(No Model.)

S. J. SHIMER.

CUTTER HEAD AND BIT.

No. 567,815. Patented Sept. 15, 1896.

Fig. 1.

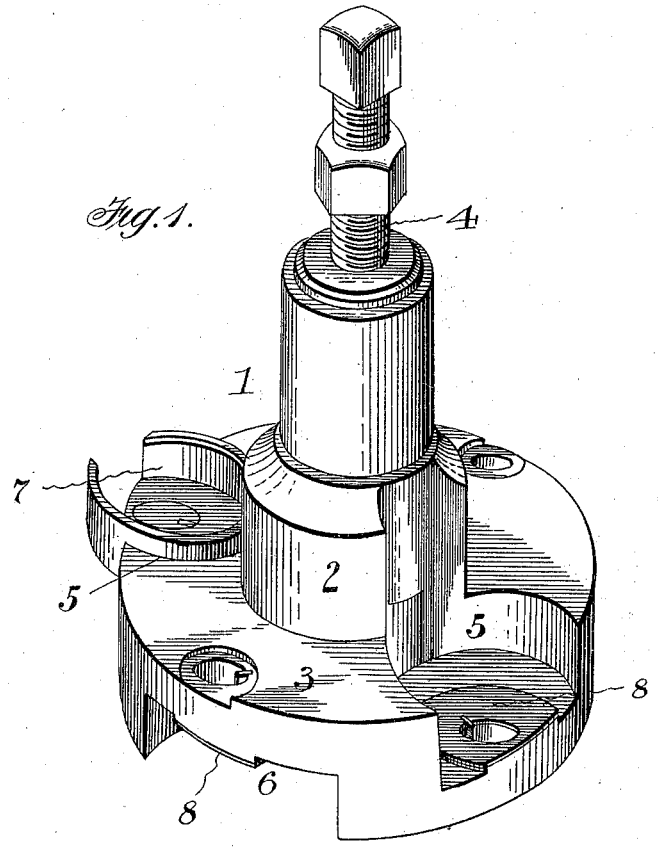
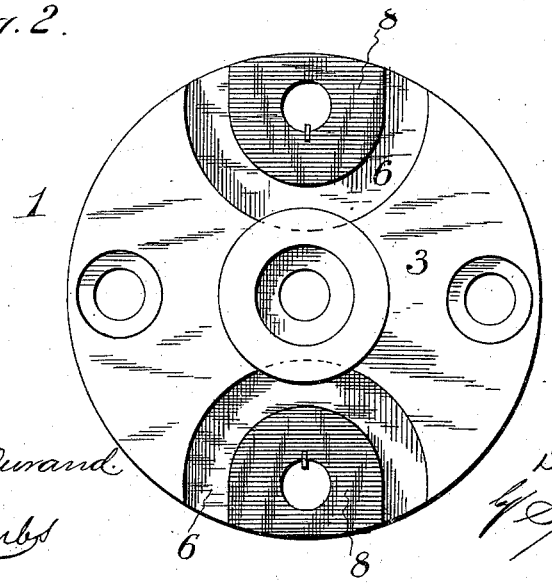


Fig. 2.



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UNITED STATES PATENT OFFICE.

SAMUEL JOHNSTON SHIMER, OF MILTON, PENNSYLVANIA.

CUTTER-HEAD AND BIT.

SPECIFICATION forming part of Letters Patent No. 567,815, dated September 15, 1896.

Application filed November 14, 1895. Serial No. 568,982. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL JOHNSTON SHIMER, a citizen of the United States, and a resident of Milton, in the county of Northumberland and State of Pennsylvania, have invented certain new and useful Improvements in Cutter-Heads; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

In the construction of cutter-heads and bits for woodworking machinery it is the common practice to make or cast the heads of brass and make the bits of highly-tempered steel. In matching-machines the bits are what are known as "circular" bits, which are secured to the heads by screw-bolts, which pass through apertures in the bit-seats. Owing to difficulties in the manufacture of the cutter-heads, it frequently happens that the facings of the bit-seats are formed with projections, depressions, or other irregularities forming a very imperfect seat, whereby it is impossible to secure perfect contact between the bits and seats. These imperfections are not due to the bits, as they can be placed in a lathe and turned perfectly true, but are caused by the imperfections of the cutter-head, which, owing to their irregular forms, cannot be so perfected. Many attempts have been made to overcome these defects, such as interposing washers between the bits and seats, and also by providing the bits with a facing of soft metal. While these improvements in a certain measure have overcome some of the objections, still they have not been entirely satisfactory in circular bits, owing to the tendency of the bits turning on their seats.

I have found by experiment that if the cutter-heads are provided at the points where the circular bits seat with a coating or facing of soft metal, permanently secured thereto, there will be no liability of the bits rotating or turning on their seats by reason of the percussion or force of the blow in use.

The invention consists in the novel construction and combination of parts hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 is a perspective view of a cutter-head constructed in accordance with my invention, three of the bits being removed. Fig. 2 is a bottom view, the bits being removed.

In the said drawings the reference-numeral 1 designates a cutter-head comprising the central hub 2, the flanges 3, and the bolt 4. The flange in the present instance is divided into four sections forming the bit-seats, two of which are on the upper surface, arranged directly opposite, and the other two on the other side, arranged at right angles to the upper bit-seats. These bit-seats are made by forming two recesses or chambers 5 in the upper surface of the flange of a semicircular shape and the under side of the flange with two similar-shaped recesses or chambers 6. These recesses or chambers are alternately arranged, one on the upper side and the next on the under side, so as to receive the circular matching bits or cutters which form the cut.

The numeral 7 designates the cutters, which are known as "circular" cutters, having central apertures for the passage of the securing-bolts, and are adapted to fit in the chambers of the head and seat upon the bit-seats.

The numeral 8 designates a facing or coating of lead or other soft metal permanently secured to the bit-seat, so as to compensate for irregularities or imperfections in workmanship, filling the grooves in the said seats and forming a perfectly true plane surface with which the bits contact. This facing is made very thin, being about one sixty-fourth of an inch in thickness, and when the bit is seated thereon and bolted down in place there will be no liability of the bit turning on its seat.

In Letters Patent granted to me April 1, 1884, No. 296,077, I have shown and described a straight cutter or bit, formed on its under side with a soft metal facing or coating, but this is for an entirely different purpose than that of the present invention. In the said patent the soft-metal coating is intended to prevent the entrance of chips between the bit and its seat, while in the present instance the soft-metal facing is attached to the seat, so as to fill in any imperfections or irregularities in workmanship, so as to present a per-

fectly plane surface to the seat and to prevent the bit from rotating or turning on its seat.

Where circular bit-seats are perfect when first made, they will become battered through long use, so that the bits will not crowd down in close contact therewith; but if the seats are coated or faced with soft metal, as described, the indents or irregularities will be filled up and present a perfect plane surface for the bits to seat upon.

Having thus fully described my invention, what I claim is—

1. As an improved article a cutter-head, the tool-marks and other irregularities in the bit-seats of which, are filled with soft metal permanently secured thereto, substantially as and for the purpose specified.

2. As an improved article a cutter-head formed with a circular bit-seat, the tool-marks or other irregularities in which are filled with soft metal compressed and permanently secured therein, substantially as and for the purpose specified.

3. The combination with a cutter-head having a circular bit-seat, the tool-marks and other irregularities in the face of which are filled with soft metal permanently secured thereto, of the circular bit bolted down upon the bit-seat so as to contact therewith and compressing the soft metal in the grooves and indentations, substantially as and for the purpose specified.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

SAMUEL JOHNSTON SHIMER.

Witnesses:

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