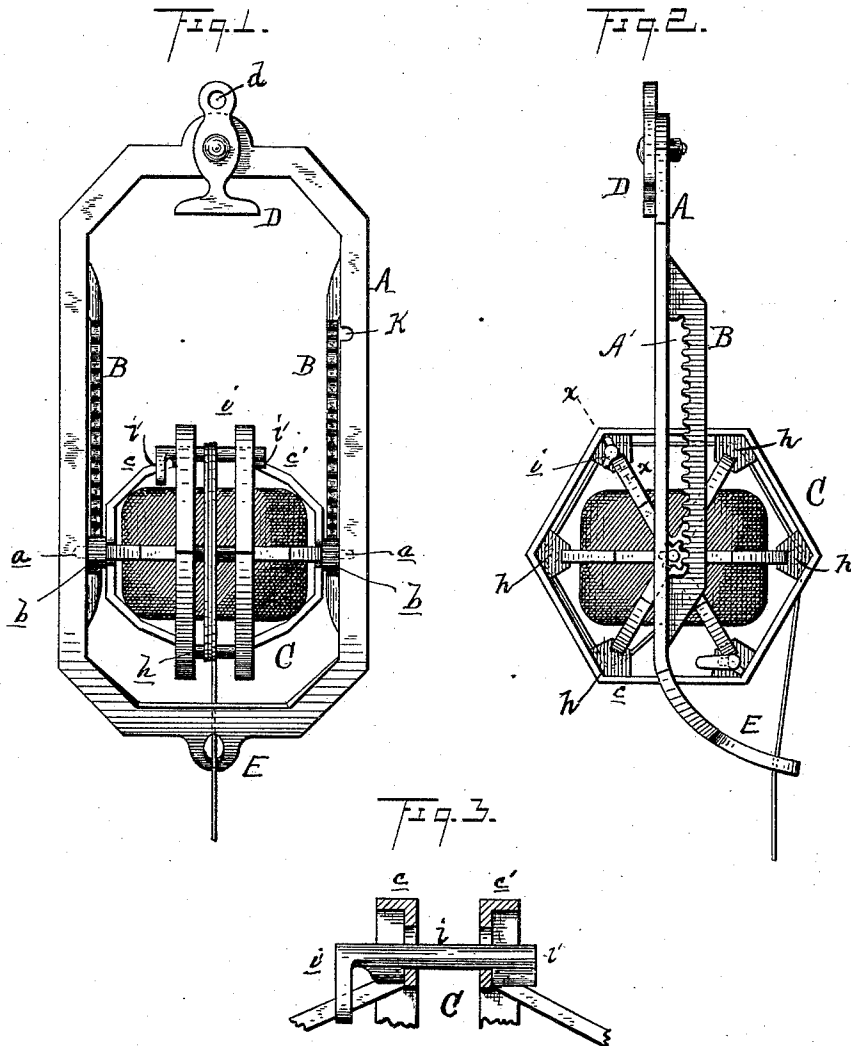


(No Model.)

W. G. BOLUS.
GRAVITY TWINE BOX.

No. 474,076.

Patented May 3, 1892.



WITNESSES

HELLE SLOWRIE.

Josephine Morgan

INVENTOR.

Wm. G. Bolus

By *N. S. Sprague*
ATTORNEY.

UNITED STATES PATENT OFFICE.

WILLIAM G. BOLUS, OF CLEVELAND, OHIO, ASSIGNOR TO THE GRAVITY TWINE BOX COMPANY, OF SAME PLACE.

GRAVITY TWINE-BOX.

SPECIFICATION forming part of Letters Patent No. 474,076, dated May 3, 1892.

Application filed October 24, 1891. Serial No. 409,686. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM G. BOLUS, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Gravity Twine-Boxes, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention has relation to that class of twine-holders in which the twine-receptacle is so mounted in the frame that upon pulling down the free end of the twine the receptacle will be caused to rise to the top of the holder and when the twine is released the receptacle caused to assume its original position and in its passage wind upon its surface a part of the free end of the twine.

Heretofore it has been proposed to support the twine-receptacles by cords attached at their upper ends to the frame and at their lower ends to the trunnions of the receptacles, so that when the free end of the twine is pulled the supporting-cords will wind around the trunnions and thereby lift the twine-receptacle and hold it in its elevated position until the twine is released. This construction has proved objectionable, owing to the fact that the cords which support the twine-receptacle allow the latter to have a retrograde movement after it has reached its lowest position in the frame, and such movement causes the receptacle to rotate in the opposite direction, or rather to wind the cords in the opposite direction, thus frequently so snarling the twine that the device is utterly useless for the purpose for which it is intended.

The object of my invention is to provide a twine-holder of the class stated which will obviate this objection, and also to provide one of simple and durable construction and in which the twine-receptacle can be readily removed from and replaced within the frame and its parts easily separated to remove or insert a ball of twine.

To these ends the invention consists in certain peculiarities in the construction, arrangement, and combination of the parts, substantially as hereinafter described, and particularly pointed out in the subjoined claims.

In the accompanying drawings, Figure 1 is

a front elevation of my improved twine-box. Fig. 2 is a side elevation of the same; and Fig. 3 is a cross-section through the twine-receptacle, showing the manner of securing the two parts together.

A represents a rectangular frame formed at its opposite sides with longitudinal projections B, joined to the frame at their opposite ends, but having their intermediate portions located a short distance away from the frame, thereby leaving openings A', and formed with rack-teeth.

Pivoted to the top of the frame A is a stop D, in the upper end of which is formed an opening d, by which the device may be supported. The lower end of said frame is bent and formed with an opening E for the end of the twine.

C designates the twine-receptacle, which is constructed in two parts c c', each of which is provided with an axial arm a and a pinion b, the latter being adapted to mesh with the rack-bars B and the arms a serving to prevent the receptacle from falling out of the frame. h designates spreader-spurs, which project from the part c of the receptacle and retain the two parts thereof a proper distance apart, and i designates bars or rods, which pass through the two parts of the receptacle at diagonally-opposite corners thereof and are journaled in said parts of the receptacle. These bars or rods are each formed at their extremities with projections i', which are adapted to engage opposite sides of the parts c c' when the rods are turned in the opposite direction to release said parts and allow them to be separated. The parts h and i, in addition to serving as spreaders and locks, respectively, serve as guides for the cord on its way from the ball to the guide-loop E, and the cord is wound on them, as clearly shown in Figs. 1 and 2. They are therefore an important and advantageous feature of my invention.

The operation of the device is as follows: Before the two parts of the receptacle are secured together a ball of twine is inserted, after which they are put together and locked by the cam bars or bolts. The stop D is now turned so that the receptacle may be placed within the frame, one pinion being inserted between the frame and its companion rack-bar, while the other arm and pinion is dropped

through the slot *k*, thus allowing the pinions to engage with the rack-bars. The stop *d* is then allowed to drop back to its vertical position. A portion of the twine being unwound from the ball, the end is passed through the guide-loop E, and the receptacle is then allowed to roll down the rack-bars to the lower end of the frame. This movement necessarily winds the string upon the outside of the receptacle. The frame is suspended at any convenient point over the counter. As the string is pulled down it causes the receptacle to travel to the upper end of the frame, where it is stopped by stop D. At this point as the string is being used it is unwound from the ball, and after it has been broken and the end released the receptacle assumes its position at the lower end of the frame and within easy reach of the clerk.

What I claim as my invention is—

1. The herein-described twine-holder, comprising a frame having rack-bars at its sides and openings between its sides and said rack-bars, said frame also having a recess adjacent to the upper end of one of said rack-bars, a guide-loop adjacent to the lower end of said frame, a pivoted stop at the upper end of said frame, and a twine-receptacle removably

inserted within said frame, said receptacle being made in separable sections, each of which has an axial arm engaging the frame and a pinion engaging the rack-bar, all arranged and operating substantially as shown, and for the purposes set forth.

2. The herein-described twine-receptacle, comprising a frame having rack-bars at its sides and a recess K adjacent to the upper end of one of said rack-bars, a guide-loop at the lower end of said frame, a pivoted stop at the upper end thereof, and a twine-receptacle consisting of the separate sections *c c'*, an axial arm projecting from each of said sections and engaging said frame, a pinion on each of said arms engaging a rack-bar, a series of rods *h* on one of said sections and engaging the other, and the rods or bars *i*, journaled in said parts *c c'* and each having lugs or projections at its ends, said parts *h* and *i* having the combined functions set forth.

In testimony whereof I affix my signature, in presence of two witnesses, this 14th day of October, 1891.

WILLIAM G. BOLUS.

Witnesses:

H. S. SPRAGUE,
F. B. S. MORGAN.