

No. 815,517.

PATENTED MAR. 20, 1906.

P. DIEHL.

SEWING MACHINE THREAD CASE.

APPLICATION FILED AUG. 3, 1905.

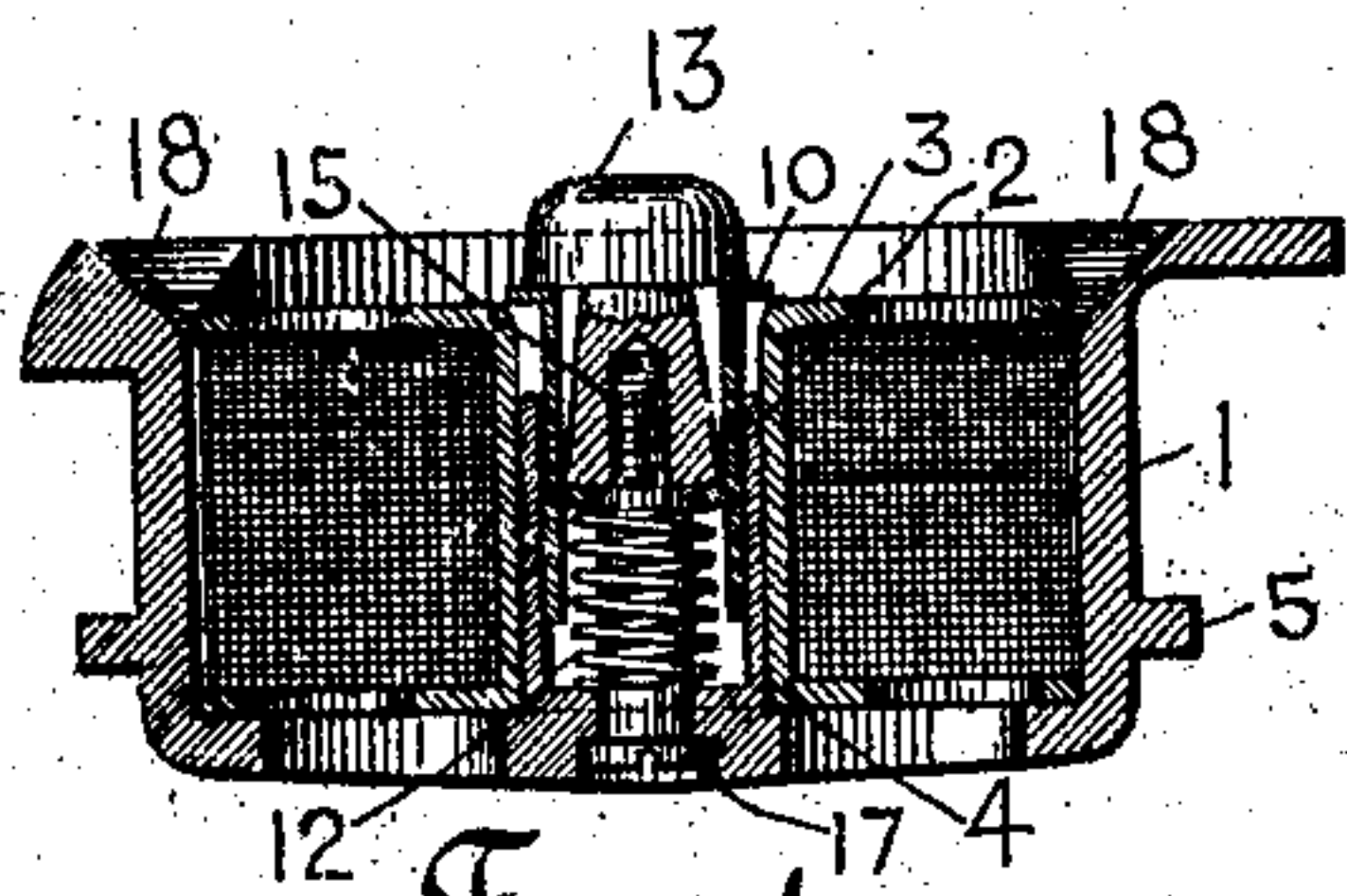


Fig: 1

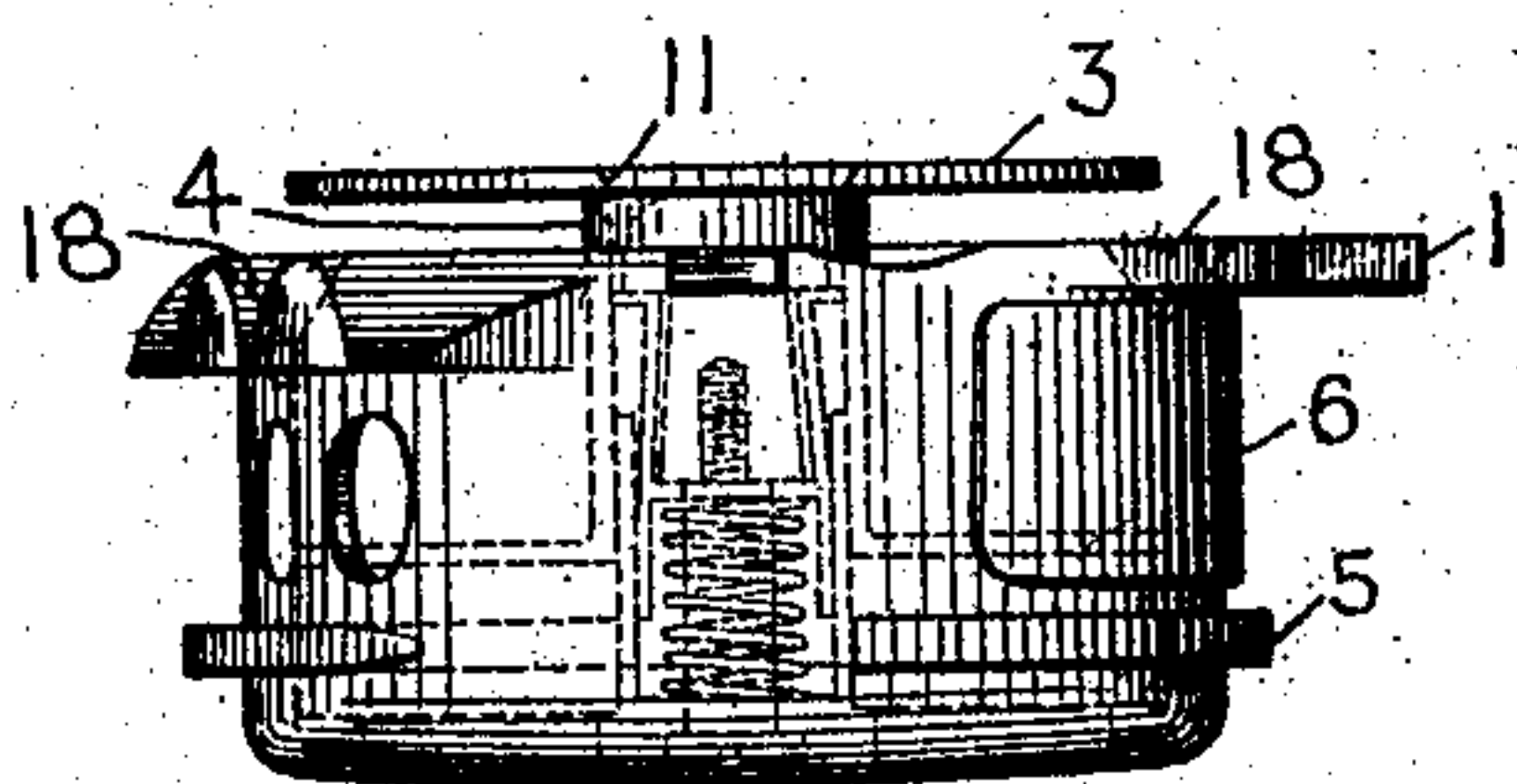
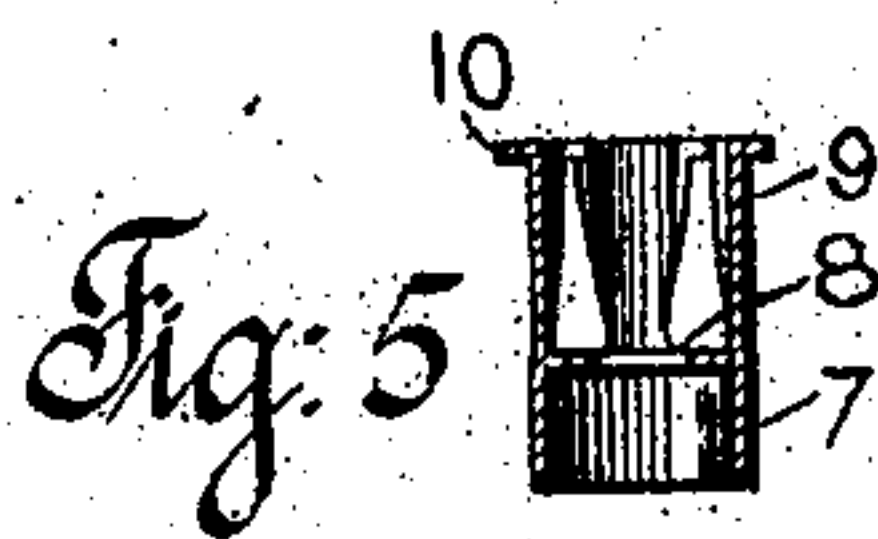


Fig: 2

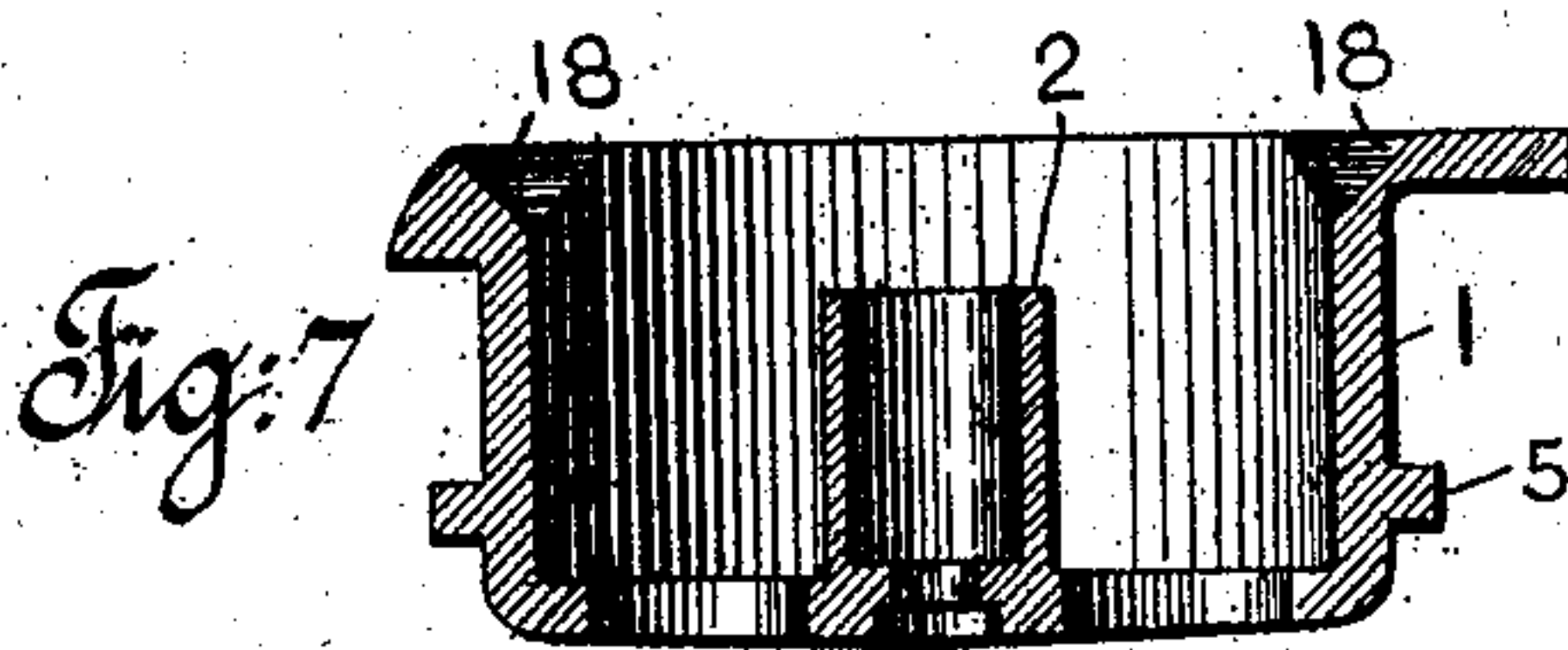


Fig: 7

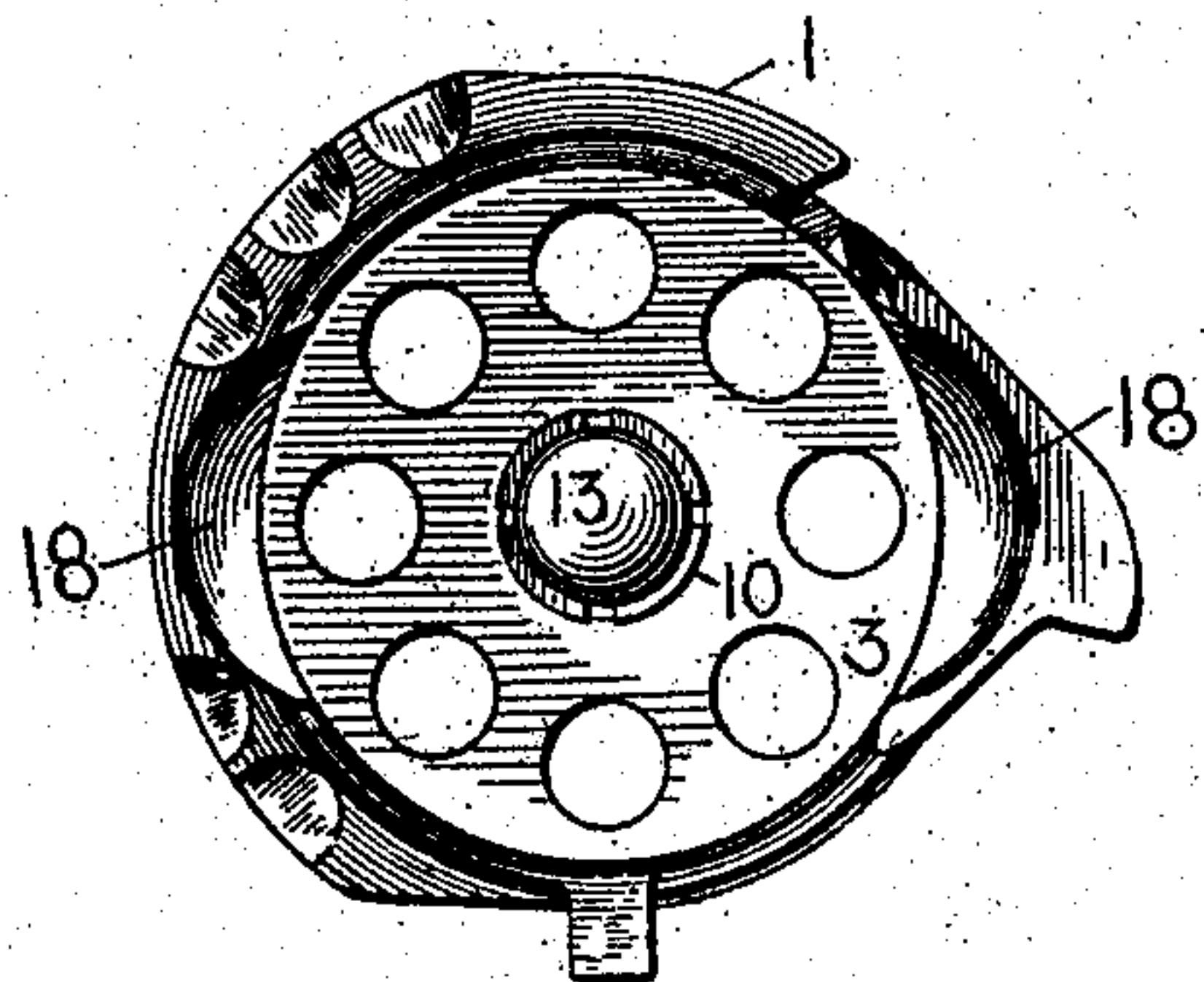


Fig: 3



Fig: 8

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UNITED STATES PATENT OFFICE.

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SEWING-MACHINE THREAD-CASE.

No. 815,517.

Specification of Letters Patent.

Patented March 20, 1906.

Application filed August 3, 1905. Serial No. 272,469.

To all whom it may concern:

Be it known that I, PHILIP DIEHL, a citizen of the United States, residing at Elizabeth, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Sewing-Machine Thread-Cases, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to an improvement in that class of thread-cases for sewing-machine loop-takers which are provided with open outer end to permit the easy introduction and removal of the bobbin containing the mass of lower thread; and it has for its object to provide means for locking the bobbin in place and for ejecting the same sufficiently beyond the walls of its cavity in the thread-case to enable the operator to readily grasp it for removal.

20 In its preferred form the improvement comprises a bobbin-case having a central hollow bobbin-supporting post fitted to the tubular hub of the bobbin and serving as a housing for a split locking-tube having a flanged outer end adapted to engage a conical countersink in the outer end of the bobbin, the locking-tube being pressed normally outward into operative locking position by means of a spring and adapted to be pressed inwardly into frictional engagement with the inner surface of the tubular hub of the bobbin-case by means of a button bearing upon its outer end to carry the bobbin outward in reassuming its initial position.

The invention will be understood by reference to the annexed drawings, in which—

Figure 1 is a sectional elevation of the bobbin-case with a filled bobbin locked therein; 40 Fig. 2, an external elevation of the same with an empty bobbin shown partially ejected in readiness for removal by the operator, and Fig. 3 a plan of the bobbin-case and bobbin. Figs. 4, 5, 6, 7, and 8 are detail views, Figs. 4, 5, and 7 being in section, representing, respectively, the press-button, the split locking tube or sleeve, the spring acting upon the latter, the bobbin-case, and the screw-stud attached to and serving to limit the outward 50 movement of the press-button.

The bobbin-case 1 is of a well-known cylindrical form open at the upper or outer end to receive the bobbin, which is composed of the flanges 3 and tubular hub 4, the latter being

entered by the post 2. The thread-case is 55 provided externally with the annular flange 5, by means of which it is supported in the loop-taker, and with the usual segmental tension-spring 6. Within the hollow post 2 is fitted the tubular split sleeve 7, having its interior divided by a perforated partition-flange 8, above which it is cut away to form segmental spring-tongues 9, terminating in the free ends in the flanges 10, projecting laterally slightly beyond the cylindrical outer 65 surface of the post 2 to engage the conical countersink 11 in the outer end of the bobbin. The locking-sleeve 7 is held yieldingly in its outer position by means of a cylindrical spring 12, interposed between its flange 8 70 and the bottom of the tubular cavity in the post 2, its outward movement being limited by engagement of its outer end with the shouldered inner end of a press-button 13, having a shank 14 with screw-threaded 75 socket entered by the similarly-threaded end 15 of a shouldered screw-stud 16, passing upwardly through the bottom of the thread-case and provided with a head 17, entering a countersink therein provided for the same. 80 The body of the screw-stud 16 is of cylindrical form to permit the downward movement of the same when the button 13 is pressed in such direction by the operator.

As represented in Fig. 1, the thread-case is 85 provided with a filled bobbin in readiness for a stitching operation. When the bobbin has become empty, it may be ejected to render it accessible for removal by the operator by merely pressing inwardly or downwardly 90 upon the press-button 13, which serves to force downwardly the split tube 7, whose locking-flanges 10 are pressed inwardly toward the taper shank 14 of the button by engagement with the conical countersink of the 95 bobbin, being thereby enabled to ride over such conical surface and into the cylindrical bore of the hub 4 for a short distance. Upon the release of the press-button 13 the latter follows the finger of the operator to its initial 100 position, while the locking-flanges 10 continue to bind upon the hub 4 of the bobbin and in the outward movement of the tube 7 under the action of the spring 12 to carry by frictional engagement therewith the empty 105 bobbin upwardly, with the upper flange slightly above the wall of the thread-case, where it may be easily grasped by insertion

underneath the same of the nails of the thumb and second finger of the operator for removal, thumb-nail notches 18 being provided for such purpose at opposite sides of the upper edge of the thread-case.

As will be observed, the outer end of the press-button 13 is preferably rounded off to prevent its catching the loops of needle-thread as they are cast about the thread-case, and the latter is made of sufficient depth to completely surround the bobbin for a like purpose.

While the present improvement is shown and described herein in its preferred form, it is evident that the same may be materially varied in construction without departure from the present invention, the essential feature of which is the common central locking and ejecting device for the bobbin. While the ends of the bobbin are herein shown as provided with conical recesses or countersinks having a wedge-like action upon the yielding lateral flanges of the locking-tube, it is evident that such countersinks are not material to the present improvement, as the same effect may be produced by properly shaping the said lateral flanges.

Having thus set forth the nature of the invention, what I claim herein is—

1. The combination with a sewing-machine thread-case, of a bobbin, an axially-movable engaging member for said bobbin constructed and adapted to assume different operative relations therewith whereby it is caused to engage the said bobbin for locking it in and ejecting it from operative position within the thread-case, and means for giving said member its axial movements.

2. The combination with a sewing-machine thread-case provided with a central hollow bobbin-supporting post, of a bobbin having a tubular hub fitted to said post, an inwardly-yielding and axially-movable locking device

housed within said hollow post and normally engaging the outer end of said bobbin, and means for yieldingly pressing said locking device into normal locking relation with said bobbin but permitting it to enter the hub of the latter and frictionally engage the same.

3. The combination with a sewing-machine thread-case provided with a central hollow bobbin-supporting post, of a bobbin having a tubular hub fitted to said post, an axially-movable tubular sleeve housed within said post and having a split and externally-flanged outer end normally engaging the outer end of said bobbin and adapted for frictional engagement with the inner wall of its tubular hub, and a spring for pressing said sleeve into outer operative relation with said bobbin.

4. The combination with a sewing-machine thread-case provided with a central hollow bobbin-supporting post, of a bobbin having a tubular hub fitted to said post, an axially-movable tubular sleeve housed within said post and having a split and externally-flanged outer end normally engaging the outer end of said bobbin and adapted for frictional engagement with the inner wall of its tubular hub, a spring for pressing said sleeve into outer operative relation with said bobbin, and a button adapted to engage the outer flanged end of said sleeve and having a shank extended through the same and terminating in a shouldered stud with the head in normal contact with the bottom of the thread-case to limit the outward movement of said button under the action of said spring.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

PHILIP DIEHL.

Witnesses:

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H. A. KORNEMANN.