(No Model.)

# W. B. HOLBROOK.

## CUTTER AND HEAD.

No. 574,151. Patented Dec. 29, 1896.

Fig. 1.

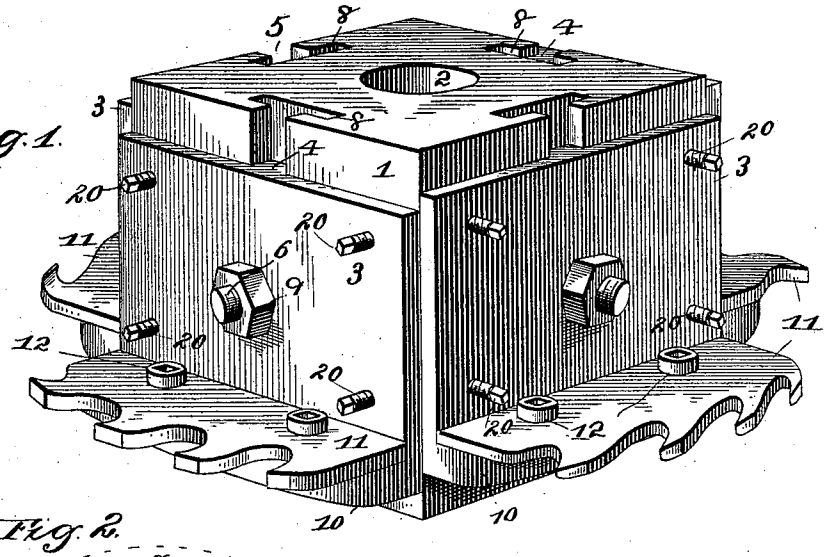


Fig. 2.

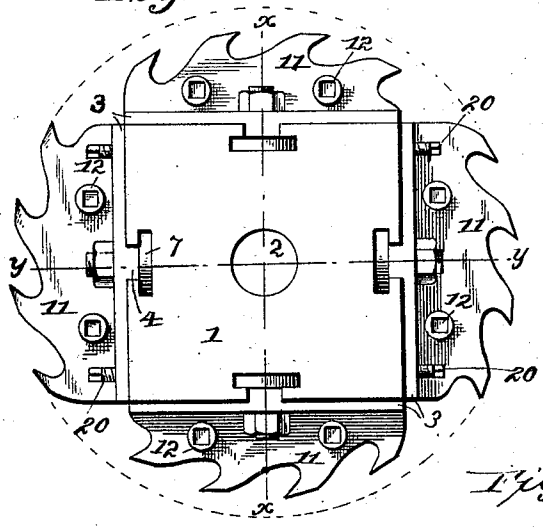


Fig. 3.

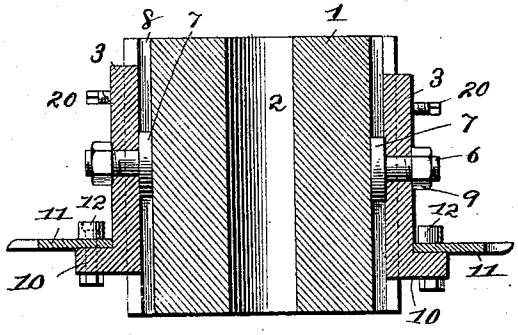


Fig. 4

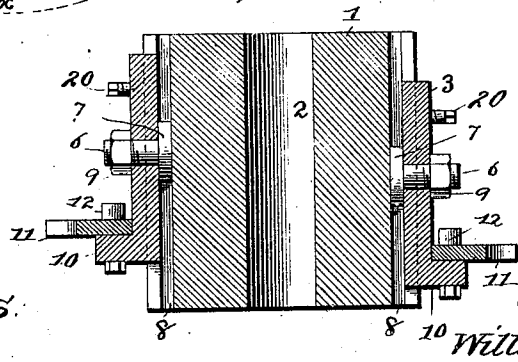


Fig. 5.

Witnesses.

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

# UNITED STATES PATENT OFFICE.

WILLIAM B. HOLBROOK, OF PATERSON, NEW JERSEY.

## CUTTER AND HEAD.

SPECIFICATION forming part of Letters Patent No. 574,151, dated December 29, 1896.

Application filed November 2, 1895. Serial No. 567,780. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM B. HOLBROOK, a citizen of the United States, residing at Paterson, in the county of Passaic and State of New Jersey, have invented certain new and useful Improvements in Cutters and Heads, of which the following is a full, clear, and exact specification.

My invention relates to a new and useful improvement in cutters for molding-machines, and has for its object to provide such a device that will act after the manner of a saw in forming all kinds of tongue-and-groove and bead work, and which may be readily applied to the ordinary slotted cutter-heads now in use, and which will perfectly balance said head, so as to prevent pounding incident to unbalanced high-speed machinery, and which will facilitate the removal and substitution of new cutters when worn or broken; and with these ends in view the invention consists in the details of construction and combination of elements hereinafter set forth and then specifically designated by the claim.

In order that those skilled in the art to which my invention appertains may understand how to make and use the same, I will describe its construction and operation in detail, referring by number to the accompanying drawings forming a part of this specification, and in which—

Figure 1 is a perspective of a head having my improved cutters attached thereto; Fig. 2, a plan view of the same; Fig. 3, a section at the line *y y* of Fig. 2; Fig. 4, a section at the line *x x* thereof; and Fig. 5, a detail section of one of the cutters, having the form adapted to produce the outer edge of a tongue.

Similar numbers denote like parts in the several views of the drawings.

1 represents the ordinary slotted head, which is adapted for use in a molding-machine and is secured upon either the upright or horizontal spindles by means of the hole 2, and 3 are bracket-holders having formed therewith the tongues 4, adapted to fit the grooves 5 of the cutter-head and be secured therein by means of the bolts 6, whose heads 7 fit within the T's of the slots and are provided with the nuts 9, as will be readily understood by reference to the drawings.

The bracket-holders are adjustable on the head facewise by means of the screws 20. Formed with the lower end of these holders are offsets or brackets 10, upon the upper side of which are bolted the cutters 11, by means of suitable bolts 12, and these cutters are made similar to a saw, and when secured to the head form sections of a circle, so that in use their action is that of a saw. By this arrangement of cutters to produce a tongue upon the groove in the edge of a board two of the cutters which are diametrically opposite each other are so adjusted as to their horizontal plane that one will trim the upper edge of the board and the other the lower edge, and the two remaining cutters, which are of such a shape as to produce half of the groove, are so set as to operate first upon one side of the groove and then upon the other, which will reduce the action at any given time upon the board to such an extent as to prevent burning or tearing, which is of great advantage in this art, since it permits the proper working of inferior and soft woods and produces the work with less strain upon the working parts of the machine, and consequently with less power.

When a tongue is to be formed, two of the cutters which are diametrically opposite each other are arranged as before described to cut the upper and lower edges of the board, and their diameter is such as to produce this cut to a sufficient depth to rough out the tongue, and the remaining two cutters are of the shape shown in Fig. 5, and are so set as to finish and round the edge of the tongue.

It will be obvious that by the use of my improved cutters instead of the gouging and violent strain necessary to produce the work by the methods now in use the even and continuous action will be had upon the material similar to the action of a saw, which removes but small particles of the material at a time, and therefore produces better work with less strain upon the machine.

My improved cutters are equally applicable to the working of material for doors, sashes, and other beadings, and may be used either upon horizontally or vertically set heads, and may be adjusted to any extent within the limit of the slots 5.

One of the advantages of my improved

cutters is that should they become broken or worn they may be replaced by others without disturbing the adjustment of the holders by simply removing the bolts 12.

Having thus fully described my invention, what I claim as new and useful is—

In combination a cutter-head having T-shaped grooves in its sides, holders slidable on the faces of the cutter, brackets formed integral with the holders and extending outwardly at right angles therefrom, a tongue formed on the rear of each holder adapted to slide in the grooves, a bolt having a head engaging the undercuts of the grooves whereby the holders are held in position, cutters 11 having saw-teeth on the edge and provided with a straight rear edge to abut the holders and conform to the angle formed by the holder and bracket means for holding the cutters and the bracket and set-screws threaded through the holders and engaging the face of the cutter-head, as and for the purpose described.

In testimony whereof I have hereunto affixed my signature in the presence of two subscribing witnesses.

WILLIAM B. HOLBROOK.

Witnesses:
S. S. WILLIAMSON,
GEORGE MCCURDY.