

(No Model.)

R. H. COREY.

CORD TYING BILL FOR GRAIN BINDERS.

No. 365,050.

Patented June 21, 1887.

Fig. 1.

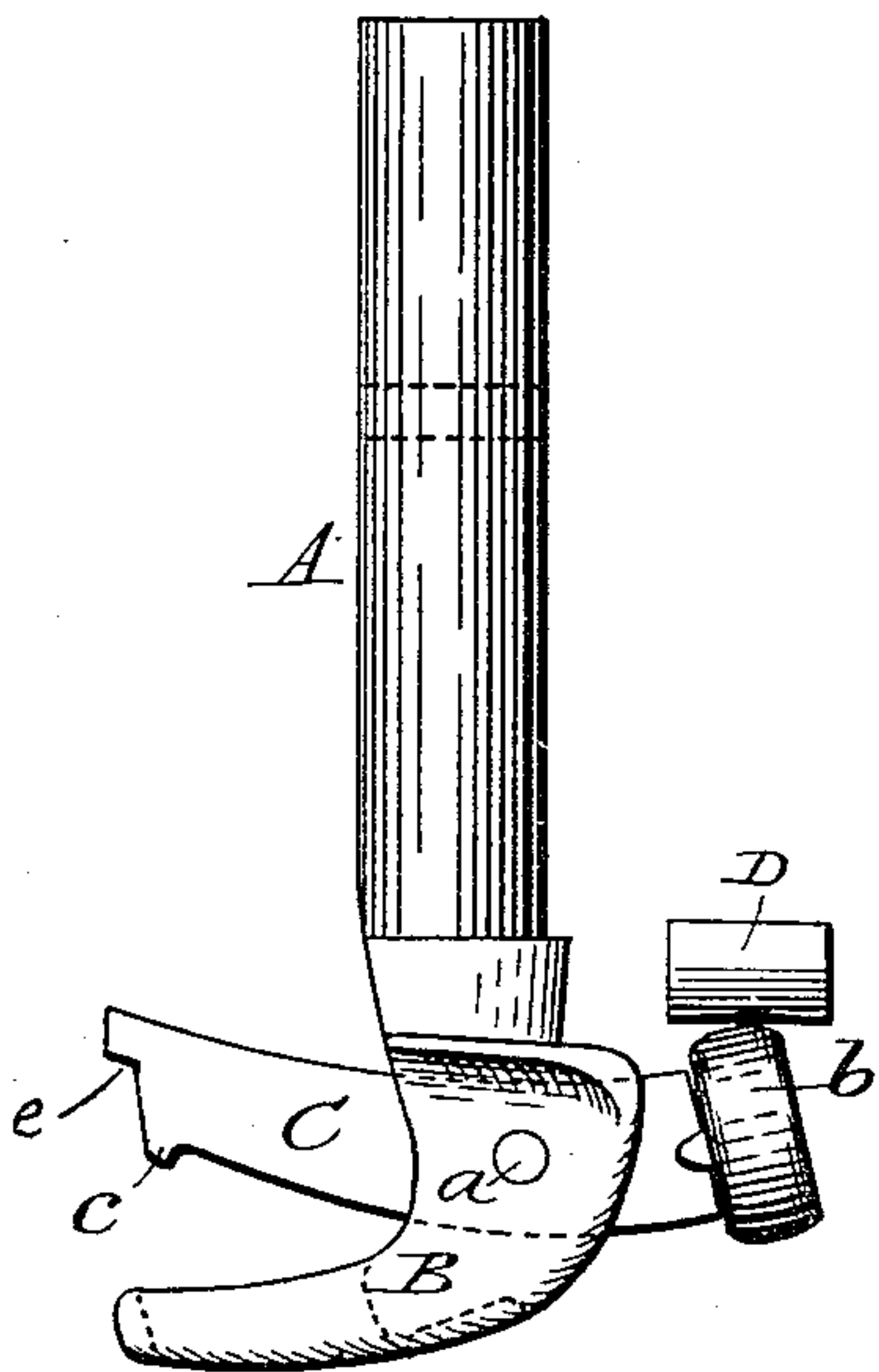


Fig. 2.

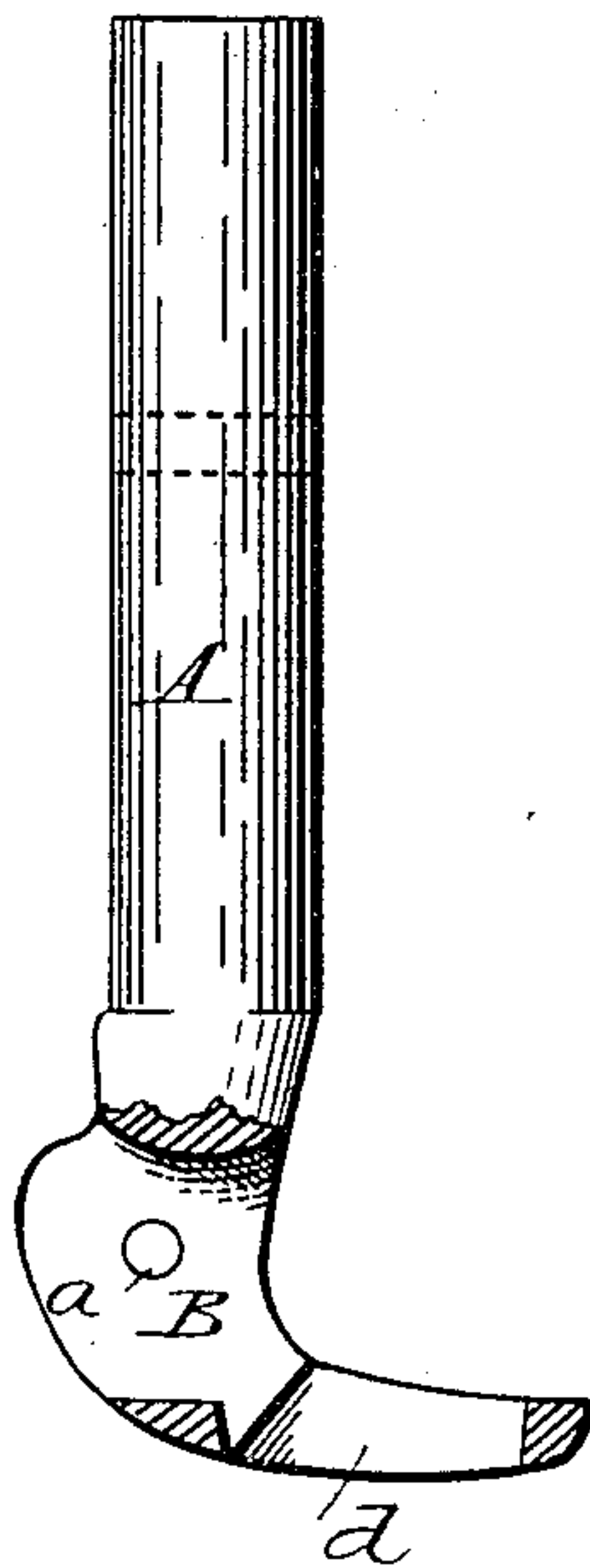


Fig. 3.

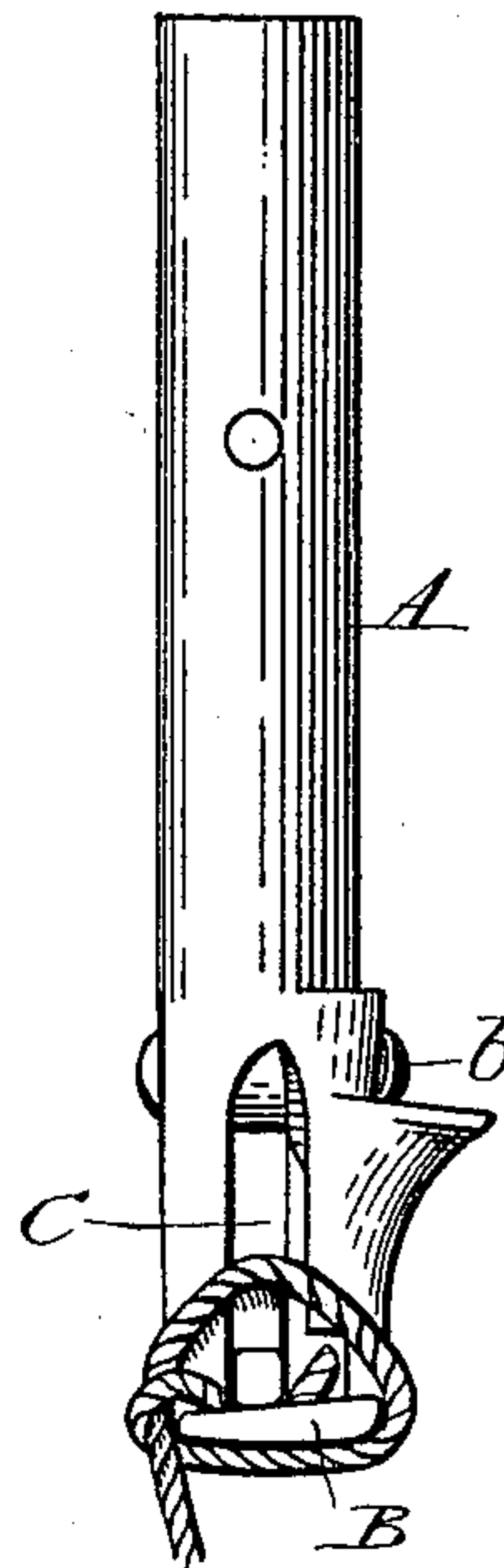


Fig. 4.

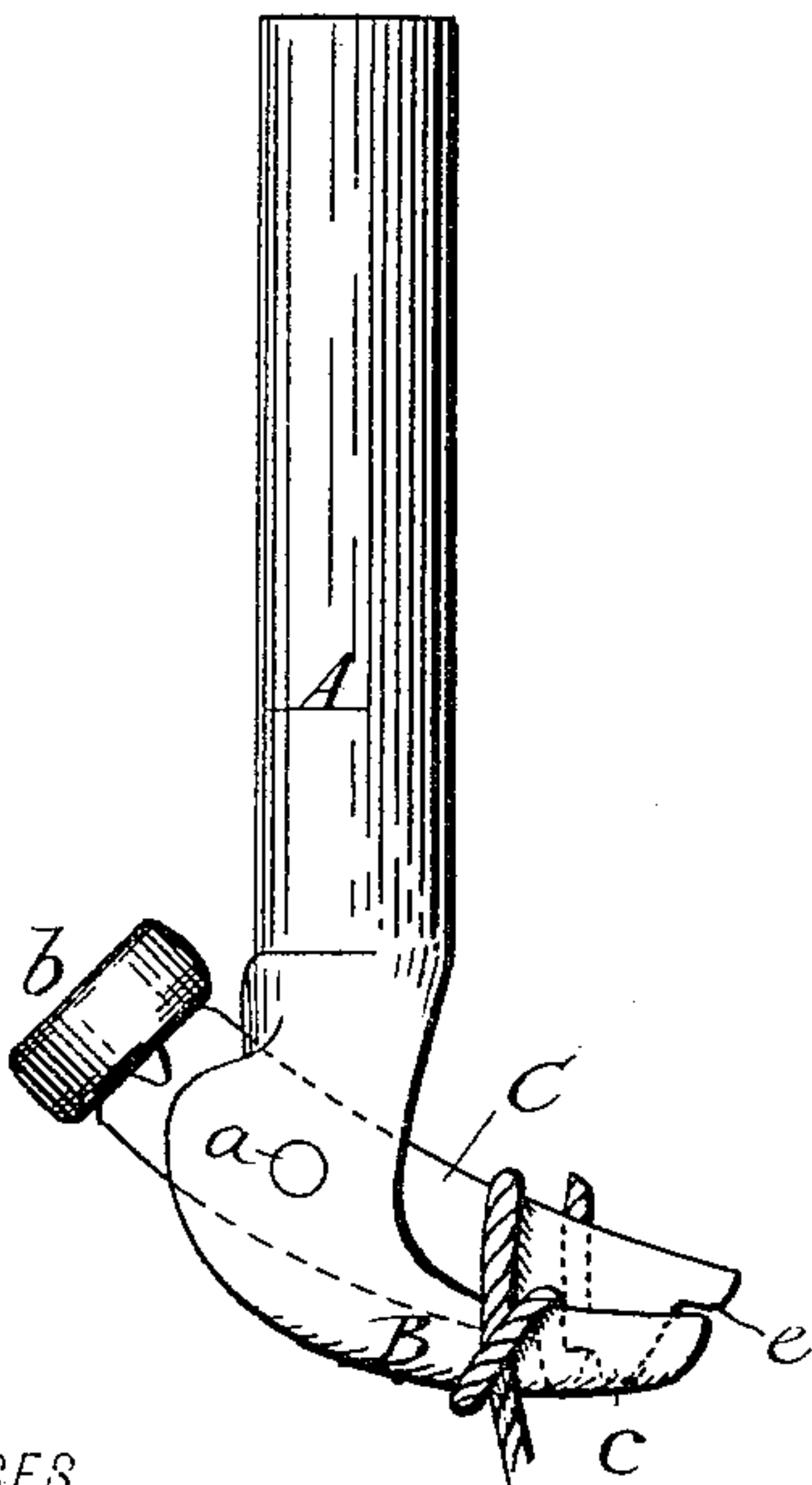
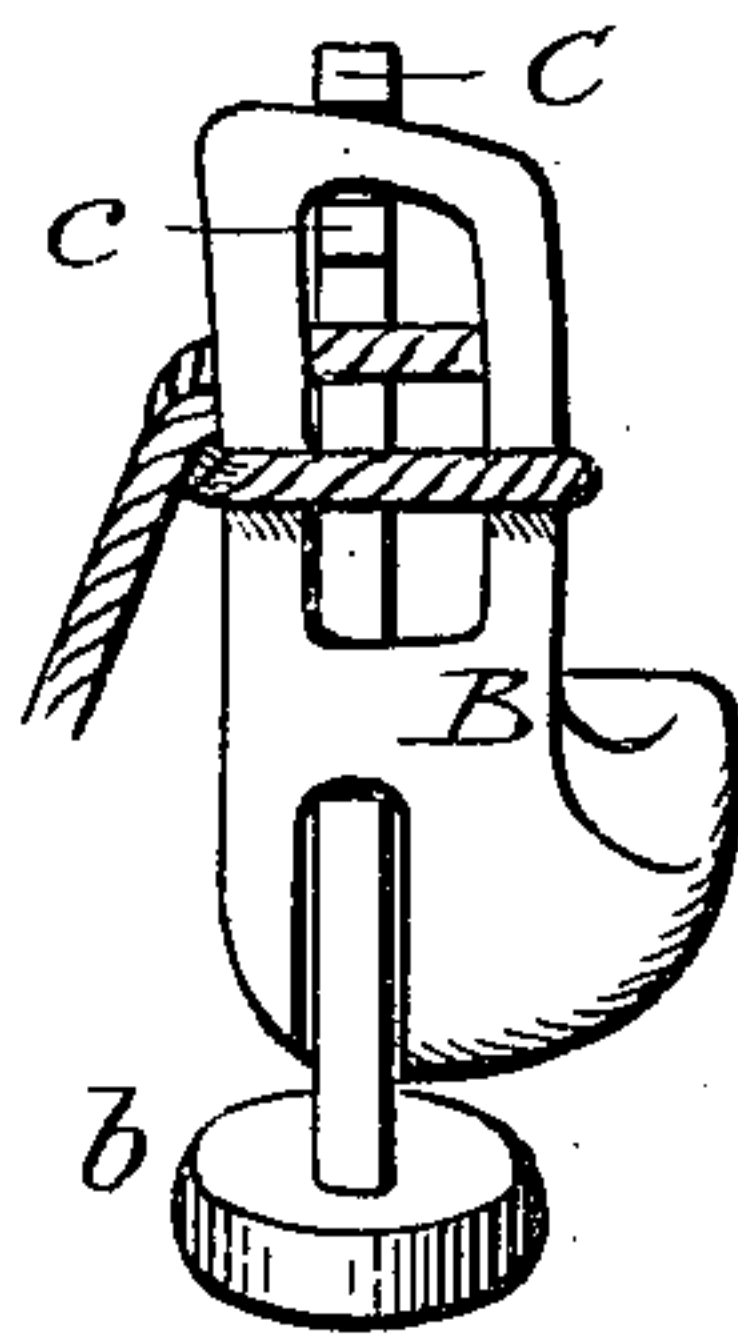


Fig. 5.



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RUFUS H. COREY, OF AUBURN, NEW YORK, ASSIGNOR OF ONE-HALF TO
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CORD-TYING BILL FOR GRAIN-BINDERS.

SPECIFICATION forming part of Letters Patent No. 365,050, dated June 21, 1887.

Application filed June 16, 1886. Serial No. 295,363. (No model.)

To all whom it may concern:

Be it known that I, RUFUS H. COREY, of Auburn, in the county of Cayuga and State of New York, have invented certain Improve-
5 ments in Cord-Tying Bills for Grain-Binders, of which the following is a specification.

This invention has reference to what are commonly known in the art as "cord-tying bills," which consist of a rotary spindle pro-
10 vided at one end with two lateral jaws, one of which is movable to and from the other, so that when the device is rotated against the cord the latter will be wound around the jaws in the form of a loop and its end grasped be-
15 tween them and drawn through the loop as the latter is stripped over their ends.

As commonly constructed, these bills are combined with a spring, which acts to close the movable jaw.

20 The aims of my improvement are to avoid the necessity for the spring, and at the same time secure a positive formation of the knot and reduce the strain on the cord.

To this end it consists, essentially, in pro-
25 viding one of the jaws with an inside lip or shoulder to assist in retaining the end of the cord and providing the other jaw with a slot or cavity, into which the first jaw enters, of such nature that the end of the cord confined
30 between the jaws may slide freely toward their delivery end while the jaw is held shut by the encircling-loop. Various attempts have hith-
erto been made to produce a bill in which a loop encircling the jaws would hold them
35 closed upon the end of the cord until the loop was carried off around the latter to complete the knot; but in all such devices, so far as I am aware, the strain of the cord around the
jaws would cause the jaws to grasp the end
40 tightly between them, and thus resist the strip-
ping action; or, on the other hand, if the cord was confined loosely between the jaws, one of the latter was provided with an inside hook to draw the end of the cord through the loop,
45 the construction being such that if the end failed to pass freely through the loop it was impossible to strip the knot from the tyer.

In my device I avoid the troubles named by so forming the parts that the end of the cord
50 can slide freely between the closed jaws in the

direction of their length, and by forming the retaining lip or shoulder in such manner that the cord cannot be permanently engaged there-
with.

In the accompanying drawings, Figure 1 rep- 55
resents a side elevation of my tyer, the jaw be-
ing open. Fig. 2 is a side elevation of the spindle, its lower end being shown in section with the movable jaw detached. Fig. 3 is an
elevation of the tyer, looking against the end 60
of the jaws, the cord being in the position which it assumes immediately before the strip-
ping of the loop from the jaws. Fig. 4 is a side elevation of the same. Fig. 5 is an end
view of the same. 65

Referring to the drawings, A represents the rotary spindle; B, the outer and stationary jaw extending at substantially right angles from one end of the spindle; and C, the movable jaw pivoted to the spindle at *a*, and extended at
70 its heel end through the same, as usual, to re-
ceive the roller *b*, which will travel against a stationary opening-cam, D, as shown in Fig. 1, or co-operate with other devices to open the jaw when required. The movable jaw, in-
75 stead of being made of the ordinary form, is provided near its free end on the edge next to the stationary jaw with a shoulder, *c*, and also provided at its end with a second shoulder,
80 *e*, which, encountering the stationary jaw, serves as a stop to limit the closing motion of the movable jaw, and thus prevent the end of the cord from being pinched between the two
fingers. The movable jaw has its end carried to or slightly beyond the end of the stationary
85 jaw, in order that the cord may retain it in a closed position for a sufficient length of time to insure the completion of the knot.

The rigid jaw is made broader than usual, and provided under or opposite the jaw C with
90 a longitudinal slot or opening, *d*, extending there-
through from a point near its end to a point nearly in line with the spindle. This opening is made of such size and form that when the end of the cord is laid transversely
95 between the jaws and the latter closed the cord will be bent, as shown in Fig. 3, but at the same time left free to slide lengthwise between the fingers and the delivery end of the jaws.

In my tyer I depend for the retention of the 100

cord not directly upon the pinching action between the fingers, but upon the fact that the cord is wound about the jaws and bent into such shape that the friction of the convolutions upon each other and upon the outside of the finger will prevent it from drawing endwise through the tyer.

As shown in Figs. 3 and 5, the finger is arranged to close into the slot near one side, so that on the side where the cord enters from the bundle the end may be slightly pinched, while on the opposite side the wide space between the finger and the side of the slot leaves the cord entirely free.

The tyer will be mounted in the ordinary manner and operated in connection with the ordinary mechanisms and the usual cord holding and cutting devices. The tyer makes substantially an entire revolution, causing the cord to be twisted in the form of a loop around the two jaws. At or near the end of its revolution the pivoted jaw is opened, the end of the cord laid between the two jaws, and the jaw permitted to close, as in Figs. 3, 4, and 5. The parts being in this position, the cord is strained in the direction of the length of the bills by the action of mechanism tending to discharge the bundle, or subjected to the action of an ordinary stripping device, or otherwise urged toward the delivery end of the bills. The loop encircling the jaws and retaining them in a closed position passes off from their ends, the end of the cord being meanwhile retained between the jaws and drawn with a positive action through the loop, so that the knot is completed in the ordinary manner.

It is to be particularly remarked that although the jaws are held shut by the encircling loop they do not act to pinch the cord tightly between them, the closing action of the movable jaw being limited by the shoulder *e*, and the slot or recess being made of large size, as shown, the end of the cord is free to slip forward between the fingers as the loop passes toward their extremities, the extremity of the cord being, however, kept in such shape that its release is prevented.

It is to be noted that the shoulder *e* is of such

character that when the jaw is opened the cord may pass freely thereover. If, therefore, for any reason the main loop should be closed around the end of the cord before the latter is drawn wholly therethrough, so that the end would form a second loop, this loop may be readily disengaged from the movable jaw. Were the loop *C* made, as in other tyers, in the form of a hook or barb, the secondary loop could not be stripped therefrom.

I am aware of the construction represented in Patent No. 306,232, in which a forked jaw co-operates with a movable jaw having an undercut shoulder or hook to draw the extremity of the cord through the loop; and I am also aware of the construction represented in Patent No. 272,150, in which a sliding jaw moves into a second jaw having a slot which closely embraces the same, the parts arranged to pinch the extremity of the cord between them at a point near the axis and prevent it from sliding endwise of the jaws and to such constructions I lay no claim, as they differ widely both in construction and mode of operation from that herein described and claimed.

Having thus described my invention, what I claim is—

1. In a tying-bill, the spindle provided with two laterally-extending jaws, the one jaw provided with a wide longitudinal slot and the other arranged to close throughout its length into said slot on one side near one wall of the slot, and on the other side widely distant from the other wall of the slot, as and for the purpose described.

2. In a tying-bill, the combination of the jaw *C*, provided with the two shoulders *c* and *e*, and the jaw *B*, provided with the longitudinal relatively wide slot closed at its outer end and adapted to admit of the first-named jaw closing loosely therein, as and for the purposes set forth.

In testimony whereof I have hereunto set my hand, this 25th day of May, 1886, in the presence of two attesting witnesses.

RUFUS H. COREY.

Witnesses:

C. F. BALDWIN,

M. J. BUCKLEY.