J. B. HYDE.

COP CARRIER.

APPLICATION FILED APR. 4, 1910.

993,377.

Patented May 30, 1911.

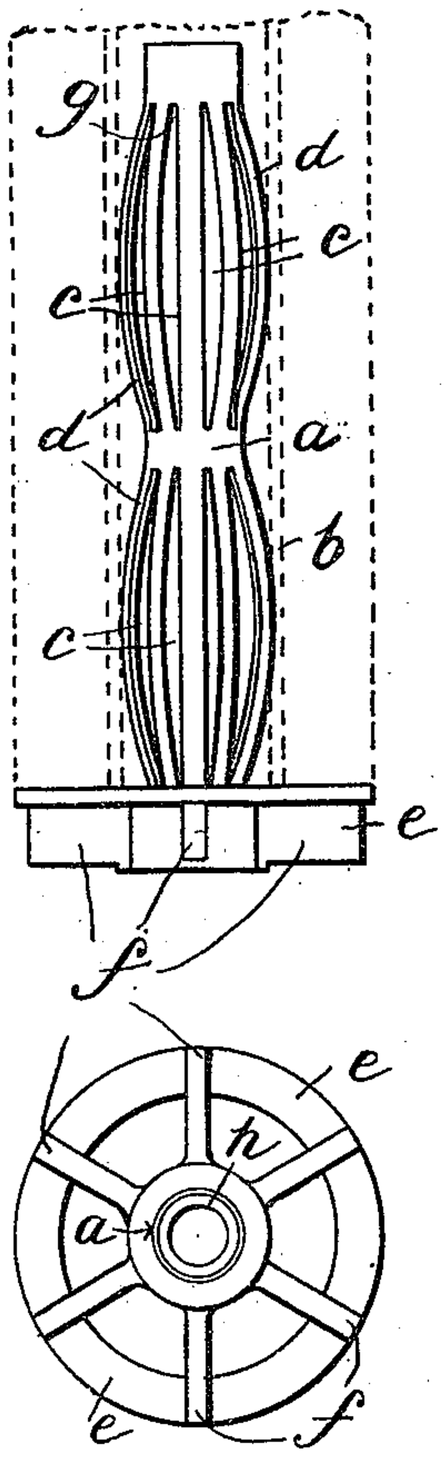

Fig. 1.

Fig. 2.

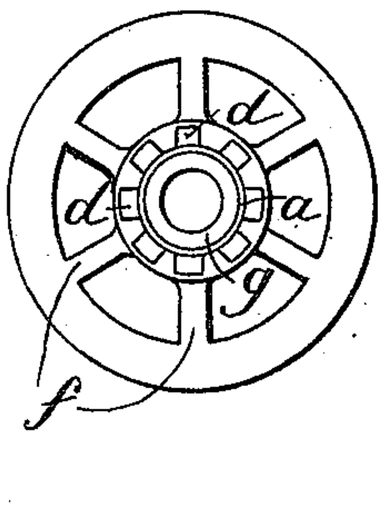

Fig. 3.

Witnesses.
Chas. M. Baruch
Wm. C. Greenley.

Inventor.
John B. Hyde
by Herbert W. Jenner.
Attorney.

UNITED STATES PATENT OFFICE.

JOHN BRITTON HYDE, OF HALE, ENGLAND.

COP-CARRIER.

993,377. Specification of Letters Patent. Patented May 30, 1911.

Application filed April 4, 1910. Serial No. 553,318.

To all whom it may concern:

Be it known that I, JOHN BRITTON HYDE, subject of the King of Great Britain and Ireland, and resident of Hale, in the county of Chester, England, engineer, have invented certain new and useful Improvements in Cop-Carriers, of which the following is a specification.

My invention relates to improvements in or in connection with the cop, bobbin or cheese carriers of braiding and lapping machines employed in the covering by winding of wire or other cores with yarn, narrow tape or the like, the object being to provide improved means more particularly intended to enable cheeses of yarn or narrow tape to be more conveniently employed, though the improvements are applicable for use in connection with ordinary wooden bobbins.

Prior to the date of my invention the yarn or other covering material for inclosing a core of wire or a core of softer material has chiefly been wound upon double-flanged wooden bobbins one of which flanges has cut into it a number of ratchet teeth adapted to work in conjunction with a catch device operated at intervals through the action of the yarn directly moving it or effecting the movement by the use of a tension weight through which the yarn is passed, the object of the complete device being to control the unwinding of the yarn from the bobbin as it is being used during braiding or lapping. Cross-wound cheeses of yarn, that is to say, yarn merely wound upon a paper or like tube have also been employed but in such a case it has been necessary to have special carriers for the purpose of supporting them. Such carriers are expensive and particularly so if it is required to replace existing carriers on old machines by them and as a result the use of cheeses of yarn has been considerably limited, for the purpose referred to, although possessing many advantages in other directions.

My object is to overcome the defects referred to by providing a device of a simple and cheap character which will admit of yarn cheeses being employed much more extensively than hitherto, the same device being also applicable for use with the double-flanged bobbins hitherto employed.

To this end my invention consists essentially of a resilient tube or spindle adapted to fit inside the paper tube on which the yarn is wound or inside the bore of the bobbin, such tube or spindle having formed in one with or fixed to it a disk or its equivalent having a number of projecting teeth for use in conjunction with the ordinary catch to control the unwinding of yarn as before with the additional advantage that such teeth allow the yarn cheese, or bobbin, to be rotated in either direction as against a single direction with bobbins arranged on the old system.

My invention will be fully described with reference to the accompanying drawings in which,

Figure 1 is an elevation of a cheese or bobbin carrier constructed in accordance with my invention, Fig. 2 inverted plan of the base portion of such and Fig. 3 plan.

In accordance with my improved invention I provide a flexible tube or spindle *a* adapted to be placed inside the paper tube *b*, or bobbin, on which the yarn is wound, such tube or spindle being usually made from a flat piece of steel stamped out with perforations *c* and then rolled into tubular form so as to leave a number of flexible strips *d* of a curved character as will be seen clearly from Fig. 1. The combined strips form one or more flexible barrel-shaped portions in the length of the tube or spindle, the largest diameter of which is greater than the internal diameter of the paper tube or the bore of the bobbin. The resilient character of such tube enables it to fit tightly in the paper tube, or bobbin, so as to rotate with it and yet at the same time allow of ready withdrawal or insertion. The tube or spindle has formed in one therewith, or fixed to it, a disk *e*, or its equivalent, having a number of projecting teeth or arms *f*. These stand out substantially at right angles from the under face of the disk, the upper face of which is pushed against one end of the cheese or bobbin.

The shape of the teeth enables the cheese or bobbin to be rotated for unwinding in either one direction or the other in accordance with the manner in which it is placed on the carrier spindle, that is to say, the disk first or last, and the direction in which the yarn is threaded through the carrier arm. The disk may be employed to operate in conjunction with any of the forms of

catches at present in use on the usual carrier. The flexible tube may have fitted to it, at its upper end, a bush *g* bored to fit the spindle and at its lower end with a similar bush *h* also bored to correspond, the latter bush being utilized also for the purpose of securing the flexible tube to the disk by being driven inside the lower end of the former and so forcing it against the inner bore of the disk tightly.

Where the device is used in connection with the double-flanged bobbins the usual teeth on the latter would be dispensed with. The device may be put in the cheese or bobbin so that the disk rests against the bottom of the carrier or is at the opposite end. In other words the cheese or bobbin may be put on the carrier spindle either way in accordance with the catch device employed, as will be well understood.

What I claim as my invention and desire to protect by Letters Patent is:—

A cop carrier comprising a tube of thin resilient material having rigid tubular end and middle portions, said tube having slots in its intervening parts which are bent outwardly to form barrel-shaped springs, a disk encircling one end portion of the said tube and provided with teeth on its under surface, a bearing bush which secures the said end portion in frictional engagement with the said disk, and a similar bearing bush inserted in the other end portion of the tube.

In testimony whereof I have hereunto set my hand in the presence of two witnesses.

JOHN BRITTON HYDE.

Witnesses:

AMY E. EVINS,

DOROTHY M. DAVIES.