A. L. HASTINGS.

REEL.

APPLICATION FILED NOV. 20, 1911.

1,066,609. Patented July 8, 1913.

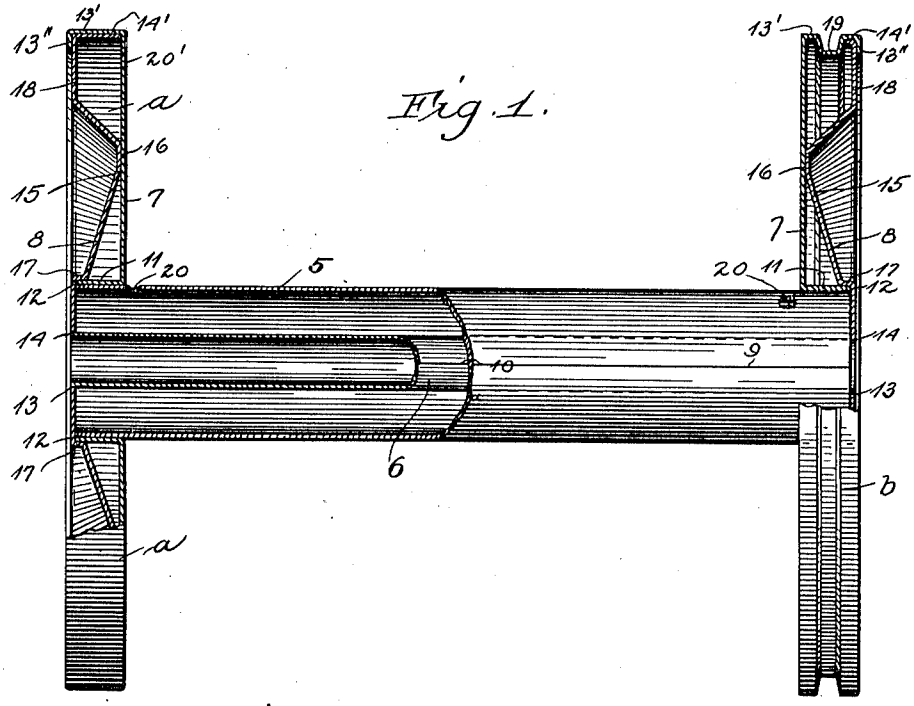


Fig. 1.

Fig. 2.

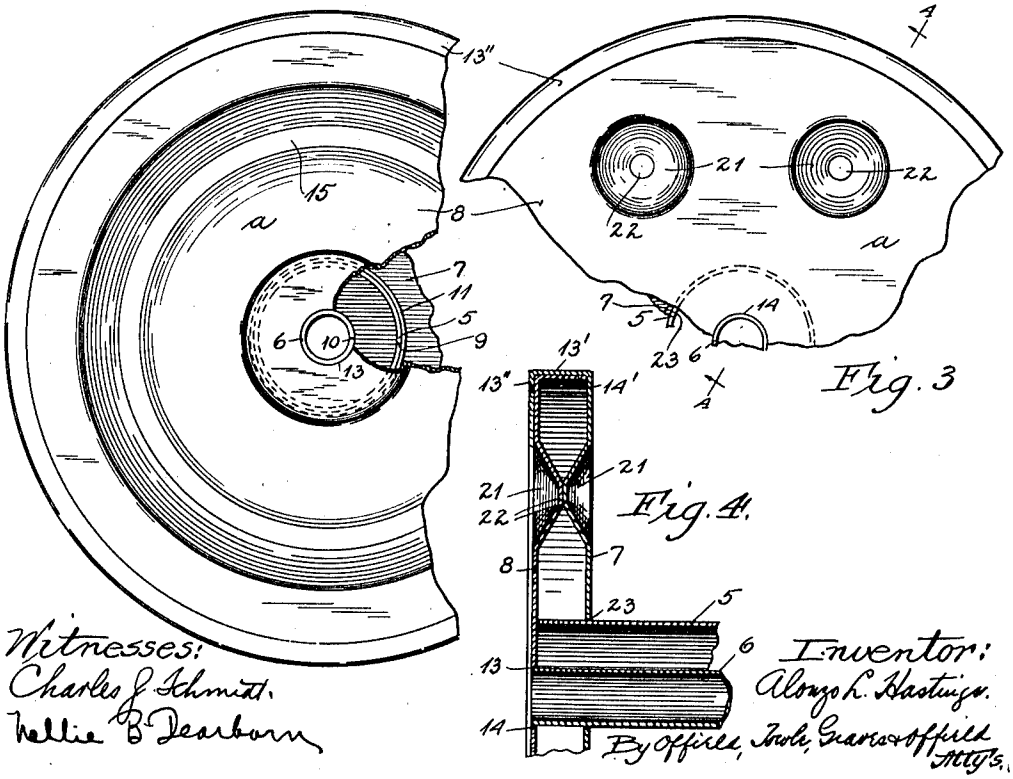


Fig. 3

Fig. 4.

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UNITED STATES PATENT OFFICE.

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REEL.

1,066,609. Specification of Letters Patent. Patented July 8, 1913.

Application filed November 20, 1911. Serial No. 661,323.

To all whom it may concern:

Be it known that I, ALONZO L. HASTINGS, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Reels, of which the following is a specification.

My invention relates to reels or spools for receiving cord, wire, cable or other material, and covers improved features of construction.

Reels made of wood are very fragile and soon chip, warp and become distorted or broken. Likewise, reels made of cast material are fragile and too heavy. Reels have also been constructed of sheet metal, but the various parts of such reels have been held together by means of riveting, or by means of screws or bolts, and the parts are liable to loosen, and the rigidity of the structure to be destroyed.

The main object of my invention is to construct reels or spools of comparatively thin sheet metal, preferably sheet steel, and of a minimum number of parts securely welded together in the most efficient arrangement to secure the greatest strength with minimum weight, and to provide a construction which is adaptable for all sizes of reels or spools.

The details of my invention are clearly illustrated on the accompanying drawing, in which—

Figure 1 is a plan view of a spool with parts thereof in section, Fig. 2 is an end elevation of the spool shown in Fig. 1, Fig. 3 is an end elevational view showing a modified arrangement, and Fig. 4 is a sectional view taken on plane 4—4, Fig. 3.

The spool comprises a tubular hub 5, a tubular axle 6, and the ends *a* and *b*, each end comprising an inner disk 7 and an outer disk 8. The hub and axle may be tubes cut from stock, or may be bent up of sheet metal with their respective edges welded together butt to butt, as indicated at 9 and 10. The inner and outer disks of the ends are each stamped integral of sheet metal. The blank for the inner disk has a central opening, the material adjacent which is deflected outwardly at right angles to form a sleeve flange 11 for snugly receiving the end of the tubular hub 5, the outer end of the flange and the adjacent end of the hub being flush, and these outer ends are welded securely together, as indicated at 12, the inner disks of the ends being thus rigidly secured to the hub ends. The outer disk 8 at each end has the central opening 13 for snugly receiving the adjacent end of the axle tube 6, and at its periphery is deflected inwardly at right angles to form the flange 14′. The outer end of the disk 7 is deflected outwardly at right angles to form the perimeter 13′ for snugly receiving and fitting about the flange 14′ of the outer section. After the outer disk has thus been inserted within the inner disk the end section 13″ of the perimeter 13 is deflected radially inwardly against the base of the flange 14′, and the disks are thus securely held together at their peripheries. The inner edge of the disk about the opening 13 is securely welded to the end of the axle, as indicated at 14. The body of the outer disks may remain straight, but in order to more securely bind the inner and outer disks together and to give greater rigidity to the structure, the disks are welded together at intermediate points. As indicated in Figs. 1 and 2, the intermediate section 15 of the outer disk is deflected inwardly to abut against the inner disk when the disks are brought together, and at such abutment 16 the disks are welded together in any suitable manner, as by being spot welded. The inner part 17 of the deflected portion 15 is preferably deflected abruptly and at right angles to engage snugly about the outer end of the flange 11 of the inner disk to assist in holding the flange and sleeve rigidly together. The section 18 between the deflected part 15 and the periphery of the outer disk preferably remains straight, and its outer surface flush with the corresponding end of the axle 6 and the section of the outer disk about said end. The part 17 could of course be welded to the flange 11, and the turned over perimeter end 13″ could also be welded to the outer disk, if desired.

As shown in Fig. 1, the end of flange 14′ of the outer disk of the left end structure *a* abuts against the body of the inner disk 7. At the right end structure *b* the perimeter 13′ of the inner disk has the peripheral groove 19 for receiving a belt for driving the spool when mounted on a shaft passing through the axle tube, and the flange 14′ of the outer disk 8 abuts against the outer wall of this groove, the periphery of the outer disk being securely held in place by the inwardly deflected end 13″ of the inner disk perimeter in the same manner as described in connection with the left end struc-

ture *a*. The hub may be provided with one or more openings 20 and the walls 7 may have openings 20′ for receiving the ends of the material wound on the spool.

Instead of having a continuous annular deflected part 15, as shown in Figs. 1 and 2, the outer disk may be given conical inward deflections at intervals, the conical sections being welded at their apexes to the inner disk, or, as shown in Figs. 3 and 4, both the inner and outer disks may have opposite conical inward deflections 21 whose apexes 22 are welded together. Also, as best shown in Fig. 4, the inner edge of the inner disks may be directly welded to the hub, as indicated at 23, instead of providing flanges thereon, as in Figs. 1 and 2. Other modifications are also possible which would still come within the scope of my invention.

I thus provide a very strong and rigid, yet very light structure comprising a minimum number of parts securely welded together.

I claim the following:

In a reel, the combination of an axle tube, a hub concentric with and surrounding said tube, end structures for said reel, each end structure comprising an inner circular disk having a central portion deflected outwardly to form a flange at right angles therewith and said flange intimately receiving the end of the hub, and an outer disk having an opening at its center for receiving the end of the axle tube, said disk abutting against the end of said hub and inner disk flange and being deflected at points intermediate said hub and disk peripheries, said disks being secured together at such deflected parts, the outer ends of the disks of each end structure being deflected at right angles and into interlocking engagement with each other.

In witness whereof, I hereunto subscribe my name this 17th day of November, A. D., 1911.

ALONZO L. HASTINGS.

Witnesses:
CHARLES J. SCHMIDT,
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