P. D. TRUDELLE.

WIRE REEL.

APPLICATION FILED JUNE 26, 1917.

1,254,091. Patented Jan. 22, 1918.

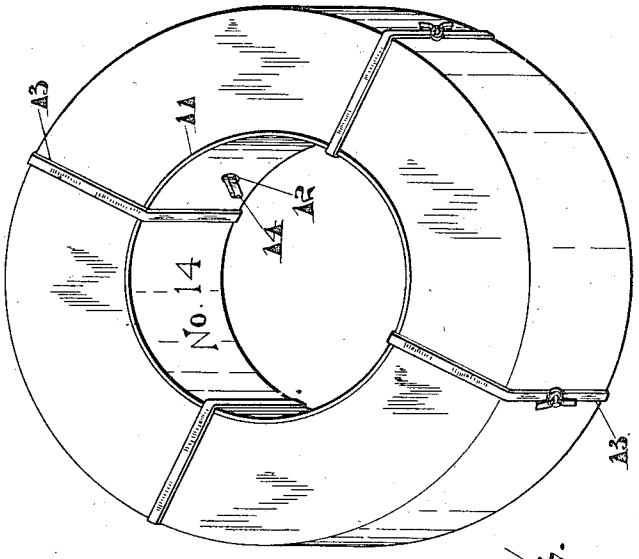


Fig. 3.

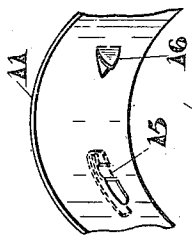


Fig. 4.

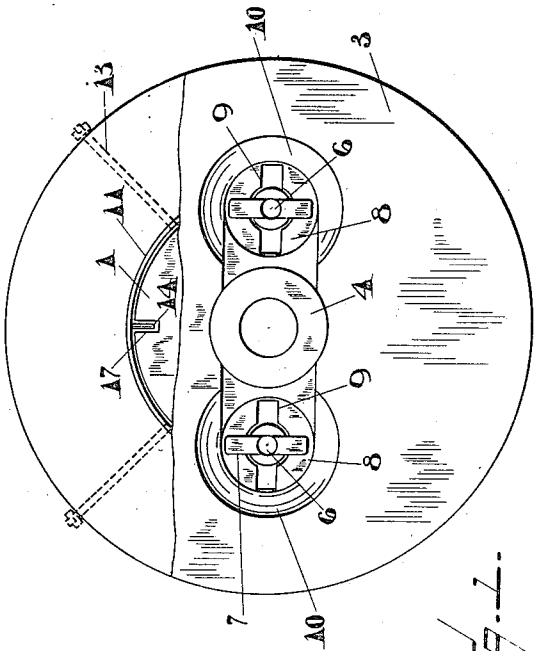


Fig. 1.

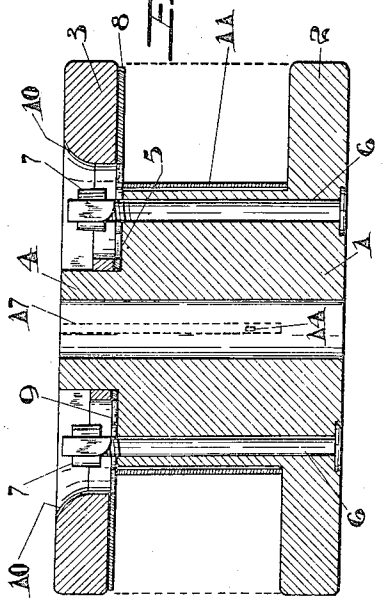


Fig. 2.

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UNITED STATES PATENT OFFICE.

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WIRE-REEL.

1,254,091. Specification of Letters Patent. Patented Jan. 22, 1918.

Application filed June 26, 1917. Serial No. 177,081.

To all whom it may concern:

Be it known that I, PHILIP D. TRUDELLE, of the city of Toronto, in the county of York, Province of Ontario, Canada, have invented certain new and useful Improvements in Wire-Reels, of which the following is a specification.

This invention relates particularly to reels or spools of wire for use with bookbinding machinery. When such reels are empty they are usually returned to be refilled, which is a troublesome process. My object is to devise a reel which may be easily refilled by the user with new coils of wire furnished by the dealer, these coils being specially adapted for use with the reel.

I attain my object by winding the wire on a light hollow cylinder and suitably, but temporarily, binding it in place thereon. The inner end of the wire projects through a hole in the cylinder so that it may engage a slot formed in the hub of a reel provided with one movable end, the slot extending through the end of the hub so that the wire end will enter the slot as the hollow cylinder is slipped on the hub.

The whole is constructed in detail substantially as hereinafter described and as illustrated in the accompanying drawings in which—

Figure 1 is an end elevation of my improved reel with parts broken away;

Fig. 2 a cross section of the same;

Fig. 3 a perspective detail of a wire coil put up ready for use on the reel; and

Fig. 4 a perspective detail of a modified arrangement for holding the wire coil from turning on the reel hub.

In the drawings like numerals of reference indicate corresponding parts in the different figures.

The reel is standard in size, shape and proportions, 1 being the hub, 2 an end which is preferably integral with the hub, and 3 a detachable end. This end 3 has a central opening formed therein adapted to fit over the end 4 of the hub, which is of reduced diameter so that a shoulder 5 is formed against which the detachable end 3 abuts.

The end 3 is held in place by the following means: bolts 6 pass through the hub, and on their threaded ends wing nuts 7 are screwed. The inner side of the detachable end 3 has a metal plate 8 secured thereto. In this plate are formed slots 9 suitably shaped for the passage of the wing nuts 7 when the said nuts are turned in proper position relative to the slots. When, however, the nuts are turned, the inner edges of the wings will engage the metal plate at each side of the slots. Recesses 10 are formed in the detachable end to receive the wing nuts so that no projections appear beyond the outer surface of the detachable end.

It will be noted that the inner edges of the wings are beveled to facilitate their rising over the sides of the slots when the wing nuts are turned. This wedge action assures a tight connection, as once the wing nuts have ridden up to engage the plate 8 a slight further screwing on of the nuts is sufficient to firmly clamp the removable end in place. When it is desired to remove the end, the nuts are turned into alinement with the slots, when the end plate is easily lifted off.

The wire is wound on a hollow cylinder or sleeve 11, which might be of thin metal, though I find that fiber board is well adapted for the purpose. Through the side of the cylinder a hole 12 is formed, and through this hole the inner end of the wire is projected as shown, being preferably doubled to give it stiffness. The wire is temporarily held on the cylinder by means of tie wires 13 as shown. The cylinder must be continuous, of sufficient stiffness to stand the compression strain caused by the winding on of the wire, and its stiffness must not be reduced or caused to disappear by making the hole of larger dimensions than necessary.

The hub 1 has a slot 17 formed therein as shown adapted to receive the projecting wire end 14 as the coil of wire is slipped in place. This engagement of the wire end with the hub prevents the coil turning on the hub. After the coil is in place and the detachable end replaced, the tie wires may be withdrawn. In Fig. 3 the wire itself directly engages the reel hub. The same result, however, might be obtained in some other manner. For example, in Fig. 4 I show a tongue stamped up from the sleeve, which tongue is bent into a hook 15 with which the end of the coil of wire is connected. Another tongue 16 is turned downwardly and serves to enter the slot 17 in the hub as hereinbefore described.

The above construction will be fairly satisfactory using a metal cylinder 11, but with

the fiber cylinder the construction shown in Fig. 3 is the better.

From this arrangement it will be seen that I can prepare the wire coil for shipment quite independently of the reel, and that once the user has a full equipment of reels it is merely necessary for him to order the coils, which are then easily slipped in place whenever required. The fittings required for the coil to enable it to be shipped and placed on the reels are so inexpensive that they may be thrown away as soon as the wire is used.

It should be mentioned that the number and style of the wire may be printed or stamped on the inside of the hollow cylinder as indicated in the drawings.

From the above description it will be seen that I have devised constructions which will satisfactorily attain the objects of my invention as set out in the preamble to this specification.

What I claim as my invention is:

1. A reel provided with a hub and two ends, one end being detachably secured in place, in combination with a hollow cylinder having a hole in its side; and a coil of wire wound on the cylinder and having its inner end projected through said hole, the hub being adapted to permit the cylinder with its projecting end being slipped thereon and adapted also to engage said end to prevent the coil turning on the hub.

2. A reel provided with a hub and two ends, one end being detachably secured in place, in combination with a hollow cylinder having a hole in its side; a coil of wire wound on the cylinder, part of the wire extending through the hole and engageable with the reel as the cylinder and coil are placed in position to prevent the wire coil turning on the hub.

3. A reel provided with a hub and two ends, one end being detachably secured in place, in combination with a stiff hollow cylinder having a hole in its side; a coil of wire wound on the cylinder; and means engaging both the cylinder and the hub to prevent the turning of the coil on the cylinder and the cylinder on the hub, the hub being adapted to permit the cylinder with the engaging means being slipped thereon.

4. For use with a reel having a detachable end and a slotted hub, a stiff hollow cylinder having a hole in its side in combination with a coil of wire wound on the cylinder and having its inner end projected a short distance through the hole in the cylinder so that it may be engaged with the slot in the reel hub when the cylinder is slipped on the said hub.

5. A wooden reel provided with a hub and two ends, one end being detachable; a plurality of bolts extending through the hub and provided with wing nuts; a metal plate secured to the inner side of the detachable end provided with slots shaped for the passage of said wing nuts in one position, the inner edges of the wings being adapted to engage the plate when they are turned after passing through the slots, and the detachable end recessed to receive the nuts.

6. A wooden reel provided with a hub and two ends, one end being detachable; a plurality of bolts extending through the hub and provided with wing nuts; a metal plate secured to the inner side of the detachable end provided with slots shaped for the passage of said wing nuts in one position, the inner edges of the wings being adapted to engage the plate when they are turned after passing through the slots, the inner edges of the wings also being beveled to facilitate their rising over the sides of the slots when the wing nuts are turned.

Signed at Toronto, Canada, this 15th day of June, 1917.

PHILIP D. TRUDELLE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."