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REEL

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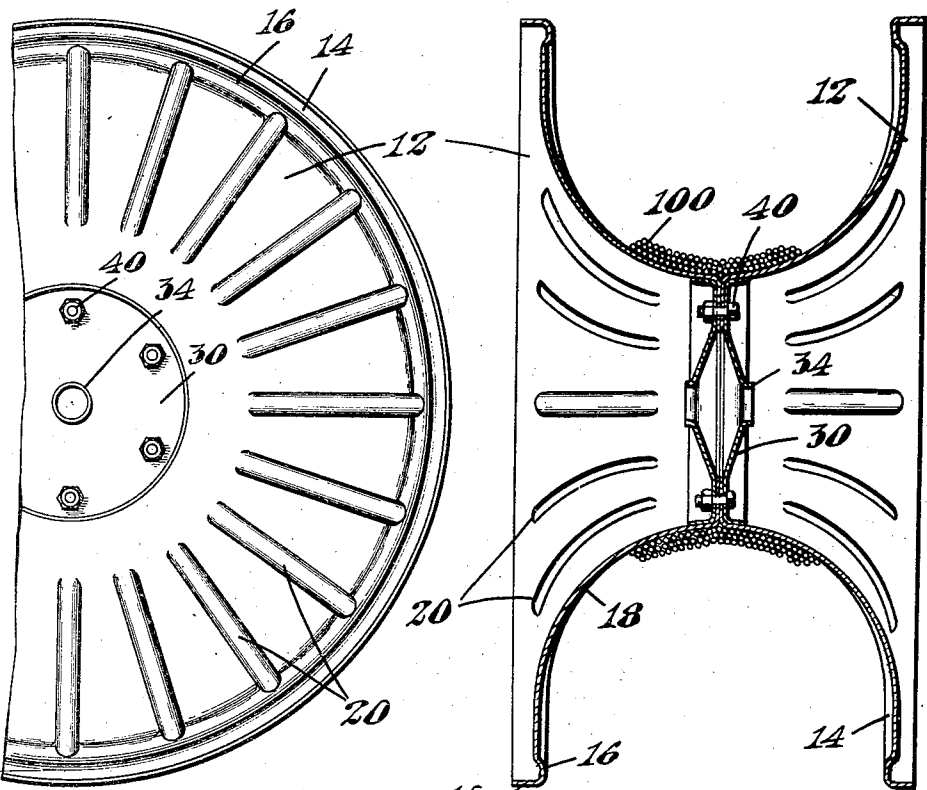


Fig. 1.

Fig. 2.

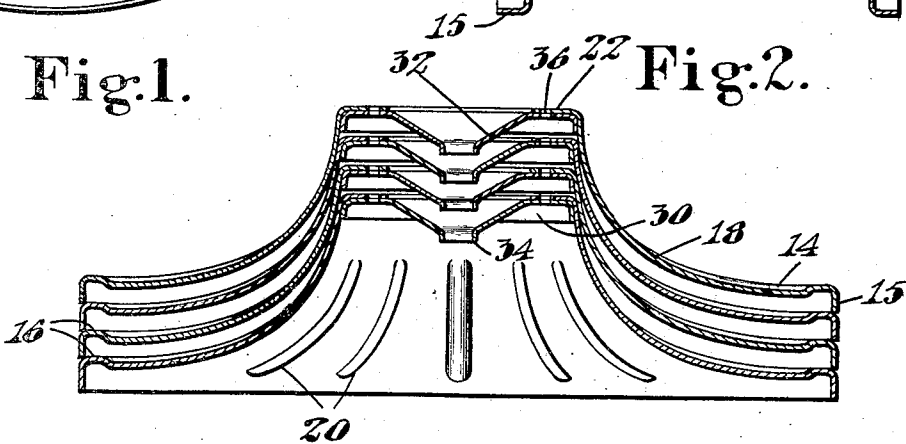


Fig. 3.

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REEL

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This invention relates to reels for shipping and storing cable, wire, rope or other flexible material that can be coiled.

It has been the practice heretofore to use wooden reels for this purpose, although such reels develop serious weaknesses in the rough usage to which they are subjected under the existing commercial conditions and also deteriorate from exposure to the weather. The principal object of the present invention is to provide a reel of a superior type, obviating the defects of the wooden reels and possessing certain inherent advantages on account of its novel construction.

It will be apparent that the great weight of the cable, particularly lead-covered cable, carried by a reel under all sorts of conditions of rough transportation, imparts a deteriorating strain to any reel of built-up wooden construction and the fact is that on this account the life of such a reel averages only four trips from manufacturer to user. In addition to this waste through deterioration, there is another constant loss to the manufacturer due to the fact that wooden reels are continually being stolen for firewood. In one of its aspects, accordingly, my invention consists in a sheet metal reel, sufficiently rigid in its construction and fabrication to withstand the deteriorating strains incident to carrying a heavy winding of cable which have proved so destructive to wooden reels.

In another aspect, my invention consists in a reel constructed in component parts, which can be readily and securely connected to form a complete reel and which can be disassembled and nested when the reel is empty for return shipment or storage. This is a point of important advantage over the present form of wooden reel, in that the latter requires practically the same amount of space for transportation or storage when empty as when full, whereas the space occupied by the two parts of my novel reel when placed in nested relation comprises scarcely more than half the space of the assembled reel. This advantage is particularly striking when it is considered that a carload of empty wooden reels does not weigh sufficient to come within

the required minimum carload weight required by the railroads.

Further advantages of my invention will be best understood and appreciated from the accompanying drawings, illustrating a preferred embodiment thereof and selected for purposes of illustration, in which

Fig. 1 is a view in side elevation of the complete reel, partly broken away.

Fig. 2 is a view of the reel in cross section, and

Fig. 3 is a sectional view showing the four component parts of two reels in nested condition.

The reel herein shown comprises broadly two hollow component parts of identical shape, that being, in general, a flanged truncated cone having its outer conical surface concaved. The main portion of each component part is an integral sheet metal stamping 12, having a widely extended base flange 14 with an annular circumferential corrugation 16 and a shallow outwardly turned rim 16, for the purpose of increasing its stiffness. The surface of the flange merges tangentially into the concave curved surface 18 which extends to the truncated apex of the cone and forms a hub which, when the two parts are assembled, constitute the core or drum of the reel. The concave surface 18 of each part is provided with a series of equally spaced corrugated ribs 20, which impart stiffness and rigidity to the drum of the reel.

Each part 12 at its apex or at the end of its hub is provided with an inwardly extending annular flange 22, cut away at the center to form a large circular opening. It will be apparent that the part 12 is so designed that it may be formed in a single stamping operation from sheet steel and, in practice, I have found it desirable to employ No. 13 gauge material for this purpose.

Within the hub of each part 12 is secured a flanged disk 30 of such diameter as to fit exactly within the hub, having its face in contact with the flange 22 of the hub and its flange in contact with the inner surface of the concave curved wall 18. The center portion 32 of the disk 30 is given a

conical shape and terminates in a shallow central flange 34. The cone of the disk 30 is directed inwardly, or in an opposite direction to the cone of the outer component part 12, and the two parts are secured permanently and rigidly together by spot welding or any other form of permanent union. The material of the hub disk 30 may, to good advantage, be somewhat heavier than the outer portion of the reel and, in practice, No. 7 gauge sheet steel has been found entirely satisfactory for this purpose.

Each part of the reel is completed by having a series of bolt holes 36 formed in the composite flange formed by the annular flange 22 of the outer part and the body of the disk 30. Six equally spaced bolt holes are shown in the drawings but the number and spacing is, of course, immaterial.

The reel is completed by assembling the two parts 12 with their hubs in contact and bolting them together by a series of bolts 40, as shown in Fig. 2. The operation of bolting the parts together may be facilitated by inserting a lining bar through the central opening formed by the flanges 34 of the hub and this flanged opening also affords suitable bearings for mounting the reel for rotation either for winding cable upon an empty reel or in running cable off a full reel. The cable is represented in Fig. 2 by reference character 100, of which a number of turns is shown upon the reel.

It will be apparent that the hollow and generally conical shape of the component parts of the reel affords very convenient access to the interior of the hub and the attaching bolts, so that the parts 12 may be assembled or disassembled with equal facility.

The reel herein shown is of such size that one complete half may be formed in a single stamping operation. It will be apparent, however, that in constructing reels of large size a single stamping of the full diameter required might be inconvenient to handle. In such cases, I contemplate fabricating each half of the reel from two or more sectors bolted or welded together and it is to be understood that a reel of such construction is within the scope of the invention.

The advantages of the novel reel of my invention as a complete unitary article will be apparent from the foregoing description. It is not only light and rigid in construction but of sufficient strength to withstand the wear of ordinary usage indefinitely. Its component parts are interchangeable, thus reducing its cost and facilitating replacement and repairs. It is fireproof and of attractive appearance and includes accurately formed flanged bearings on which it may be mounted when desired.

The advantages of my novel reel as a knock-down or collapsible article will be ap-

parent from Fig. 3, from which it will be seen that the generally conical and tapering shape of the parts 12 is ideally suited for assembling in nested condition, that is to say, with the parts assembled having their apices directed all in the same direction and with one flange resting upon another.

While I have shown the parts of two reels only in nested condition, there is no reason why they may not be stacked as high as convenient and, if desired, they may be locked together in the stack by a bar inserted through the flanges 34.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A metal reel comprising two sheet metal stampings each having the general shape of a truncated cone with a peripheral out-turned flange at its large end and an in-turned flange at its small end, and a disk member adjacent to its in-turned flange and having a conical central portion disposed in the opposite direction to the cone of its associated stamping, and means associated with said disk members for connecting the in-turned flanges of said stampings.

2. A metal reel comprising two conical sheet metal stampings each shaped to constitute one-half of the reel and each having secured within its smaller end a flanged disk with a central hub and conical intermediate portion, the stampings being assembled with said conical portions of the disks directed away from each other.

3. A knock-down metal reel comprising two halves of sheet steel, each having a wide peripheral flange merging into a conical portion having stiffening ribs formed therein and each terminating at its smaller end in an in-turned annular flange, a sheet steel reinforcing disk overlapping and permanently secured to said annular flange and each disk having a central hole therethrough for receiving a central bearing support, and connecting bolts passing through the annular flanges and disks of both halves of the reel.

4. A metal reel for electric cables, comprising two sheet steel halves, each with a wide peripheral flange having an out-turned rim and an annular corrugation therearound near its circumference, said flange merging into a cone-like tapering central portion having radially extending corrugations in its body and an in-turned flange at its smaller end, reinforcing means for said in-turned flanges, and a plurality of connecting bolts detachably securing the two halves together through the medium of their in-turned flanges.

5. A metal reel comprising two rigid sheet metal stampings each having the general shape of a flanged truncated cone with its outer conical surface concaved, a reinforcing sheet metal disk rigidly secured in overlap-

ping relation to the truncated end of each stamping and provided with a centrally disposed bearing support opening, and means associated with the said ends for rigidly securing the stampings together.

6 6. A metal reel for heavy flexible material, comprising two rigid sheet metal stampings each having the general shape of a truncated cone with an in-turned flange at its smaller end, a disk secured to each in-turned flange
10 and having an offset center portion shaped to afford a bearing for the reel, and means for connecting said stampings with their in-turned flanges parallel to each other.

15 7. A metal reel for heavy flexible material, comprising sheet metal stampings each having the general shape of a truncated cone and being connected at their smaller ends, and a pair of oppositely directed conical members
20 secured within said smaller ends and having spaced flanged openings which collectively form bearings to support the reel for rotation.

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