

Nov. 14, 1939.

K. W. HALLDEN

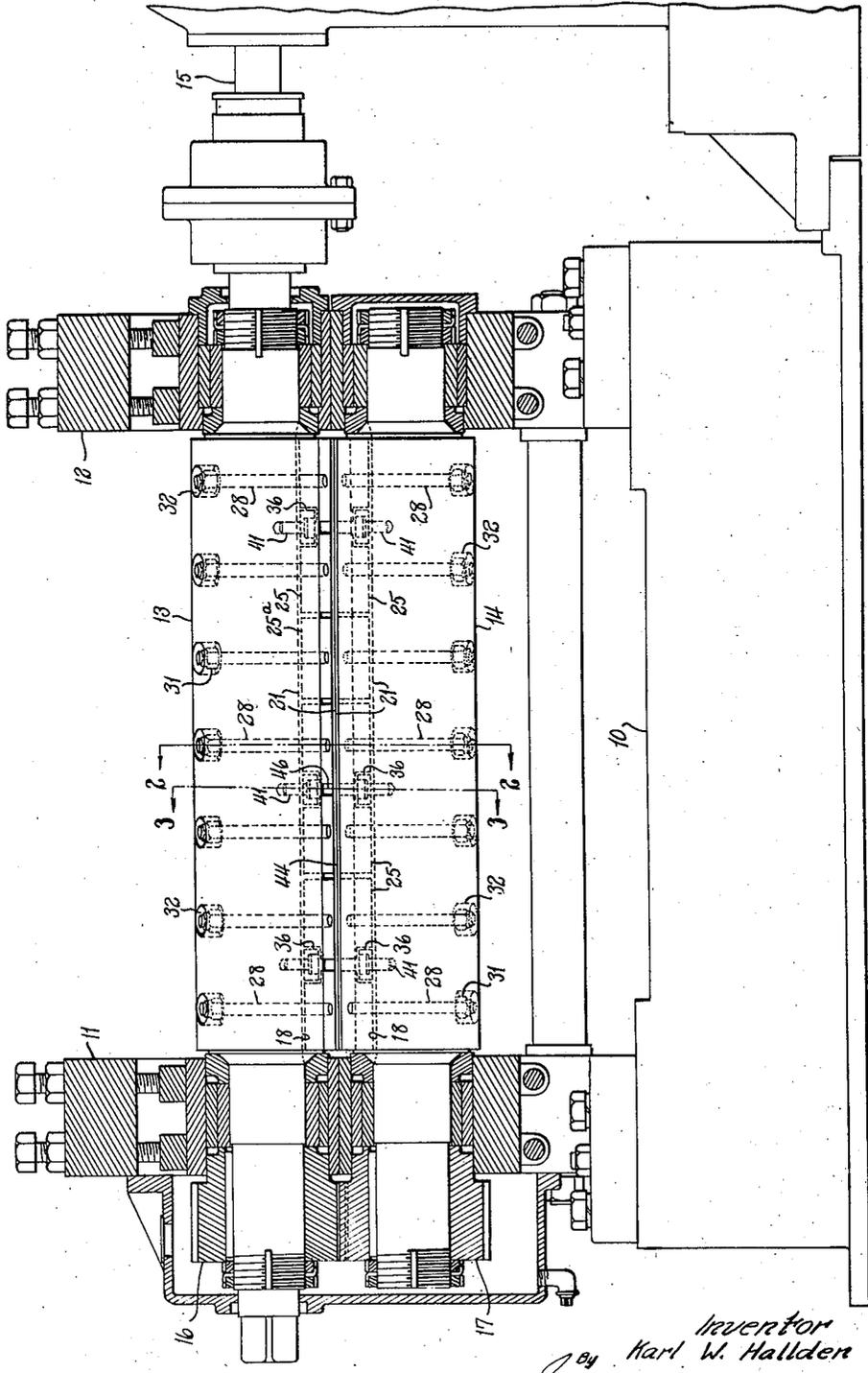
2,180,204

ROTARY CUTTING DEVICE

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Fig. 1



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Fig. 5.

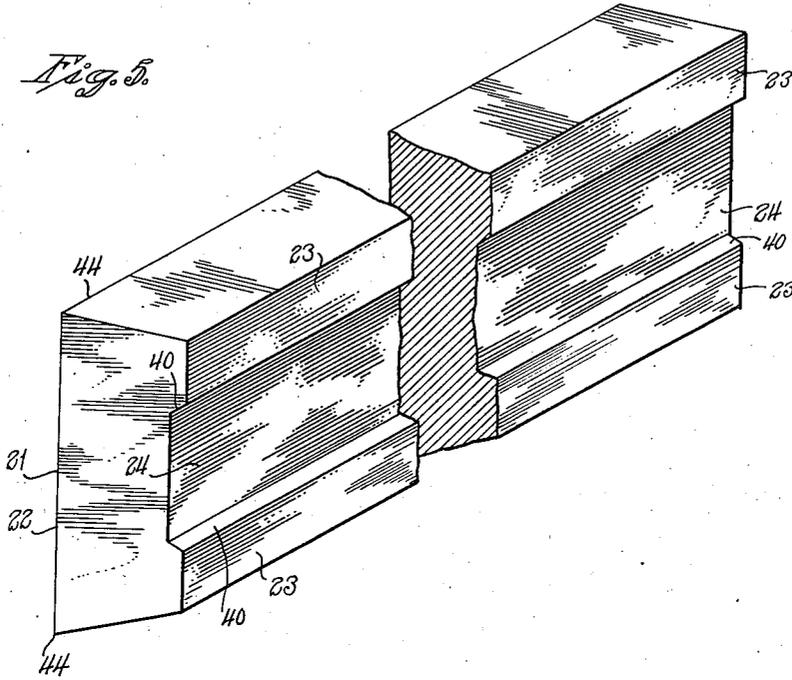


Fig. 6.

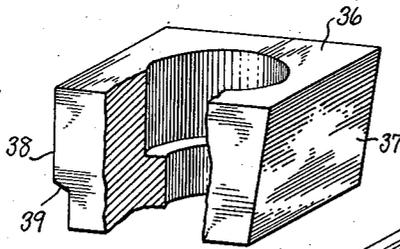
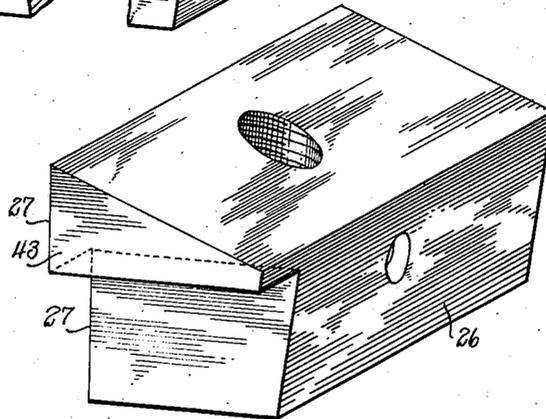


Fig. 7.



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UNITED STATES PATENT OFFICE

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ROTARY CUTTING DEVICE

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Application November 27, 1937, Serial No. 176,806

2 Claims. (Cl. 164-70)

This invention relates to improvements in rotary cutter devices, and more particularly to the cutter construction thereof.

One object of this invention is to provide an improved rotary cutter construction employing improved means for holding the cutters in the cutter-carriers.

Another object of this invention is to provide an improved rotary cutter construction in which the cutters are reversible to employ either of two opposite cutting edges.

Another object of this invention is to provide an improved rotary cutter construction formed of simple elements readily manufactured and readily assembled to produce a rugged, durable mechanism.

With the above and other objects in view, as will appear to those skilled in the art from the present disclosure, this invention includes all features in the said disclosure which are novel over the prior art.

In the accompanying drawings forming part of the present disclosure, in which one way of carrying out the invention is shown for illustrative purposes:

Fig. 1 is a front elevation partly in section illustrating one embodiment of the invention in the form of a rotary cutting device;

Fig. 2 is a vertical sectional view on the line 2-2 of Fig. 1;

Fig. 3 is a vertical sectional view on the line 3-3 of Fig. 1;

Fig. 4 is a fragmental, longitudinal, vertical, sectional view on line 4-4 of Fig. 2;

Fig. 5 is a broken perspective view of one of the shear-blades or knives;

Fig. 6 is a perspective view, partly broken away, of one of the hold-down clamps or locking-members; and

Fig. 7 is a perspective view of one of the blade-wedges.

In the description and claims, the various parts are identified by specific names for convenience, but they are intended to be as generic in their application as the prior art will permit.

Referring to the drawings, 10 is the base of a rotary cutting device which may, for example, be of the type shown in my application Serial No. 167,192. Mounted on the base 10 are bearing-stands 11 and 12, in which are mounted upper and lower cutter-carriers or cutter-rolls 13 and 14. The upper cutter-roll 13 is driven from the shaft 15 and by means of a pair of gears 16 and 17 drives the lower cutter-roll 14.

Each cutter-roll has a longitudinal housing-

recess 18 having opposed walls 19 and 20 converging toward one another. Mounted in the recess 18 of each of the cutter-carriers or rolls 13, 14 is a shear-blade or knife 21 having opposite parallel faces 22 and 23, the face 23 being provided with a hold-down or locking-recess 24. A plurality of blade-wedges 25, 25^a each have a face 26 adapted to engage against the face 20 of the housing-recess 18 and an opposite face 27 adapted to engage against the face 23 of the shear-blade 21. Each wedge 25 is threadedly secured upon a bolt 28 and locked thereto by means of a pin 29. Each bolt 28 extends through a hole 30 in the cutter-carrier or roll and is threadedly engaged with a nut 31 in a recess 32. A split lock-washer 33 may be engaged between the nut 31 and the bottom surface 34 of a recess 32, and a cotter-pin or the like may extend through a hole in each bolt 28 and engage in one of the slots 35 of the nut 31. By tightening the nuts 31, the wedges 25 are drawn in firmly to wedge the latter between the surface 20 of the recess 18 and the face 23 of the shear-blade 21 to firmly force the face 22 of the blade 21 into firm frictional engagement with the face 19 of the recess 18.

At suitable intervals between the blade-wedges 25 are located hold-down clamps or locking-members 36, each of which has a face 37 adapted to engage against the wall 20 of housing-recess 18, and a lug 38 having a shoulder 39 adapted to engage against one or the other of shoulders 40 of the recess 24 of the shear-blades 21. A set-screw 41, preferably in the form of a hollow cap-screw, serves to draw down each of the hold-down clamps 36 to firmly hold down the shear-blades against the bottom surface 42 of the housing-recess 18. The blade-wedges 25 have overhanging portions 43 which overlie the hold-down clamps 36 and thus serve as safety means to prevent the hold-down clamps from coming out or being removed prior to the removal of the blade-wedges 25, although the space 46 between each two adjacent overhanging portions 43 is sufficient to permit of introducing a wrench into the wrench-opening 45 in each cap-screw 41 to loosen or tighten the latter.

It will be observed that the shear-blades 21 have two opposite cutting edges 44, either of which may be brought into cutting position by removing the shear-blades and reversing their positions in the housing-recesses 18, and then firmly securing them in their reversed positions.

The invention may be carried out in other specific ways than that herein set forth without departing from the spirit and essential character-

istics of the invention, and the present embodiment is, therefore, to be considered in all respects as illustrative and not restrictive, and all changes coming within the meaning and equivalency range of the appended claims are intended to be embraced therein.

I claim:

1. A rotary cutter construction comprising: a rotary cutter-carrier provided with a housing-recess having opposed walls converging toward one another; a reversible cutter having opposite cutting-edges and mounted in said housing-recess and having opposite parallel faces, one of which cutter-faces engages against one of said housing-recess walls; wedge-means in said housing-recess between said cutter and the housing-recess wall remote from said cutter and adapted to engage the adjacent of said parallel cutter-faces and force the other of said parallel cutter-faces into frictional engagement with the adjacent housing-recess wall; and locking-means in said housing-recess and extending in the same general direction as said one cutter-face and anchored below the innermost end of said cutter for locking said cutter against movement out of said housing-recess, said wedge-means overlying

the outer end of said locking-means to prevent removal of said locking-means prior to removal of said wedge-means.

2. A rotary cutter construction comprising: a rotary cutter-carrier provided with a housing-recess having opposed walls converging toward one another; a reversible cutter having opposite cutting-edges and mounted in said housing-recess and having opposite parallel faces, one of which cutter-faces engages against one of said housing-recess walls and the other of which has a locking-recess; wedge-means in said housing-recess between said cutter and the housing-recess wall remote from said cutter and adapted to engage between the latter wall and the adjacent of said parallel cutter-faces to force the other of said parallel cutter-faces into frictional engagement with the adjacent housing-recess wall; and locking-means in said housing-recess and extending in the same general direction as said one cutter-face and anchored below the innermost end of said cutter and engaging in said locking-recess for locking said cutter against movement out of said housing-recess.

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