(No Model.)

D. A. MORRISON.

AUTOMATIC TWINE HOLDER.

No. 386,081. Patented July 10, 1888.

Fig.1.

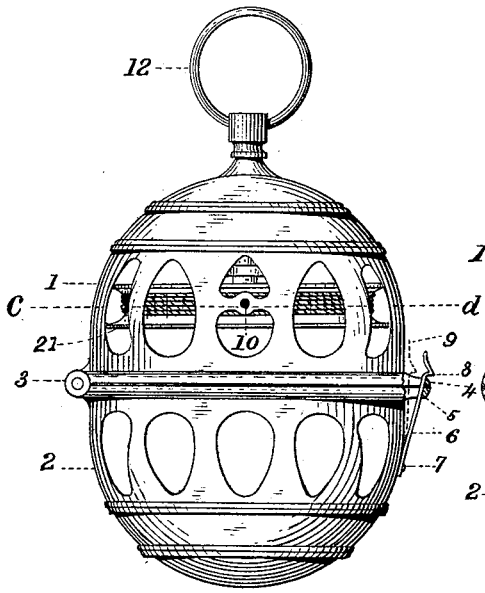


Fig.2.

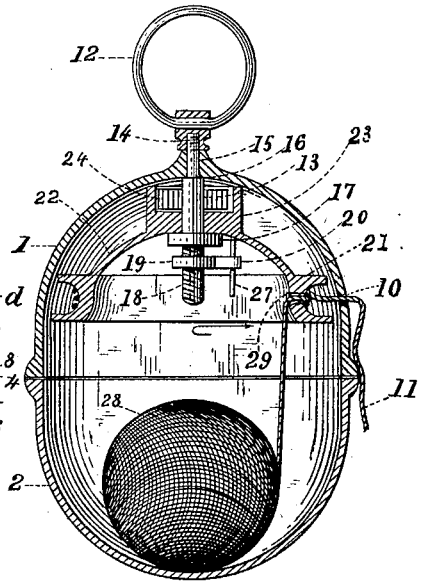


Fig.3.

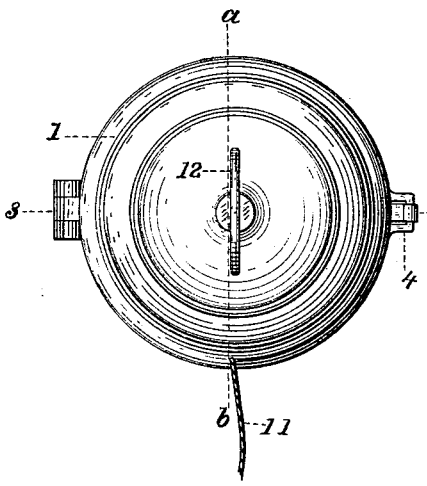
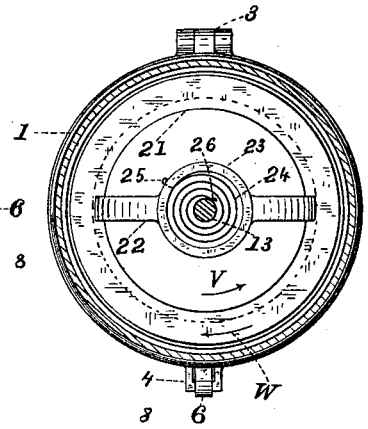


Fig.4.



Witnesses.

J. M. Caldwell.

Harriet Johnson

David A. Morrison Inventor.

By James Bangster.

Attorney.

UNITED STATES PATENT OFFICE.

DAVID A. MORRISON, OF BUFFALO, NEW YORK.

AUTOMATIC TWINE-HOLDER.

SPECIFICATION forming part of Letters Patent No. 386,081, dated July 10, 1888.

Application filed January 21, 1888. Serial No. 261,488. (No model.)

To all whom it may concern:

Be it known that I, DAVID A. MORRISON, a citizen of the United States, residing in Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Automatic Twine-Holders, of which the following is a specification.

My invention relates to certain new and useful improvements in twine-holders, whereby as often as any amount of twine is drawn off from the ball in the holder and the required length broken off the remaining portion outside of the holder will be automatically drawn up into it, except a small portion hanging outside of sufficient length to be conveniently reached when required, all of which will be fully and clearly hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation. Fig. 2 is a section through line *a b*, Fig. 3. Fig. 3 is a top plan view; and Fig. 4 is a horizontal section on line *c d*, Fig. 1, cutting through the case only and exposing a top plan view of the coiled spring, its barrel, and a top view of the spool.

The outer case is made in two halves, 1 2, in the usual way, and secured by a hinge, 3, at the rear, and at the front each part is provided with a loop, 4 5. A spring, 6, is secured to the lower half of the case by a rivet, 7. The top of this spring 6 passes up through the loop 5 and has a bent portion, 8, adapted to catch over the top of the upper loop, 4, and thereby hold the top or cover down in place. It is easily released by pushing the spring back, as shown by the dotted lines 9 in Fig. 1, when it becomes necessary to open the case. This case 1 and 2 is preferably made of cast-iron and of an ornamental shape; but any suitable shape or material may be used.

Through one side of the upper portion of the case is a small perforation, 10, through which the twine 11 passes from the inside to the outside, and at the top of the case is a ring, 12, by which it may be suspended to the ceiling or at any suitable point. This ring 12 is secured in any position desired by means of the vertical spindle 13, its screw portion 14, and shank 15, which passes up through the top of the case until its shoulder 16 rests against the inner side of the top, against which it is tightly drawn by the screw, as shown in Fig. 2. At or about the center of the stationary axis 13 is a surrounding flange, 17, and below the flange is a quick-running screw portion, 18. On this screw portion is a circular nut, 19, having a horizontally-projecting piece, 20.

The spool is mounted on the axis 13, so as to turn easily thereon. (See Figs. 2 and 4.) It consists of the spool-ring 21, secured by a curved cross-piece, 22, to the barrel 23, in which is secured a coiled spring, 24. This spring 24 is secured to the barrel by passing its outer end through the side of the barrel and bending it over, as shown at 25 in Fig. 4, and its inner end is secured to the axis 13 by a pin, 26, or in any well-known way. To the under side of the barrel is rigidly secured a pin, 27, which projects through a perforation in the portion 20, projecting from the nut 19.

The operation of the device is as follows: After ascertaining how much twine is required to be wound upon the spool, it is turned around in the direction of the arrow *v* (see Figs. 2 and 4) the required number of times to take up the necessary length, and is turned so as to bring the perforation 29 through the side through which the twine passes exactly in a line with the hole 10 in the case 1. The end of the twine is now put first through the spool and then through the hole 10 in the case. The required quantity of twine is then drawn through the said holes, so that when the spool is turned back by the action of the spring it will be wound upon the spool and leave a sufficient length hanging out to be conveniently reached by the hand.

It will be noticed that when the spool is turned in the direction of the arrow *v*, Fig. 4, against the force of the spring, the nut 19 is made to turn with it by means of the pin 27, and that the number of turns given to the spool will cause the nut 19 to make the same number of turns around the screw 18, and will thus be moved away from the flange 17, and consequently when the spool is released it will be moved back in the direction of the arrow *w*, Fig. 4, by the spring 24, until the nut 19 comes in contact with the flange 17, when it will stop.

The length of the twine to be wound up depends upon the distance it is required to be drawn before it begins to unwind from the ball 28—that is, it would require a quantity to be

unwound that would be sufficient to reach the distance from which it is taken hold of and the point to which it is drawn, broken off, and used.

The object of the nut 19 is to control the momentum of the spool and prevent it from drawing in too much twine, which would be liable to be the case when the spool is large and comparatively heavy, requiring a stronger spring.

I claim as my invention—

In an automatic twine-holder, the combination of a case consisting of two parts hinged together at one side and provided with a spring-catch at the opposite side for releasing it to open it and securing it when closed, the lower half of the cage carrying the ball of twine and the upper half having a perforation for the twine to pass through, a stationary axis secured at the top within the upper half of the case, a twine-holding-spool ring having a perforation through which the twine passes and winds around it, and an arched cross-piece by which it is suspended and turns on the stationary axis, a barrel at the top of the cross-piece surrounding the stationary axis and inclosing a coiled spring having one end fastened to the barrel and the other to the axis, a screw portion on the lower end of the stationary axis carrying a nut having a vertical perforation through it, and a pin rigidly secured to the spool-ring cross-piece and projecting down through the perforation in the nut, the whole combined for conjoint operation, substantially as described.

DAVID A. MORRISON.

Witnesses:

JAMES SANGSTER,

JENNIE M. CALDWELL.