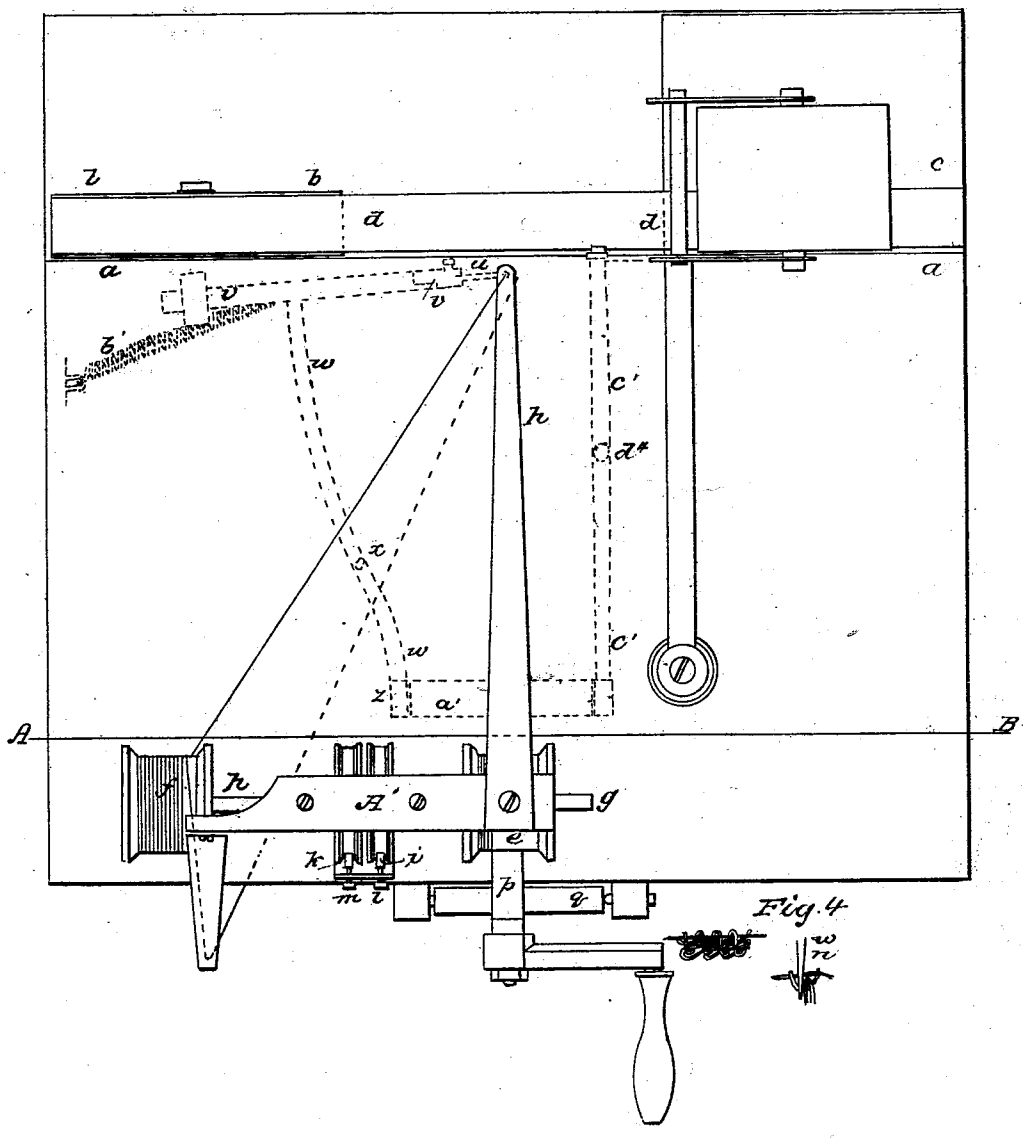
2 Sheets—Sheet 1.

GROVER & BAKER.

Sewing Machine.

No. 7,931. Patented Feb. 11, 1851.

Fig. 1



2 Sheets—Sheet 2.

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Fig. 2

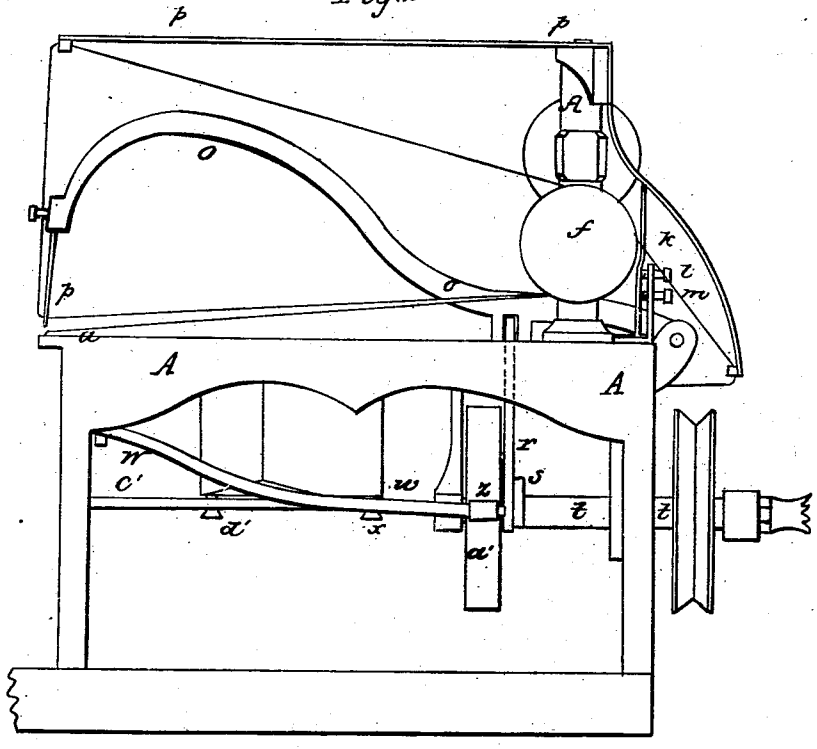
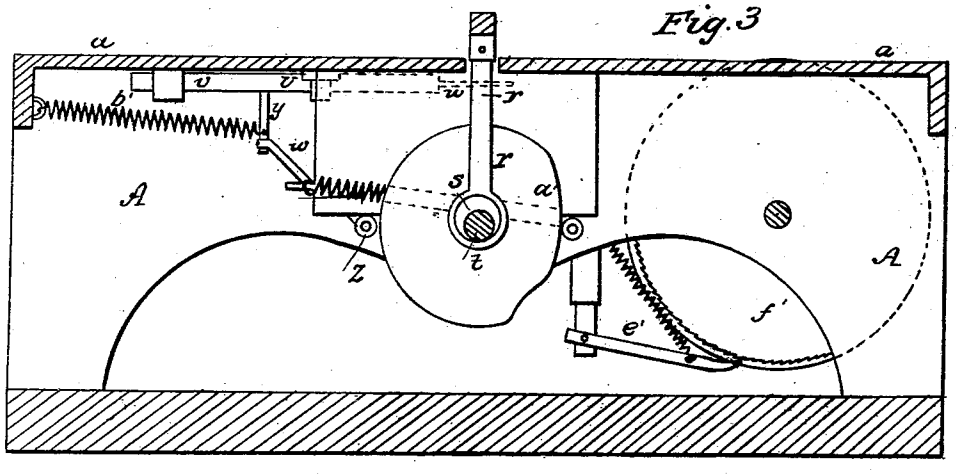


Fig. 3



UNITED STATES PATENT OFFICE.

W. O. GROVER, OF BOSTON, AND WM. E. BAKER, OF ROXBURY, MASS.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **7,931**, dated February 11, 1851.

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 description 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.

The figures of the accompanying plate of drawings represent our improvements.

Figure 1 is a plan or top view of our improved machine. Fig. 2 is a side elevation; and Fig. 3 is a longitudinal vertical section taken in the plane of the line A B, Fig. 1.

The distinguishing feature of our invention consists in the use of two needles, instead of one needle, and a shuttle carrying a filling-thread, either by a rotary or a traverse movement, and the forming of a double-loop stitch by the peculiar movements of said two needles and their respective threads.

A A A A′ A′ is the frame-work of the machine, which may be constructed as shown in the drawings, or in any other suitable way, to sustain the operative part of the apparatus. The two pieces of cloth to be joined or seamed are placed on the platform *a a a a*, and fed along by the feeding-rolls *b b c* and band *d d*, which are made to move intermittently and after each stitch, by means which will be referred to in the sequel. The thread for the two needles is wound on the spools *e f*, which are supported and turn on horizontal spindles *g g h h*, having bearings in the upright portion A′ A′ of the frame-work. A suitable degree of friction is brought to bear on these spools, so as to prevent the thread from unwinding too easily by the springs *i k*, which are operated, respectively, by screws *l m*, in a manner well understood by mechanics.

n is the vertical needle, with the eye formed at a proper distance from the point, as is usual in other kinds of sewing-machines, and fixed in the socket end of the needle-arm *o o*, as shown in Fig. 2. The thread which supplies this needle comes from the spool *e*, and is passed through a hole in the spring-guide *p p* and through the eye of the needle, in the direction shown by the blue line in Fig. 2. This needle turns or vibrates on the short shaft *q*, Figs. 1 and 2, and is operated by means of the arm *r r*, attached to it at a proper point, and worked up and down by means of the eccentric or cam *s* on the driving-shaft *t t*, which turns in the lower looped end of said arm *r r*, in a manner which will be readily understood by inspection of Fig. 3.

The horizontal needle *u* (shown by dotted lines in Figs. 1 and 3) is fixed in the socket end of the holder *v v*, which holder moves or slides forward and back in proper guides on the under side of the platform *a a a*, &c. The thread which supplies this needle comes from the spool *f*, and passes in the direction shown by the red lines in Fig. 1, said red lines being dotted when the thread is under the platform *a a a*. The horizontal needle derives its reciprocating motion in a proper direction from the lever-rod W W, which turns on the fulcrum *x*, one end of which rod clasps the elongated stud *y*, depending from the under side of the holder *v v*, while the other end has a roller, *z*, fitted on it against the face of the cam *a′ a′* on the driving-shaft, by the revolutions of which the needle *u* is moved forward, the retracting-spring *b′ b′* (shown by dotted lines in Fig. 1) operating to draw it back again. The cam *a′ a′* also actuates one end of the lever *c′ c′*, which turns on the fulcrum *d′*, and works the pawl *e′*, which turns the ratchet-wheel *f′* on the roller *c* of the set of feeding-rolls before referred to.

The operation of the machine is as follows: The cloth is placed, as before described, on the platform *a a a*, which has a proper hole in it for the play of the vertical needle, which passes through the cloth and forms a loop on the under side of the cloth, and the horizontal needle passes through this loop, forming another loop beyond, and holding the first loop until the vertical needle is drawn up and pressed down again, (through the loop formed by the horizontal needle,) which draws up the loop first made and forms the double-loop stitch, as hereinabove first suggested, and

which is particularly represented in Fig. 4, which is a detail view of said stitch, &c., on a large scale.

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

The use of two needles operating alternately, one working vertically and the other horizontally, substantially as hereinabove described, and uniting two pieces of cloth or forming the seam by means of the double-loop stitch, as hereinabove set forth.

WM. O. GROVER.
WM. E. BAKER.

Witnesses:
EZRA LINCOLN,
BENJ. C. PIPER.