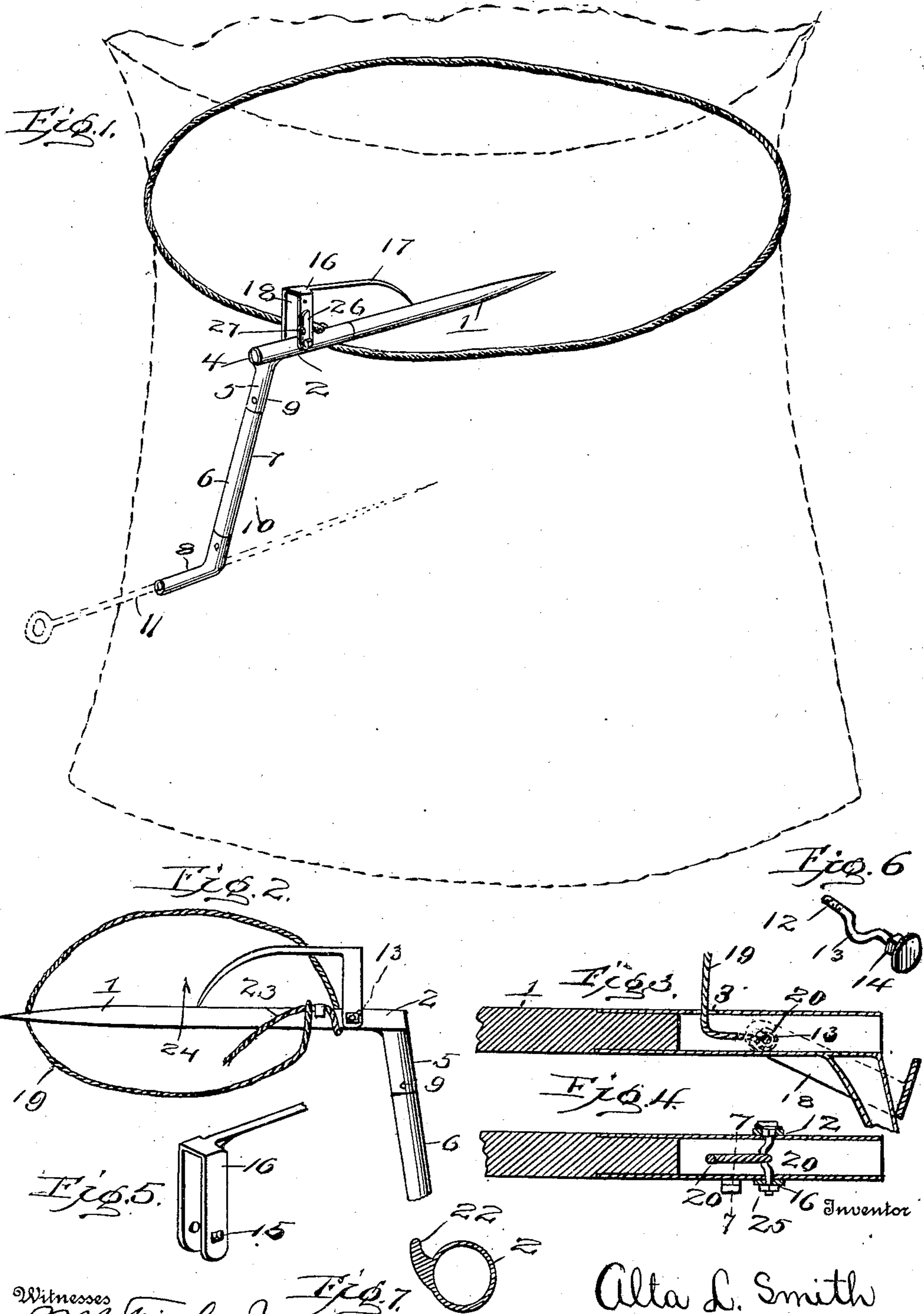


No. 860,580.

PATENTED JULY 16, 1907.

A. L. SMITH.
SHOCK BINDER.

APPLICATION FILED JAN. 12, 1907.



Witnesses
J. M. Fowler Jr.
A. J. Kitchen

Alta L. Smith
By *Mason, Fenwick Lawrence*
his Attorneys.

UNITED STATES PATENT OFFICE.

ALTA L. SMITH, OF RICHMOND, VIRGINIA.

SHOCK-BINDER.

No. 860,580.

Specification of Letters Patent.

Patented July 16, 1907.

Application filed January 12, 1907. Serial No. 352,051.

To all whom it may concern:

Be it known that I, ALTA L. SMITH, a citizen of the United States, residing at Richmond, in the county of Henrico and State of Virginia, have invented certain new and useful Improvements in Shock-Binders; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in shock binders, and comprises certain novel combinations and arrangements of parts as will be fully hereinafter described and claimed.

In the accompanying drawings:—Figure 1 is a perspective view of a binder formed according to the present invention, a shock being shown in dotted lines in connection therewith. Fig. 2 is a side elevation of my improved shock binder, part of the handle being broken away. Fig. 3 is a fragmentary, vertical, sectional view of one end of a shock binder formed according to the present invention. Fig. 4 is a fragmentary, horizontal, sectional view of one end of a shock binder formed according to the present invention. Fig. 5 is a detail, fragmentary view of a holding device forming a part of the present invention. Fig. 6 is a detail, perspective view of a bolt forming a part of the present invention. Fig. 7 is a section on line 7—7 of Fig. 4.

In the construction of binders for shocks it has been found very desirable to provide a device that may be moved from place to place and preferably a device that may be carried. In the present invention a device of this character is provided which is comparatively light in weight, yet amply strong for drawing the tension rope to any degree and for holding the same while the tying cord is put in position.

Referring more particularly to the drawings, 1 indicates a spindle of any desired construction such as wood, for instance. To the spindle 1 is secured a hollow member 2, preferably of metal. The hollow member 2 is provided with an aperture 3 and an open end 4. At the open end 4 is a lug 5, preferably hollow, formed integral with the member 2 for accommodating a handle 6. The handle 6 is preferably formed of a shaft 7, preferably of wood, and a hollow gripping portion 8. The shaft 7 is secured to the projection 5 and the grip 8 by any suitable means as rivets 9 and 10. The gripping portion 8 is adapted to be used as a gripping portion of the handle and also as means for accommodating a stay rod 11, which is adapted to be passed therethrough and into the shock that is being bound. Passing through the member 2 at any suitable point is a bolt or shaft 12 formed with a bent or cam portion 13. The bolt 12 is also formed with a squared portion 14 for engaging a square aperture 15 in a retaining member 16. As will be clearly seen from the drawings, the retaining member 16 is pivotally mounted on the hollow member 2 but

as the member 16 is moved from one position to another it will rotate the bolt 12. The retaining member 16 is formed with a penetrating point 17 for entering the shock, and a bifurcated portion 18 that engages the bolt 12 is formed sufficiently large to permit the outer end of the bifurcated portion to pass the open end 4 of the member 2 as clearly seen in Fig. 3 of the drawings.

A rope or binding cable 19 of any desired construction, but preferably of considerable strength, is formed with an eye through which the curved or cam-shaped portion of the bolt 12 passes. The rope 19 has its outer end passed into the hollow member 2 and then out through the opening 3, from thence around the shock to be bound and back to the member 2, under which the same is passed as clearly seen in Fig. 2. After having passed bolt 12 through eye 20, the rope or cable 19 is drawn by hand as tightly as convenient, and then the end is passed over a lug 22, preferably formed integral with the member 2. After passing over the lug 22 the end passes beneath the end of the rope or cable 19 as the same leaves the aperture 3. By thus having the rope or cable 19 pass over the end 23 as clearly seen in Fig. 2 of the drawings, it will firmly bind the same in position as the spindle 1 is rotated in the direction indicated by the arrow 24. The ends of the bifurcated portion 18 accommodates the bolt 12, and is firmly held in contact with the sides of the member 2 by a suitable securing nut 25. The nut 25 is adapted to bring the bolt under tension in order to produce any desired frictional contact between the ends of the bifurcated portion and the member 2 so that the retaining member 16 will not be moved unless moved by the operator.

The formation of the curved or cam-shaped portion 13 on the bolt 12 and the position of the same in the member 2 forms an important feature in the present invention. When the retaining member 16 is in its extreme outer or lowered position as seen in Fig. 3, the cam 13 is slightly off a horizontal plane, or what might be termed a dead center with respect to the strain of the cable 19 as the same is wound on the spindle 1 in binding the shock. As the spindle 1 is revolved and the cable or rope 19 is wound upon the same, it will be evident that more or less strain is exerted thereon which is communicated to the cam 13 of the bolt 12. The position of the cam 13 slightly off a dead center gives a tendency to rotate the member 16 downward. The upper end of the bifurcated portion 18 of the member 16 rests against the lug 5 when in its extreme outer or lowered position, so that the tendency of the rope 19 and cam 13 to further rotate the same is prevented, and also the member 18 is prevented from accidentally moving in the way of the rope 19 during the binding of the shock. After the rope 19 has been sufficiently brought under tension, the operator forces the member 16 upward from its position shown in Fig. 3 to the position shown in Figs. 1 and 2. This will

change the position of the cam from the position shown in Fig. 3 to the position shown in dotted lines in Fig. 2. As shown in dotted lines in Fig. 2 the cam 13 is slightly off dead center and will permit the rope 19 to exert a tendency to hold the member 16 in its upper position as shown in Figs. 1 and 2. By this arrangement of cam 13 the holding member 16 is positively held in its correct position in the shock, or positively held in an open position.

It will be observed that in the provision of a spindle and rope secured thereto I have provided only one aperture, as 3, through which the rope is adapted to pass. By this construction and provision of only one aperture, the shaft or spindle 1, or the member 2 is not weakened materially. A lug as 22, is formed adjacent the hole or aperture 3 for forming means whereby the rope as it leaves the aperture 3 will grip the outer end preparatory to winding the same on the spindle.

After winding the rope 19 sufficiently the retaining member 16 is forced into position into the shock for preventing a reverse rotation of the spindle when the handle is released by the operator, and if desirable, an auxiliary retaining member as 11 is also forced into position. As clearly seen in Fig. 1 of the drawings the retaining member 11 is adapted to pass through the gripping portion 8 of the handle 6. This will assist in more firmly holding the spindle 1 against reverse or backward rotation, but it is not usually necessary as the retaining member 16 will hold the same against reverse rotation under most circumstances.

In order to provide a more complete binder, I supply the same with a combined string holder and knife 26. The knife 26 is preferably made slightly narrower than the sides of the bifurcated portion 18 as clearly seen in Fig. 1. The knife is held in position by engaging the squared portion 14 of the bolt 12 and is also provided with a bracing lug 27 formed preferably integral with one of the sides of the bifurcated portion 18. By this construction of a blade that is not as wide as the portion 18 and with means for positively holding the same in position, a knife is provided that is always ready for operation and will not be in a position that will endanger the hands of the operator. The knife 26 is preferably made from spring material and is adapted to normally rest against one of the sides of the bifurcated portion 18 so that when it is desired to pass a binding cord around the shock after the cable 19 has been sufficiently wound, the same may be passed between the portion 18 and the knife 26 which will firmly hold the same in position while the cord is being passed around the shock. After the cord has been passed around the shock and tied in any desired way, the ends are cut off and the retaining member 16 is withdrawn from the shock, and also the

retaining member 11 if used. The spindle 1 is then permitted to rotate and unwind the rope 19 and then the device is removed from the shock.

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

1. A device of the character described comprising a spindle, a handle for rotating the same, means pivotally secured to said spindle for preventing rotation of the same, a rope secured to said spindle, a hook for holding one end of the rope in position during the rotation of the spindle, said rope being adapted to bind the end thereof after it has been laid upon said hook.

2. A device of the character described, comprising a spindle, formed with an aperture therein, a handle for rotating the same, a rope secured to said spindle, and passing through said aperture, a curved lug positioned near and at right angles to said aperture, and means for holding said spindle against rotation, said means comprising a pivotally mounted member and means for holding the same in an operative and inoperative position.

3. A device of the character described, comprising a spindle, a hollow member secured thereto formed with an aperture therein, a rope formed with an eye at one end secured in said hollow member, said eye being positioned within the hollow portion, a bolt passing through said hollow portion formed with a cam thereon, said cam engaging the eye of said rope, retaining means connected to said bolt and means for rotating said spindle for bringing said rope under tension, said cam and said retaining means being positioned in such relation to each other as to permit the tension of said rope to hold said retaining means in either of its adjusted positions.

4. A device of the character described, comprising a spindle, means for rotating the same, a cable secured to the spindle and adapted to be rotated thereby, means for preventing reverse rotation of said spindle, and a cam bolt connected to said rotating preventing means and to said rope, said cam being so positioned as to permit the strain on said rope when under tension to hold said retaining means in position.

5. A device of the character described, comprising a spindle, a handle for rotating said spindle, a cable secured to said spindle, and adapted to be brought under tension by the rotation of the same, a retaining member comprising a penetrating point and a bifurcated portion pivotally secured to said spindle for preventing reverse rotation of the same, means for holding said retaining member in position and auxiliary means passing through said handle for assisting said retaining member in preventing reverse rotation of said spindle.

6. A device of the character described, comprising a spindle, means for rotating the same, a cable secured to said spindle and adapted to be brought under tension thereby, means secured to said spindle for preventing rotation of the same, and a pin passing through said rotating member for forming auxiliary means for preventing rotation of said spindle.

In testimony whereof I affix my signature in presence of two witnesses.

ALTA L. SMITH.

Witnesses:

A. T. KITCHIN.
E. T. FENWICK.