J B. GREEN.

REEL.

APPLICATION FILED DEC. 24, 1919.

1,420,094. Patented June 20, 1922.

Fig. 1

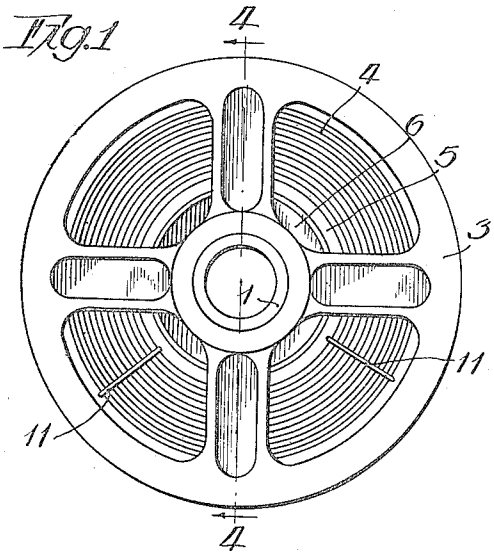


Fig. 2

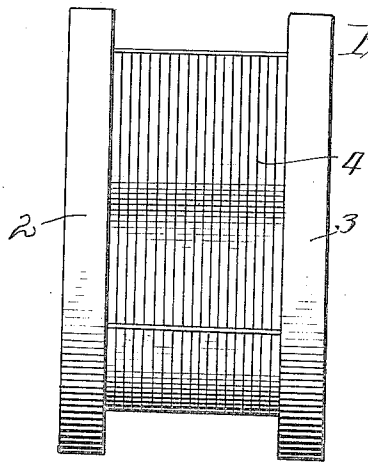


Fig. 3.

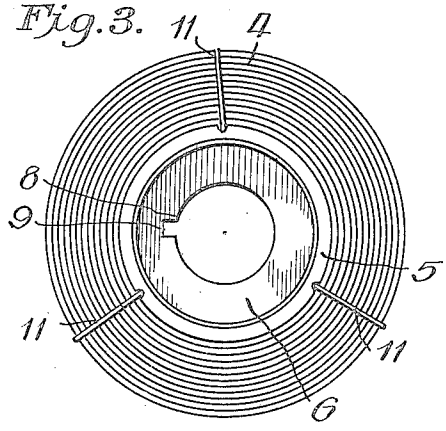


Fig. 4

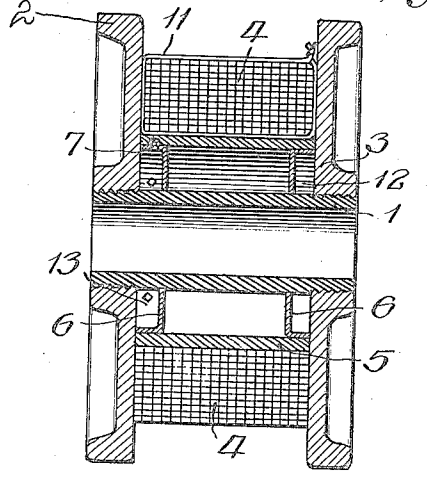
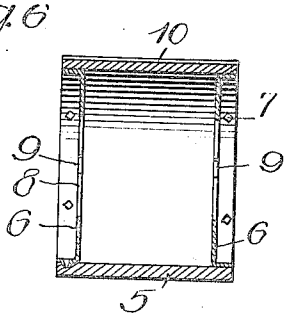


Fig. 6



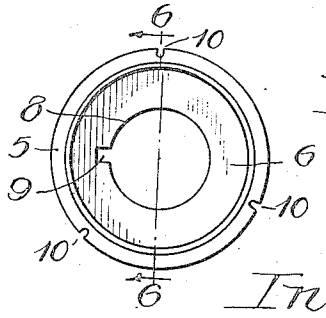


Fig. 5

Inventor,
J Birchard Green.
By Arthur F Durand
Atty.

UNITED STATES PATENT OFFICE.

J BIRCHARD GREEN, OF CHICAGO, ILLINOIS, ASSIGNOR TO CHICAGO STEEL AND WIRE COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

REEL.

1,420,094. Specification of Letters Patent. Patented June 20, 1922.

Application filed December 24, 1919. Serial No. 347,112.

To all whom it may concern:

Be it known that I, J BIRCHARD GREEN, a citizen of the United States of America, and a resident of Chicago, Illinois, have invented a certain new and useful Improvement in Reels, of which the following is a specification.

This invention relates to reels for wire, such as those employed on stapling machines, and contemplates an improvement on the construction shown and described in Patent No. 1,264,918, granted May 7, 1918.

The object of the present invention is to provide novel and improved means for supporting the wire while being formed into a coil for shipment, as well as for supporting the wire in the reel, and whereby the necessity of using wood for this purpose, in the form of a cylindric core for each coil, is obviated, thus not only reducing the cost of production, but also avoiding some of the difficulties and disadvantages connected with the use of wood for this purpose.

To these and other useful ends the invention consists in matters hereinafter set forth and claimed, and shown in the accompanying drawings, in which—

Fig. 1 is a side elevation of a reel having a coil of wire mounted therein, and held in place thereon by means embodying the principles of the invention.

Fig. 2 is a side elevation of said reel and wire, viewed in a direction at right angles to the axis of the reel.

Fig. 3 is a side elevation of the coil of wire and the core therefor shown in Fig. 1.

Fig. 4 is a vertical section on line 4—4 in Fig. 1.

Fig. 5 is a side elevation of said core.

Fig. 6 is a vertical section on line 6—6 in Fig. 5.

As thus illustrated, the invention comprises a short tube 1 threaded at one end to receive the flange 2, which is screwed permanently upon the tube, and threaded at the other end to receive the flange 3, which latter is removably screwed upon the end of the tube. Said flanges can be of any suitable character.

The coil of wire 4 is wound on the cylindric core 5 which latter is preferably of pulp or paper or fiber-board, or some similar fibrous material. Sheet metal heads 6, which are in the form of shallow cups, are inserted in the ends of said cylindric core, and the flanges or rims of these cups are held in place therein by indentations 7 producing sharp or ragged edges which extend into the fibrous material of the core. Each head 6 is provided with a central opening 8 which approximately fits the diameter of the tube 1, and each opening preferably has a notch 9 which is of use in rotating the core to wind the coil of wire thereon. The core also has its outer surface provided with notches 10 to receive the binding wires 11 which hold the coil of wire in place and against unwinding. These binding wires 11 preferably fit tightly in the notches 10, so that the core 5 is prevented from slipping out of the coil of wire, during shipment of the coil on the core.

After the coil with the core thereon is inserted in the reel, in the manner shown in the drawings, the binding wires 11 are then removed, so that the coil of wire can be unwound as it is needed in the stapling machine, or other machine, in the well known manner.

The fibrous material employed for the core 5 does not shrink after the coil of wire is wound thereon, so that it remains tight in the center of the coil. The sheet metal heads 6, of course, are not subject to expansion or contraction, to any appreciable extent, so that the combination of the sheet metal and the fibrous material produces a very light core or filler which remains tightly held in the center of the core, and which reduces the weight to some extent in shipping the coils to the consumers who already have the reels,—that is to say, who already have the tubes 1 and the flanges 2 and 3, it being understood that these cores can be thrown away after the wire is entirely consumed, if such is desired. Of course, the cores can be saved and returned to the manufacturer of the wire, if necessary for they are not harmed or injured by the unwinding of the wire, and do not wear out, but are so cheaply made that, like the wood cores of said prior patent, it is cheaper in some cases at least to throw the cores away instead of shipping them back to the manufacturer of the wire. In some localities wood for this purpose is expensive, and the core 5 with its heads 6 can be manufactured more cheaply than the wood cores, and in addition it has some advantages over the latter, as explained, and as will be obvious to those

familiar with materials of this kind in devices for this purpose.

The cylindric core 5, it will be seen, provides a cylindric filler for the coil of wire 4, and the heads 6, being cup shaped and set inwardly, form countersunk end walls which serve as stiffening means for the filler. Said filler is subject to edgewise compression between the flanges 2 and 3, so that the flange 3 is held frictionally against rotation after being screwed up tightly against the edge of the filler. The screw threads for the flange 3, it will be seen, extend a distance into the filler, and into the cavity 12 formed by the countersunk head of the filler, but the screw threads for the flange 2 preferably terminate short of the cavity 13 formed at the other end of the filler, so that the flange 3 can be unscrewed while the flange 2 can be rotated until it is held practically fixed upon the end of the tubular hub, which latter is preferably of such a length that its ends are flush with the outer sides of the two flanges. While the heads 6 are shown and described as being made of sheet metal, it will be understood that they can be made of any suitable material, and can be held in place in any suitable manner.

It will be seen that the heads 6 are protected by the overhanging annular edges of the cylinder 5 against compression in the reel, so that the heads are not distorted by the compression of the filler in the reel. It will also be seen that the coil of wire can be removed from the core or filler while the binding wires are in place thereon, if such is necessary or desirable, as the removal of the core or filler does not necessitate the removal or breaking of the binding wires. Also, the coil can be formed on another support, and the core or filler shown and described can then be inserted for shipment, if for any reason this may become necessary or desirable. Of course, when the wire is coiled on the cylinder 5, the coiling is done in a manner that contracts the wire on said cylinder, so that the latter is thereby held tightly in place, and the binding wires 11 hold the wire against displacement from the core or filler, by keeping the wire from uncoiling. Also, when the core or filler becomes a part of the reel, the binding wires 11 are then cut or broken and the wire freely uncoiled. But, as explained, if for any reason such may become necessary or desirable, the cylinder 5 can be pushed out of the coil without breaking the wires 11, and the coil can then be otherwise mounted for the uncoiling of the wire in some other form of reel.

What I claim as my invention is:—

1. A reel for wire comprising a hub having provisions to mount the reel for rotation, and flanges for said hub, spaced apart to hold the winding between them, having means for rotatably removing at least one of said flanges to permit loading of the reel, said winding having a cylindric filler secured therein and upon which the wire is wound for shipment, and to facilitate placing of said winding on the reel, said filler having a bore fitting said hub to center the winding in the reel before and also after the removable flange is adjusted in place, and said filler being adapted for compression and serving frictionally to prevent relative rotation between said flanges, characterized by this, to wit:—said filler comprising a hollow cylinder of fibrous material, and cup shaped heads having the flanges thereof permanently secured in the cylinder, each head having a central opening.

2. A reel for wire comprising a tube for rotation on a spindle inserted therein, a flange removably screwed onto one end of said tube, a flange fixed on the other end of said tube so that the tube terminates or practically terminates in the flanges and means for supporting and centering the wire in the reel before and also after the removable flange is screwed onto the tube, said means being compressed between the two flanges and of a diameter to engage the removable flange a distance from said tube, whereby said means serve to limit the screw adjustment of the removable flange toward the fixed flange, and so that said removable flange is held against unscrewing by frictional engagement with said means, characterized by this, to-wit:—said filler being adapted for compression and comprising a hollow cylinder of fibrous material, heads secured in the cylinder, each head having a central opening, and binding wires to secure the coil on the filler, with provisions on the filler to accommodate said binding wires.

3. In a reel for wire having a hub and flanges, the combination of a cylindric and hollow core forming a filler upon which the wire is wound in coiling the same, and for shipment of the coil of wire, heads secured within said hollow filler, so that the filler has projecting edges at each end thereof, said heads having central hub openings therein to center it about the axis of the reel.

4. A structure as specified in claim 3, said filler having notches in the cylindric outer surface thereof, and binding wires to hold the coil of wire against unwinding, said notches being adapted to receive said binding wires tightly therein.

5. A structure as specified in claim 3, said openings having notches to engage a support upon which the filler is held while being rotated to wind the coil of wire thereon.

6. A structure as specified in claim 3, said filler being of fibrous material, and said heads being of sheet metal with each head indented at different points to hold it in place.

7. A structure as specified in claim 3, said filler being subject to edgewise compression in the reel.

8. A structure as specified in claim 3, said heads being cup-shaped to form countersunk end walls which serve as stiffening means for the filler, with the edges of the cups extending toward the outer edges of the cylindric hollow filler, so that a cavity is formed at each end of the filler, and providing flanges for the attachment of the heads to the inner surface of the filler.

9. As an article of manufacture, a coil of wire, a core or filler on which the coil is wound and also shipped, and for mounting the coil in a reel, comprising a hollow cylinder of fibrous material the cylindric wall of which presents a projecting annular edge at each end of the core or filler, and binding wires to hold the coil against displacement on the cylinder, with grooves in which said binding wires extend parallel with the axis of the reel.

10. A structure as specified in claim 9, having provisions for permitting removal of the filler while the binding wires are in place on the coil.

11. A structure as specified in claim 9, said cylinder having heads disposed in position to be protected by said annular edges against compression in a reel.

12. As an article of manufacture, a coil of wire, a core or filler on which the coil is wound and also shipped, and for unwinding the coil, comprising binding wires to hold the coil together and present unwinding thereof and provisions to receive said wire binding to permit a tight fit of the filler in the coil and permit removal of the filler while said wires are in place on the coil.

13. As an article of manufacture, the coil of wire, binding wires therefor, and a filler in the form of a hollow cylinder within said coil, having parallel grooves for said binding wires and heads permanently secured in the ends of such cylinder.

J BIRCHARD GREEN.