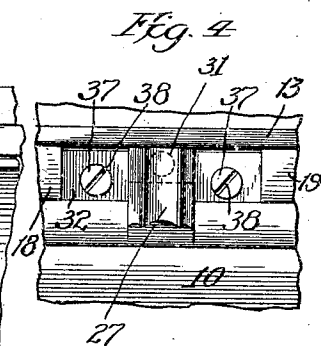
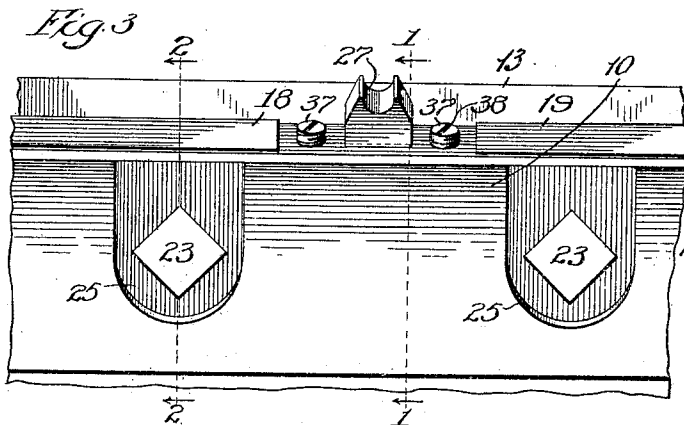
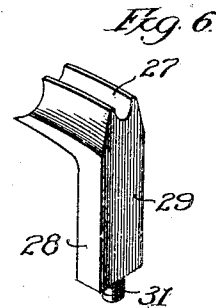
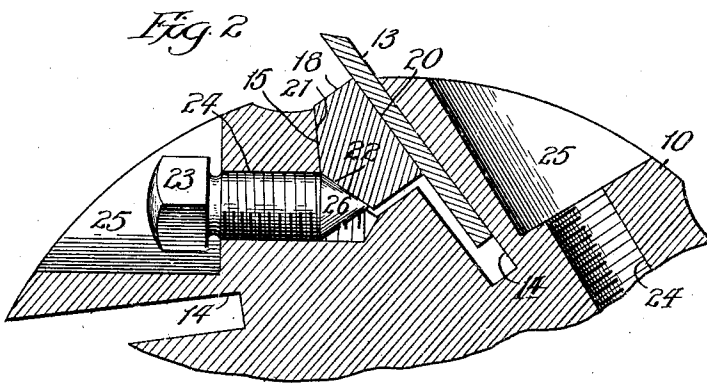
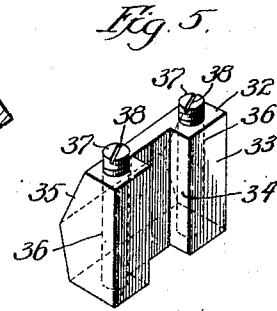
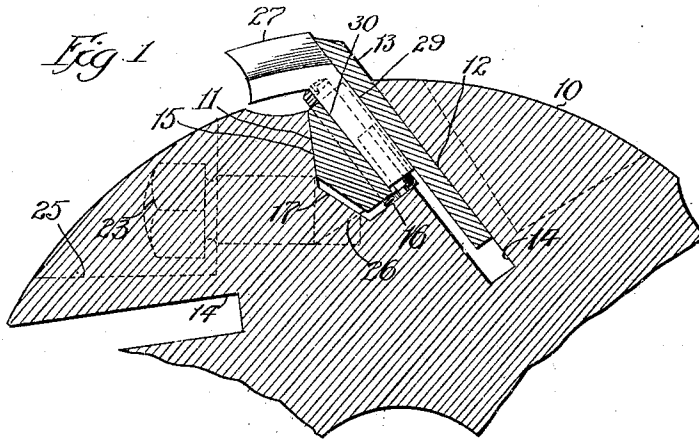


B. D. STEVENS.
HOLDING DEVICE FOR PLANER HEAD BITS.
APPLICATION FILED AUG. 26, 1909.

954,146.

Patented Apr. 5, 1910.



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UNITED STATES PATENT OFFICE.

BURT D. STEVENS, OF BELOIT, WISCONSIN, ASSIGNOR TO THE BERLIN MACHINE WORKS, OF BELOIT, WISCONSIN, A CORPORATION OF WISCONSIN.

HOLDING DEVICE FOR PLANER-HEAD BITS.

954,146.

Specification of Letters Patent.

Patented Apr. 5, 1910.

Application filed August 26, 1909. Serial No. 514,686.

To all whom it may concern:

Be it known that I, BURT D. STEVENS, a citizen of the United States, residing at Beloit, in the county of Rock and State of Wisconsin, have invented certain new and useful Improvements in Holding Devices for Planer-Head Bits, of which the following is a specification.

This invention pertains in general to holding or securing devices for maintaining planer-head tools fixedly and rigidly in position on the planer-heads, but concerns more particularly holding or securing devices for beader bits used in connection with the ordinary, straight planing knives. Where such bits and knives are used in conjunction in planer-heads, it is frequently desirable to be able to remove the bits without disturbing the knives proper, so as to permit sharpening and jointing of the latter, and to replace such bits in exactly the same positions which they previously occupied.

The improved and simple device described and illustrated in detail herein constitutes one embodiment of the invention capable of performing this desired and useful function and purpose.

In the accompanying drawings illustrating such an embodiment, like reference characters refer to the same parts throughout the various views, and in these drawings,—Figure 1 is a fragmentary cross section through a planer-head on line 1—1 of Fig. 3, and illustrates the manner of holding the beader bit fixedly in operative position; Fig. 2 is a similar cross section on line 2—2 of Fig. 3, and shows the locking or securing means used for holding the planer-knife in its groove; Fig. 3 is a fragmentary elevation of a planer-head equipped with my improved means; Fig. 4 is a fragmentary plan view of a portion of the head shown in Fig. 3; Fig. 5 is a perspective view of the locking or securing member for the bit; and Fig. 6 is a perspective view of the bit itself.

By reference to the drawing, it will be noted that the planer-head 10 has extended longitudinally of its outer cylindrical surface an undercut groove 11 having a flat, inclined surface 12 against which the back of the flat planer-knife 13 is adapted to bear, the inner portion of such knife partially occupying the elongated, inner extension 14 of the groove. Opposite the surface 12,

the groove has an inclined surface 15 extended inwardly from the contracted mouth of the groove, giving the latter its general undercut formation. The groove has in addition, disregarding the extension 14, a flat bottom or seat 16, connected to the lower edge of the surface 15 by another inclined face 17. The planer-knife 13 is held and maintained rigidly and fixedly in adjusted position by means of a plurality of wedge keys, of which fragments of two, 18 and 19, have been illustrated. Each of such gibs or keys has, as is shown, a flat surface 20 bearing against the knife 13 and an opposite surface 21 inclined to the surface 20 so as to give the gib or key a wedge conformation or shape. Also, the same side of the gib is equipped with an oppositely beveled surface 22 adjacent to the surface 21, and coacting with the former I employ a plurality of adjusting screws 23 extended through threaded openings 24 in the wall of the planer-head between the undercut groove and the cavities or recesses 25 provided on the periphery of such planer-head for the accommodation of the angular heads of the screws. Each of these screws has a conical inner end 26 coöperating with and bearing against the inclined surface 22 of the gib. It will therefore be apparent that after the knife 13 has been adjusted to the proper outstanding position, it may be maintained in such relation by the turning of the screws 23, the inward travel of which causes their conical ends 26 to force the gib or key outwardly, securing a firm and effective wedging action by coöperation with the surface 15, whereby an adequate pressure is obtained on the knife to hold and maintain it in operative position.

When it is desired to use beader bits or the like in the planer-head, the locking gibs or keys for the main planer-knife 13 are shifted apart longitudinally so as to provide for the accommodation of the bit between their adjacent ends, as is clearly shown, for example, in Figs. 3 and 4. Such a bit 27, I have illustrated in perspective in Fig. 6, showing that the same is equipped with a shank 28 adapted to fit in the undercut groove, such shank having the parallel plane surfaces 29 and 30. The face 29 of the beader-bit shank is adapted to lie directly against the face of the planer-knife 13, as is shown in Fig. 1, the position of such bit being de-

terminated and adjustable by means of a screw 31 taking into a threaded aperture in the lower end of the shank, the exposed end of such screw bearing against the bottom 16 of the groove 11. Obviously, by the employment of such screw-stop or adjusting means, the bit may be taken out and replaced always in the same position as regards its projection beyond the face of the planer-head, lateral displacement of such bit being prevented by the means hereinafter set forth.

For a locking means for such bit I employ, in the particular embodiment shown, a wedge gib or key 32 having a flat face 33 grooved at 34 for the accommodation of the shank 28 of the bit, the construction being such that this gib or key straddles the shank, as is plainly shown. The other face of this locking member is inclined or beveled at 35 for cooperation and coaction with the inclined surface of the undercut groove, and in order to secure the wedging action between such surfaces to obtain a firm hold on the bit, I provide the gib or key 32 with a pair of threaded apertures 36 extended downwardly therethrough, such holes accommodating the pair of tightening screws 37, the top ends of which are slotted at 38 for the application of a screw-driver, while the lower ends, as is shown in Fig. 1, bear against the seat or ledge 16, so that the turning of such screws forces the gib or key outwardly, while the wedge or beveled surfaces 35 and 15 act to push the key or gib laterally into firm engagement with the surface 30 of the shank. No binding action, however, is intended to be secured by the gib or key 32 directly, as distinguished from its action through the shank of the bit, on the main planer-knife 13, the thickness of the gib being such that the surface 33 of the same is out of contact with the knife 13, as I have illustrated in Fig. 1.

By making the keys 18 and 19 of convenient short length, the beader bits may be introduced into position at any place along the length of the planer-head, and both the straight-edged knife 13 and the one or more bits may be effectively and efficiently held in operative relation by the screws and gibs shown and described. When it is desired to remove such a bit without disturbing the planer-knife, as, for example, to permit sharpening and jointing of the knife while held in operative position on the head, it is merely necessary to loosen the screws 37 somewhat, thereby freeing the bits and their shanks, which may be readily picked out. After the planer-knives have been sharpened, the bits may be replaced in exactly the same position which they previously occupied, their projection being determined by the screws 31, and after such replacement the turning of the screws 37 in the tightening direction will again cause the clamping or securing of the bits in their former positions.

It will therefore be apparent that such bits may be easily and readily taken out and replaced without in any way disturbing the adjustment of the main planer-knives. Obviously also, the presence of the bit-shanks and the wedge-gibs 32 in the gap between the gibs 18 and 19 acts by pressure on the knife 13 to compensate for such spreading apart of the gibs 18 and 19 so that the planer-knife throughout its entire length is held in position under the required pressure.

The invention although described herein in connection with one specific embodiment, is not limited to the exact structural features of the latter, because these may be modified within comparatively wide limits without departure from the substance of the invention.

I claim:

1. In a device of the character described, the combination of a planer-head having a groove on its periphery, a planer-knife in said groove, means to maintain said knife fixedly in position in said groove, a cutter or bit in said groove bearing against said knife, and independent holding means in said groove acting to hold said cutter in position, substantially as described.

2. In a device of the character described, the combination of a planer head having a groove on its periphery, a planer knife in said groove, means to maintain said knife securely in position in said groove, a cutter or bit in said groove, a wedge gib in said groove and bearing against the cutter, and one or more screws extended through said gib and bearing on the bottom of said groove, said screw or screws being adapted to force the gib toward the contracted mouth of the groove to securely hold the cutter in position, substantially as described.

3. In a device of the character described, the combination of a planer-head having an undercut groove on its periphery, a planer-knife in said groove, means to maintain said knife fixedly in position in said groove, a cutter or bit in said groove bearing against said knife, and an independent gib straddling said cutter or bit and acting to hold the same in position, said gib being out of contact with said knife, substantially as described.

4. In a device of the character described, the combination of a planer head having an undercut groove on its periphery, a planer knife in said groove, means to maintain said knife securely in position in said groove, a cutter or bit in said groove bearing against said knife, an independent gib straddling said cutter or bit, and a pair of screws extended through said gib on opposite sides of the cutter, said screws being adapted to force the gib toward the contracted mouth of the groove to securely hold the cutter in position, substantially as described.

5 5. In a device of the character described,
the combination of a planer-head having an
undercut wedge-shaped groove on its pe-
riphery, a planer-knife in said groove, a
10 plurality of wedge gibs in said groove,
means to wedge said gibs against said knife
to hold the latter fixedly in position, a cut-
ter or bit in said groove between two of said
gibs, said cutter or bit bearing against said
15 knife, an independent gib or key straddling
said cutter or bit and acting to hold the same
in position, said gib being out of contact

with said knife, and one or more adjusting
screws extended through said independent
gib or key and bearing on the bottom of said 15
groove, said screw or screws being adapted
to force said independent gib toward the
contracted mouth of the groove to wedge
said gib against the cutter, substantially as
described.

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