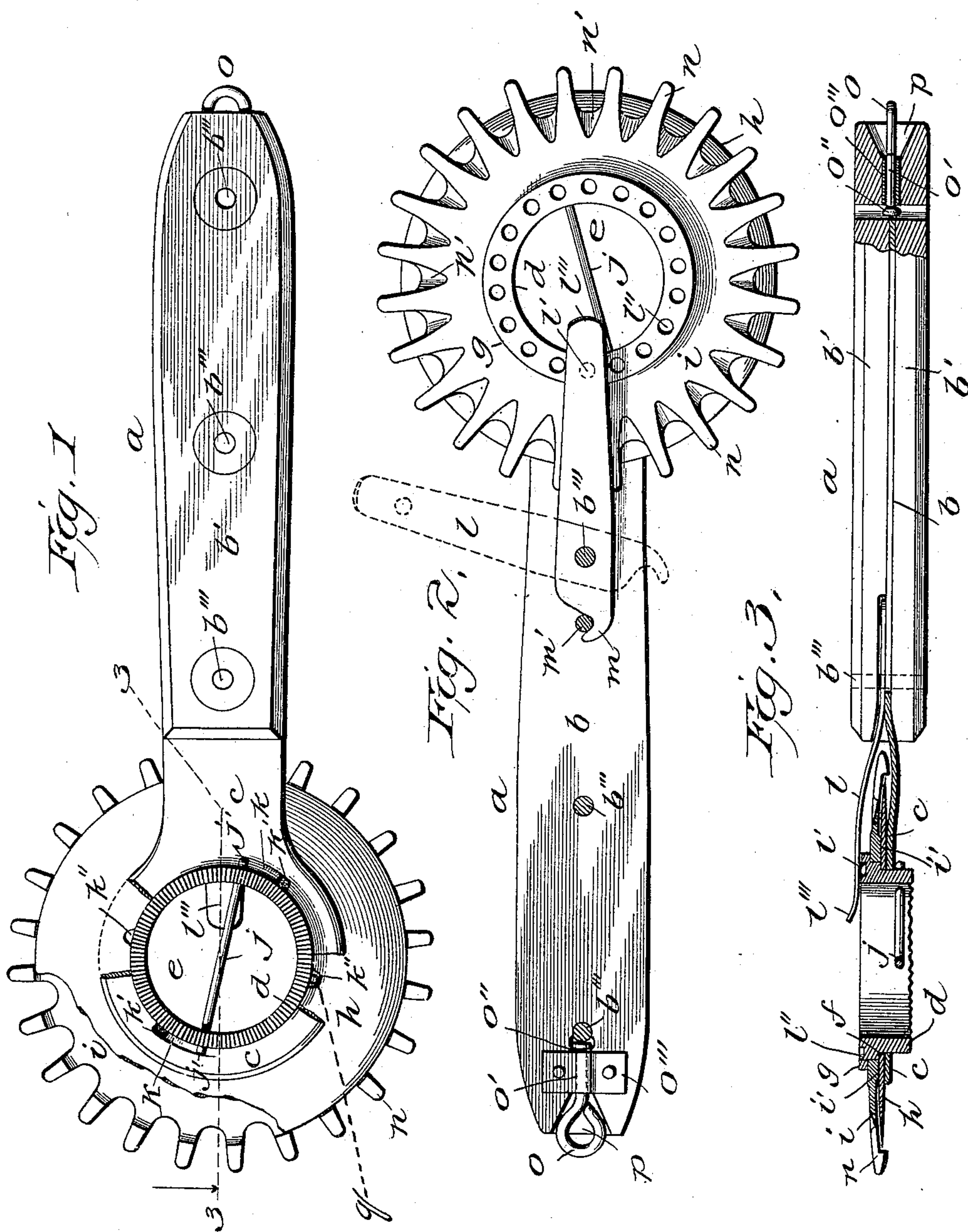


(No Model.)

D. R. BURNHAM.
BAND CUTTER.

No. 594,776.

Patented Nov. 30, 1897.



Witnesses

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UNITED STATES PATENT OFFICE.

DELLA RICH BURNHAM, OF PULLMAN, WASHINGTON.

BAND-CUTTER.

SPECIFICATION forming part of Letters Patent No. 594,776, dated November 30, 1897.

Application filed March 1, 1897. Serial No. 625,648. (No model.)

To all whom it may concern:

Be it known that I, DELLA RICH BURNHAM, a citizen of the United States, residing at Pullman, in the county of Whitman and State of Washington, have invented certain new and useful Improvements in Band-Cutters; and I do 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to a device for cutting the bands on sheaves of wheat or grain when feeding the latter to a threshing-machine.

My object is to provide a convenient and safe hand-knife which will not be liable to cut the operator nor become dulled and nicked from contact with various objects while being used about the machine.

To this end my invention consists of four essential features, a handle, circular knife, guard-plate, and means for locking them in their assembled position, all peculiarly arranged and constructed, as will be more fully described hereinafter, and pointed out in the claims.

In the accompanying drawings, Figure 1 represents a side elevation of my complete invention, part of the cutting-disk being cut away to disclose the structure beneath; Fig. 2, a view of the opposite side of Fig. 1, one-half of the handle being removed to show the parts beneath; and Fig. 3, an edge view, partly in section, through the line 3 3 of Fig. 1.

The reference-letter *a* represents the handle portion, consisting of a metal plate *b*, embraced by two side pieces *b'* and *b''*, retained by transverse rivets *b'''*. The handle is provided with a forwardly-projecting head *c*, which is an integral extension of the plate *b*. This head carries the operative parts of the device, which are locked thereon through the medium of a locking-ring *d*, adapted to fit within a central opening *e* in the head *c*. This ring is provided with an annular shoulder *f* and an annular flange *g*, which overlap and hold in place the circular knife *h* and guard-plate *i*, respectively, to hold them in their assembled position, for it will be observed that

the locking-ring extends transversely through the knife and guard-plate. The ring is locked in place on the head *c* by means of a pin *j*, extending diametrically through the ring and beyond its sides a short distance, so that its opposite ends *j'* will project over and lock against the surrounding edge of the head *c*. This pin also serves as a handle in turning the ring to lock and unlock the parts in the manner which will be more fully described hereinafter. On that portion of the head over which the ends *j'* of the pin extend are two gradually-inclined planes *k*, sloping downwardly toward diametrically opposite holes *k'*, through which the ends pass when the ring is turned around into unlocking position. When turned in the opposite direction to lock the parts snugly together, the ends slide up the inclined planes *k*. The locking-ring is also provided with a milled surface on the edge opposite the spring-latch. The ring is prevented from turning on its axis and unlocking the parts prematurely by means of a locking-latch consisting of a flat metal spring *l*, provided with a lug *l'* on its under side, adapted to drop into one of an annular series of sockets *l''* in the top edge of the ring. The forward end *l'''* of the spring projects over the opening *e*, so that it can be more easily caught hold of and disengaged from the ring when unlocking the parts. The spring is pivoted upon the forward rivet *b'''* of the handle, so that it will swing out laterally, as seen in dotted lines in Fig. 2, from over the ring, guard-plate, and knife to allow the parts to be disassociated. In returning this spring into locking position it is arrested at the proper point by means of a hook *m* on the tail, which is curved around to come in contact with a stud *m'*. The cutting-blade *h* tapers gradually to a sharp circumferential edge, which is guarded by radial fingers *n*, spaced apart sufficiently to receive the binding cord or band and allow the knife *h* to cut it, but too near together to allow the fingers of the operator to pass between them. Tapering concavities *n'* are provided at the base of the fingers to permit the cord to be drawn over the edge of the cutting-knife at a more acute angle when the knife is pressed down upon it. The guard-plate is hollowed out to form a countersink to receive the knife, so that its edge will lie

below or flush with the sides of the fingers to still further protect the operator and shield the edge.

It frequently happens that the operator will drop the knife in the straw and it will go into the cylinder of the machine and do great injury. To prevent such an accident, I provide the end of the handle with a swiveled attaching-ring *o*, having a stem *o'* extending longitudinally into the handle and locked in place by means of a head *o''* and cross-plate *o'''*. The end of the handle is hollowed out to form a cavity *p* for the ring to turn in. The operator can by this means attach the cutter to his person by a cord, so that it cannot get away from him and be carried into the mechanism of the machine.

The guard-plate is loosely clamped on the ring for the purpose of allowing it to turn thereon in order to permit all of the edge of the knife to be used, because if it were rigid the cutting would only take place on that portion of the edge exposed between the fingers. Another advantage gained by this loose revolution of the guard-wheel is that it turns when coming in contact with an object and prevents the fingers from breaking off. When the band or cord is between the fingers, it will be held to the transverse action of the knife. An annular boss *i'* on the inside of the guard-plate forms the bearing-surface against which the latter revolves.

The knife fits the locking-ring *d* snugly, and is provided with recesses *k''* for the projecting ends *j'* of the rod *j* to pass through when removing the ring. The central opening in the guard-plate *i* is made wide enough to allow the ring and the projecting ends *j'* of the rod *j* to pass through, so that no openings such as those in the head and knife are necessary.

To disassociate the parts, all that is necessary to do is to first disengage the latch *l* and turn it one side, then give the locking-ring a partial turn sufficient to bring the ends *j'* of the pin over the openings *k'* in the head, whereupon the ring, knife, and guard-plate will drop out of the head. Now by bringing the openings *k''* of the knife into coincidence with the ends *j'* of the pin the locking-ring will become free to drop out and the knife and its guard-plate to come apart. The knife can then be sharpened or another substituted, after which the parts can be quickly assembled by a reversal of the movements just described.

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

1. In a band or twine cutter, a circular knife provided with a central opening and mounted upon a head having a handle, in combination with a circular guard-plate provided with radial fingers projecting beyond the edge of the knife, a locking-ring adapted to pass through the knife, guard-plate and head, and a latch to prevent the ring from turning in its place, substantially as described.

2. In a band or twine cutter, the combination with a suitable handle provided with a head having a central opening, a locking-ring adapted to fit within the opening, a circular knife encircling the locking-ring, a circular guard-plate revolubly mounted on the locking-ring and provided with radial fingers projecting beyond the edge of the knife, and having a cavity in its side for the reception of the knife so that it will lie flush with or below the sides of the fingers, and means for locking the ring on the head, substantially as described.

3. In a band or twine cutter, the combination with a suitable handle provided with a head having a circular opening therein, a circular flanged locking-ring fitting within the opening and a circular knife and guard-plate mounted on the ring, outwardly-projecting lugs on the ring, inclined surfaces on the head, the latter being provided with openings at the ends for the reception of the lugs, a locking-latch extending from the handle to the ring to lock it in position whereby, when the latch is released, the ring can be turned to lock or unlock the knife and its guard-plate for the purpose of detaching or attaching them, substantially as described.

4. In a twine or cord cutter, the combination with a suitable handle provided with a head having a circular opening therein, a locking-ring provided with a flange located within the opening, a circular knife surrounding the flange, a guard-plate between the ring and the head, and means for retaining the ring in locked position, substantially as described.

5. In a band or cord cutter, a circular knife provided with a revoluble guard-plate having radial fingers projecting beyond the edge of the knife, in combination with a handle provided with a head on which the knife and guard-plate are mounted, a flanged locking-ring arranged to lock said plate and knife on the head, and a latch for holding the ring in locked position, substantially as described.

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

DELLA RICH BURNHAM.

Witnesses:

FRANK MATHEWSON,
A. A. MILLER.