

(No Model.)

S. BENSON.

SHUTTLE CARRIER FOR SEWING MACHINES.

No. 467,461.

Patented Jan. 19, 1892.

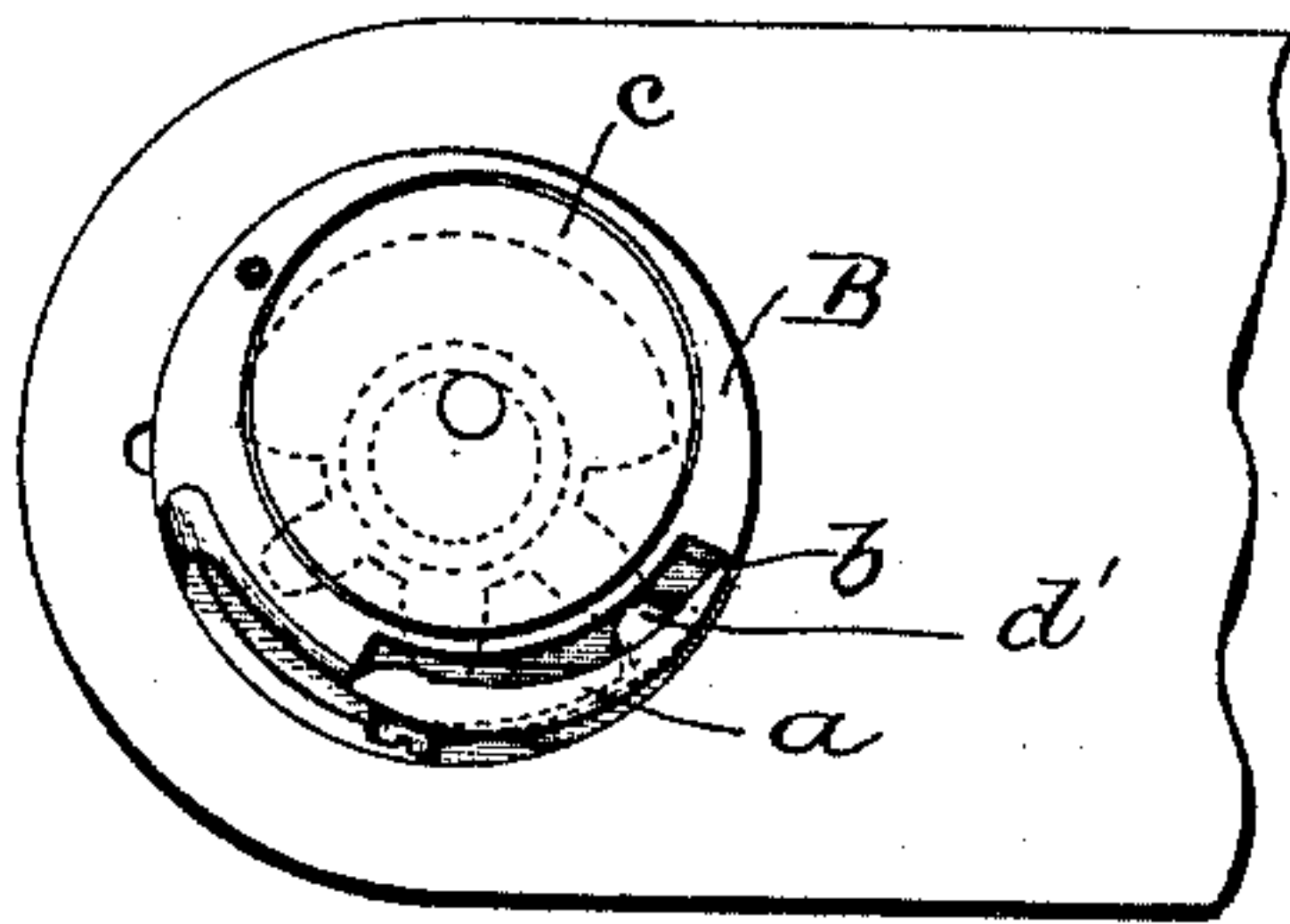


Fig. 1.

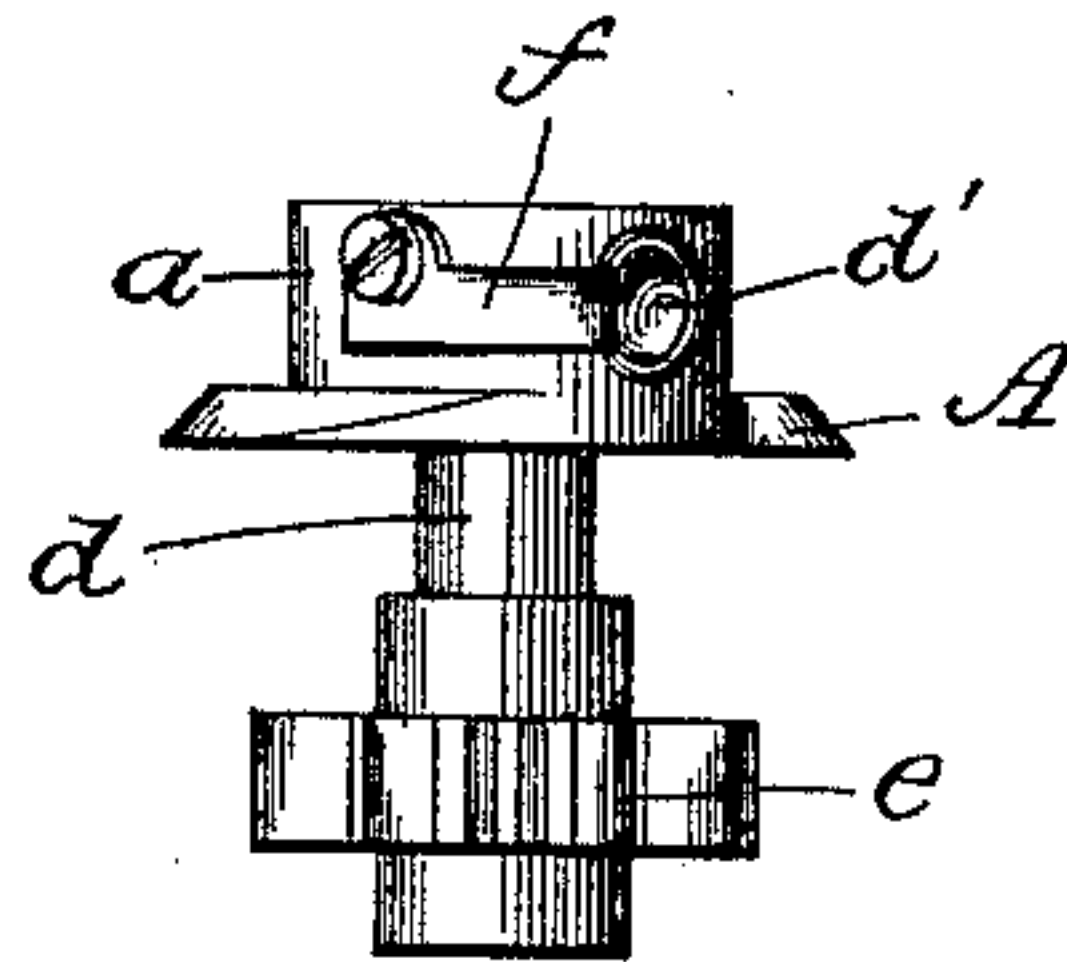


Fig. 2.

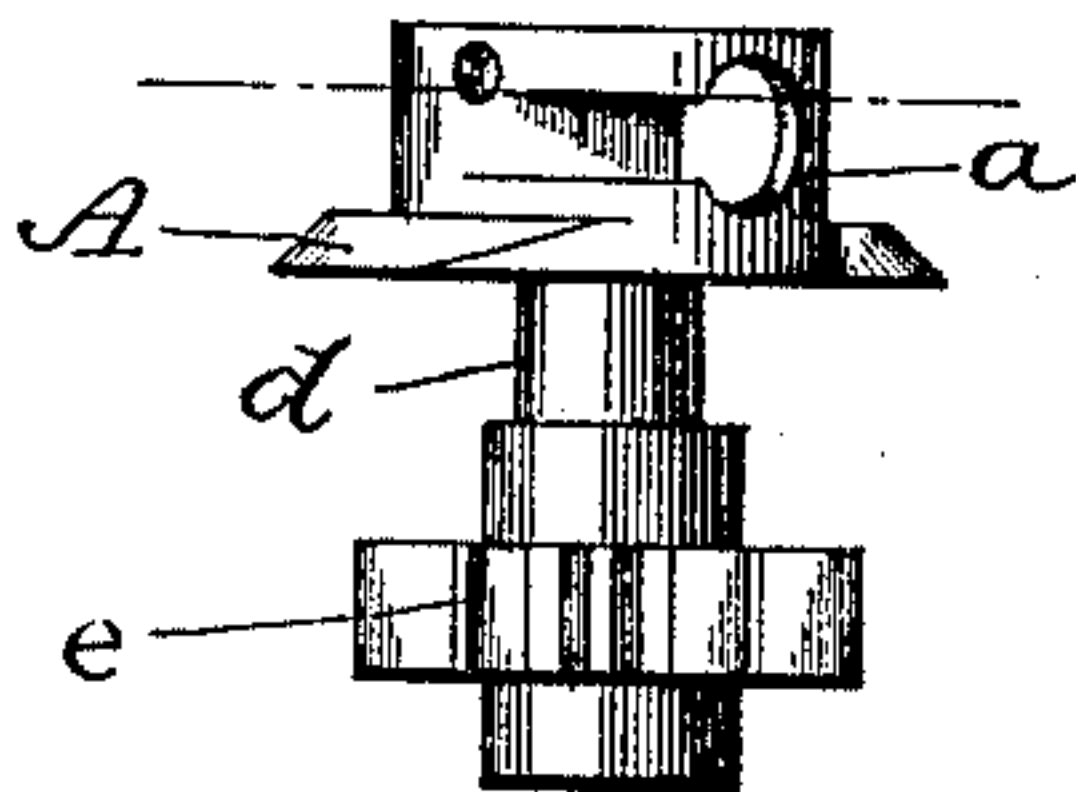


Fig. 3.

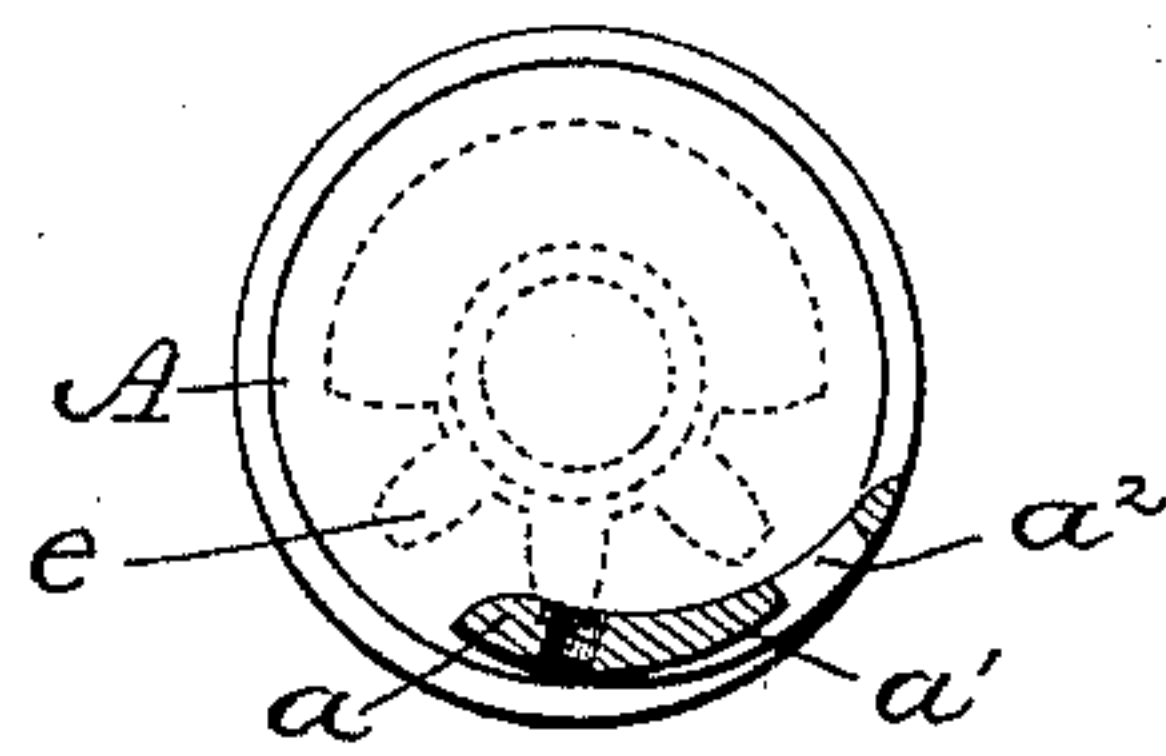


Fig. 4.

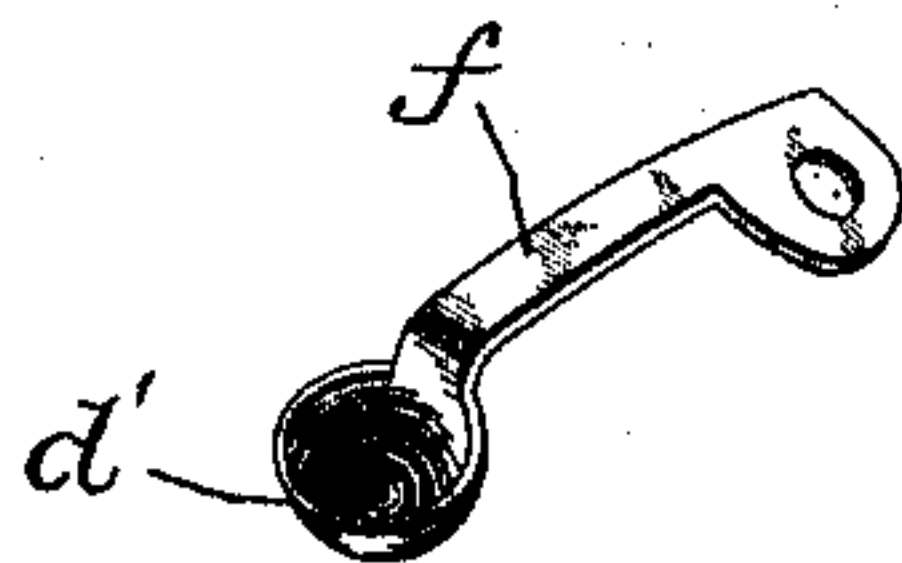


Fig. 5.

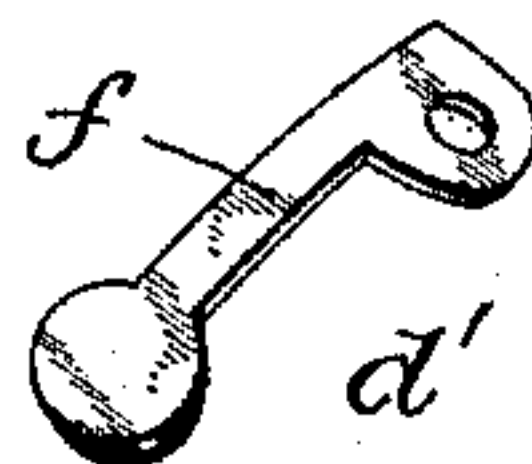


Fig. 6.

Witnesses:

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# UNITED STATES PATENT OFFICE.

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## SHUTTLE-CARRIER FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 467,461, dated January 19, 1892.

Application filed July 15, 1891. Serial No. 399,606. (No model.)

*To all whom it may concern:*

Be it known that I, SIVERT BENSON, a citizen of the United States, residing at Spring Valley, in the county of Fillmore and State of Minnesota, have invented certain new and useful Improvements in Shuttle-Carriers for Sewing-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to that class of sewing-machines in which a horizontal oscillating movement is imparted to a shuttle placed in a horizontal carrier and operated by a short vertical shaft provided with a mutilated pinion meshing with a horizontal rack-bar, this shuttle mechanism being located in the forward end of a slender arm adapted to enter tubular or hollow articles to be sewed. Machines of this class are provided with an upper universal feed. The shuttle-carriers of these machines as heretofore constructed have each been provided with a spring arranged inside of a driving-flange or driver which loosely enters a recess formed for its reception in the side of the shuttle, the said spring pressing on the shuttle in such a manner as to hold its nose or hook closely against the side of the shuttle-race, so as to prevent any liability of skipping stitches. These springs as heretofore constructed and arranged have occasioned some difficulty, in that the needle-thread was liable to catch thereon.

My invention, which consists in the combination specified in the claims hereunto appended, has for its object to provide a spring, for the purpose above stated, of such construction that the difficulty heretofore arising from the use of the springs previously employed may be wholly avoided. To this end the projecting flange or driver of the shuttle-carrier is provided with a recess and an aperture, and the shuttle-holding spring, which is provided at its free end with a rounded projection, is secured to the outside of the driver in such a manner that it may lie partly in said recess, with its rounded projection extending from the outside of the carrier through said aperture, so as to press against the shuttle. This rounded projection, which is the only part of the spring within the driver, is

of such construction that the shuttle-thread cannot by any possibility catch thereon, as the outer part of said projection is housed within the aperture through which the said projection extends.

In the accompanying drawings, Figure 1 is a plan view of a shuttle-carrier provided with my improved shuttle-holding spring, this view showing also the shuttle and bobbin and a portion of the shuttle-race. Fig. 2 is a side view of the carrier with my improved spring applied thereto. Fig. 3 is a side view of my carrier with the spring removed. Fig. 4 is a horizontal section on line 4 4, Fig. 3. Figs. 5 and 6 are detail views of different forms of springs.

A denotes a horizontal shuttle-carrying disk provided with a vertical shuttle-driving flange or driver *a* of proper size to loosely enter a recess *b*, formed in the side of the shuttle *B*, the latter being provided with an ordinary disk-bobbin *c*. The carrier *A* is formed integral with or rigidly secured to the upper end of a short shaft *d*, provided with a mutilated pinion *e* to be engaged with a reciprocating rack-bar. To the outside of the driver *a* is attached a shuttle-holding spring *f*, which is partly housed in a recess *a'* in the said driver and the free end of which is provided with a semi-spherical or rounded projection *d*, extending through an aperture *a<sup>2</sup>* in the said driver. The rounded projection *d* is of such size that, while it can extend through the aperture *a<sup>2</sup>* far enough to press against the shuttle and hold the nose or hook of the latter close against the inner side of the shuttle-race, it will still be partially housed within the said aperture *a<sup>2</sup>*, so that the shuttle-thread cannot by any possibility catch thereon. The rounded projection of the spring *f* may be either cup-shaped or hollow, as shown in Fig. 5, or the same may be solid, as shown in Fig. 6, the former construction being, however, preferred, for the reason that it may be stamped out from the metal of which the spring is formed, and will thus be integral with said spring and very light.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. A horizontal shuttle-carrying disk *A*, pro-

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vided with the vertical shuttle-driving flange  $a$ , having an aperture  $a^2$  through the same and in its outer face a recess  $a'$ , combined with a spring  $f$ , secured to the outside of the  
5 said flange and provided at its free end with a semi-spherical or rounded projection extending through the said aperture, the body of the said spring being partly housed within the said recess.

10 2. The combination, with the shuttle-carrying disk A, provided with the vertical shut-

tle-driving flange  $a$ , having an aperture  $a^2$ , of the spring  $f$ , secured to the outside of said flange and provided at its free end with a hollow or cup-shaped projection extending 15 through said aperture.

In testimony whereof I affix my signature in presence of two witnesses.

SIVERT BENSON.

Witnesses:

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