No. 869,845. PATENTED OCT. 29, 1907.

E. C. IVES.

SHUTTLE.

APPLICATION FILED FEB. 7, 1906.

Fig. 2.

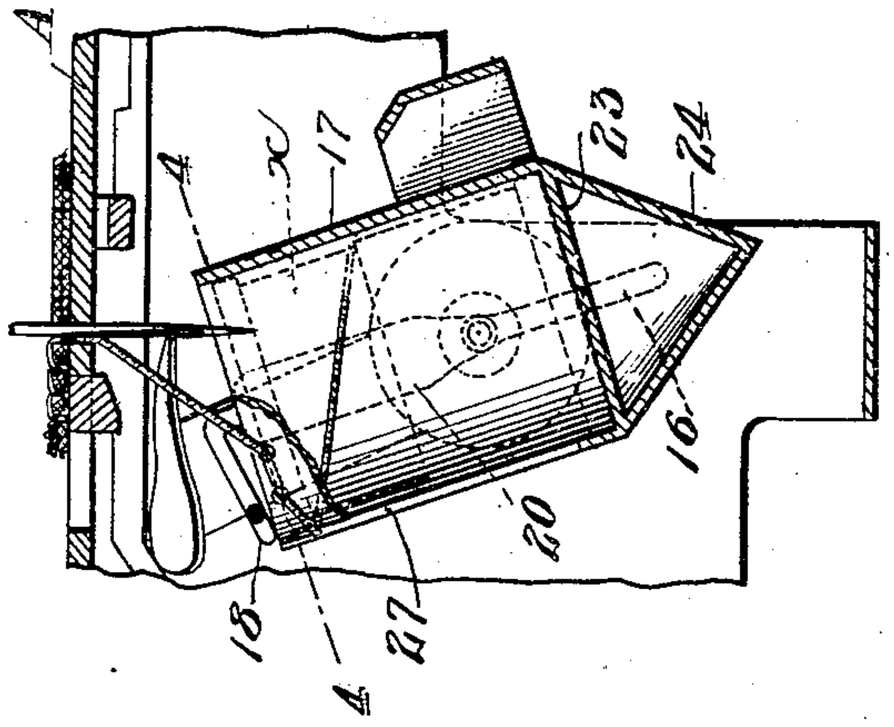


Fig. 3.

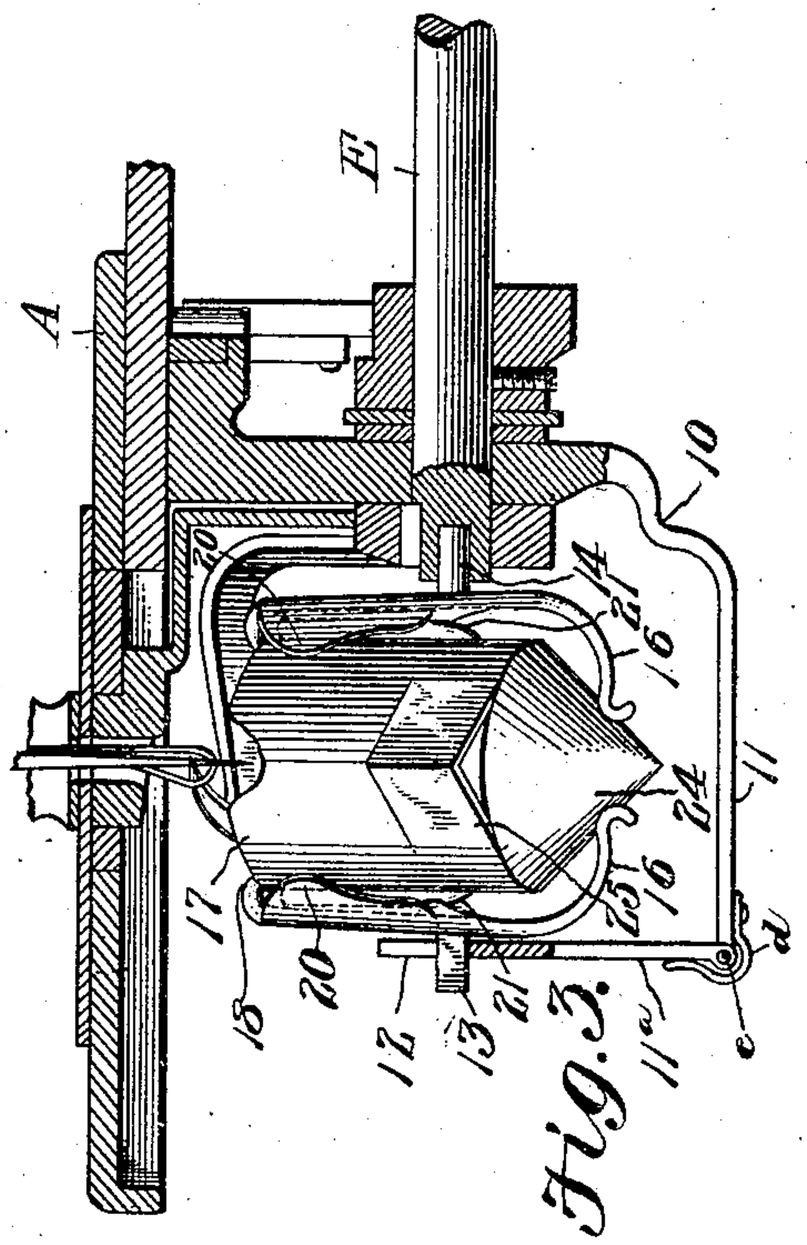


Fig. 1.

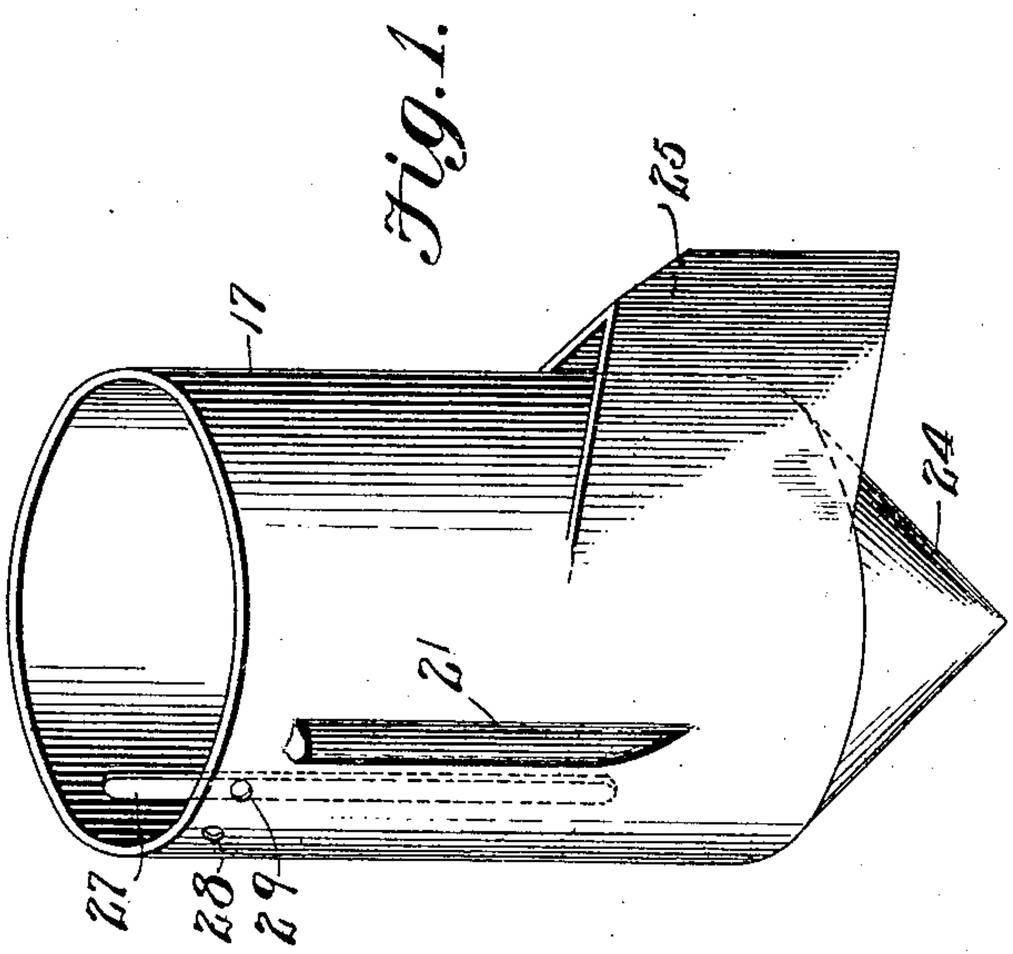
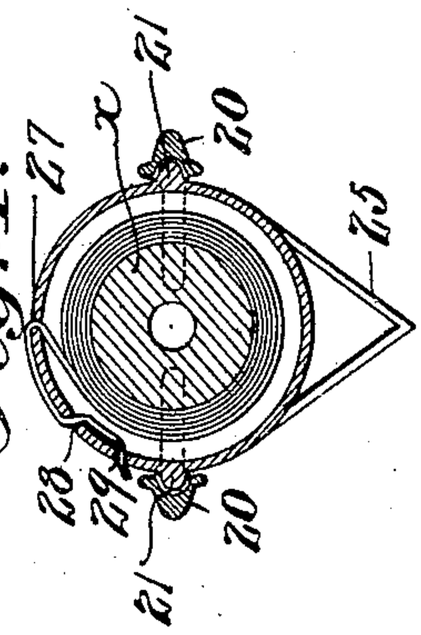


Fig. 4.



WITNESSES:

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ERNEST CHARLES IVES, OF WARREN, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO JAMES H. PERKS AND THOMAS PERKS, OF WARREN, PENNSYLVANIA.

SHUTTLE.

No. 869,845. Specification of Letters Patent. Patented Oct. 29, 1907.

Original application filed August 17, 1905, Serial No. 274,601. Divided and this application filed February 7, 1906. Serial No. 299,963.

To all whom it may concern:

Be it known that I, ERNEST CHARLES IVES, a citizen of the United States, residing at Warren, in the county of Warren and State of Pennsylvania, have invented a new and useful Shuttle, of which the following is a specification.

This invention relates to sewing machine shuttles, and has for its principal object to provide a novel form of shuttle for use in connection with machines of that general type in which a shuttle or reel carrier is arranged for the reception of a very large reel, such for instance as an ordinary spool of cotton.

A further object of the invention is to provide a shuttle or reel carrier of simple and inexpensive construction, and in which the spool or reel may be properly supported, and from which the thread may be drawn freely, and at the same time maintained under proper tension during the operation of the sewing machine.

With these and other objects in view, as will more fully hereinafter appear, the invention consists in certain novel features of construction and arrangement of parts, hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings:—Figure 1 is a perspective view of a shuttle or reel carrier constructed in accordance with the invention. Fig. 2 is a transverse sectional view of the same showing the position which it assumes with relation to other portions of the sewing mechanism. Fig. 3 is a front elevation of the shuttle in position in its supporting frame. Fig. 4 is a sectional plan view on the line 4—4 of Fig. 2.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

The present application is a division of an application for Letters-Patent for sewing machines filed by me on August 17, 1905. Serial No. 274,601.

The drawings illustrate portions of the mechanism forming the subject of the above noted application, including the cloth plate A, and looper shaft E.

Hung from the lower front portion of the bed plate is a casting 10 constituting a bearing for the looper shaft, and hung from this bearing is a substantially horizontal bracket 11 which projects in advance of the looper shaft below and in substantial parallelism therewith. From the outer end of the bracket 11 there rises a post 11^a which is provided in its upper end with a longitudinal slot or bifurcation 12 for the reception of a non-circular lug 13 projecting from one side of a carrying frame for the bobbin or spool case. The post 11^a has a pivotal or hinged connection *e* with the outer end of the bracket 11, and a leaf spring *d* is secured to the under side of the bracket and bows around the joint between the latter and the post and bears against the outer side of said post to yieldably maintain the same in its normal upright position.

The bobbin frame may be formed of wire, and is approximately U-shaped in general contour, the lug 13 projecting from one of its arms, and a second lug 14 projecting from the opposite arm and entering a suitable recess formed in the extreme end of the looper shaft. The lower ends of the arms of the frame are bent inward, forming supporting fingers 16 for the lower end of the bobbin or spool casing 17, and the extreme end portions of the fingers are flared outward in order to permit the convenient passage of the thread between the arms of the frame and the casing. The upper ends of the frame arms are connected by a cross bar 18 of such construction as to prevent the withdrawal of the bobbin or spool *x* during the sewing operation. The two arms of the frame are provided with widened strips 20 bent to form a pair of parallel grooves for the reception of correspondingly arranged ribs 21 that are formed at the opposite sides of the bobbin or spool casing 17, and the lower ends of these grooves taper down and merge into the peripheral wall of the casing in order to permit the convenient introduction of the casing into the frame.

The casing 17 is of generally cylindrical form, and of sufficient diameter and length to permit the reception of an ordinary spool of cotton. The cylinder is provided with a lower partition 23 for the support of the lower end of the spool and said cylinder has a conical bottom 24 to assist in dividing the loop. At the front of the cylinder is a forwardly projecting loop dividing finger 25, so arranged with respect to the looper and needle that when the looper passes slightly below the finger, the latter will be directly to the rear of the slightly open loop, and on further movement of the looper as it advances toward the rear of the spool casing this finger will divide the loop, and the latter will pass over the spool casing, and will enter between the conical bottom of the casing and the fingers 16, and thence will be drawn up over the ribs 21 and completely over the top of the spool casing, carrying with it the thread from the spool and binding the latter into the lower face of the fabric to form the well known lock stitch.

The thread from the spool passes through a vertically elongated slot 27 formed in the casing, the slot being preferably as long as the reeling surface of the spool, and thence over the outer portion of the casing and inward through an opening 29, and thence outward

through a second opening 27, and up to the fabric, a strand of thread being thus held in position to be engaged by the successive loops.

I claim:—

1. A shuttle, comprising a hollow cylindrical casing, open at one end and closed at its opposite end by a conical bottom, a loop spreader projecting from one side of the lower end of the cylindrical part of said casing, the sides of which loop spreader are angularly disposed with relation to each other and tangential to the outer surface of the casing, and diametrically opposed longitudinal ribs on the outer side of and shorter than said casing, the lower end of each rib tapering towards the casing.

2. A shuttle, comprising a hollow cylindrical casing open at one end and closed at its opposite end by a conical bottom, said casing having thread holes passing through its wall near its open end and a longitudinal slot extending substantially from the bottom to top thereof, an angular loop spreader projecting from one side of the casing at its junction with the conical bottom, the sides of which loop spreader are tangential to the outer surface of said casing, the dividing edge of said loop spreader having its lower part parallel to the axis of the casing and its upper part inclined inwardly thereto, and diametrically opposed longitudinal ribs on the outside of said casing, the lower ends of which are inwardly tapered, said ribs being shorter than the casing.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

ERNEST CHARLES IVES.

Witnesses:
RALPH W. SALSBURY,
JAMES H. PERKS.