(No Model.)

J. C. TROVILLION.

COMBINED SCREW HOLDER, SCREW DRIVER, AND COUNTERSINK.

No. 382,670. Patented May 8, 1888.

Fig. 1.

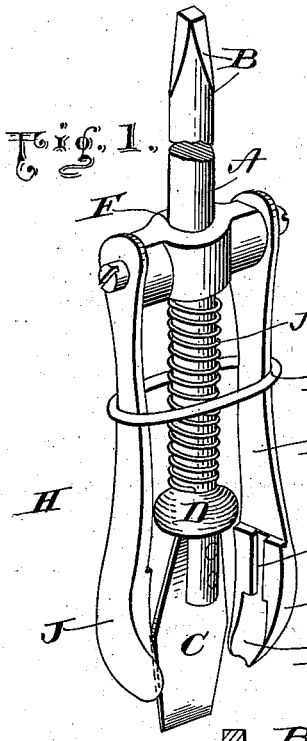


Fig. 2.

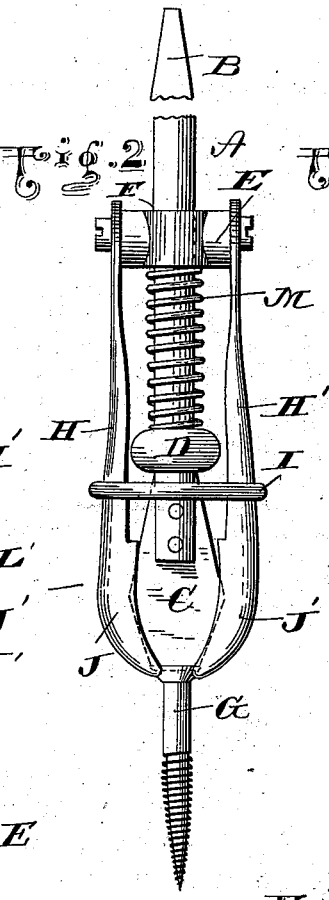


Fig. 3.

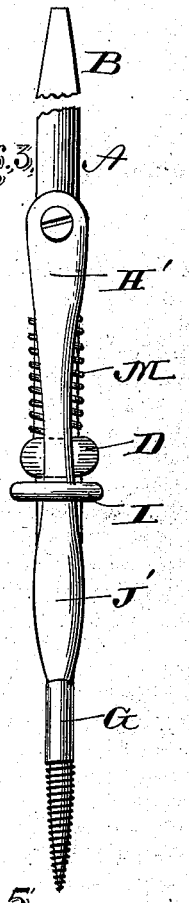


Fig. 4.

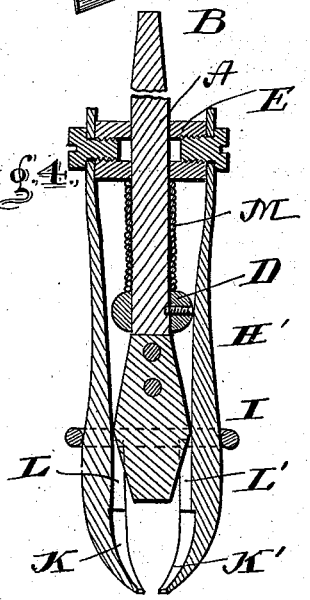


Fig. 5.

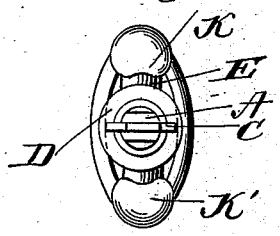
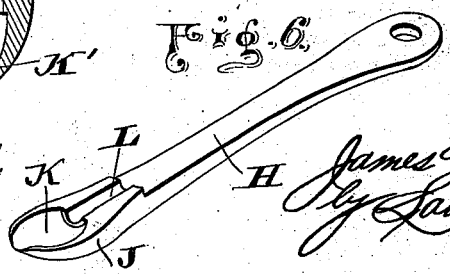


Fig. 6.



WITNESSES.

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UNITED STATES PATENT OFFICE.

JAMES C. TROVILLION, OF SANBURN, ILLINOIS.

COMBINED SCREW-HOLDER, SCREW-DRIVER, AND COUNTERSINK.

SPECIFICATION forming part of Letters Patent No. 382,670, dated May 8, 1888.

Application filed January 17, 1888. Serial No. 261,001. (No model.)

To all whom it may concern:

Be it known that I, JAMES C. TROVILLION, a citizen of the United States, and a resident of Sanburn, in the county of Johnson and State of Illinois, have invented certain new and useful Improvements in Combined Screw-Holders, Screw-Drivers, and Countersinks; 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, and in which—

Figure 1 is a perspective view of my device, showing the jaws open. Fig. 2 is a side elevation of the device, showing a screw inserted and clamped firmly between the jaws. Fig. 3 is a side elevation of the device at right angles to the view shown in Fig. 2. Fig. 4 is a vertical sectional view showing the device in position for countersinking. Fig. 5 is an end view looking toward the movable link or keeper, and Fig. 6 is a perspective detail view of one of the jaws.

Like letters of reference denote corresponding parts in the several figures.

My invention has relation to that class of devices which combine in a single implement a screw-driver and means for holding the screw while it is being driven; and my improvement consists in the detailed construction and combination of parts of the clamping device or means for holding the screw, whereby the same is adapted not only to hold the screw firmly upon the screw-driver proper, but also to cut a countersink in the wood adapted to receive the head of the screw before the same is driven home, thereby enabling the workman to make a neat and finished job, having the head of the screw flush with the wood into which it is driven without necessitating the use of any other tools.

Referring to the accompanying drawings, the letter A denotes the shank of the tool, which is squared, as shown at B, to adapt it to be fitted into a suitable handle having a square socket, or into an ordinary brace-bit. At the other end of this shank is the blade of the screw-driver, (shown at C,) and below this blade, fixed upon shank A, is a collar, D. These three parts, A, C, and D, may be made either in one single piece or in several pieces suitably fastened together, at the option of the manufacturer.

E denotes a cross-head, having an aperture, F, through which the shank A is inserted, and through which it plays freely. To opposite ends of the cross-head E are fastened, by means of screws G or other suitable means, a pair of spring-jaws, denoted by the letters H and H′, and encircling the lower part or shanks of said jaws is a link or keeper, I, adapted to slide up and down on the jaws. When the link is slid up upon the jaws in the direction of the cross-head, the spring of the jaws will cause the lower ends or bits to separate from one another and from the screw-driver between the same, as shown in Fig. 1; but when, on the other hand, this link or keeper is forced downwardly against the outwardly-bulging sides of the jaws it will force the free ends of the jaws together, as shown in Fig. 2. Each of these jaws is of such a shape as to form at its lower end a concaved head or bit, J and J′, having notches, denoted by the letters K and K′, respectively, and on their inner sides longitudinal recesses L and L′, for the purpose which will be hereinafter indicated.

A spiral spring, M, encircles the shank A in such a manner as to be confined between the fixed collar D and the movable cross-head E. When the jaws are opened in the position shown in Fig. 1, the tension of this spring operates to throw the lower end of the screw-driver below the jaws, as shown in Fig. 1; but when the device is to be used the screw to be driven is placed against the screw-driver blade, and by then depressing the same by the left hand, and bearing with the fingers of the right hand against the link or keeper I, it will be seen that the spring will be compressed, so as to bring the screw-driver with the head of the screw between and below the bits J and J′, which are by the same operation forced against the shank of the screw above its head, as clearly shown in Figs. 2 and 3, so as to overlap the screw-head. The notches K and K′ in the lower ends of the bits impinge upon the shank of the screw in such a manner that the head of the screw will be held firmly between the jaws, the tension of the spiral spring M

operating to force the blade of the screw-driver in a downward direction, so as to force the head of the screw into and against the concavities on the inner sides of the jaws.

When the screw is in this position, the edges of the blade C will project into the longitudinal recesses L and L′, thereby locking the screw-driver and the jaws together in such a manner that the whole device will be rotated with the revolutions of the shank A when the same is inserted into any suitable handle or bit-brace.

Having in the foregoing described the construction of this device, I shall now proceed to describe its operation, which is as follows: Before the screw has been inserted and clamped between the jaws the link or keeper is slid downwardly upon the jaws, so as to bring their lower cutting ends close together, as shown in Fig. 4 of the drawings. While in this position the device is made to rotate, and the cutting ends of these jaws are brought in contact with the wood, thus cutting countersinks in the same. Now, the link or keeper is slid upwardly and a screw inserted between the jaws, which are then clamped, as shown in Figs. 2 and 3. It will be seen that countersinks may be formed of various sizes by adjusting the link or keeper in the manner above set forth.

From the foregoing description, taken in connection with the accompanying drawings, the operation and advantages of my invention will be readily understood without requiring an extended explanation.

Having thus described my invention, I claim—

The combination, with a screw-driver, of a movable cross-head provided with a pair of spring-jaws facing each other, said jaws being formed with concave bits or cutters at their lower ends and with vertical grooves or recesses slightly above these cutters, and a link or keeper for forcing the said jaws together, substantially as set forth.

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

JAMES C. TROVILLION.

Witnesses:
JAMES F. WHITEHEAD,
JOHN E. SCYSTER.