

(No Model.)

E. A. COCHRAN.
COMBINATION TOOL.

No. 461,402.

Patented Oct. 13, 1891.

Fig. 1.

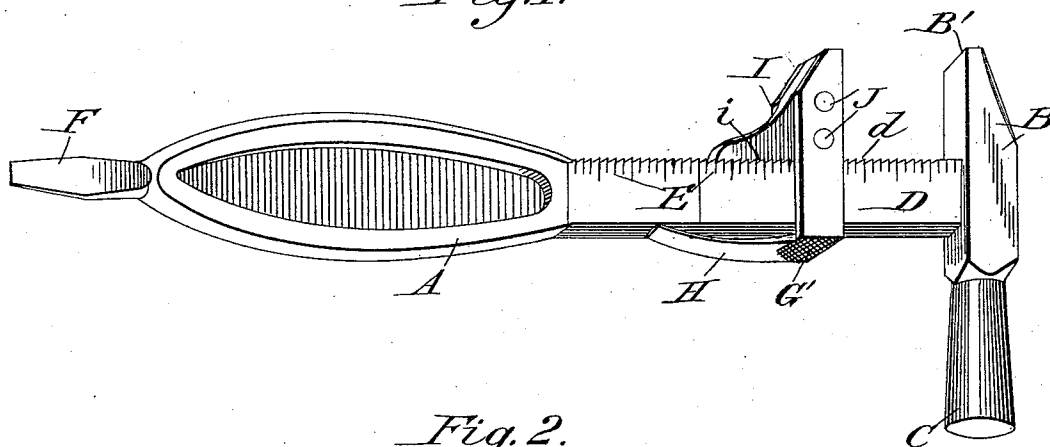


Fig. 2.

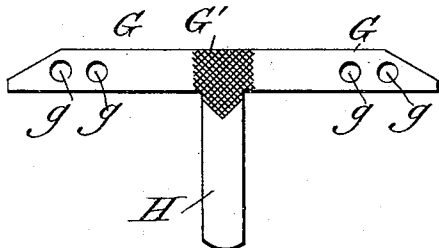


Fig. 3.

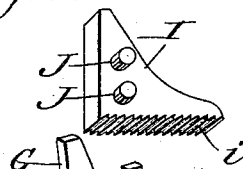
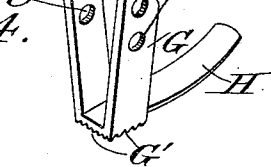


Fig. 4.



Attest:

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UNITED STATES PATENT OFFICE.

EDWARD A. COCHRAN, OF PASADENA, CALIFORNIA, ASSIGNOR OF ONE-FIFTH TO ALEXANDER R. METCALFE, OF SAME PLACE.

COMBINATION-TOOL.

SPECIFICATION forming part of Letters Patent No. 461,402, dated October 13, 1891.

Application filed March 28, 1891. Serial No. 386,761. (No model.)

To all whom it may concern:

Be it known that I, EDWARD A. COCHRAN, a citizen of the United States, residing at Pasadena, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Combination-Tools; and I 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.

This invention relates to an improvement in combination-tools, the object of the invention being to provide a simple, neat, cheap, and effective article which will combine within itself the uses and functions belonging to numerous different tools, and thus be readily applicable for service in various ways and for manifold purposes; and the invention therefore consists, essentially, in a combination-tool which is adapted to serve as a wrench, an ordinary hammer, a riveting-hammer, a screw-driver, a caliper, and a scale or rule; and also the invention consists in the construction, arrangement, and combination of the several parts, substantially as will be hereinafter described and claimed.

In the annexed drawings illustrating my invention, Figure 1 is a perspective elevational view of my improved combination-tool. Fig. 2 is a plan view of the blank cut out of steel and ready to be formed into the frame or socket which constitutes a part of the sliding jaw, and is connected with other parts to form said sliding jaw. Fig. 3 is a perspective view of the serrated or toothed block, which, in conjunction with the aforesaid blank shown in Fig. 2, serves as the movable jaw. Fig. 4 is a perspective view of the steel blank indicated in Fig. 2 after its arms have been partially bent into proper position to receive between them the block shown in Fig. 3.

Similar letters of reference designate corresponding parts throughout all the different figures of the drawings.

A denotes the handle of my improved combination-tool, which is made in any suitable form and of any convenient size, it being preferably paneled or webbed for the sake of

lightness and also to save material and to give the tool an ornamental appearance. The said handle A is integral with the shank D, which serves as the bar of the wrench, said shank D being preferably rectangular in cross-section and being provided along one of its longitudinal faces with a series of teeth, notches, or dentations *d*. (See Fig. 1.) The bar D carries at its end the transverse right-angled bar or head B, one end of which B' is made of sufficient size and shape to enable it to perform the function of a riveting-hammer. Therefore this part B' of the tool I denominate a "riveting-hammer." The other end of the head B is formed at C like the ordinary hammer, and may be termed the "hammer" proper, and therefore the part C of the combination-tool performs the functions of a hammer when it is desired to use the tool for nailing, hammering, or other similar purposes. On the end of the handle A is formed a screw-driver F, which is capable of performing all the functions usually belonging to screw-drivers. Thus the combination-tool has at one end its screw-driver and at the other end an ordinary hammer and a riveting-hammer.

A leading and prominent feature of the combination-tool is the wrench. On the wrench-bar D a sliding jaw is arranged to slide so that it may be adjusted nearer to or farther away from the fixed jaw. This movable or sliding jaw consists of the steel block I (shown in Fig. 3) and also of a steel frame supporting and connected to said block I, said frame being shown in Figs. 2 and 4. In order to provide this frame portion, which is connected to the block I, I take a piece of steel and punch out a blank of the shape shown in Fig. 2, said blank having a T shape, or having three arms, one of which projects centrally from the other two and at right angles to them. G G denote two of the arms, and H the third right-angled arm. The arms G G are perforated near each end with two perforations or holes *gg*. The number of these holes may of course vary, if desired. The arms G G are made of any suitable thickness, so as to have a rigidity. The arm H is preferably made somewhat thin, as it is intended to serve

as a flat spring. The aforesaid blank at the point where the arms G G and H meet is formed with a roughened or grooved face G', to which the thumb or finger may be applied without slipping. The blank thus provided has its two arms G G bent parallel to each other. In Fig. 4 they are shown as partially bent. The space between them is intended to be equal to the thickness of the wrench-bar D and also of the block I. The block I, which is shown in detail in Fig. 3, is any ordinary steel block neatly formed and having preferably a rounded rear edge and a plain straight forward face, which is adapted to lie parallel to the face of the fixed jaw of the wrench. Said block I is provided with lateral bosses, lugs, or rounded projections J J, of which there are preferably two on each side, said bosses or projections being of the proper size and shape to permit them to enter into the perforations g g, formed in the arms G G, as is clearly shown in Fig. 4, and in this way the block I may be placed between the arms of the sliding frame and be securely connected thereto, so that all these parts will form a neat sliding jaw. The block I has on its lower face the series of dentations i, and this face is adapted to lie upon the longitudinal face d of the wrench-bar D, so that the serrations of the face i will engage the serrations of the face d, said serrations being so cut that they will hold the sliding jaw from moving farther away from the fixed jaw after it has been once adjusted, but will permit the sliding jaw to slide or slip easily over the serrations when it is being moved toward the fixed jaw. After the block I has been placed between the arms G G a sufficient rectangular space will be left at the bottom between said arms G G to receive the wrench-bar D, it being noted, of course, that the said wrench-bar will be placed between the arms G G before the block I is inserted intermediate between them; also, it will be perceived that the roughened part G' will lie beneath the wrench-bar D in convenient position to receive the touch of the thumb of the user of the combination-tool, and, also, that the flat spring H will bear with a firm even tension upon the side of the wrench-bar opposite to where the serrated face i is in engagement with the serrated face d. The user by pressing upon the part G' and also upon the spring H can, whenever he desires, throw the teeth i out of engagement with the teeth d, and thus withdraw the movable jaw farther away from the fixed jaw. Whenever the operator desires to lessen the distance between the jaws, he can push with his thumb upon the block I, which furnishes a neatly-rounded rear face for this purpose, and thus can press the movable jaw toward the fixed jaw. In this way the wrench can be adjusted with its edges any desired dis-

tance apart, so that it may be able to serve any desired purpose.

On the side of the wrench-bar D and contiguous to the series of ratchet-teeth d is a graduated scale E. This scale may be graduated to inches or with any other desired marks of division. In the example of scale shown in the drawings I have indicated inches, each inch being provided with quarter-divisions and also with sixteenth-divisions, and each sixteenth-division corresponds to one of the teeth of the ratchet d, so that there are sixteen of said teeth in the length of one inch. By means of this scale thus arranged I am enabled to adjust the jaws of the wrench at any desired distance apart, and it is possible, therefore, to use the wrench so as to take the size or diameter of any object, even in the dark, by simply counting the notches. All that the user of the wrench is obliged to do in order to set his wrench-jaws at a proper distance apart is to count off a certain number of notches and adjust the sliding jaw correspondingly.

It will thus be seen that I provide a very simple, neat, and efficient tool or article capable of performing many useful services, and yet exceedingly light and simple in its construction, and consisting of but very few parts.

The screw-driver, handle, ratchet, and hammers, are all forged or cast in one piece. Thus the cost of manufacture of the tool is very greatly lessened.

The spring H not only serves to hold the teeth of block I in engagement with the teeth of the wrench-bar, but it also serves to keep the movable jaw from rattling whenever the tool is used as a hammer.

The arms G G will, in the process of manufacture of the wrench, be bent upon some suitable form, so as to be brought into a state of parallelism and ready to receive the bar D and block I between them.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of a wrench-bar having a fixed jaw and a movable jaw which slides on the wrench-bar, said movable jaw consisting of a steel blank bent to provide perforated arms G G and flat spring H, together with the block I, held between the perforated arms G G, substantially as described.

2. The combination of the bar D, having a fixed jaw and the movable jaw consisting of a steel blank bent to form parallel arms G G and flat spring H with roughened face G', the arms G G being perforated at g g, and the serrated block I having lateral lugs or bosses J J that enter perforations g, substantially as described.

3. The combination, with the bar D, having a fixed jaw and a serrated face d, and

also a graduated scale E, the graduations of
said scale corresponding to the number of
teeth *d*, of the movable jaw consisting of the
serrated block I, whose serrations *i* engage
5 the serrations *d*, said block having lateral
bosses J, and the frame having arms G G and
flat spring H, said arms G G supporting the
block I and said spring H bearing on the op-

posite side of the bar D, all substantially as
described.

In testimony whereof I affix my signature in
presence of two witnesses.

EDWARD A. COCHRAN.

Witnesses:

H. H. ROSE,

JNO. G. ROSSITER.