W. J. SMITH.

REEL.

APPLICATION FILED DEC. 4, 1920.

1,384,572.

Patented July 12, 1921.

Fig. 1.

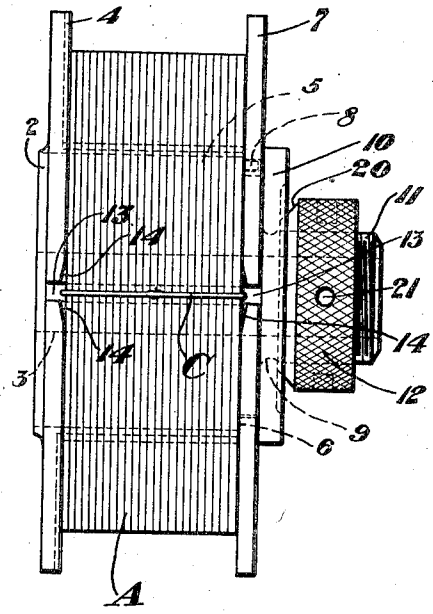


Fig. 2.

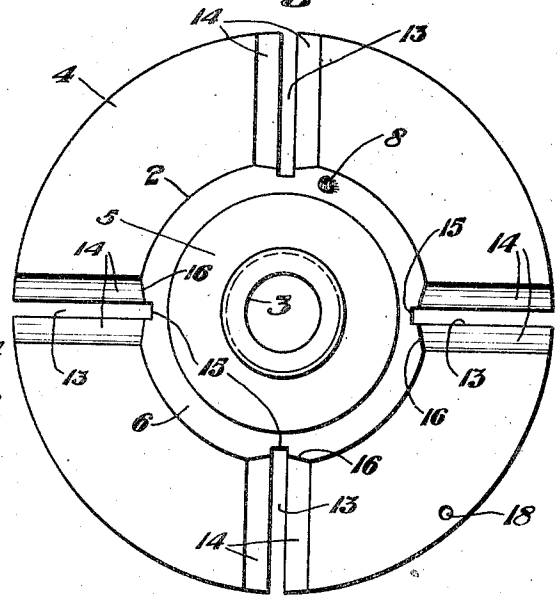


Fig. 3.

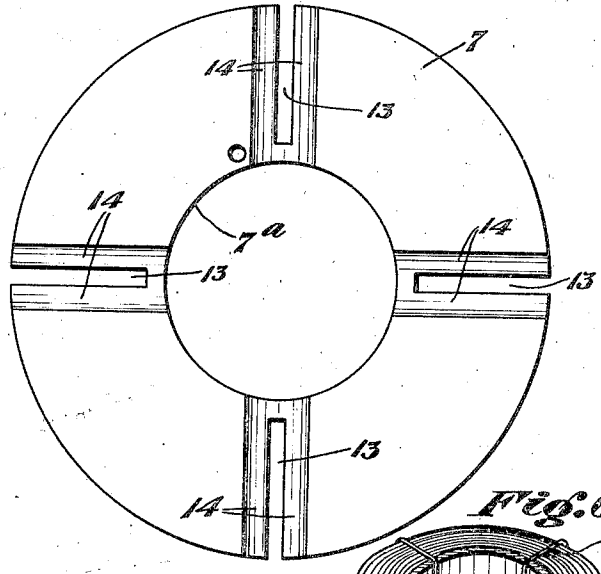


Fig. 4.

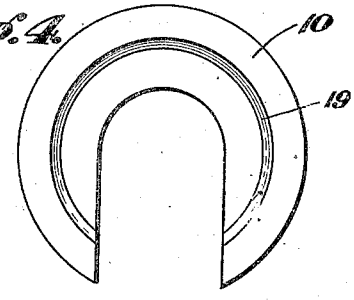


Fig. 5.

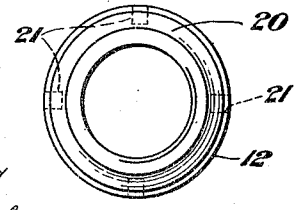
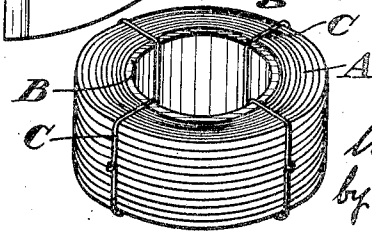


Fig. 6.



Witnesses:

Edwin Trueb

Inventor:

William J. Smith

by D. Anthony Sons

Atty

UNITED STATES PATENT OFFICE.

WILLIAM J. SMITH, OF CLEVELAND, OHIO, ASSIGNOR TO THE AMERICAN STEEL AND WIRE COMPANY OF NEW JERSEY, A CORPORATION OF NEW JERSEY.

REEL.

1,384,572. Specification of Letters Patent. **Patented July 12, 1921.**

Application filed December 4, 1920. Serial No. 428,358.

To all whom it may concern:

Be it known that I, WILLIAM J. SMITH, a citizen of the United States, and resident of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Reels, of which the following is a specification.

My invention relates to reels, and more particularly to reels for feeding or delivering wire or similar material to stapling machines, binding machines, or the like.

The object of my invention is to provide a reel of this general class in which one flange or end wall is removable to permit the loading and unloading of coils of wire on the reel.

Another object of my invention is to provide a novel and improved construction whereby a reel of the above class is provided with a permanent hub for supporting the coils of wire, and with a removable flange, or side wall, which is frictionally held on the wall with a screw threaded nut and a removable collar, so that said flange may be readily removed over said nut after said nut has been loosened and said collar has been removed, thereby facilitating the loading and unloading of said reel.

Another object is to provide certain details and features of construction and combinations tending to increase the general efficiency and desirability of a reel of this particular character.

With these and other objects in view, I have illustrated my invention in the accompanying drawings, in which—

Figure 1 is a plan of a completed reel embodying my invention and showing a coil of wire thereon.

Fig. 2 is an end elevation looking from the left of Fig. 1.

Fig. 3 is an inside elevation of the detachable flange.

Fig. 4 is a front elevation of the holding collar.

Fig. 5 is a rear elevation of the holding nut.

Fig. 6 is a perspective view of a coil of wire as used on my improved reel.

As illustrated, my invention comprises a supporting hub 2 having a bearing aperture 3 therein, so that it may be mounted on an axle or spindle of a machine, and having an integral flange 4 of considerably greater diameter formed on its one end. The end of the hub 2 opposite flange 4 is reduced, forming a bearing portion 5 and a shoulder 6, and a second removable flange 7 having an aperture 7^a therein is adapted to fit snugly around the bearing portion 5 and bear against the shoulder 6. A dowel pin 8 is secured in the shoulder 6 and extends through a suitable aperture in the flange 7 to hold it against rotation.

The hub 2 is further reduced, forming a bearing 9 for a slotted or U-shaped holding collar 10, adapted to bear against the detachable flange 7, and the remainder of the hub is slightly reduced in diameter and screw threaded, forming a portion 11 to receive the screw threaded nut 12 which is adapted to bear against the collar 10 to lock it in position against the flange 7.

The flanges 4 and 7 have radially disposed slots 13 formed therein which have their inner edges beveled as at 14, and the hub 2 is provided with longitudinal slots 15 on a line with slots 13 and which also have their edges beveled as at 16 in line with the bevels 14 of slots 13. The slots 13 and 15 form passageways for binding wires used in tying or binding coils of wire before they are removed from the reel.

Flange 4 is provided with a small aperture 18 adjacent its edge, through which the loose end of a coil of wire is adapted to be forced to temporarily hold it until the coil can be properly bound.

The U-shaped collar 10 is of greater diameter than the aperture 7^a in flange 7, so as to hold the flange in position, and is provided with a recess surrounded by a beveled shoulder 19 adapted to be engaged by a reduced projecting portion 20 formed on the rear face of nut 12 to prevent the collar from being displaced until the nut is loosened.

Nut 12 has a serrated peripheral face or surface and is also provided with suitable depressions or apertures 21 to receive a suitable wrench or tool for operating it.

In Fig. 1, I have shown a coil of wire A

on the reel, and in Fig. 7 I have shown a perspective view of a coil A, showing its construction. These coils are wrapped on a tubular filler B of pasteboard or the like, which are of such size as to fit snugly on the hub 2, and are secured by binding wires C.

My improved form of reel may be used either for forming coils of wire or for dispensing such coils. If used for forming coils, a filler B is placed on the hub 2, flange 7 is placed in position on the bearing 5, and collar 10 is mounted between the flange 7 and nut 12, and nut 12 is tightened into position. The wire is then wrapped on the filler to form a coil of suitable dimensions. After sufficient wire is wrapped, the free end of the wire is inserted in the aperture 18 in flange 4 to hold it from unwrapping, and binder wires C are then passed through the slots 13 and 15 and lapped over the coiled wire and secured to hold the coil. The nut 12 is then loosened slightly and collar 10 removed, allowing flange 7 and the coil of wire to be removed, and the hub 2 is then ready to receive another filler for a new coil.

If used as a dispensing reel, a coil of wire suitably bound as shown in Fig. 6 is mounted on the hub 2. The flange 7 and holding collar 10 are placed in position, and nut 12 screwed into place to lock the collar against said flange. The binding wires are then cut and the coil used. If desired to change the wire on the reel before it is all used, suitable binding wires C are passed through the slots 13 and 15 and lapped over the coil and secured to hold the coil. The nut 12 is then loosened slightly and collar 10 removed, allowing flange 7 and the coil of wire to be removed, and a new coil substituted.

It will be readily seen that by providing the flange 7 with the aperture 7^a of greater diameter than the nut 12, and providing the U-shaped collar 10 to form a bearing surface between the nut 12 and flange 7, I have provided a quicker and more efficient manner of mounting the removable flange of reels of this class, since it is only necessary to unscrew the nut 12 sufficiently to clear the beveled shoulder 19 on the collar 10.

I claim:—

1. A reel for wire or the like, comprising a hub, said hub having provision for mounting the reel for rotation, and flanges for said hub, said flanges being spaced apart to hold a coil of wire therebetween and at least one of said flanges having a centrally arranged aperture therein by which the flange is removably fitted over a portion of said hub, said means comprising a slotted collar removably mounted on said hub and adapted to engage said flange, and a nut threaded on said hub to engage and secure said collar in place, the aperture in said flange being of greater diameter than said nut, to thereby allow said flange to pass freely over the nut when said collar is disengaged therefrom.

2. A reel for wire or the like, comprising a hub, said hub having provision for mounting the reel for rotation, and flanges for said hub, said flanges being spaced apart to hold a coil of wire therebetween, and at least one of said flanges having a centrally arranged aperture therein by which the flange is removably fitted over a portion of said hub, means for holding said collar in place, said means comprising a U-shaped collar removably mounted on said hub and adapted to engage said flange, and having a recess in one face, and a nut threaded on said hub and having one face fitting into the recess in said collar to thereby secure said collar in place, said aperture being of greater diameter than said nut to permit said flange to pass freely over said nut when the U-shaped collar is removed, said collar forming a bearing between said nut and said flange in holding the parts in assembled relation.

3. A reel for wire or the like, comprising a hub, said hub having provisions for mounting the reel for rotation, and having a plurality of longitudinal slots on the periphery thereof, flanges on said hub having slots registering with the slots in said hub, said flanges being spaced apart to hold a coil of wire therebetween, and one of said flanges being fixed to said hub, the other of said flanges having a centrally arranged aperture therein and being removably fitted over a portion of said hub, a U-shaped collar mounted on said hub, and a nut on one end of the hub, said nut being adapted to force said collar against and hold said flange in position on said hub, the aperture in said flange being of greater diameter than said nut to permit said flange to pass freely over said nut when said U-shaped collar is removed, said collar forming a bearing between said nut and said flange in holding the parts in assembled relation.

4. A reel for wire or the like comprising a hub and a pair of flanges, one of said flanges being removable and having an aperture therein to fit said flange on a reduced portion of said hub, a U-shaped collar of greater diameter than the aperture in said removable flange fitted over another reduced portion of said hub, and a nut threaded on said hub to force said collar against said removable flange, the aperture in said flange being of a size that permits the flange to pass freely over said nut when said collar is removed.

5. A reel for wire or the like comprising a hub and a pair of flanges, one of said flanges being removable and having an ap-

erture therein to fit said flange on said hub, a U-shaped collar of greater diameter than the aperture in said removable flange, said collar having a recess formed in one face, and a nut threaded on said hub to force said collar against said removable flange and engaging in said recess to hold said collar from displacement, the aperture in said flange being of a diameter that permits the flange to pass freely over said nut when said collar is removed.

In testimony whereof, I have hereunto signed my name.

WILLIAM J. SMITH.