(No Model.)

J. S. & J. FRAY.

TOOL HANDLE.

No. 360,426. Patented Apr. 5, 1887.

Fig. 1.

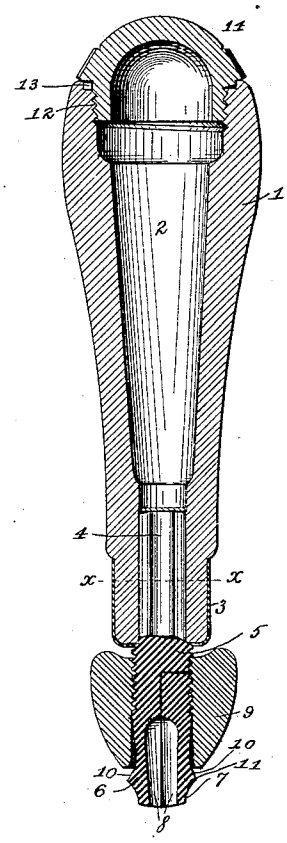


Fig. 4.

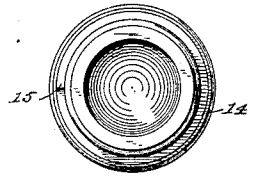


Fig. 2.

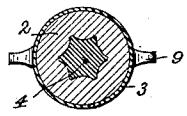
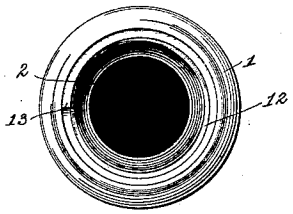


Fig. 3.



Witnesses:

C. E. Ruggles

E. D. Smith

Inventor:

John S. Fray and
James Fray
By A. M. Wooster
Atty

N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

JOHN S. FRAY AND JAMES FRAY, OF BRIDGEPORT, CONNECTICUT.

TOOL-HANDLE.

SPECIFICATION forming part of Letters Patent No. 360,426, dated April 5, 1887.

Application filed August 16, 1886. Serial No. 210,967. (No model.)

To all whom it may concern:

Be it known that we, JOHN S. FRAY and JAMES FRAY, citizens of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Tool-Handles; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to the manufacture of tool-handles, and has for its object to improve their construction and mode of operation without in any way increasing the cost of manufacture.

With these ends in view we have devised the novel construction of which the following description, in connection with the accompanying drawings, is a specification, numbers being used to indicate the several parts.

Figure 1 is a central section of the device complete; Fig. 2, a cross-section of the handle on the line *x x;* and Figs. 3 and 4 are, respectively, plan views of the bottom of the handle, showing the tool-carrying recess, and of the cap or cover therefor inserted.

1 denotes a handle, which is preferably made of wood, and is provided with an internal recess, 2, which serves as a tool-holder.

3 is the ferrule, and 4 the shank, which is made angular in cross-section or provided with projections, which hold it from turning when driven into the upper end of the handle, as is clearly shown in Fig. 2.

5 is the head, and 6 the fixed jaw, both of which are made integral with the shank. The diameter of the head is slightly greater than that of the shank. In assembling, the shank is driven in until the base of the head rests upon the ferrule, as is clearly shown in Fig. 1.

7 is the detached jaw, which corresponds in shape and size with the fixed jaw. The faces of the two jaws lie parallel with each other, and each is provided with a recess, 8, slightly enlarged at the bottom, in which the tools are clamped when the device is in use.

The peculiarity of our construction is that the head and both jaws are provided with an external screw-thread, which is engaged by an internal screw-thread upon a sleeve, 9, the construction being such that the sleeve is held in position by engagement with the portion of the thread upon the fixed jaw and head, and the detached jaw is held in position by engagement with the screw-thread of the sleeve. The internal screw-thread of the sleeve extends from the lower end thereof for about half of its length, the diameter of the internal recess beyond the screw-thread being slightly enlarged and the diameter of the jaws being reduced, so that there is no engagement between said jaws and sleeve between the ends of the screw-threads and inclines 10 upon the outside of the jaws. The jaws project a short distance beyond the end of the sleeve and are provided with enlargements 11, the diameter of which is sufficient to cause the jaws to be firmly clamped against the shank of a tool by engagement of the sleeve with the inclines when the sleeve is turned outward.

An important result accomplished by our novel construction is that the respective threads of the sleeve and the jaws constitute inclines, which act to close the base of the detached jaw upon the tool-shank at the same instant that the outer end of the sleeve is acting on the outer end of this jaw. By thus causing both ends of the detached jaw to move inward together the tool-shank is firmly grasped by the entire length of the jaw, which adjusts itself to different sizes and shapes of shanks.

This handle is adapted for all classes of tools—such, for example, as awls, reamers, screw-drivers, &c. We have not deemed it necessary to illustrate the tools, as they form no portion of our present invention, it being simply necessary that the shanks of the tools should be made to correspond, approximately, in shape with the recesses in the jaws, so that they will be held firmly when the jaws are clamped together. At the base of the handle we provide an internal screw-thread, 12, which extends inward a short distance from the outside and terminates abruptly in a shoulder, 13. The cap 14 is provided with a corresponding external screw-thread, which terminates abruptly in shoulder 15.

As stated above, this class of handles is almost invariably made of wood, and considerable trouble has heretofore been caused by the shrinking and swelling of the wood. As these screw-threads have heretofore been made—

that is, without shoulders—the handles have frequently been screwed up so tightly that when slight swelling of the wood took place from dampness it was almost impossible to turn out the cap, and the threads themselves have frequently been broken in loosening and unloosening the cap. These objections are wholly overcome by our improved construction, which provides a positive stop—that is, the two shoulders meet squarely, there being no incline to permit variation with varying conditions of the wood—so that "setting" of the cap is made impossible.

It will of course be understood that the details of construction may be considerably varied without departing from the spirit of our invention.

We claim—

1. The head, fixed jaw, and detached jaw having an external screw-thread, both of said jaws having enlargements 11, with inwardly-curved inclines 10, in combination with the sleeve having an internal screw-thread adapted to engage the thread upon the jaws and head, and also engaging the incline of said enlargements, whereby the jaws are closed upon the shank of the tool as the sleeve is turned outward.

2. The head, shank, and fixed jaw formed in a single piece and provided with an external screw-thread, and the detached jaw, whose face lies parallel with the fixed jaw and whose back is provided with a screw-thread, said jaws having at their outer ends enlargements 11, with inwardly-curved inclines 10, in combination with a sleeve having an internal screw-thread a portion of its length, adapted to engage the head and both jaws, and whose outer end acts to close the jaws by engagement with the inclines upon the enlargements.

3. A tool-handle having an internal screw-thread at its base terminating in an abrupt shoulder, 13, in combination with a cap having a corresponding external screw-thread terminating in an abrupt shoulder, 15, whereby a positive stop is provided and setting of the cap is prevented.

4. The head and fixed jaw provided with an external screw-thread, and a detached jaw having a screw-thread registering therewith, both of said jaws having recesses in their faces and enlargements at their outer ends, with inwardly-curved inclines, in combination with a sleeve having an internal screw-thread adapted to engage the thread on the head and jaws, said threads acting in connection with said inclines to move both ends of the jaw inward together, so that a tool-shank is grasped its entire length.

In testimony whereof we affix our signatures in presence of two witnesses.

JOHN S. FRAY.
JAMES FRAY.

Witnesses:
A. M. WOOSTER,
C. E. RUGGLES.