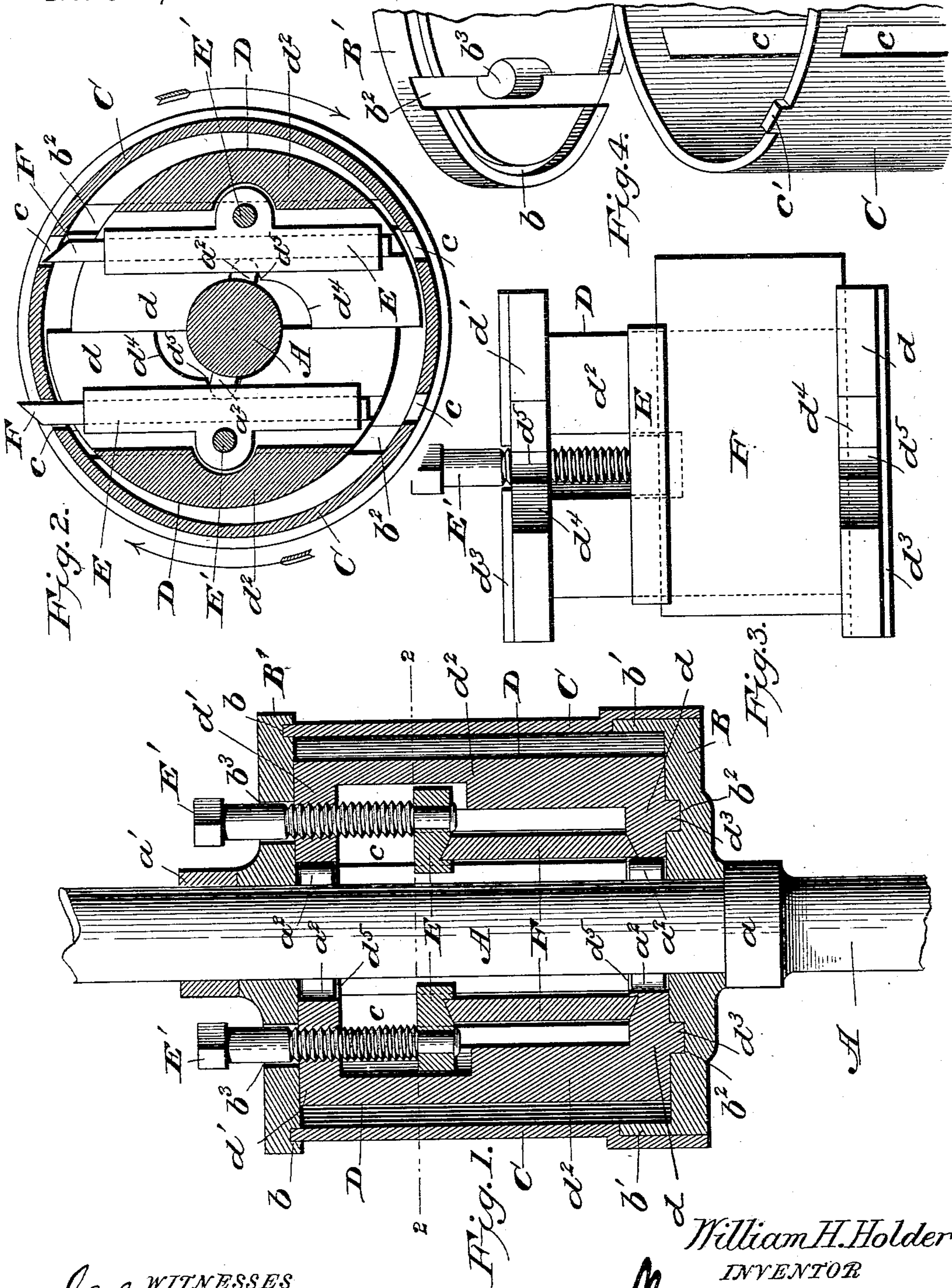


(No Model.)

W. H. HOLDER.  
CUTTER HEAD.

No. 560,166.

Patented May 12, 1896.



WITNESSES  
*L. S. Elliott*  
*W. H. Johnson*

Fig. 1.

William H. Holder  
INVENTOR

by *[Signature]* Attorney



# UNITED STATES PATENT OFFICE.

WILLIAM H. HOLDER, OF SCRANTON, PENNSYLVANIA, ASSIGNOR OF THREE-  
FOURTHS TO JACOB W. WALTERS, RICHARD H. HEFFELFINGER, AND  
SAMUEL K. MCKEEHAN, OF SAME PLACE.

## CUTTER-HEAD.

SPECIFICATION forming part of Letters Patent No. 560,166, dated May 12, 1896.

Application filed December 19, 1895. Serial No. 572,652. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM H. HOLDER, a citizen of the United States of America, residing at Scranton, in the county of Lackawanna and State of Pennsylvania, have invented certain new and useful Improvements in Cutter-Heads; and I do hereby 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.

The object of this invention is to provide an improved cutter-head consisting of a casing carrying a pair of movable cutter-stocks, which are engaged by lugs on the supporting or driven shaft, so that the rotation of said shaft in either direction will project one of the cutters beyond the casing and retract the other.

The invention consists in the construction and combination of the parts, as will be hereinafter fully set forth, and particularly pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a longitudinal sectional view through the cutter-head. Fig. 2 is a transverse sectional view on the line 2 2 of Fig. 1. Fig. 3 is an elevation of one of the cutter-stocks detached; and Fig. 4 is a detail view of the casing, showing one of the heads disconnected.

A designates the shaft upon which the cutter-head is mounted, said shaft being provided with a rigid collar  $a$  and an adjustable collar  $a'$ , between which the cutter-head is clamped to hold the parts thereof in relative position, as hereinafter described.

The cutter-head consists, in part, of a casing made up of the heads B and B', having central openings through which the shaft A passes, the heads being connected to each other by a cylinder C, one end of which fits into an annular recess or groove  $b$  in the head B', while the other end is bulged outward or enlarged to fit over the outer edge of the head B and inwardly-projecting flange  $b'$  thereon. The cylinder is provided with the

usual longitudinal slots  $c$ , through which the cutting-knives are projected, and the end of said cylinder which fits into the annular groove  $b$  is provided on opposite sides with projecting lugs  $c'$ , which fit into corresponding recesses in the head B' to hold these parts in proper relative position.

The heads B and B' are provided with transverse grooves or recesses  $b^2$ , located on opposite sides of their center a short distance beyond the opening through which the driving-shaft A passes, and with these grooves or recesses engage the ends of the cutter-stocks D, hereinafter described, the transverse grooves in the head B' being intersected by slots  $b^3$ , through which the adjusting-screws of the cutter-stocks pass.

The cutter-stocks are each made up of semicircular end pieces  $d$  and  $d'$ , which are connected at their outer ends by a plate  $d^2$ , formed integral therewith, the end pieces being provided on their outer side with transverse splines or webs  $d^3$ , which engage the transverse grooves  $b^2$  in the heads B and B'.

The end pieces of the cutter-stocks are provided in their straight edges with semicircular recesses  $d^4$ , which receive the driving-shaft A and permit lateral movement of the cutter-stocks within the casing, and in the base of these semicircular recesses are formed recesses  $d^5$ , with which engage lugs  $a^2$ , projecting from opposite sides of the driving-shaft A, so that the rotation of said shaft in either direction will move the cutter-stocks in opposite directions, the limit of movement being governed by the size of the recesses  $d^4$ , and such movement projecting one of the cutters or knives and retracting the other, for the purpose hereinafter mentioned.

The cutter-stocks are preferably provided with adjustable means for connecting thereto cutters or knives of different widths, and for this purpose the cutter-stocks are each provided with a sliding plate E connected to the inner end of an adjusting-screw E', said screws passing through the slots  $b^3$  in the head B', and through threaded apertures in the adjoining end pieces of the cutter-stocks, the knives or cutters F being placed between the opposite end of the cutter-stocks and sliding



plates E, the parts being provided with beveled recesses to receive the beveled edges of said knives.

In operation when the shaft is rotated in the direction of the arrows, Fig. 2, the lugs  $a^2$  will act upon the cutter-stocks to move the one on the right, so that the knife carried thereby will be retracted within the cutter-head or casing, while the other cutter-stock will be moved to project the cutting edge of its knife beyond said casing or in position to cut. When the rotation of the shaft is reversed, the lugs thereon will act to project the knife at the right and retract the one at the left, Fig. 2. By this construction and arrangement a board may be passed through the planing or cutting machine, after which the feeding mechanism and shaft A are reversed and the board passed back through the machine and operated upon by the other cutting-knife, the cutting edges of the knives being properly arranged for this purpose.

It will be noted that though I have shown cutting-knives with straight edges, any kind or style of knife can be used with the improved cutter-head hereinbefore described.

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

1. In a cutter-head, the combination, of the cutter-stocks in sliding engagement with the head and carrying cutters adapted to be projected beyond one side of said head; together with lugs on the driving-shaft and engaging the cutter-stocks to move them alternately in opposite directions, for the purpose set forth.

2. In a rotary cutter, the combination, of the cutter-head having heads B and B' provided with transverse recesses or grooves; cutter-stocks provided at their ends with webs or splines in engagement with said transverse recesses and carrying cutters adapted to be projected beyond one side of said cutter-head; together with lugs on the driving-shaft and in engagement with the cutter-stocks for moving them alternately in opposite directions, for the purpose set forth.

3. In a rotary cutter, the combination, of the cutter-head having heads B and B' provided with transverse recesses or grooves; cutter-stocks mounted between said heads and provided at their ends with webs or

splines in engagement with said transverse recesses, the cutter-stocks being provided with recesses and carrying cutters adapted to be projected beyond one side of the cutter-head; and lugs on the driving-shaft in engagement with the recesses in the cutter-stocks for moving them alternately in opposite directions, for the purpose set forth.

4. In a rotary cutter, the combination with the driving-shaft A having lugs projecting from opposite sides thereof, of heads B and B' mounted on said shaft and held in place by collars  $a$  and  $a'$ , said heads being provided with transverse grooves; cutter-stocks mounted between the heads and provided at their ends with webs or splines in engagement with the transverse recesses, the lugs on the driving-shaft engaging recesses in the cutter-stocks, substantially as shown and for the purpose set forth.

5. In a rotary cutter, the combination with the driving-shaft A having lugs projecting from opposite sides thereof, of the heads B and B' mounted on said shaft and provided on their inner sides with transverse recesses or grooves; a cylinder connecting the heads to each other; and cutter-stocks mounted in the cylinder between the heads B and B' and provided with webs or splines in engagement with the transverse recesses therein, the cutter-heads having recesses with which the lugs on the shaft engage, substantially as shown and for the purpose set forth.

6. In a rotary cutter, the combination with the driving-shaft A having lugs projecting from opposite sides thereof, of heads, as B and B', mounted on said shaft, and cutter-stocks located between the heads and in movable engagement therewith, the cutter-stocks having recesses which receive the shaft and permit a limited movement of said cutter-stocks, the cutter-stocks being also provided with recesses with which the lugs on the shaft engage, substantially as shown and for the purpose set forth.

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

WILLIAM H. HOLDER.

Witnesses:

W. L. LAWRENCE,  
ISAAC A. REICHARDT.