

(No Model.)

E. SHAW.
WRENCH.

No. 458,796.

Patented Sept. 1, 1891.

Fig. 1.

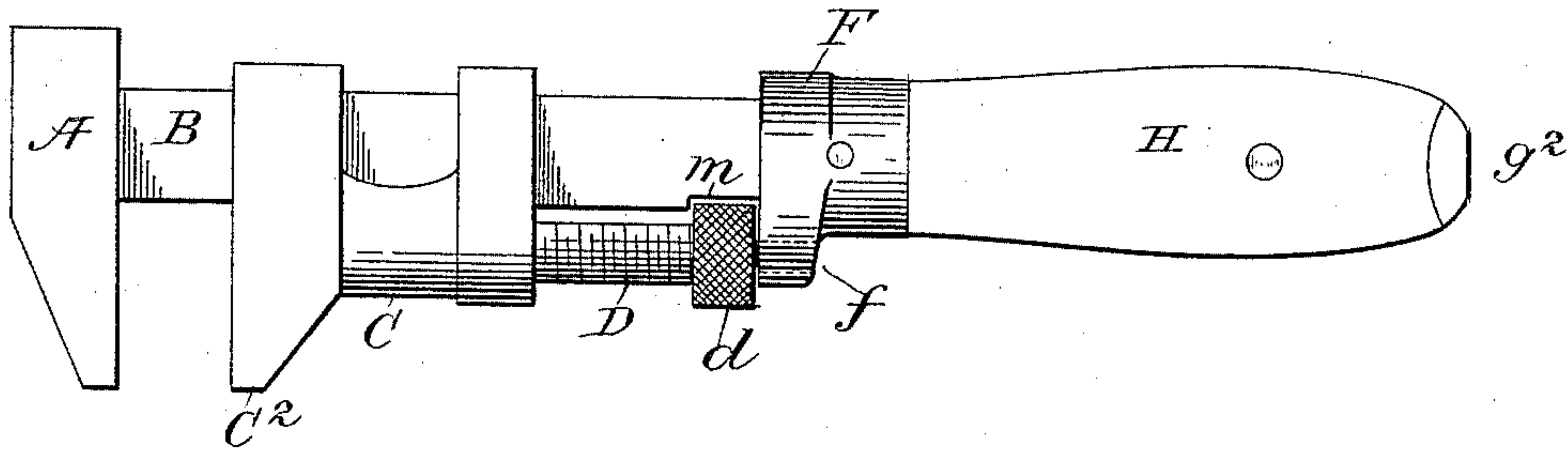


Fig. 2.

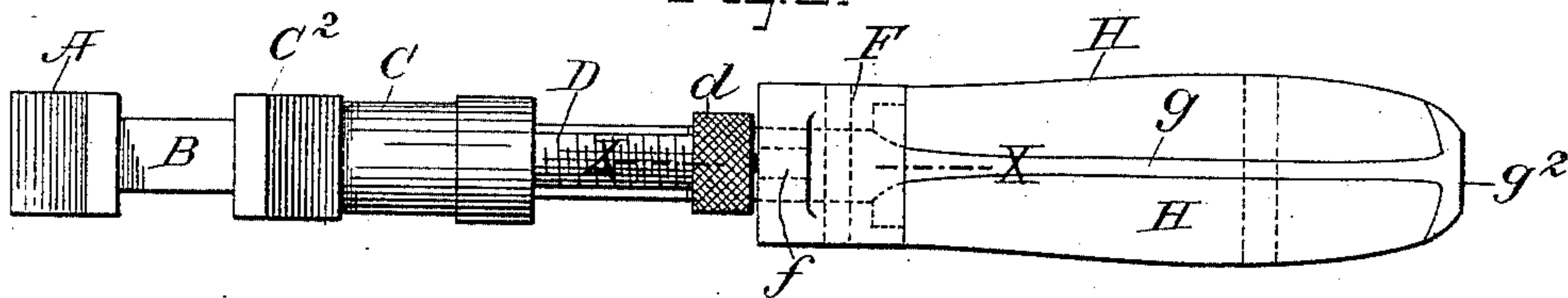


Fig. 3.

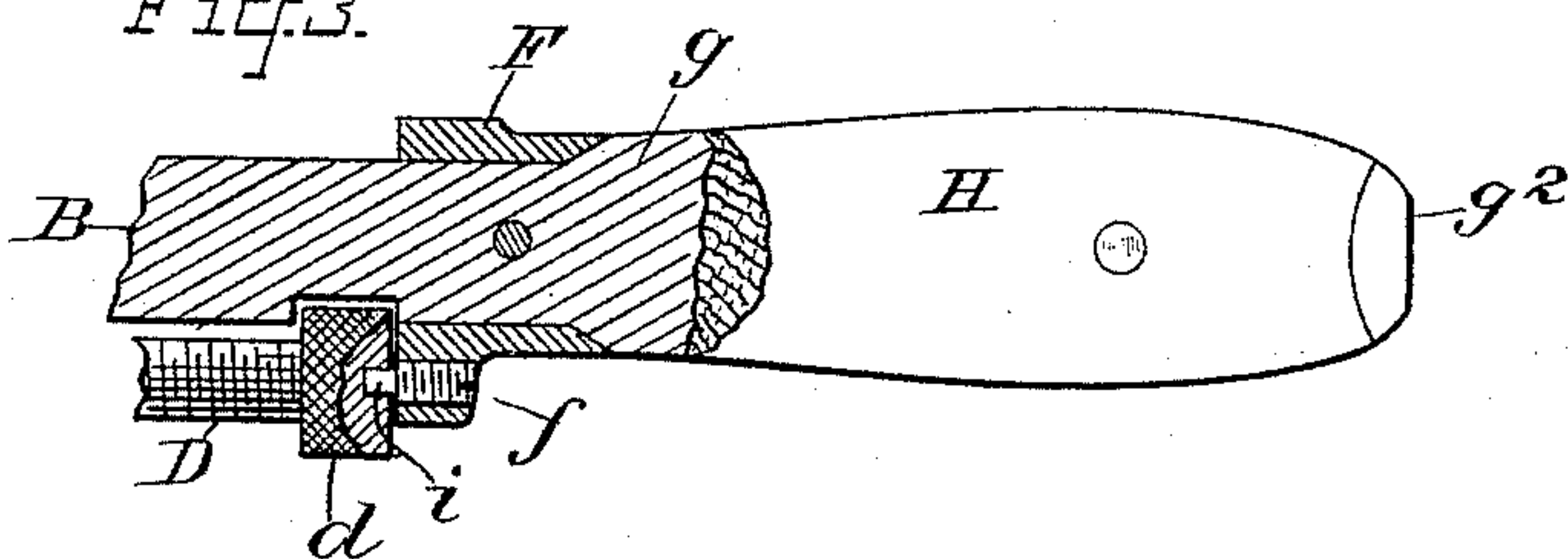
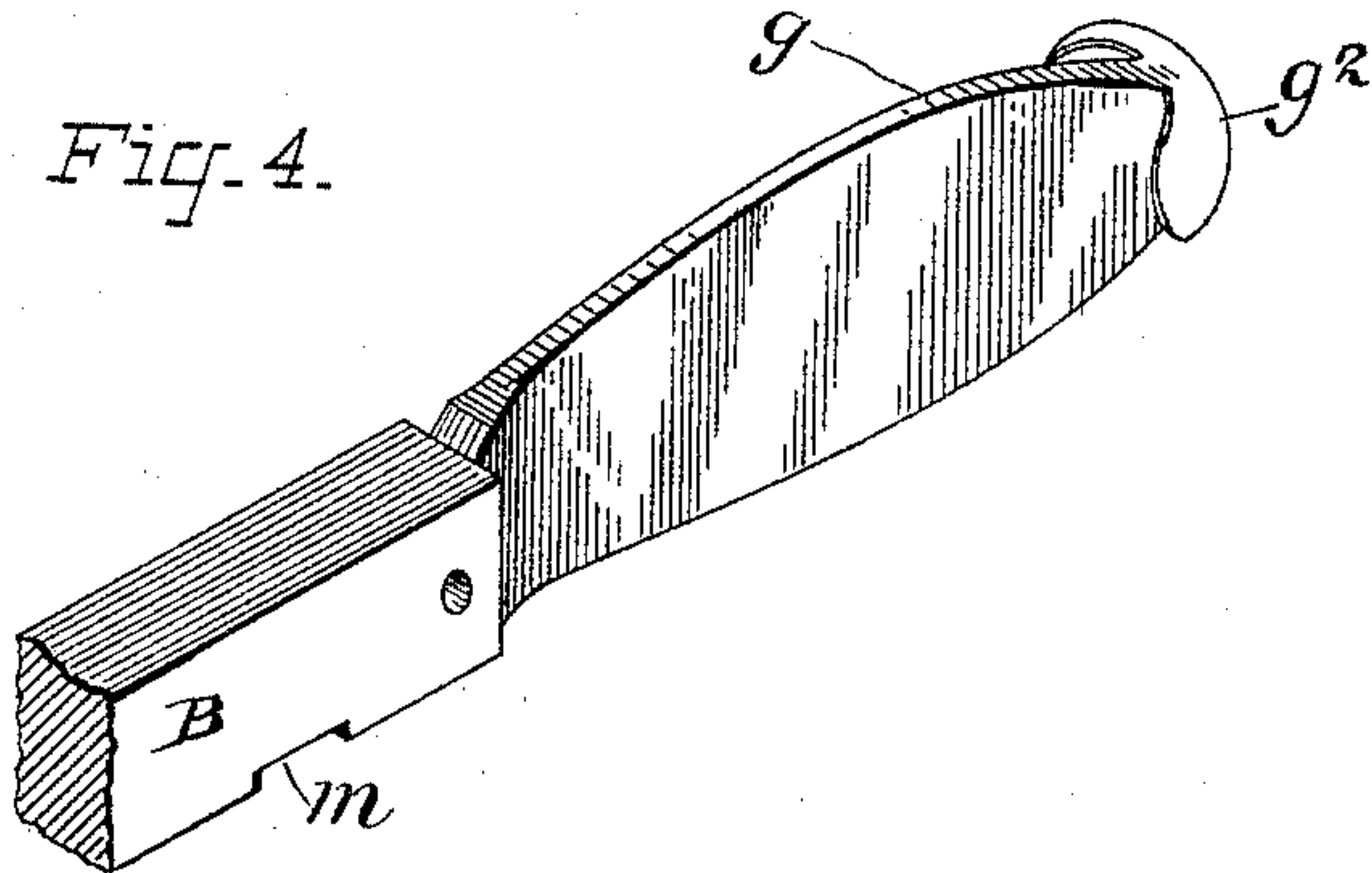


Fig. 4.



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EDGAR SHAW, OF LYNN, MASSACHUSETTS, ASSIGNOR TO FRANKLIN C. PAYSON, TRUSTEE, OF PORTLAND, MAINE.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 458,796, dated September 1, 1891.

Application filed April 16, 1891. Serial No. 389,164. (No model.)

To all whom it may concern:

Be it known that I, EDGAR SHAW, of Lynn, in the county of Essex and State of Massachusetts, have invented a certain new and useful
5 Improvement in Wrenches; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

10 My invention relates to a slide-wrench, or to that species of wrench familiarly known to mechanics as a "monkey-wrench." The most usual form of this type of wrench is that in which the handle is composed partially or
15 mostly of wood or some non-metallic material; and my invention has for its object to provide for use a monkey-wrench of this form which shall, while being economic of manufacture, have its parts adapted to fit and work
20 together with great perfection and which shall possess the greatest possible degree of strength and durability with the least amount of material. As is well known to those skilled in the art of making such wrenches and familiar
25 with the use of them, the most important desiderata are cheapness of manufacture, capacity in the bar-shank and handle to withstand the wrenching strain to which these parts are often subjected, and such a degree
30 of nicety in the fitting together of the relatively movable parts as will insure ease and perfection of movement in the said working parts in handling or manipulating the wrench. To provide for use a wrench of the type and
35 form alluded to which shall possess in the most eminent degree these structural qualities is the main object of my present invention, which to this end consists in the word-features of construction which will be found hereinafter
40 described, and which will be more particularly pointed out and specifically defined in the claims of this specification.

To enable those skilled in the art to make and use wrenches embodying my invention,
45 I will now proceed to more fully explain the latter, referring by letters to the accompanying drawings, which form part of this specification, and in which I have shown my said invention carried out in the precise form in
50 which I have so far successfully practiced it,

though in form it may be more or less modified without changing its character.

In the drawings, Figure 1 is a side view of a wrench made according to my invention. Fig. 2 is an edge view of the same. Fig. 3 is
55 a detail section at *x x*, Fig. 2. Fig. 4 is a view in perspective of a portion of the bar separated from all the other parts and showing particularly the form of its handle-shank.

In the several figures the same part will
60 be found designated by the same letter of reference.

A is the head or stationary jaw, which, as usual, is forged on one end of the bar B, the other end of which bar forms part of the
65 wrench-handle, as will be presently described.

C is the sliding frame, that is arranged, about as usual, to move freely longitudinally on the bar B and one end portion of which constitutes the movable jaw C² of the wrench.
70 The upper or solid portion of this jaw-frame C C² is, as usual, formed with a long female screw or nut, with which engages the thread of the rosette-screw D, the knurled head *d* of which works freely at its periphery within the
75 recess or milled-out depression *m* of the bar B, all as clearly shown.

F is the ferrule-piece, which, as clearly shown, constitutes a ferrule proper to the handle of the wrench and also serves at the
80 vicinity of its laterally-projecting portion to form the usual abutment for the head *d* of the rosette-screw to bear against and to support a teated screw *f*, (see Fig. 3,) on the
85 teat *i* of which is mounted to turn freely the head *d* of the rosette-screw. The screw *f* is preferably made and arranged within the threaded hole in the ferrule F, so that the exposed portion or surface of its head will be flush with the surface of the part
90 F, in order that no uncomfortable protuberance may occur at this point, which is often (especially with a wrench of small size) pressed upon by the end of the thumb of the person using the tool. The handle-shank or
95 tang portion *g* is formed integrally with the bar B, and its contour or profile corresponds, as seen, to the shape of the finished handle, which is composed of said tang *g* and the wooden scales H, arranged on either side of
100

said tang and preferably riveted or pinned thereto, as shown. The outer end of the ferrule F is interiorly shaped so as to accommodate the chamfered ends of the wooden scales H and so encompass said ends as to hold them securely in place and make a good finish, while that portion of said end of said ferrule that is contiguous to the edges of the tang *g* are interiorly beveled, it will be seen, or run to feather-edges in such manner as to cause the exposed portion of the said edges of the tang to come about flush with the outer surface of the tang, all as best seen at Fig. 3. The end of the tang *g* is formed or provided with a laterally-projecting undercut head-like portion *g*², which overlies the extreme outer end portions of the scales H in such manner as to embrace or bind and securely hold in place said portions and at the same time make a nice finish to the handle as a whole and a solid metallic end finish to the combined wood and metal handle of the wrench.

In making and assembling the parts herein shown and described I proceed, by preference, in the following manner, though, so far as the finished product made the subject of this application is concerned, this method of manufacture (which forms the subject of another application filed simultaneously with this one) need not be strictly followed. After having completely formed the jaw A and bar B and subjected the latter to the necessary mechanical treatment to finish its sides and cut the recess *m* in one edge and having left the bar B long enough to permit the formation of the tang *g* out of the stock lying beyond the point at which the ferrule F is to be secured to said bar, I then assemble the said bar B, the finished jaw-frame C C², and the finished ferrule F, sliding the last-named two parts about as far as possible toward the stationary jaw A. I then draw out the surplus stock of the bar B (under a trip-hammer or otherwise) and form the tang *g* with its head *g*², and after having moved the ferrule toward said tang as far as necessary I then insert within the nut of frame C the end of screw D, bringing the head *d* to its proper position relatively to the recess *m*, after which I adjust the ferrule to its proper place, and there secure it fast to the bar B. I then insert the teated screw *f*, and, screwing it home, give to the head *d* of screw D its proper journal-like support, after which the placement in position of the scales H and their securement to the tang *g* completes the tool ready for the market.

It will be understood that in lieu of the teated screw *f* a simple pin might be driven into a hole in the ferrule, so as to afford a proper journal or support for the head of the rosette-screw, and it will be seen that in a wrench constructed substantially as shown the disposition of the metal composing the tang *g* is such as to induce to great strength and stiffness in the handle in the direction

in which the greatest strain comes with a comparatively small quantity of stock; that the handle-scales have their ends snugly and neatly overlapped by the ferrule at one end and by the tang-head *g*² at the other, so that the wooden and metallic portions of the handle are neatly and durably assembled; that, while cheaply manufactured, all the parts having relative movement can be made to work closely and smoothly, and that a perfect and simple journal is afforded to the headed end of the rosette-screw and one that can easily be properly centered with said screw, so as to cause the latter to run or turn true.

Having now so fully explained my improved wrench that one skilled in the art can make and use it in either the precise form shown or under some modification thereof, and wishing it to be distinctly understood that in practicing my invention less than all of the separable features of novelty may be used with more or less advantage, (though it is most desirable to have the tool embody all the novel features of construction shown,) what I claim as new, and desire to secure by Letters Patent, is—

1. In a slide-wrench, a handle composed of wooden or other suitable scales and an intermediately-arranged flat or plate-like tang that is formed integrally with the wrought bar of the wrench, and which has its end formed or provided with a head-like device against which the outer ends of said scales abut, and which overlaps the ends of said scales, all substantially as and for the purposes hereinbefore set forth.

2. In a slide-wrench, the combination, with the bar formed with an integral flattened tang, of a ferrule-like device F and scales H, the inner ends of which scales are overlapped by the ferrule and the outer ends of which scales are overlapped by the head-like device of the said flattened tang, all in substantially the manner and for the purposes hereinbefore described.

3. In a slide-wrench, the combination, with the bar formed with an integral flattened tang, the contour or perimeter of which corresponds, substantially, with the shape of the handle-scales, of the ferrule-like device F, shaped to overlie and come flush, exteriorly, with the inner ends of the scales H and having beveled cut-outs to let the inner end of the flattened tang come flush with its exterior, the handle-scales H, and the head-like device formed integrally with said flattened tang and constructed to overlap the outer ends of the handle-scales, all substantially in the manner and for the purposes hereinbefore set forth.

In witness whereof I have hereunto set my hand this 21st day of March, 1891.

EDGAR SHAW.

In presence of—

JEROME DEWITT,
MAUDE CUSHMAN.