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D. S. HALL

TOOL FOR APIARISTS

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Fig. 1.

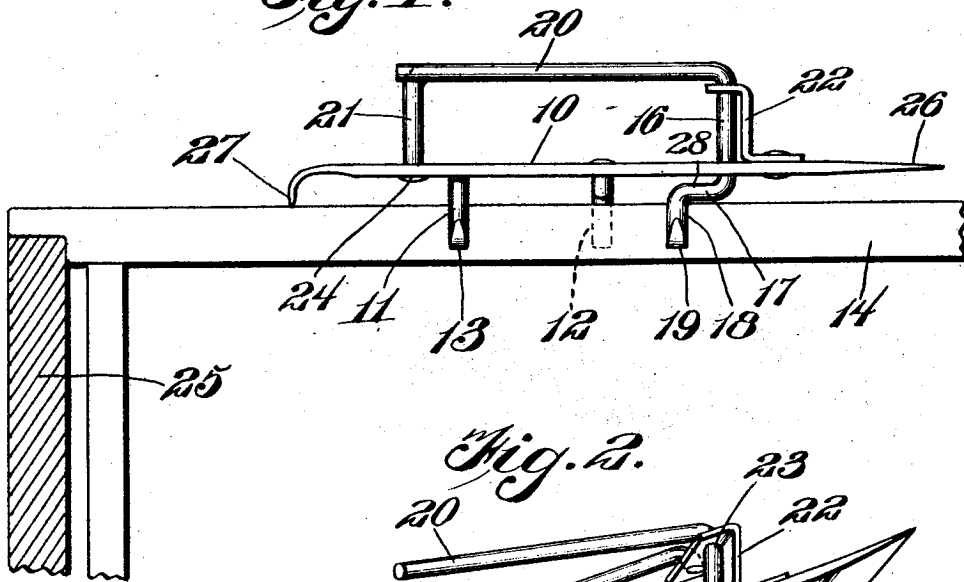


Fig. 2.

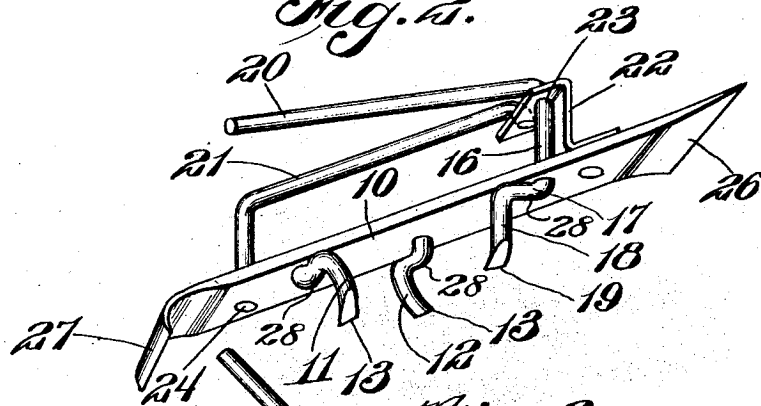
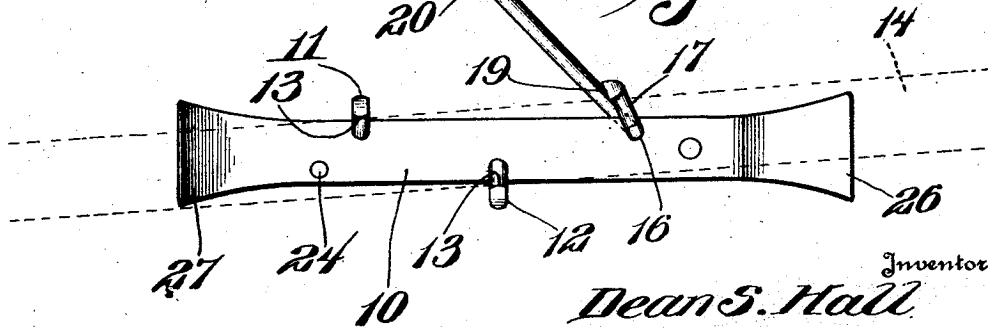


Fig. 3.



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TOOL FOR APIARISTS.

Application filed November 1, 1924. Serial No. 747,209.

To all whom it may concern:

Be it known that I, DEAN S. HALL, a citizen of the United States, residing at Marshfield, in the county of Washington and State of Vermont, have invented certain new and useful Improvements in Tools for Apiarists, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to a tool for apiarists, and has for a particular object thereof the provision of a tool of general utility for care of hives and which is particularly adapted for removal and lifting of the frames of the hive.

An important object of the invention is to provide a device of this character so constructed that the frame may be readily grasped to lift the same from the hive with the use of but one hand of the operator, thus leaving the remaining hand free to enable the operator to operate the smoker.

A further object of the invention is to produce a device of this character which is free from delicate adjustments requiring the unobstructed use of the hands, thus enabling the operator to employ the device while wearing gloves and to thereby save himself from the attacks of the bees disturbed by the removal of the frame.

A further object of the invention is to provide a device of this character the construction of which is such that crushing of the bees collected upon the surface of the frame which is being removed is reduced to the greatest possible extent.

A further object of the invention is to provide a device of this character which, in addition to grasping a frame to permit its withdrawal from the hive, will rigidly hold the frame after such withdrawal, and which may, therefore, be employed for holding the frame while jarring the same against some rigid surface to shake therefrom any bees which may be collected thereon.

A still further object of the invention is to produce a device of this character the construction of which is such that the application of the device to the ordinary beehive tool employed in scraping frames, prying them loose from the hives and for similar operations may be effected without interfering with the efficient operation of such tool by enabling the operator to have at

hand in a single unit tools for loosening the frame, for lifting the frame from position after it is loosened and for scraping from the frame, after it is removed, propolis which may have been deposited thereon.

These and other objects I attain by the construction shown in the accompanying drawings, wherein for the purpose of illustration is shown a preferred embodiment of my invention and wherein:—

Figure 1 is a side elevation showing a tool constructed in accordance with my invention applied to the top bar of a hive frame to remove the same;

Figure 2 is a perspective view of the tool detached;

Figure 3 is a bottom plan view of the tool with the movable jaw in the open position, the manner of engaging the tool with the top bar being indicated by the showing of the top bar in dotted lines.

Referring now more particularly to the drawings, the numeral 10 indicates a base to the under surface of which are secured a pair of fixed grasping members 11 and 12. These grasping members are secured at opposite sides of the base and at points spaced longitudinally of the base, and have their grasping points 13 arranged in planes parallel to the longitudinal axis of such base and spaced apart transversely of the base a distance less than the width of the upper frame member 14 of a hive frame 15. Due to the spacing of the members longitudinally of the base, by placing the base upon the frame member so that the longitudinal axis of the frame member and base are in angle to one another, the points may be passed downwardly at opposite sides of the frame member 14. Attention is called to the fact that with the base in such position and the points arranged at opposite sides of the frame bar, if the base be moved so that its longitudinal axis parallels the longitudinal axis of the frame bar, these engaging points 13 will be forced into opposite sides of the frame bar so that the frame bar will be very firmly grasped.

In order to accomplish this movement of the base upon the frame bar, I provide a shaft 16 rotatably directed through the base and having upon the under side of the base a crank 17 the terminal portion of which is provided with a grasping element 18

similar to the grasping elements 11 and 12 and having at its lower end a grasping point 19 similar to the grasping points 13. The upper end of this shaft is provided with an angular handle portion 20 by means of which the shaft may be rotated. When the handle portion is swung outwardly, the crank is moved outwardly and it will be obvious that when this crank has been swung outwardly to a point where a plane including the grasping element 11 is arranged at the same side of the bottom of the base as the crank and the grasping element 18 of the crank is spaced transversely of the base a distance greater than the width of the bar, these grasping elements may be placed at opposite sides of the bar, the grasping element 12 being arranged at one side of the bar, while the grasping elements 11 and 18 are arranged at the opposite side thereof. If the handle 20 is now swung over the base to a point where it parallels the base, the base by the engagement of the grasping element 18 against the side of the bar is moved into a position where it extends longitudinally of the bar and accordingly to a position where the grasping elements 13 and the grasping element 19 are engaged in the sides thereof, this engagement being at longitudinally spaced points at one side of the bar and at the opposite side of the bar at a point intermediate these points. It will be obvious that the bar will be rigidly held against movement with relation to the base so long as the handle member remains in this position.

In order to assist in holding the handle member longitudinally of the base, I provide upon the base a fixed handle 21 which the handle section 20 parallels when the grasping of the bar has been accomplished. This fixed handle preferably has that end thereof adjacent the shaft 16 secured to a bracket 22 carried by the base, this bracket forming a second support or bearing for the shaft, as indicated at 23. The opposite end of the fixed handle may be directly secured to the base, as indicated at 24. The fixed handle being rigid to the base provides a means for manipulating the base as well as a means for holding the shaft handle in proper position so that but one hand is necessary in manipulating the base and the bar carried thereby, thus leaving the other hand of the operator free to operate a blower, scraper or any other implement which it is desired to employ.

It is well known to those familiar with the art that the frames 15 of the hive are often firmly glued at the ends of the top bars 14 thereof to the upper wall 25 of the hive by the bees thus necessitating, before the frame can be removed, that it be separated at this point. In order that this may be readily accomplished without the neces-

sity of providing an additional tool, the base 10 is preferably in the form of a beehive tool having one end thereof flattened and widened, as indicated at 26, to provide a scraping and prying implement which may be inserted between the top of the hive and the end of the bar to free the bar. The opposite end 27 is similarly widened and flattened and, in addition, is bent toward that side of the base upon which the grasping elements 11 and 12 are arranged. This bending provides a greater leverage in freeing the bars from the hive wall 25.

As stated above, the base proper is in the form of an ordinary hive tool and as such is not claimed by me as my invention, this hive tool being old and well known in the art. It is further known to those familiar with the art that when the cover is removed from the hive, for the purpose of removing the frames 15, bees disturbed by the removal of the cover collect upon the upper surface of these frames and accordingly are often crushed in handling of the frames. In order to prevent this crushing, as far as possible, the attaching portions 28 of the grasping elements 11 and 12 and the crank 17 are made of such thickness that they will maintain the upper surface of the bar in spaced relation to the lower face of the base a distance such that bees disposed upon the surface will not be crushed by the upper surface of the bar and the opposed surface of the base. This spacing is further such that the angular end 27 of the base will clear the bar as the base is moved into alignment with the bar. At this time the edge of this angular scraping end 27 will come into contact with the upper surface of the bar so that it actually assists in maintaining a spaced relation of the base and bar.

It will be obvious that a structure of this character will be very useful in handling the frames of hives and is capable of a certain range of change and modification without materially departing from the spirit of my invention, and I accordingly do not limit myself to such specific structure as hereinbefore set forth except as hereinafter claimed.

I claim:—

1. Means for removing and manipulating the frames of beehives, the frame having a top bar, said means comprising a base, a pair of gripping elements carried by said base at points spaced longitudinally of the base; said gripping elements being spaced transversely of the bar a distance less than the width of the top bar, and means carried by the base engaging the side of a top bar disposed between the gripping elements for shifting the base upon the top bar to a position where it parallels said top bar.

2. Means for removing and manipulating the frames of beehives, the frame having a top bar, said means comprising a base, a pair of gripping elements carried by said base at points spaced longitudinally of the base, said gripping elements being spaced transversely of the bar a distance less than the width of the top bar, means carried by the base engaging the side of a top bar disposed between the gripping elements for shifting the base upon the top bar to a position where it parallels said top bar, and means for maintaining a bee space between adjacent faces of the base and top bar.

3. Means for removing and manipulating the frames of beehives, the frame having a top bar, said means comprising a base, a pair of gripping elements carried by said base at points spaced longitudinally of the base, said gripping elements being spaced transversely of the bar a distance less than the width of the top bar, means carried by the base engaging the side of a top bar disposed between the gripping elements for shifting the base upon the top bar to a position where it parallels said top bar, and means for maintaining a bee space between adjacent faces of the base and top bar including portions connecting said gripping elements and base extending between the base and top bar.

4. Means for removing and manipulating the frames of beehives, the frame having a top bar, said means comprising a base, a pair of gripping elements carried by said base at points spaced longitudinally of the base, said gripping elements being spaced transversely of the bar a distance less than the width of the top bar, a shaft rotatably directed through the base and having a crank, and a third gripping element carried by said crank and adapted to engage the side face of the top bar at the same side thereof as one of said gripping elements and at a point spaced longitudinally of the top bar from the last named gripping element.

5. Means for removing and manipulating the frame of beehives, the frame having a top bar, said means comprising a base, a pair of gripping elements carried by said base at points spaced longitudinally of the base, said gripping elements being spaced transversely of the bar a distance less than the width of the top bar, a shaft rotatably directed through the base and having a crank, and a third gripping element carried by said crank and adapted to engage the side face of the top bar at the same side thereof as one of said gripping elements and at a point spaced longitudinally of the top bar from the last named gripping element, the base having a handle, the shaft having a handle section extending adjacent the handle of the base when the shaft is rotated to shift the base upon an engaged top

bar to a position paralleling the top bar whereby engagement of the gripping element of said shaft with the top bar and support of the base through the handle thereof may be accomplished by the use of one hand. 70

6. Means for removing and manipulating the frames of beehives, the frame having a top bar, said means comprising a base, a pair of gripping elements carried by said base at points spaced longitudinally of the base, said gripping elements being spaced transversely of the bar a distance less than the width of the top bar, and means carried by the base engaging the side of a top bar disposed between the gripping elements for shifting the base upon the top bar to a position where it parallels said top bar, said base being flattened and broadened at opposite ends thereof to provide scraper blades. 85

7. Means for removing and manipulating the frames of beehives, the frame having a top bar, said means comprising a base adapted to be arranged upon the top bar, the base having a pair of gripping elements adjacent one edge thereof and adapted to engage one side of the top bar, a third gripping element arranged at the opposite side of the base intermediate the first named gripping elements and means for shifting one of the first named gripping elements transversely of said base. 95

8. Means for removing and manipulating the frames of beehives, the frame having a top bar, said means comprising a base adapted to be arranged upon the top bar, the base having a pair of gripping elements adjacent one edge thereof and adapted to engage one side of the top bar, a third gripping element arranged at the opposite side of the base intermediate the first named gripping elements, means for shifting one of the first named gripping elements transversely of said base, and means for maintaining a bee space between the top bar and the base providing means for connecting said gripping elements to the base. 100

9. Means for removing and manipulating the frames of beehives, the frame having a top bar, said means comprising a base adapted to be arranged upon the top bar, the base having a pair of gripping elements adjacent one edge thereof and adapted to engage one side of the top bar, a third gripping element arranged at the opposite side of the base intermediate the first named gripping elements, and means for shifting one of the first named gripping elements transversely of said base, said base being flattened and broadened at opposite ends thereof to provide scraper blades. 105 110 115 120 125

10. Means for removing and manipulating the frames of beehives, the frame having a top bar, said means comprising a base adapted to be arranged upon the top bar, 130

the base having a pair of gripping elements adjacent one edge thereof and adapted to engage one side of the top bar, a third gripping element arranged at the opposite side of the base intermediate the first named gripping elements, and means for shifting one of the first named gripping elements transversely of said base, said base being flattened and broadened at opposite ends thereof to provide scraper blades, one of said flattened ends being disposed at an angle to the base and directed toward the top bar upon which the tool is arranged.

11. Means for removing and manipulating the frames of beehives, the frame having a top bar, said means comprising a base adapted to be arranged upon the top bar, the base having a pair of gripping elements adjacent one edge thereof and adapted to

engage one side of the top bar, a third gripping element arranged at the opposite side of the base intermediate the first named gripping elements, and means for shifting one of the first named gripping elements transversely of said base, said base having upon its upper surface a handle, said means for shifting the gripping element including an angular handle for the gripping element swinging in the plane of said handle and paralleling and closely approximating said handle when the gripping element is arranged most nearly adjacent that side of the base bearing the third gripping element.

In testimony whereof I hereunto affix my signature.

DEAN S. HALL.