

B. FRESE.
SEWING-MACHINE.

No. 172,308.

Patented Jan. 18, 1876.

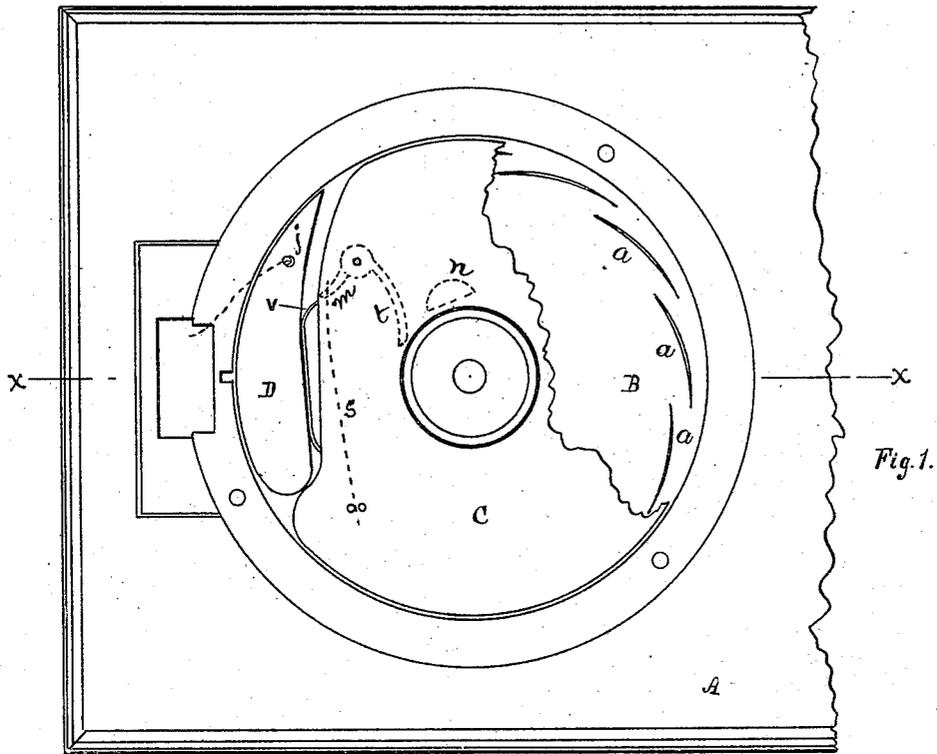


Fig. 1.

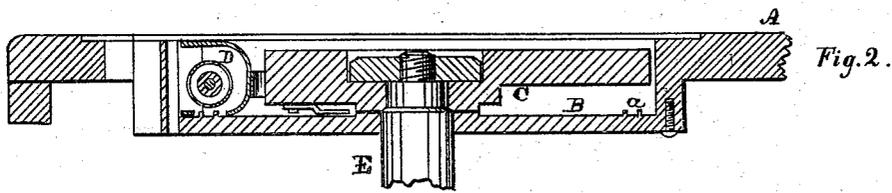


Fig. 2.

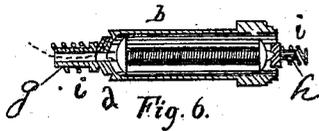


Fig. 6.

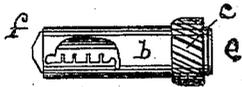


Fig. 7.

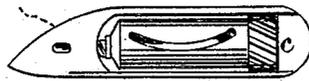


Fig. 3.

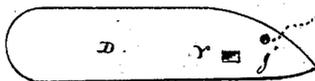


Fig. 4.

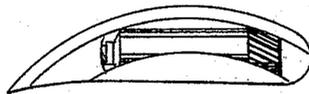


Fig. 5.

Witnesses:

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BERNARD FRESE, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **172,308**, dated January 18, 1876; application filed December 9, 1875.

To all whom it may concern:

Be it known that I, BERNARD FRESE, of Chicago, Cook county, and State of Illinois, have invented new and useful Improvements in Sewing-Machines, of which the following is a full description, reference being had to the accompanying drawings.

Figure 1 is a plan, with a portion of the driving-plate cut away. Fig. 2 is a section on line *x* of Fig. 1; Figs. 3, 4, and 5, views of the shuttle, showing the holder of the bobbin in 3 and 5; Fig. 6, a section of the bobbin-holder with the bobbin in place. Fig. 7 shows the bobbin-holder.

The principal object of my invention is to so construct a rotating shuttle and shuttle-race that the thread will not be twisted by the rotation of the shuttle, and this I accomplish by providing a bobbin-holder which can rotate in the shuttle, its rotation being effected by means of angular ribs or cogs on one end thereof and corresponding ribs or projections in the bottom of the race, arranged to engage with the ribs or cogs on the bobbin-holder. There are other novel features to render the operation of my shuttle complete.

In the drawings, A represents the bed-plate of a sewing-machine; B, the shuttle-race, which is circular; C, the plate which drives the shuttle. It is cut away on one side to allow the shuttle to be placed by its side in the race. D is the shuttle, in its place in Figs. 1 and 2. E is a shaft, upon which the shuttle-driving plate C is secured. Suitable devices for driving the needle can be secured to the same shaft beneath the bed-plate. *a a*, ribs or projections upon the bottom of the shuttle-race. *b* is the bobbin-holder; *c*, ribs or angular cogs upon the heel of the bobbin-holder. There are as many ribs or cogs *c* as there are projections *a*. *d* is the bobbin. As shown, it is inserted into the holder *b* through the end *e*, which is open. It has a point at each end, as usual. One end rotates in the end *f* of the holder. *g h* are bearings, secured one in each end of the shuttle, to receive the bobbin-holder and bobbin. *g* receives the bobbin-holder, and *h* receives one end of the bobbin. They are

movable but not removable, and the springs *i i* hold them in place, and permit the insertion and removal of the holder and bobbin into the shuttle. One end of the holder rotates in its bearing *g*. The other end rotates in the heel of the shuttle. The bobbin and bobbin-holder both rotate independently of each other, each having its own bearings.

The holder might be so made that the bobbin could be inserted from the side, in which case the heel would be the same, substantially, in form as the other end, the ribs excepted, and the holder would then rotate in the bearings *g h*.

The under side of the shuttle is cut away (see Fig. 5) to allow it to pass over the projections *a*.

There is an opening in one side of the bobbin-holder *b*, having projections on one side thereof, (see Fig. 7,) and by passing the thread around or over one or more of these the tension can be adjusted.

When the thread passes the heel of the shuttle it (the heel) should not be in contact with the driving-plate C; and I carry the shuttle forward a little, at the proper time, by means of the following devices: *m* is a hook, pivoted to the under side of C, a portion of which is thinner than at the center. *n* is a projection upon the surface of B. *r* is a hole in the shuttle. *s* is a spring; *t*, an arm connected with the hook. When *t* comes in contact with *n* the hook *m* will be thrown out into the hole *r*, and will carry the shuttle forward a little; but as soon as *t* passes *n* the hook will be returned to its former position by the spring *s*. The dotted lines in Fig. 1 indicate the position and form of the parts *m n t s*.

v is a light spring.

The thread from the bobbin is to pass first through the opening in the shuttle, (shown in Fig. 3;) then around or over such number of the projections as the proper tension requires; then through *g*; then out through the shuttle at *j*.

In use the thread is drawn from the bobbin, as usual; but while the shuttle makes one revolution in the race the bobbin-holder

makes a revolution on its axis, carrying the bobbin with it, and preventing the twisting of the thread.

In Fig. 6 the parts *g h* are shown removed from the shuttle, in which they belong.

Instead of the plate C, a fork could be used to drive the shuttle.

What I claim as new is as follows:

1. The circular shuttle-race B, provided with projections *a*, substantially as specified.
2. The bobbin-holder *b*, provided with cogs *c*, substantially as specified.

3. The driving-plate C and shuttle D, in combination with the hook *m*, arm *t*, projection *n*, and spring *s*, for lifting the shuttle as the thread passes its heel, substantially as specified.

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Witnesses:

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