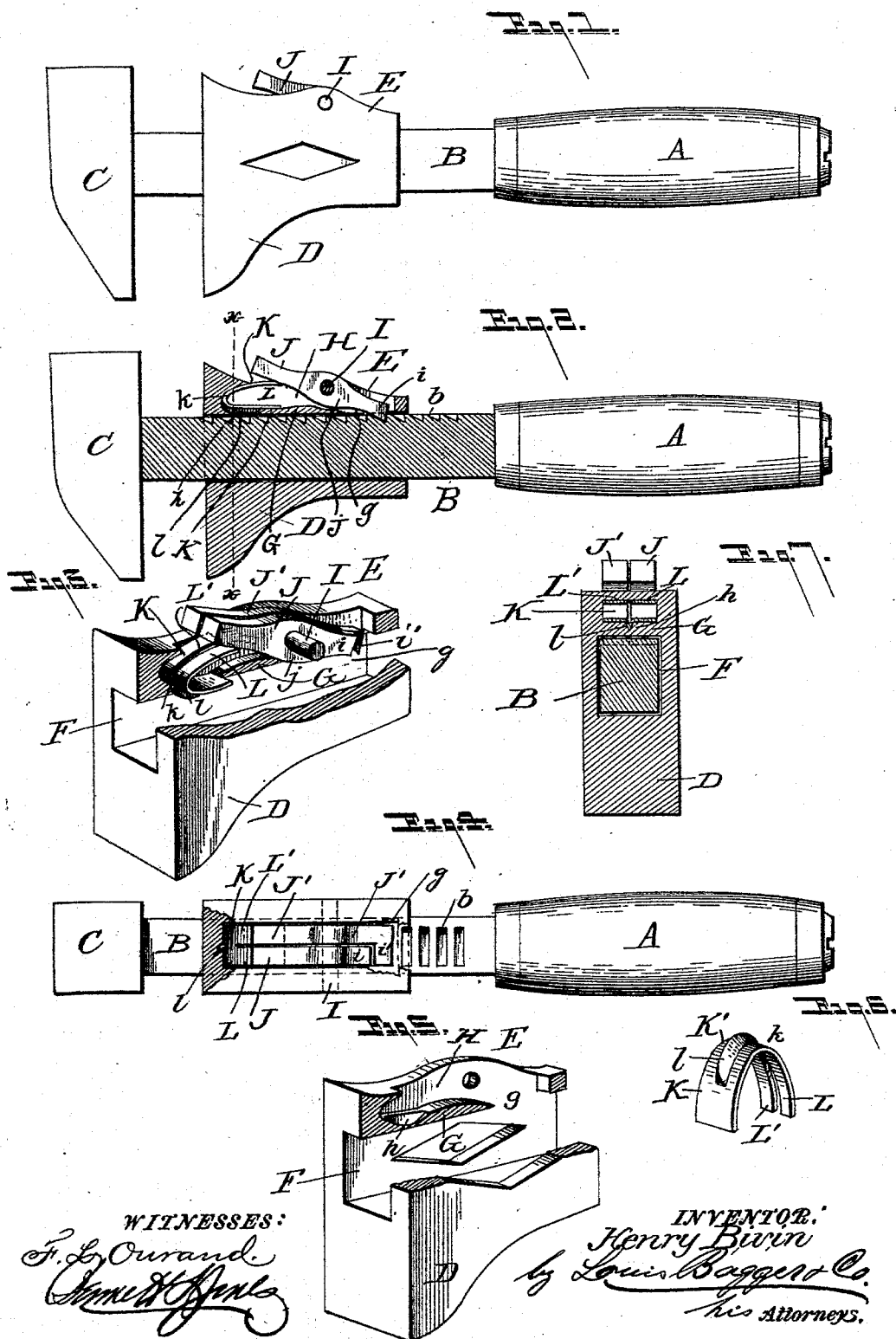


H. BIVIN.  
MONKEY WRENCH.

Patented Feb. 27, 1894.



# UNITED STATES PATENT OFFICE.

HENRY BIVIN, OF AUBURN, ILLINOIS.

## MONKEY-WRENCH.

SPECIFICATION forming part of Letters Patent No. 515,645, dated February 27, 1894.

Application filed October 16, 1893. Serial No. 488,280. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY BIVIN, a citizen of the United States, and a resident of Auburn, in the county of Sangamon and State of Illinois, have invented certain new and useful Improvements in Monkey-Wrenches; 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 side view of my improved monkey wrench. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is a sectional detail view of the sliding jaw with its two independently operating pawls and their bifurcated spring. Fig. 4 is a rear view of the wrench (*i. e.*, a view at right angles to the view shown in Fig. 1) with part of the box or casing of the sliding jaw broken away to show the interior bifurcated spring which operates the two retaining-pawls. Fig. 5 is a detail view, showing the interior of the box which forms part of the sliding jaw. Fig. 6 is a detail view of the bifurcated spring for operating the two independently operating retaining-pawls; said spring having been removed from its chamber in the sliding or movable jaw; and Fig. 7 is a sectional detail view on the line *x—x* in Fig. 2, showing the spring compartment and spring, and means for fastening the spring in its compartment.

Like letters of reference designate corresponding parts in all the figures.

My invention relates to monkey wrenches of that particular type or class in which the movable jaw, which slides upon the notched stem of the wrench, is retained in its adjusted position by means of a spring-actuated pawl which engages or interlocks with the notches in the shank; and my invention consists in the peculiar and specific construction and combination of parts of the sliding jaw and its pawls and spring, in combination with the notched shank, as will be hereinafter more fully described and particularly pointed out in the claims.

On the accompanying drawings, the reference letter A denotes the handle, B the shank,

b the notches in the same, and C the rigid hammer-shaped head or jaw. The movable jaw comprises a solid part, D, which forms the jaw proper, and, on the other side thereof, the box or casing E, having a square or rectangular aperture F for the insertion of the stem B, which is also square or rectangular in cross-section, so as to fit in the aperture F, as usual in this type of wrenches. The box E, back of the aperture F and stem B, from which it is separated by the vertical partition or diaphragm G, has a compartment H, through which is inserted, transversely, the fulcrum-pin I. Upon this pin are pivoted the two independently-operating retaining-pawls J and J', the shape of which is clearly shown on the drawings; *i. e.*, each pawl is in the nature of a lever of the first class, having a central enlargement, *j*, at its middle where it is fulcrumed upon the pin I, and having their upper arms of equal length, while the lower arm of one of the pawls (J') projects a little below the other, and is bent at right angles at its lower end, forming the shoe *i'*. The upper end of the compartment H, above the upper squared ends of the pawls, is rounded off to conform to the shape of the bend *k* of the bent spring K, which is made from a small plate or strip of tempered steel or other suitable spring-metal, bent into the shape illustrated more clearly in the detail view Fig. 6, with its free end slit or bifurcated longitudinally so as to form two legs L and L', of equal length but diverging a little at their lower ends. The back part, K', of the spring-plate is struck up to form a longitudinal rib or feather *l*, which, when the spring is properly seated in its chamber or spring-compartment H in the upper part of the box E, fits into a slot or recess *h*, made on the inside of the partition G, so as to hold the spring in place within the compartment, as will be seen more clearly by reference to the detail view Fig. 7. The free or lower ends L, L' of the spring bear against the adjacent inner sides of the upper arms of the pawls J and J', so as to force these outwardly from the box, while their lower ends are forced against the notched side of the shank; the box-diaphragm G being cut off at its lower end so as to leave an opening, *g*, through which the lower ends of the pawls project so as to

engage with the notches *b*. These notches are (as will be seen by reference to Fig. 2) of such a shape that the pawls will slip over them easily when the movable jaw is pushed upward on the shank, in the direction of the rigid jaw, but will prevent said movable jaw from slipping down upon the shank. To do this, both pawls *J* and *J'* must be released from the notches, which is done by pressing with the thumb against their upper ends, which project a little beyond the box. When this is done, the lower ends *i* and *i'* of the pawls are withdrawn from contact with the notched shank, so that the jaw *D E* can be moved in a downward direction upon the shank. In this manner the movable jaw may be adjusted, in a moment of time, up or down to fit a nut or other device to be operated by the wrench. It will be observed (see Fig. 4) that the right-angled shoe *i'* at the lower end of pawl *J'* overlaps the squared lower end *i* of the adjacent pawl *J*, below the same, so as to take a full bearing in its appropriate notch *b*. The lower end *i* of pawl *J* takes its bearing in the notch *b* next above, so that the movable jaw will be supported upon two notches, or notched steps *b b* on the shank, instead of one; thus giving the movable jaw a much better and firmer support, and enabling it to resist any amount of strain or pressure brought to bear on the jaws in operating the wrench.

Having thus described my invention, I

claim and desire to secure by Letters Patent of the United States—

1. In a monkey wrench, the combination with the notched shank and rigid head or jaw, of the movable jaw provided with the bifurcated spring *K* and pawls *J* and *J'*; one of said pawls projecting below the other and bent at its projecting lower end to form a shoe *i'*, adapted to engage or interlock with the notch *b* in the shank below the notch with which the lower end *i* of the adjacent pawl *J* engages; substantially as and for the purpose shown and set forth.

2. In a monkey wrench, the sliding or adjustable jaw comprising the solid part *D* and hollow part or box *E*; said box having the diaphragm *G* and spring-compartment *H*, in combination with the bifurcated bent spring *K L L'* and independently-operating pawls *J* and *J'*; one of said pawls projecting below the other and adapted to engage the notch or offset in the shank of the wrench below the notch engaged by the adjacent pawl; substantially as and for the purpose shown and set forth.

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

HENRY BIVIN.

Witnesses:

A. M. GORDON,  
J. F. TOOMBS.