No. 681,978. Patented Sept. 3, 1901.

F. A. RICHARDSON.

TWINE CUTTER.

(Application filed Feb. 16, 1901.)

(No Model.)

FIG. 1.

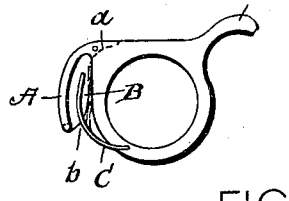


FIG. 2.

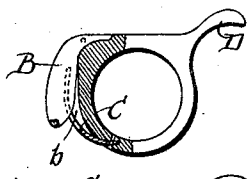


FIG. 3.

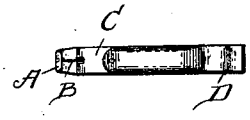


FIG. 3A.

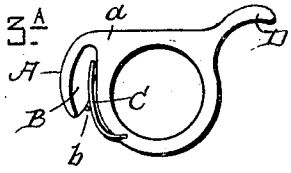


FIG. 4.

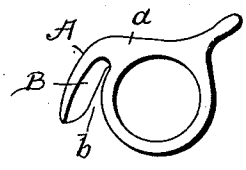


FIG. 5.

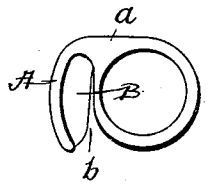


FIG. 6.

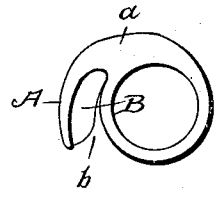


FIG. 7.

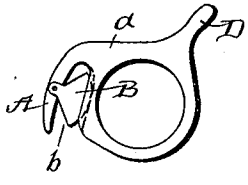


FIG. 8.

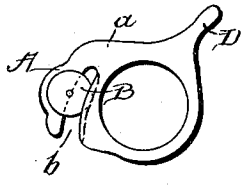


FIG. 9.

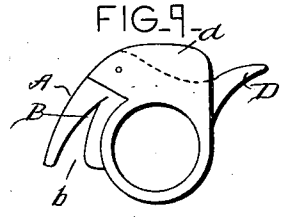


FIG. 10.

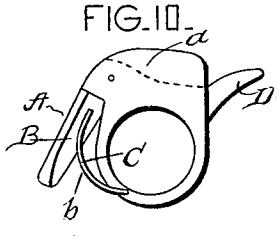


FIG. 11.

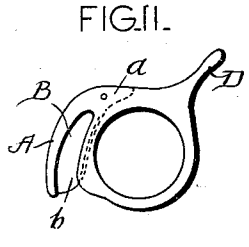


FIG. 12.

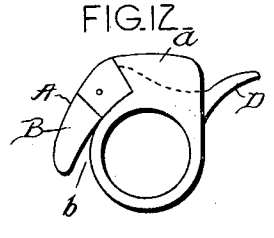
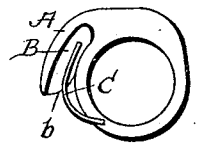


FIG. 13.



WITNESSES.

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UNITED STATES PATENT OFFICE.

FRED A. RICHARDSON, OF LOWELL, MASSACHUSETTS.

TWINE-CUTTER.

SPECIFICATION forming part of Letters Patent No. 681,978, dated September 3, 1901.

Application filed February 16, 1901. Serial No. 47,684. (No model.)

To all whom it may concern:

Be it known that I, FRED A. RICHARDSON, a citizen of the United States, and a resident of Lowell, in the county of Middlesex and State of Massachusetts, have made a certain new and useful Improvement in Twine-Cutters; and I 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 letters of reference marked thereon, which form a part of this specification.

Figure 1 is a side elevation of my device. Fig. 2 is a partial central longitudinal section of the same. Fig. 3 is a front edge view. Fig. 3ª is a view similar to Fig. 1 and showing the spring as put under tension by the twine. Figs. 4 to 13, inclusive, illustrate modified forms of my device.

This invention has relation to twine and cord cutters, and has for its object the provision of such a device of novel and efficient character, in combination with a ring for wear upon the finger for the use of clerks in stores, mill operatives, factory employees, and any person required to cut cord, twine, or thread of any description.

With this object in view the invention consists in the novel construction and combination of parts, all as hereinafter described, and pointed out in the appended claims.

My device is designed for wear upon the little finger, as being least required for other use.

Referring to the accompanying drawings, Figs. 1, 2, 3, and 4 illustrate the preferred form of my cutter-ring, having the peripheral extension A in the same plane as the ring, starting from one edge thereof and extending first directly outwardly to form a shoulder *a* at its base and then in a manner approaching the parallel, with the adjacent ring-wall nearly the full diameter of the ring or nearly as far as the opposite edge thereof, and forming, with the adjacent ring-wall, a recess *b* of a depth approximately equal to the internal diameter of the ring and having side walls of a slight inward taper. In this recess is located the knife B, also in the plane of the ring and seated in said extension A, centrally thereof, said knife having its cutting edge beveled or rounded at its outer end portion away from the ring.

Projecting from the peripheral wall of the ring opposite its outer or free end portion of extension A is the plate-spring C, arched over toward and into recess *b*, nearly the full depth and centrally thereof, and centrally split or bifurcated throughout the major part of its length to straddle the knife. This spring is also in the plane of the ring and of equal width thereas. The peripheral wall of the ring is notched to receive the end portion of the spring, through which and the ring-wall is passed a transverse securing-pin. The spring forms, with the beveled or rounded portion of the knife, a V-shaped recess having convex walls for the reception and guidance of the twine to be divided. The spring being secured at one end only is free to yield under pressure of the twine, when the V-form recess aforesaid will become deeper and the wedge-walls thereof more nearly parallel as the twine passes farther therein, as indicated in Fig. 3ª, which, in connection with the pressure of the spring as it is put under tension, will effectually cut the twine. A comparatively slight movement of the spring will suffice to divide the lighter varieties of cord; but when heavier cord or twine is used the action of the parts will readily serve their purpose, the movement of the spring under pressure being limited by the inner wall of the recess *b*, as indicated in Fig. 1 in dotted lines. Under sufficient pressure the spring may lie directly against the adjacent ring-wall, which has a V-form relation to the cutting edges of the knife to further increase the depth and the approximate parallel relation of the side walls of the cutting-recess with a proportionately greater effect.

Upon the same side of the ring as the shoulder *a* at the base of extension A and about diametrically opposite the free end of such extension is a stop extension D, having a radial direction with respect to the ring and designed to bring up or abut against the third or ring finger to prevent undue rotation of the ring forwardly out of proper operative position.

The shoulder *a* of the ring at the base of extension A is adapted to take a bearing

against the third or ring finger when the device is pressed against the twine to brace it against undue backward rotation.

Figs. 4 to 13, inclusive, illustrate different modifications of my device. In Fig. 4 the spring C is omitted, the construction being otherwise substantially the same as in the preferred form of my device previously described. In Fig. 5 the stop extension D is omitted, the construction being otherwise substantially the same as in Fig. 4. In Fig. 6 the construction is the same as in Fig. 5, a slightly-different configuration being employed. In Fig. 7 a pivoted knife B is used. In Fig. 8 a disk-knife B is used. In Fig. 9 a notched plate having V-shaped recess is inserted in the ring and sharpened for the knife B. In Fig. 10 a plate is inserted in the ring and sharpened for the knife B, the adjacent ring-wall action in conjunction with the knife to form the V-shaped cutting-recess, the spring C being also employed and the outer edge of the plate bent over to keep the spring in place and present a broader edge. In Fig. 11 the knife B has its cutting edge received in a channel of the adjacent ring-wall, the construction being otherwise the same as in Fig. 4. In Fig. 12 the construction is the same as in Fig. 9, with the exception that in this case the adjacent ring-wall acts in conjunction with the knife-edge to form the V-shaped cutting-recess, and in Fig. 13 the stop extension D is omitted, the construction being otherwise the same as in Fig. 1.

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

1. A finger-ring cutter for twine or the like, having the peripheral extension in the plane of the ring, extending first directly outwardly to form a smooth-walled stop-shoulder, and thence in a manner approaching the parallel with the adjacent ring-wall to include a recess therebetween, and a cutting device arranged in said recess, substantially as specified.

2. A finger-ring cutter for twine or the like, having the peripheral extension in the plane of the ring extending first directly outwardly to form a smooth-walled stop-shoulder, and thence in a manner approaching the parallel with the adjacent ring-wall to include a recess therebetween, cutting devices arranged in said recess, and a second stop shoulder or extension upon the same side of the ring as said first-named shoulder, substantially as specified.

3. A finger-ring cutter for twine, or the like, having the peripheral extension in the plane of the ring and including a recess therebetween and the adjacent ring-wall, a knife secured in said extension, and also in the plane of the ring, a plate-spring extending peripherally of the ring in the same plane thereas into said recess, and split at its free end portion to straddle said knife, substantially as specified.

4. A finger-ring cutter for twine or the like, having the peripheral extension in the plane of the ring, and including a recess therebetween and the adjacent ring-wall, a knife secured in said extension, and also in the plane of the ring, a plate-spring extending peripherally of the ring in the same plane thereas, and secured in a peripheral slot thereof, said spring being split at its free end portion to straddle said knife, together with a stop-shoulder at the base of such extension, and a second stop shoulder or extension upon the same side of the ring as said first-named shoulder, substantially as specified.

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

FRED A. RICHARDSON.

Witnesses:
LEOPOLD M. REINHARDT,
ETHEL A. MORSE.