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C. C. COST.

BOBBIN.

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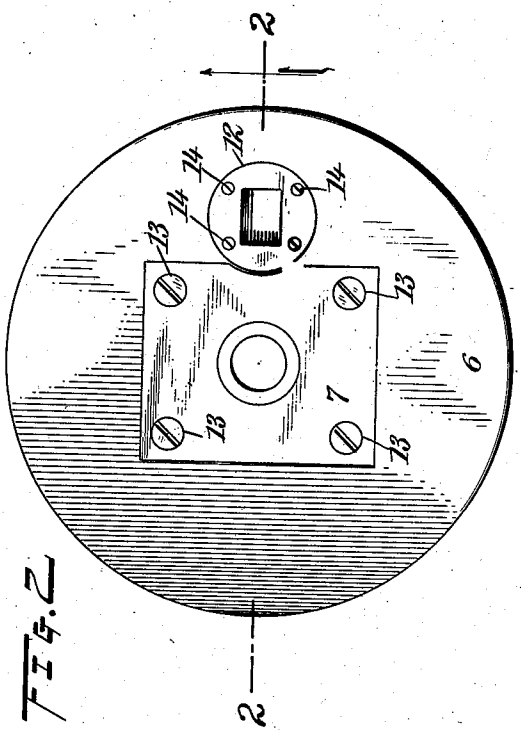


FIG. 2.

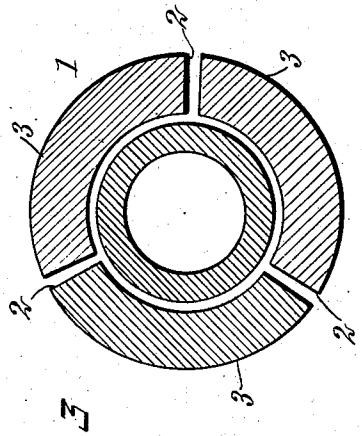


FIG. 3.

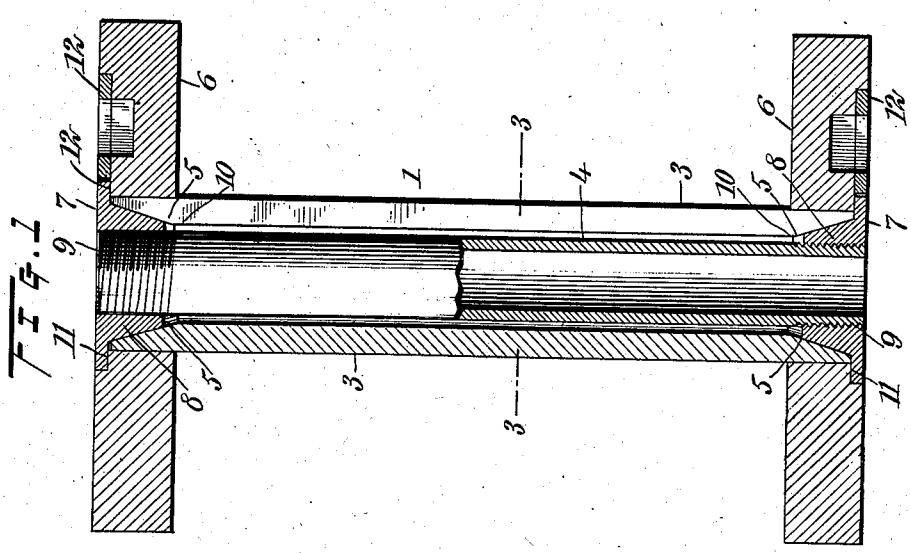


FIG. 1.

WITNESSES:

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BOBBIN.

No. 815,683. Specification of Letters Patent. Patented March 20, 1906.

Application filed April 26, 1905. Serial No. 257,492.

To all whom it may concern:

Be it known that I, CHARLES CLYDE COST, a citizen of the United States, and a resident of Bismarck, in the county of Burleigh and State of North Dakota, have invented a new and Improved Bobbin, of which the following is a full, clear, and exact description.

This invention relates to bobbins; and it consists, substantially, in the details of construction and combinations of parts hereinafter particularly described, and pointed out in the claims.

In the manufacture and baling of what is commonly termed "binder-twine" it has been the practice heretofore in many instances to wind the twine upon a solid or integral bobbin which when full is removed from the winding-machine and transferred to what is known as the "balling-machine," in which the twine is unwound from the bobbin and rewound into balls which are collected or gathered in separate quantities and taken to the "baling-room," where they are closely pressed or packed into sacks which are sewed up and strongly wrapped in some manner, as with rope, thus forming them into bales ready for market. These operations are expensive on account of the labor and machinery (and motive power) required to carry them out, and besides the unwinding of the twine from the bobbin and the subsequent rewinding of the same into balls causes a material loss of the shorter and finer fibers thereof, (amounting to many pounds per day,) which destroys the smoothness of the twine and renders it soft and spongy and far less suited to its purposes than is desired.

One of the principal objects of the present invention is to provide a bobbin by the use of which the necessity of unwinding the twine and again rewinding the same is obviated, thereby dispensing with the use of balling-machines, as well as the labor attendant thereupon.

A further object is to provide a bobbin by the use of which the twine may in the first instance (as it is spun or manufactured from the fiber) be wound directly into form for baling, as will hereinafter be more fully explained.

A still further object is to provide a bobbin which is simple in its embodiment, as well as strong and durable and comparatively cheap to manufacture, besides being effective and reliable for its purposes and possessing the capacity for long and repeated service.

The above and additional objects are attained by means substantially such as are illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal sectional view of a bobbin embodying my improvements, taken on the line 2 2 of Fig. 2. Fig. 2 is an end view thereof; and Fig. 3 is an enlarged transverse sectional view of the bobbin minus any head, taken on the line 3 3 of Fig. 1.

Before proceeding with a more detailed description it may be stated that in the form of my improvements herein shown I employ a bobbin the body or spindle of which is provided at each end with a removable or detachable head of special construction, while said body or spindle itself is also of special construction by which to collapse inwardly whenever the heads are removed or detached therefrom. Special means are employed for retaining the body or spindle of the bobbin rigidly in expanded form when the heads are secured in place, and while I have herein represented my improvements in a certain preferred embodiment it will be understood that I do not limit myself thereto in precise detail, since immaterial changes therein may be made coming within the scope of my invention.

Reference being had to the drawings by the designating characters marked thereon, 1 represents the body or spindle of the bobbin, which may be constructed of wood or any other suitable material and which is preferably circular in cross-section and tubular or hollow. Said body or spindle is divided longitudinally at 2 into a plurality of segmental sections 3, (with spaces between,) which are placed or fitted about or around a central member or core 4, which may also be of any suitable material and which is preferably tubular or hollow for the purposes of lightness and strength. The inner surface of each segmental section 3 is beveled outwardly at each end at 5 for a suitable portion of the length thereof, thus to present a conical or outwardly-flaring entrance to the hollow or tubular body or spindle at each of its ends when the several segmental sections thereof are properly associated in its formation. Each of the heads 6 of the bobbin may also be of wood or any other suitable material, while fitted therein, so as to be flush with the outer surface thereof, is a metal plate 7, formed with an integral hollow cone 8, having an internal screw-thread cut therein to fit a corresponding screw-thread 9, formed

for a suitable distance from each end of the aforesaid central member or core 4, the said cone being of dimensions also to snugly enter the space 10 between the threaded portion of the central member or core and the corresponding inner beveled portions of the segmental sections 3 of the said body or spindle. It will thus be seen that by properly associating the said segmental sections about the central member or core 4 and then screwing the cones tightly into place upon the ends thereof until the ends of the central member or core abut the inner annular surface portions 11 of the plates 7 the segmental sections will be expanded and the entire structure will be rendered rigid and practically solid or integral throughout. The heads being thus applied to both the inner member or core and the body or spindle, it is apparent that on removing or detaching the heads the segmental sections 3 will collapse. Also inserted in each head 6 flush with the outer surface thereof is a metal socket or catch 12 for enabling the bobbin to be properly fitted or inserted in the winding-machine, both the said socket or catch and the plate 7 being secured in place by rivets or screws 13 and 14 or in any other suitable manner.

If desired, the threads of the cones and end portions of the inner member or core may be right and left hand threads, so as to enable the two heads to be applied or removed at one and the same time by simply turning them in opposite directions. The general interior or bore of the body or spindle is of increased diameter over the external diameter of the inner member or core, thus to permit the collapsibility of the segmental sections 3 without requiring the inner member or core to be removed. If desired, however, the general internal diameter of the body may be such as to closely fit the inner member or core, in which case it will be only necessary to remove the inner member or core to permit the segmental sections to collapse.

The parts of the bobbin being fitted together, as already described, the bobbin may be placed in the winding-machine to receive the windings of twine, thread, or cordage thereon, and then when the same is full it may be taken from the machine and the heads thereof removed or detached in the manner explained. The collapsing of the segmental segments of the body or spindle enables the windings to be easily removed in the form of a coil or hollow roll, which is securely bound or tied in a sufficient number of places to keep it intact. The said coil or roll thus takes the place of the "ball" as hitherto sold in the trade, and separate quantities of them may be made up in sacks or bales in like manner, as has been mentioned with reference to the balls.

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

1. A bobbin comprising a body formed of a plurality of longitudinal segmental sections heads having circular openings to receive the segmental sections, means on the heads for clamping the sections against the inner walls of the openings, and a connection between the heads within the body.

2. A bobbin comprising a body formed of a plurality of longitudinal segmental sections each beveled outwardly on its inner surface for a suitable distance from each end, a core for the sections having its end portions threaded, and heads at the ends of the body, each provided with a hollow threaded cone screwing upon one of said end portions of the core and engaging the beveled surfaces of said segmental sections.

3. A bobbin comprising a body formed of a plurality of longitudinal segmental sections each beveled outwardly on its inner surface for a suitable distance from each end, a tubular core for the sections having its end portions externally threaded, and heads at the ends of the body each having flush with the outer surface thereof a metal plate provided with a threaded cone screwing upon one of said end portions of the core and engaging the beveled surfaces of said segmental sections.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES CLYDE COST.

Witnesses:

LAURA B. SANDERSON,

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