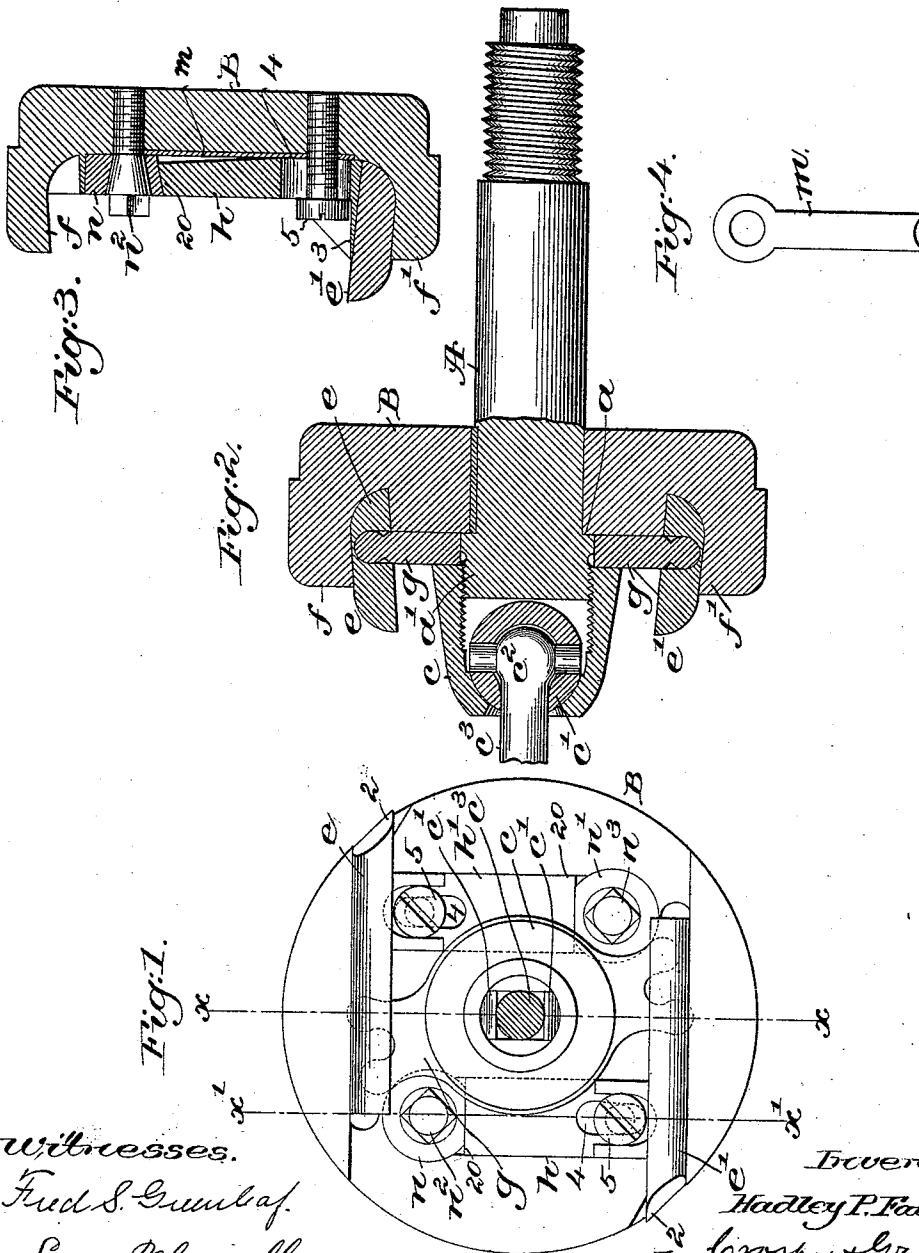


(No Model.)

H. P. FAIRFIELD.
ROTARY CUTTER.

No. 498,745.

Patented May 30, 1893.



Witnesses.

Fred S. Grumbaf.
Louis M. Howell.

Inventor:
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UNITED STATES PATENT OFFICE.

HADLEY P. FAIRFIELD, OF WEST MEDFORD, ASSIGNOR TO JAMES W. BROOKS, TRUSTEE, OF PETERSHAM, MASSACHUSETTS.

ROTARY CUTTER.

SPECIFICATION forming part of Letters Patent No. 498,745, dated May 30, 1893.

Application filed February 27, 1893. Serial No. 463,787. (No model.)

To all whom it may concern:

Be it known that I, HADLEY P. FAIRFIELD, of West Medford, county of Middlesex, State of Massachusetts, have invented an Improvement in Rotary Cutters, of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

This invention has for its object the production of a novel and efficient rotary cutter, the blades being confined in place and adjusted in novel manner.

My invention is shown as embodied in that class of cutter wherein the blades are clamped at but one edge, and the clamping devices are, therefore, so constructed as to act with great power, as will be described.

Figure 1, in a face view, shows a rotary cutter embodying my invention; Fig. 2, a section thereof in the line x, x , together with part of the cutter shaft; Fig. 3, a section in the line x', x' , and Fig. 4, a detail of spring m .

The cutter-shaft A, adapted to be rotated in any usual or suitable manner has splined upon it a disk B, one side thereof abutting preferably against a shoulder a of the said shaft, a portion of the said shaft beyond the said shoulder being, in this instance of my invention, threaded as at a' , for the reception of the threaded cap c , open at its outer end and shaped internally, as best shown in Fig. 2, for the reception of the spherical receiver c' in which is pivoted the inner end c^2 of the rand cutter shaft c^3 , said shaft being common to United States Patent No. 410,089.

The connection shown between the rand cutter shaft and the shaft A, is one form of universal or ball joint, and instead of the particular form of joint shown I may employ any other usual or suitable joint to cause the two shafts to rotate in unison and yet enable them to be rotated when their centers of rotation are not parallel throughout their entire length, or when the said shafts are not in the same horizontal line. The face of the disk B is provided with suitable cross-grooves b , b , herein shown, see Fig. 2, as substantially semicircular, for the reception of the correspondingly shaped side edge of one of the blades e , or e' , the back of each blade acting

against one of the flanges or abutments f , or f' , of the said disk or block. Each blade is shaped and sharpened at its front edge 2 to adapt it to the work to be done, and the underside of the blade is suitably notched or shaped to be engaged by the blade adjusting device g , herein shown as a plate fitted over the shaft A near the shoulder a , a projection or projections at the ends of the plate entering said notches, so that when the adjusting device is turned about the shaft A as a center the said blades will be adjusted simultaneously and for exactly the same distance. The adjusting device is held firmly in adjusted position by the inner end of the cap c , it acting as a set nut or clamping device for the blade adjusting device, the said device c being turned to free the adjusting device when the blades are to be adjusted for any purpose.

Inasmuch as the blades are held at but one side edge, they must be held very firmly in their adjusted position, and for this purpose I have provided a clamp as h, h' , one for each blade. These clamps are alike so I need specifically describe but one of them, viz:—the one h . This clamp consists of a block or shank having at one end preferably a flange or finger 3, adapted to extend more or less across and act against the inner side of the blade e' , as best shown in Fig. 3. Each block has a suitable slot 4, through which is extended a screw 5, see Fig. 2, which is screwed into the disk B and serves to hold the clamp in position. The blocks referred to have also at or near their opposite ends beveled seats against which bear clamp-actuating devices, shown as wedges n, n' , said wedges, as shown, being operated by screws n^2, n^3 , said screws, see Figs. 1 and 3, serving to force the said wedges inwardly, and causing them to act against and force the clamping devices firmly and powerfully against and so as to maintain the blades in adjusted position, the screws 5 being slack when the adjusting devices are working. The wedges referred to constitute clamp actuating devices, and instead of the particular wedges used I may employ any usual or known equivalent device.

This invention is not limited to the exact shape shown for the clamping devices or of

the screws for moving them. I have shown the screws n^2 , n^3 , as having conical heads, as that shaped head exerts sufficient friction to prevent the screw backing out. Between
 5 each block h , h' , and the disk or plate B, as shown in Fig. 3 applied to block h , I prefer to place a spring m , shown detached in Fig. 4, said spring having a hole m' for the screw 4,
 10 the opposite end of the spring being extended under the wedge n , said spring acting normally to lift the clamp actuating device or wedge when the screw or bolt n^2 is turned outwardly.

Herein it will be noticed that the fingers 3
 15 constituting parts of the clamping devices extend but partially across the inner side of the blade, thus leaving the inner sides of the blades free and unobstructed to and beyond
 20 said fingers to thus leave an open space, not only to afford clearance but to enable a rand cutter to enter said space and correctly co-operate with the blades in boot and shoe work, said rand cutter being common to the patent referred to.

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

1. A rotary cutter, consisting of a disk provided with a groove having near it an over-
 30 hanging flange or abutment, a cutter blade having one edge placed in said groove, a blade clamp, the acting portion of which overlaps but a part of the inner side of the blade, thus leaving the inner side of the blade opposite
 35 said clamp unobstructed, to thereby afford clearance and leave a space for the entrance of a rand cutter, substantially as described.

2. A rotary cutter, consisting of a disk provided with a groove having near it an over-
 40 hanging flange or abutment, a cutter blade having one edge placed in said groove, a blade clamp, the acting portion of which overlaps but a part of the inner side of the blade, thus leaving the inner side of the blade opposite
 45 said clamp unobstructed to thereby afford clearance and leaving a space for the entrance of a rand cutter, and a clamp actuating de-

vice to force the clamp against the blade, substantially as described.

3. In a rotary cutter, a disk, a blade, a blade- 50
 clamp carried thereby and adapted to act against the inner side of the blade, combined with a clamp actuating device to force the clamp against the blade, and an independent
 55 screw to confine the clamping device in adjusted position, substantially as described.

4. In a rotary cutter, a disk having two blade-
 receiving grooves and overhanging abut- 60
 ments, two blades; and a blade adjusting device engaging both blades to adjust them simultaneously, combined with two blade
 65 clamps having fingers extended partially across said blades at their inner sides to co-operate with said abutments to hold the blades; and with adjusting devices to cause the said
 clamps to hold the said blades firmly in place, substantially as described.

5. In a rotary cutter, a disk, a blade, a blade-
 clamp carried thereby and adapted to act 70
 against the inner side of the blade, combined with a clamp actuating device to force the clamp against the blade, and screws to move the clamp actuating device, substantially as described.

6. A cutter disk, a blade, a clamp to engage 75
 the inner side of the blade, and a wedge to act on and move the said clamp, combined with a conically headed screw acting on said
 wedge, to operate, substantially as described.

7. A cutter disk, a blade, a clamp to engage 80
 the inner side of the blade, and a wedge to act on and move the said clamp, combined with a conically headed screw acting on said
 wedge, and a spring to move the wedge in op- 85
 position to said screw, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HADLEY P. FAIRFIELD.

Witnesses:

GEO. W. GREGORY,
 LAURA MANIX.