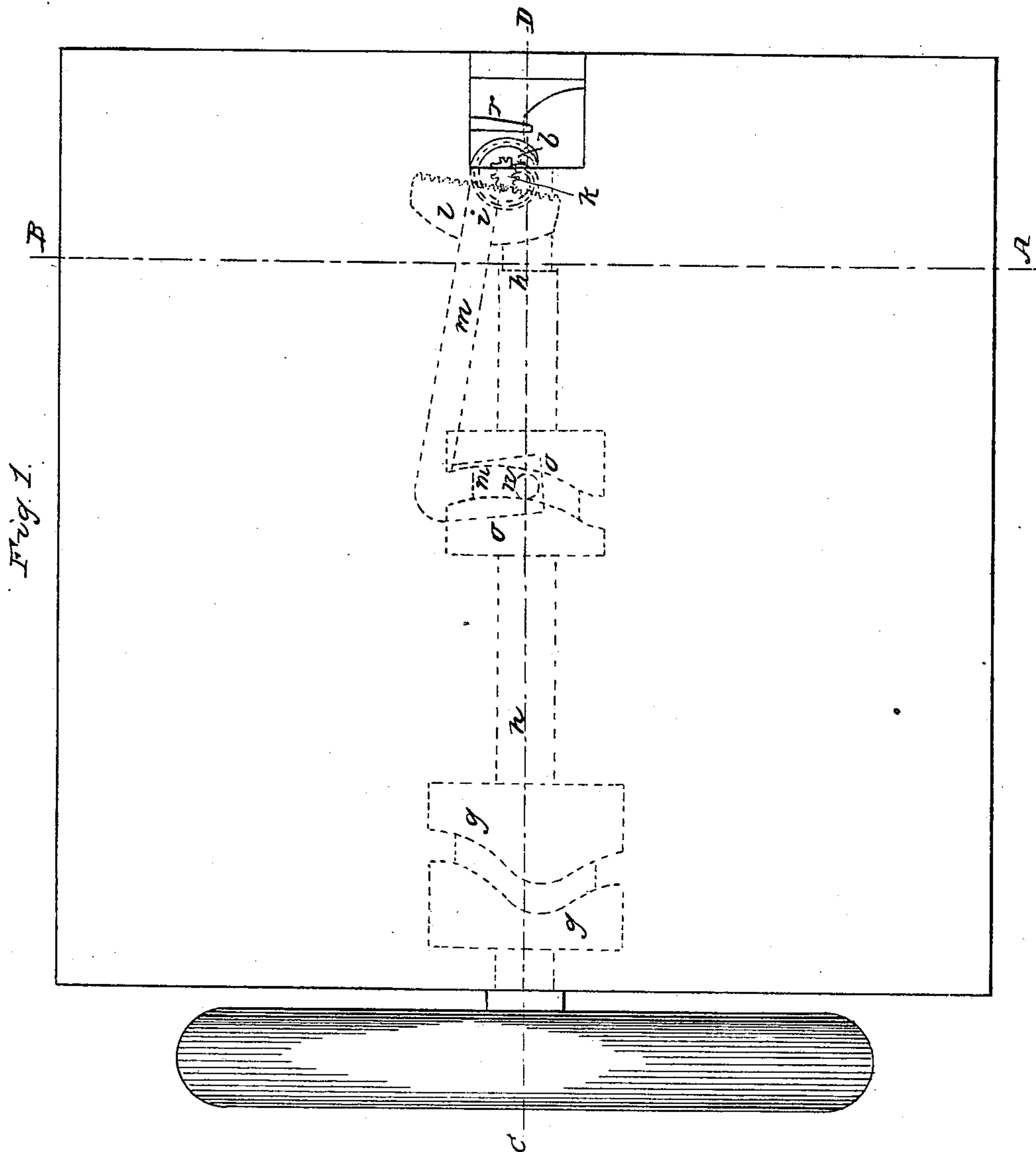


GROVER & BAKER.
Sewing Machine.

3 Sheets—Sheet 1.

No. 9,053.

Patented June 22, 1852.

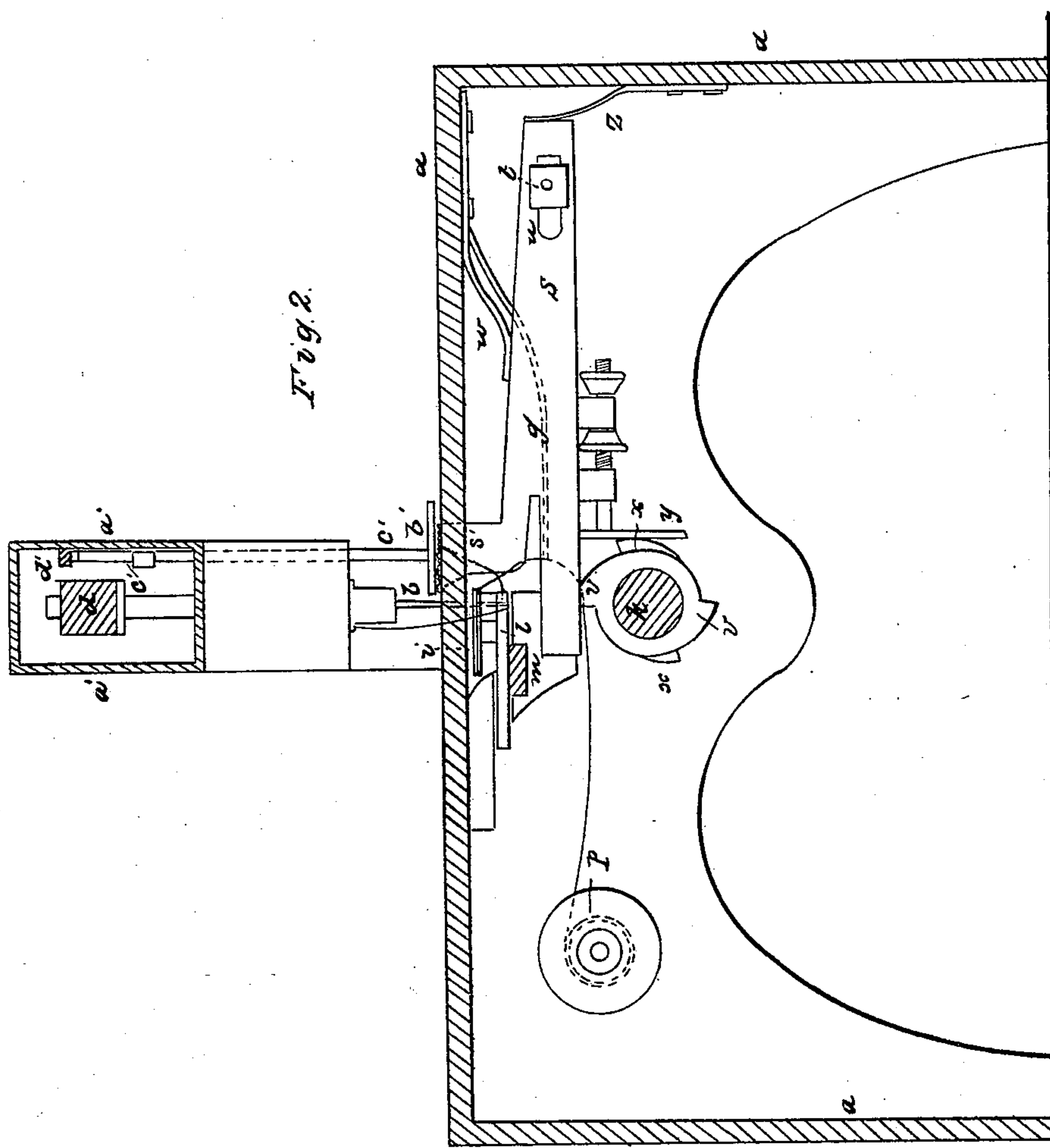


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3 Sheets—Sheet 2.

No. 9,053.

Patented June 22, 1852.

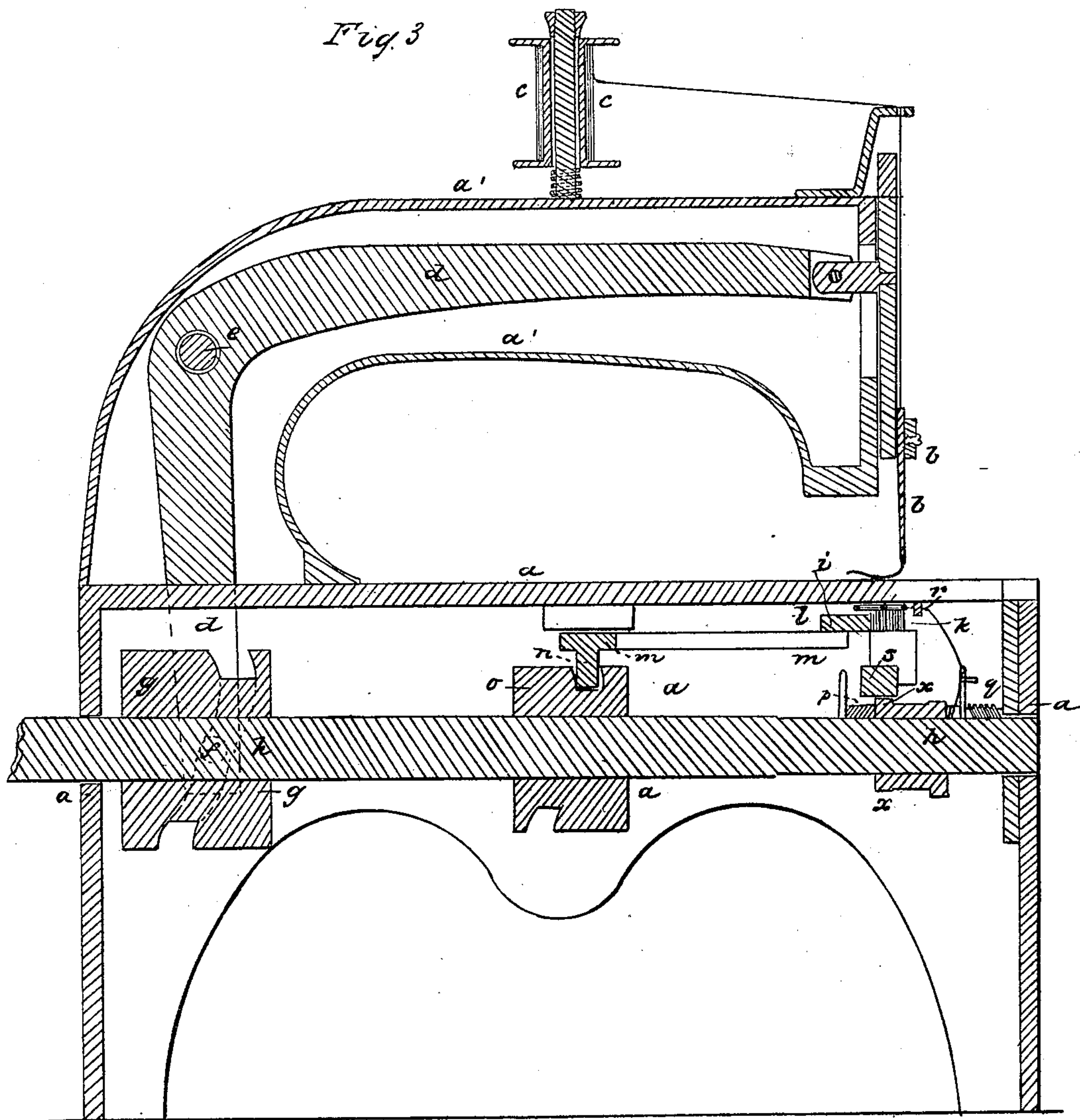


GROVER & BAKER.
Sewing Machine.

3 Sheets—Sheet 3.

No. 9,053.

Patented June 22, 1852.



UNITED STATES PATENT OFFICE.

W. O. GROVER AND W. E. BAKER, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 9,053, dated June 22, 1852.

To all whom it may concern:

Be it known that we, W. O. GROVER, of Boston, in the county of Suffolk and State of Massachusetts, and W. E. BAKER, of Roxbury, in the county of Norfolk and State aforesaid, have invented certain new and useful Improvements in Sewing Machinery; and we do hereby declare that the following description, taken in connection with the accompanying drawings, hereinafter referred to, forms a full and exact specification of the same, wherein we have set forth the nature and principles of our said improvements, by which our invention may be distinguished from others of a similar class, together with such parts as we claim and desire to have secured to us by Letters Patent.

Our improvements are made upon a sewing-machine for which Letters Patent of the United States were granted to us, bearing date the 11th day of February, 1851, and described in the schedule annexed to the same. The principal features of our improvements consist in the arrangement by which the cloth is fed along as the sewing progresses, and in making the horizontal needle circular.

The figures of the accompanying plates of drawings represent our improved sewing-machine.

In Plate 1, Figure 1 is a plan of the same, with the parts for operating the horizontal needle represented by dotted lines; and Fig. 2 is a vertical section taken in the plane of the line A B, Fig. 1. In Plate 2, Fig. 3 is a vertical section taken in the plane of the line C D, Fig. 1, Plate 1.

a a a' a' in the drawings represent the frame-work of the machine.

b b is the vertical needle, which is supplied with thread (represented by red lines in the drawings) from the adjustable spool *c c*. This needle *b b* is made to move up and down by the bent lever *d d*, which turns on a fulcrum at *e* in the frame-work *a' a'*, the stud *f* of the said lever playing in the grooved wheel *g g* on the driving-shaft *h h*, and operating the vertical needle, as will readily be understood by inspection of the drawings.

In this machine the horizontal needle *i i*, Fig. 1, Plate 1, is made nearly circular instead of straight, this form of needle being better fitted for opening the loop of the thread of the

vertical needle. The horizontal needle *i i* is made to rotate intermittently, as follows: The end of the needle is bent so as to be inserted into the pinion *k*, into which works the geared rack *l*, attached to the bent lever *m m*, the stud *n* of which works in the eccentric groove of the wheel *o o* on the driving-shaft *h h*. The thread which supplies the needle *i i* (represented by blue lines in the drawings) is wound upon the spool *p*, and passes from the said spool through the spring *q* and guiding-bar *r*, and thence through the point and around the needle *i i*, which is grooved for the purpose. This needle, with its thread, passes through the loop of the vertical needle and forms another loop beyond, through which the vertical needle passes, the two needles operating together and forming a double-loop stitch in the manner described in the schedule annexed to the Letters Patent above referred to.

The apparatus in this machine for feeding the cloth along differs, essentially, from that introduced into the machine before patented by us, as it feeds the cloth along much more uniformly. This apparatus is represented more particularly in Fig. 2, Plate 1, and consists of the bent bar *s s'*, the upper part of which is notched to hold the cloth, and extends a little above the platform, having a reciprocating vertical motion and a motion forward and back imparted to it, as follows: The bar *s s'* turns on a fulcrum at *t*, and has also a slot, *u*, in it, so as to allow it to slide on the said fulcrum. The bar *s s'* is pressed up by the cams *v v* on the driving-shaft, and forced back again by the spring *w*, attached to the frame-work *a a*. The bar is also moved forward and back by means of the cams *x x* striking against the projection *y*, and by the retracting-spring *z*.

The cloth to be operated upon is placed upon the notched bar *s s'*, and, in order to hold it upon the same while the stitch is being made, is pressed by the vertical motion of the bar *s s'*, as above described, against the plate *b' b'*, attached to the sliding rod *c' c'*, on the end of which the spring *d'* bears.

It will be seen that as the sewing progresses the cloth will be held upon the notches of the bar *s s'* by the said bar striking against the yielding plate *b' b'*, and the cloth will be fed along after each stitch by the horizontal motion of the bar *s s'*, the downward motion of

said bar, as above described, releasing the cloth from the pressure of the plate *b' b'*, so as to allow it to be fed along.

Having thus described our improved sewing-machine, we shall state our claims as follows: What we claim as our invention, and desire to have secured to us by Letters Patent, is—

1. The arrangement above described in a sewing-machine for feeding the cloth along, consisting of a notched bar which has a vertical or up-and-down motion for fastening the cloth upon and releasing it from the notches

of said bar by striking it against a yielding plate, and a lateral motion or motion forward and back for feeding the cloth along after each stitch, substantially as above set forth.

2. A circular instead of a straight horizontal needle for spreading the loop of the thread of the vertical needle, substantially as above described.

WM. O. GROVER.

WM. E. BAKER.

Witnesses:

EZRA LINCOLN,

JOSEPH GAVETT.