

June 10, 1924.

P. BASMAISON

1,497,474

PLANE BIT

Filed Sept. 22, 1923

FIG. 4.

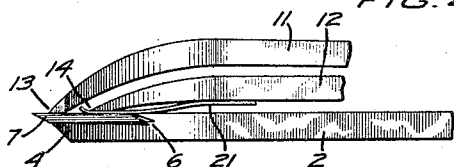


FIG. 1.

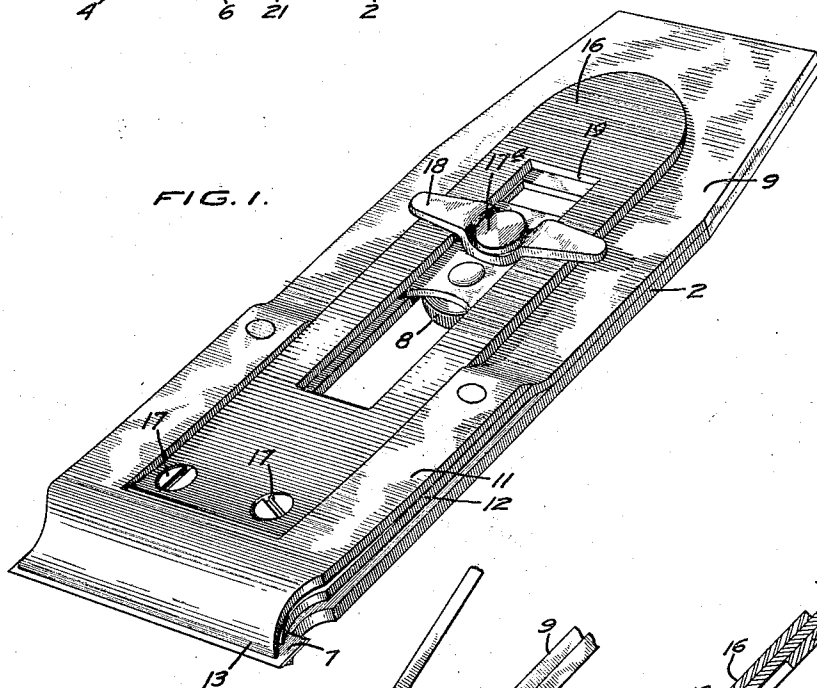


FIG. 2.

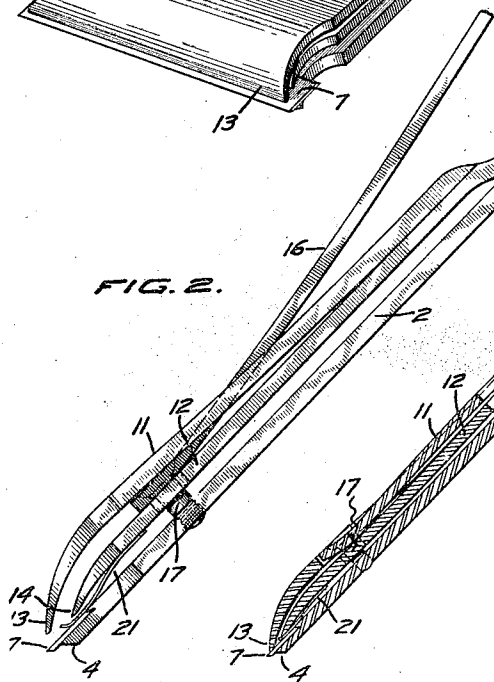
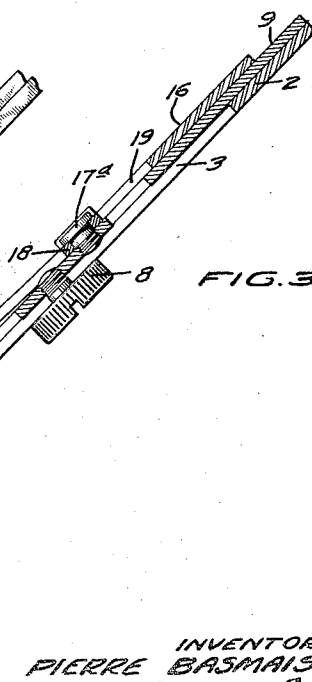


FIG. 3.



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UNITED STATES PATENT OFFICE.

PIERRE BASMAISON, OF SAN FRANCISCO, CALIFORNIA.

PLANE BIT.

Application filed September 22, 1923. Serial No. 664,239.

To all whom it may concern:

Be it known that I, PIERRE BASMAISON, a citizen of the United States, and a resident of the city and county of San Francisco, State of California, have invented a new and useful Plane Bit, of which the following is a specification.

My invention relates to bits for wood-working tools, and especially plane bits, and one of the objects of the invention is to provide a plane bit having a replaceable cutter with improved means for securing the cutter in operative position.

My invention possesses other objects and features of advantage, some of which, with the foregoing will be set forth in the following description of my invention. It is to be understood that I do not limit myself to the showing made by the said description, as I may adopt variant forms of my invention within the scope of the claims.

Referring to the drawings:

Figure 1 is a perspective view of the plane bit of my invention.

Figure 2 is a side elevation, drawn to an enlarged scale, of the lower portion of the plane bit.

Figure 3 is a longitudinal sectional view of the plane bit, showing the parts in position ready for use in the plane.

Figure 4 is a side elevation, on an enlarged scale of the lower portion of the plane bit showing the rabbeted lower edge of the cutter blade with the cutter clamped therein.

The plane bit of my invention comprises a cutter blade 2, formed with a slot 3 extending longitudinally therein along a median line, and having its lower end formed with a bevel 4, preferably at about 45° angle. The lower edge of the cutter blade is also formed with a rabbet 6, best shown in Figure 4, and this rabbet is under-cut as shown, at a rather sharp angle, so that the double edge replaceable cutter of bit 7, which is seated in the rabbet, is protected along its unexposed edge. It will be obvious that the beveled edge of the cutter interlocks in the under-cut portion of the rabbet and that such engagement helps to secure the cutter in place and prevent its disengagement accidentally.

Overlying the cutter blade and secured thereto by the screw 8 is a clamp plate 9. The screw 8 is threaded into the clamp plate and passes thru the slot 3 in the cutter blade

so that the clamp plate may be readily adjusted longitudinally, and to a limited degree, laterally, upon the cutter blade in the same way that the cap is usually adjusted on the bit of the ordinary double iron.

The lower portion of the clamp plate 9 is bifurcated to form resilient superposed leaves 11 and 12 which are spaced from each other and from the cutter blade, both however, curving inwardly to form spaced edges 13 and 14, respectively, at their lower extremities, adapted to bear, as shown, upon the cutter, and clamp it to the cutter blade. The inner or lower leaf 12 impinges upon the cutter opposite the point of support of the cutter upon the cutter blade, while the upper or outer leaf 11 impinges upon the cutter adjacent its cutting edge, serving also as a chip breaker in the manner similar to that of the ordinary cap. Longitudinal adjustment of the clamp plate upon the cutter blade positions the edge 13 of the leaf 11 relative to the cutting edge of the cutter, the considerations which determine this adjustment being well known to every woodworker.

Means are provided for pressing or clamping the leaves 11 and 12 tightly to the cutter blade so that the edges 13 and 14 engaging the cutter, hold it securely in position. Lying in a slot formed in the upper leaf 11 is a clamp lever 16 having its lower end somewhat curved, as shown best in Figures 2 and 3. The rounded portion of the curve forms a fulcrum bearing upon the upper surface of the lower leaf 12, thus dividing the clamp lever into two lever arms, on either side of the fulcrum. The lower and shorter lever arm is pivotally connected to the cutter blade by a pair of screws 17 which pass loosely thru apertures in the leaf 12. These screws are threaded into the cutter blade and are provided with heads which permit a slight pivotal movement of the clamp lever. The screws are adjustable to vary the tension or pressure applied by the lever, and the slot in the leaf 11 is formed so that no portion of the lever touches the leaf.

When the clamp lever is released, as shown in Figure 2, it extends upwardly at an angle from the rest of the structure, but when pressed downwardly to lie flat upon the clamp plate, it lies flush within the slot in the leaf 11 and extends upwardly along the main body of the clamp plate. When so pressed the action of the bent lever arms

is such as to press the lower leaf 12 toward the cutter blade and since the outer leaf 11 is connected to the leaf 12 at their inner ends, the outer leaf is also pressed towards the cutter blade, the proportions and adjustments being such that the edges 13 and 14 are clamped firmly upon the cutter and hold it securely in position.

Means are provided for holding the long lever arm of the clamp lever in the clamped position, as shown in Figure 3. Pivotally mounted on the clamp plate by a pivot pin 17^a is a button or latch 18. The clamp lever is formed with a slot 19 which readily passes over the wings of the button when the latter is turned to lie in the median line of the plane bit. When the clamp lever has been pressed against the clamp plate the button is turned to engage its wings over the clamp lever as shown in Figure 1. When the button is turned to release the clamp lever, the latter rises and the resilient leaves 11 and 12 also rise slightly from engagement with the cutter 7, so that it may be taken out for reversal or replacement.

Means are also provided for resiliently retaining the cutter in position after the release of the clamp lever and this is accomplished by a flat plate spring 21, suitably secured to the underside of the lower leaf 12, and so arranged that when the leaves have been released by the clamp lever the lower edge of the spring lightly engages the cutter with a force sufficient to retain it in place, but not sufficient to prevent its ready disengagement.

The edge of the spring is curved upwardly as shown, so to serve as a guide for the insertion of the cutter, and when the lower leaf is clamped down, the curved end of the spring is caught under the edge 14.

I claim:

1. A plane bit comprising a cutter blade, a cutter disposed in the end of said blade, a clamp plate secured at one end to said cutter blade and adapted at its free end to engage said cutter, a clamp lever pivotally connected to said cutter blade and bearing on the free end of said clamp plate to clamp the cutter against the blade, and means for securing the clamp lever in clamping position.

2. A plane bit comprising a cutter blade, a cutter disposed in the end of said blade, a clamp plate secured at one end to said cutter blade and adapted at its free end to engage said cutter, a clamp lever pivotally connected to said cutter blade and bearing on the free end of said clamp plate to clamp the cutter against the blade, and means for securing the clamp lever in clamping position, said clamp plate being bifur-

cated and with one portion adapted to engage the cutter adjacent its cutting edge to form a chip breaker and the other portion adapted to engage the cutter opposite its point of support on the cutter blade.

3. A plane bit comprising a cutter blade, a cutter disposed in the end of said blade, a clamp plate, means for adjustably securing the clamp plate at one end to the cutter blade, said clamp plate being formed with two resilient leaves having spaced clamping edges adapted to engage the cutter, and means for clamping the leaves to the cutter blade to secure the cutter in position.

4. A plane bit comprising a cutter blade, a cutter disposed in the end of said blade, a clamp plate having on one end resilient leaves adapted to engage the cutter, means for securing the other end of the clamp plate to the cutter blade, and means for clamping the leaves of the clamp plate upon the cutter to secure it in position.

5. A plane bit comprising a cutter blade, a cutter disposed in the end of said blade, a clamp plate, means for securing the clamp plate at one end to the cutter blade, said clamp plate being formed with superposed resilient leaves having spaced clamping edges adapted to engage the cutter, and clamping means arranged on the cutter blade and impinging directly on the adjacent leaf of the clamp plate for clamping both leaves upon the cutter to secure it in position.

6. A plane bit comprising a cutter blade, a cutter disposed in the end of said blade, a clamp plate having on one end resilient leaves adapted to engage the cutter, means for securing the other end of the clamp plate to the cutter blade, means for clamping the leaves of the clamp plate upon the cutter to secure it in position, and a retaining spring arranged on the clamp plate and resiliently bearing on the cutter.

7. A plane bit comprising a cutter blade, a cutter disposed in the end of said blade, a clamp plate, means for securing the clamp plate at one end to the cutter blade, said clamp plate being formed with superposed resilient leaves having spaced clamping edges adapted to engage the cutter, and the upper of said leaves being formed with a slot, a clamp lever adapted to lie in said slot and fulcrumed on the lower leaf, means for pivotally connecting the short end of the lever to the cutter blade, and means for releasably securing the long end of the clamp lever to the cutter blade.

In testimony whereof, I have hereunto set my hand.

PIERRE BASMAISON.