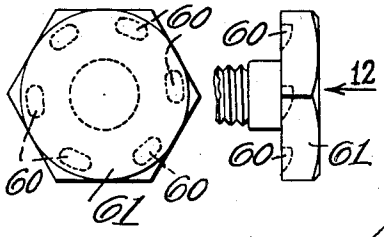
Dec. 11, 1934. W. H. WILSON 1,984,244

YARN SPOOL

Filed July 3, 1933

Fig. 12. Fig. 13.



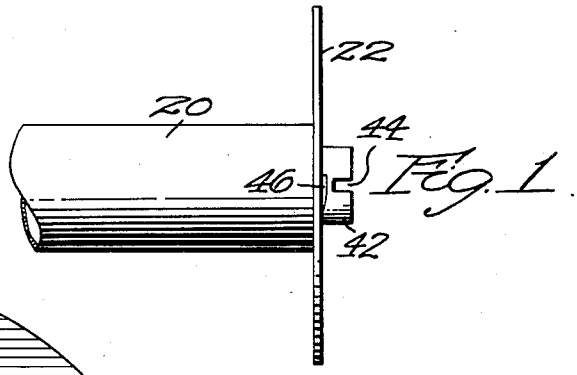
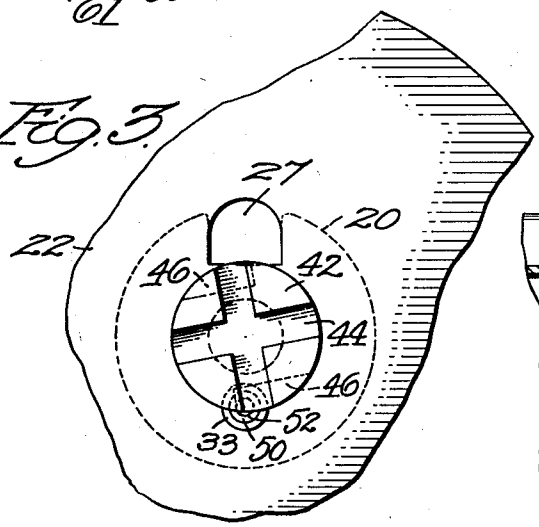


Fig. 1.

Fig. 3.



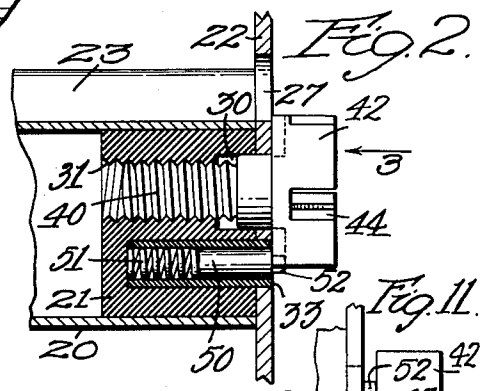


Fig. 2.

Fig. 11.

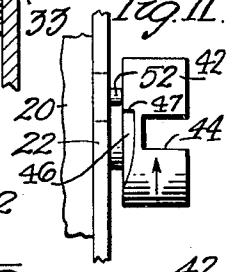


Fig. 7.

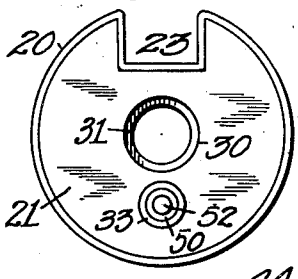


Fig. 8.

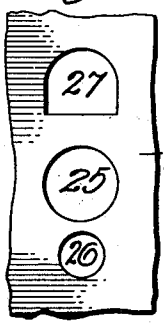
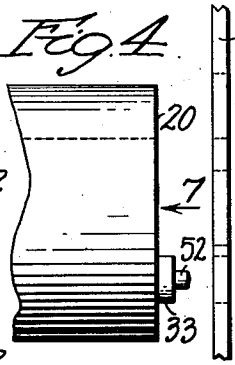


Fig. 4.



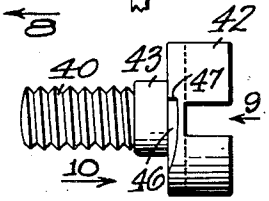


Fig. 6.

Fig. 5.

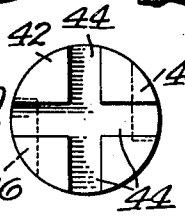


Fig. 9.

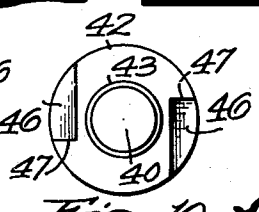


Fig. 10.

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UNITED STATES PATENT OFFICE

1,984,244

YARN SPOOL

William H. Wilson, Burlington, Vt., assignor to Vermont Spool & Bobbin Co., (Incorporated), Burlington, Vt., a corporation of Vermont

Application July 3, 1933, Serial No. 678,881

2 Claims. (Cl. 242—124)

This invention relates to spools used in spinning, twisting or spooling yarn for textile purposes.

It is the general object of my invention to provide a spool for such purposes having readily replaceable metal heads.

A further object is to provide improved devices for retaining such metal heads on a spool, said retaining devices being readily releasable or replaceable.

My invention further relates to arrangements and combinations of parts which will be hereinafter described and more particularly pointed out in the appended claims.

A preferred form of my invention, together with a slight modification thereof, is shown in the drawing, in which

Fig. 1 is a partial side elevation of a spool embodying my improvements;

Fig. 2 is an enlarged sectional view showing my improved head-attaching devices;

Fig. 3 is a detail end elevation, looking in the direction of the arrow 3 in Fig. 2;

Fig. 4 is a side elevation of a portion of the spool barrel;

Fig. 5 is a side elevation of a portion of the spool head;

Fig. 6 is a side elevation of the head-holding screw;

Fig. 7 is an end view of the spool barrel, looking in the direction of the arrow 7 in Fig. 4;

Fig. 8 is a partial end view of the spool head, looking in the direction of the arrow 8 in Fig. 5;

Figs. 9 and 10 are end views of the head-attaching screw, looking in the directions of the arrows 9 and 10 in Fig. 6;

Fig. 11 is a detail side elevation illustrating the assembly of the parts;

Fig. 12 is an end view of a modified head-attaching screw, and

Fig. 13 is a side elevation thereof.

Referring to the drawing, I have shown a portion of a spool comprising a sheet metal barrel 20 having plugs 21 permanently secured in the ends thereof and sheet metal discs 22 mounted at the ends of said barrel.

The barrel 20 is of the usual construction and is provided with a groove or recess 23 (Fig. 7) at one side thereof to receive the usual bar for holding the ends of the yarn on the spool. Each head 22 is provided with an axial opening 25 (Fig. 8), also with a smaller circular opening 26 spaced outward from the axial opening 25 and with an opening 27 adapted to be aligned with the groove 23 when the parts are assembled and through which the yarn-holding bar may be inserted or removed.

The plug 21 is provided with a cylindrical recess 30 positioned in alignment with the axis of the spool and also with a threaded opening 31 concentric with the opening 30. Each plug 21 is also preferably provided with a bushing 33 permanently secured in a radially offset opening in the plug and extending outward therefrom by a distance substantially equal to the thickness of the head 22.

The opening 26 in the head 22 is of such a diameter that it fits closely over the projecting end of the bushing 33, by which association of parts the barrel and head are held from relative rotation.

A head-attaching screw or stud 40 is threaded in the opening 31 of the plug 21 and is provided with an enlarged head 42 and with a shouldered portion 43. The portion 43 fits closely in the axial opening 25 in the head 22 and also in the recess or opening 30 in the outer end of the plug 21.

The head 42 of the screw 40 is preferably provided with cross slots 44 to which a screw driver may be applied and by which driving engagement may be established with an adjacent spool if so desired.

The head 42 is also provided with cam recesses 46 on the under side, having a shoulder 47 at the leading end of each recess. A plunger 50 is freely slidable in the bushing 33 and is forced yieldingly outward by a coil spring 51.

The outer end of the plunger 50 is provided with a reduced extension forming a pin 52 adapted to project into one or the other of the cam recesses 46 when the parts are assembled.

Having described a preferred form of my invention, the method of assembly and advantages thereof are as follows:

In assembling the parts, the head or disc 22 is placed at the end of the barrel 20, with the opening 26 in the head fitted over the projecting end of the bushing 33. The attaching screw 40 is then inserted through the opening 25 and threaded into the plug 21. As the screw is tightened, the pin 52 at the end of the plunger 50 snaps past each shoulder 47 into the associated recess 46 and is then forced gradually out of the recess by the inclined rear cam face thereof.

When the screw 40 is in final tightened position, the pin 52 will occupy one of the cam recesses 46 or will be in position to enter a recess 46 on any slight loosening of the screw. The pin 52 then engages the associated shoulder 47 and positively

prevents any further backward rotation of the screw. The head 22 is thus securely mounted on the end of the barrel 20 and accidental displacement thereof is effectively prevented.

If, however, it is necessary to remove a head for replacement on account of damage thereto, the pin 52 and plunger 50 may be pushed into the bushing 33 by applying a suitable tool to the end of the plunger or pin which project for this purpose slightly beyond the periphery of the screw-head 42, as clearly shown in Figs. 2 and 3. After the plunger is thus pushed inward, the screw can be backed out in the usual way.

The pin 52 is also of such small size that it may be sheared off by applying substantial backward pressure to the screw 40, and a new plunger may be substituted when the parts are re-assembled.

This latter method of operation is necessary if the modified form of screw shown in Figs. 12 and 13 is used. In this construction, the cam recesses 60 are spaced inwardly from the edges of the screw-head 61 so that the spring plungers are entirely covered by the screw-head and cannot be manually released. In this modified form also the head 61 is also increased, but otherwise the construction and operation is as previously described.

Having thus described my invention and the advantages thereof, I do not wish to be limited to the details herein disclosed, otherwise than as set forth in the claims, but what I claim is:—

1. A spool comprising a barrel having a solid end portion with a threaded axial opening and a radially offset cylindrical recess parallel thereto, a bushing in said offset recess projecting beyond said barrel end, a spool head having an axial opening and having a radially offset opening positioned to receive the end of said bushing, a clamping screw insertable in said threaded axial opening and having a portion fitting the axial opening in said head, a plunger slidable in said bushing, and a spring in said bushing for said plunger, said screw having an enlarged head with a plurality of cam recesses on the under side thereof successively receiving the end of said plunger as said screw is tightened, said screw being held thereby from substantial backward movement.

2. The combination in a spool as set forth in claim 1, in which the end of the plunger is substantially reduced in diameter and constitutes a readily frangible releasing element.

WILLIAM H. WILSON.