Oct. 31, 1933. G. PARRIER 1,932,598

EXTENSIBLE REEL FOR UNSPOOLING OF HANKS

Filed Jan. 4, 1929

Fig.2

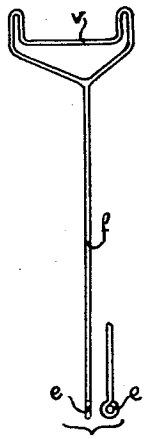


Fig.1

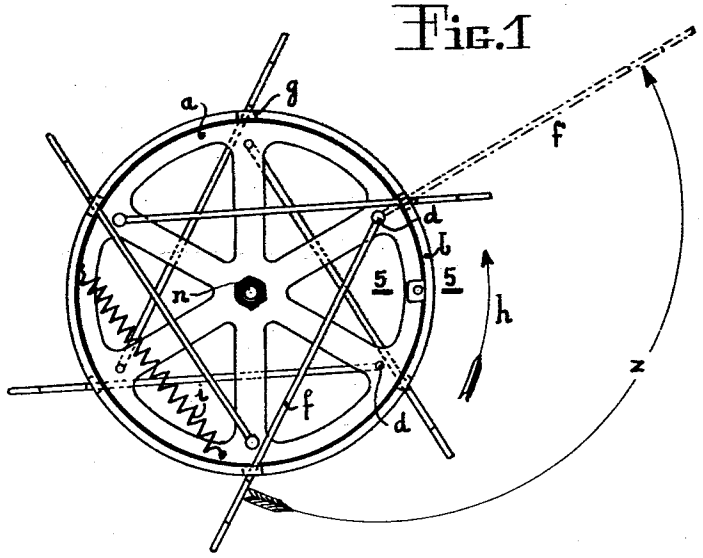


Fig.7

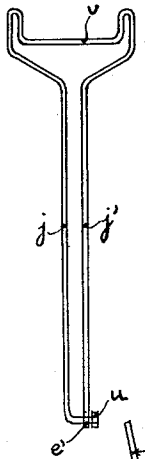


Fig.3

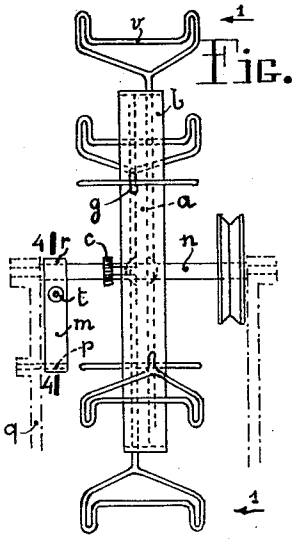
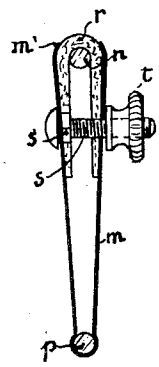


Fig.4 Fig.5



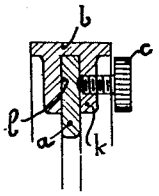
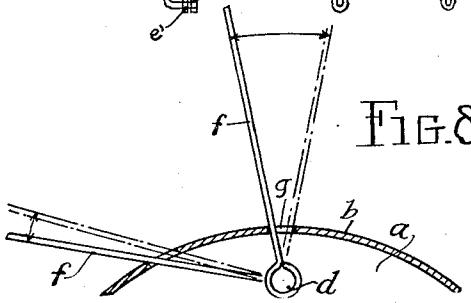


Fig.6



Fig.8



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EXTENSIBLE REEL FOR UNSPOOLING OF HANKS

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Application January 4, 1929, Serial No. 330,202, and in France January 11, 1928

2 Claims. (Cl. 242—111)

The invention relates to an extensible, metallic reel or winder for unspooling of hanks, characterized by that articulated spikes of the reel, forming forks at their free extremities, are attached with their other extremities pivotally to a central, perforated disc and pass across the holes pierced in a rim put over the disc and displaceable over the same with but slight friction in such manner that by this displacement the inclination of the spikes with regard to the reel and, hence, the diameter of the latter, is varied.

The drawing appended shows one embodiment of the invention in the way of an example.

Figure 1 is a front view of the reel, if looking in the direction of the arrows 1—1 of Fig. 3;

Figure 2 shows a reel arm or spike in front and lateral view;

Figure 3 is a lateral view of the reel provided with its brake;

Figure 4 is a vertical section according to line 4—4 of Fig. 3, in a larger scale;

Figure 5 is a horizontal section according to line 5—5 of Fig. 1;

Figure 6 shows a pin for the fixation of the spikes;

Figure 7 illustrates another embodiment of the reel-spike;

Figure 8 is a detail elevation partly in section on a somewhat larger scale than the other figures, showing the operation of the arms.

The apparatus comprises a perforated disc *a* permitting manual operation, a rim *b* revolving on the disc *a* with but slight friction and actuated with aid of a fastening button *c* (Fig. 3) in such manner as to describe a rotary movement.

At a suitable distance from the center of the disc are pins *d* which engage in eyes *e* at the inner ends of the arms, so that the latter are pivotally mounted on the disc *a*. These arms are formed with forks *v* at their free, outer ends as shown. The said arms are made of steel wire and are flexible, as indicated on the drawing.

The rim *b* is provided with round or, preferably, with oblong holes *g*, with the necessary play to permit the spikes *f* to incline themselves in an easy manner.

In the position of folding, represented in Fig. 1 the rotation of the rim *b* in the direction of the arrow *h* is followed by an adjustment of the spikes *f* into the position *f'*—dotted lines—, which is essentially radial and corresponds to the greatest development of the spikes and to the greatest extension of the reel, the spikes developing according to the direction of arrow *z*.

A spring *i* has one extremity connected to the disc and the other to the rim *b* and tends to hold the arms or spikes in maximum extended position.

The spikes *f*, whose number may be increased or diminished at will, are placed preferably (as represented in Fig. 3) alternately at one and at the other side of the disc *a*, whereby the stroke of the spikes and hence the extensiveness of the reel are augmented.

In such case the holes *g* are pierced at one and at the other side of the disc *a*.

The openings of the rim have a suitable length so that the arms can slightly be displaced when in extended position as shown in Figure 8, even when the outer rim is locked. This longitudinal play permits the displacement of the arms of the mortises without requiring any modification of the radius. Hence during the rotation of the reel the arms are subjected to a slight displacement longitudinally of the rim openings and strike the skein. The soft blows thus imparted to the material have the effect of separating the yarns and hence obtain even with the most delicate threads a perfect unreeling.

The pins do not form projections impeding the passage of the spikes.

For hanks needing no great variation of the diameter, the spikes could consist (Fig. 7) of two parallel branches *j*, *j'* of wire, passing at both sides of the disc *a* and traversing the rim *b* through two holes placed opposite to each other at both sides of the disc *a*.

The extremities of the branches *j* are for example bent and threaded and the branches *j'* are formed with eyes *e'*, into which said threaded parts engage and are fixed in this position by nuts *u*.

c is a knurled screw screwed into an inner boss *k* of the rim *b* (cast with the rim or fitted thereto), this screw permitting by its screwing home on the disc *a* the fixation of the rim with respect to the disc.

This fixation can be hence effected at any point whatsoever of the stroke, the boss *k* of the rim *b* being of course slit at *l* for the passage of the disc.

It is also possible to place the arresting screw on the outer circumference of the rim *b*.

m is a brake spring braking the shaft *n* of the reel and permits its adjustment even during the run of the apparatus and the regulation of the thread in a very exact manner.

This brake spring *m* is a flat steel spring forming pincers and fixed to a rod *p* supported by

the bearings q of the reel-shaft n and preventing the spring from rotation.

r is leather laid around the shaft n and fixed by a screw s provided with a square s' against rotation, the tightening being effected by means of a knurled button t according to the requirements.

The borders m' of the spring m are arched according to the diameter of the shaft n and prevent the leather r from deviation.

The arrangement and the simplicity of the device procure to the same great advantages, such as lightness, and solidity owing to the provisions of the rim b.

This exceedingly light apparatus is destined to render very great service for the unspooling of silk, cotton, wool and so on, owing to its great development, and takes along all hanks of small and of great diameter.

It can be manufactured of any suitable materials and its shape, dimensions and details can vary without departing from the general inventional idea of the present invention.

What I claim, is:

1. An extensible skein winder, comprising a disc, a relatively broad rim free to move on the periphery of the disc and extending laterally from opposite sides of the disc and having openings at points at opposite sides of the disc and winder arms articulated at the inner ends on the disc and movable through the rim openings, said arms being on opposite sides of the disc and hence also serving to retain the rim in place on the periphery of the disc, said rim being provided with a pair of inwardly extending bosses between which the disc is arranged and is adjustable, and a tightening screw threaded in one of the bosses and engageable with the disc to secure the latter at any desired adjustment.

2. An unreeling device, comprising a disc, a relatively large rim adapted to move on the circumference of the disc, extending from opposing sides thereof, and having openings in the reel on both sides of the disc, flexible arms articulated at their inner ends to the disc and extending through and movable in said openings, the said arms being located alternatively on opposite sides of the disc and serving to hold the rim in place on the disc, the openings of the rim being sufficiently large to afford play of the flexible arms therein, to enable the said flexible arms to impart blows to the yarns during the rotation of the reel to separate the yarns immediately prior to reeling them.

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