(No Model.)

H. BORNSTEIN.

WRENCH.

No. 338,707. Patented Mar. 30, 1886.

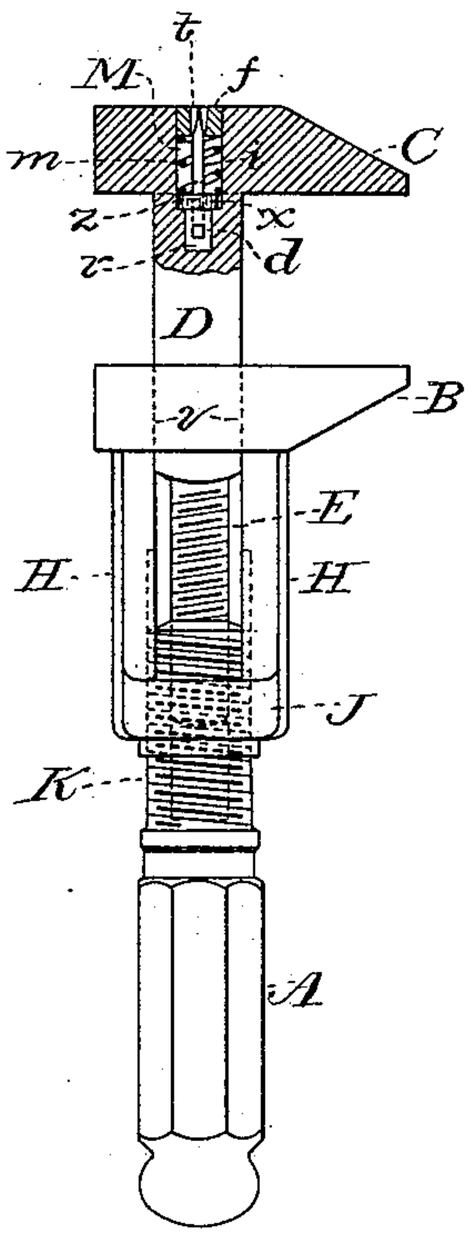

Fig. 1.

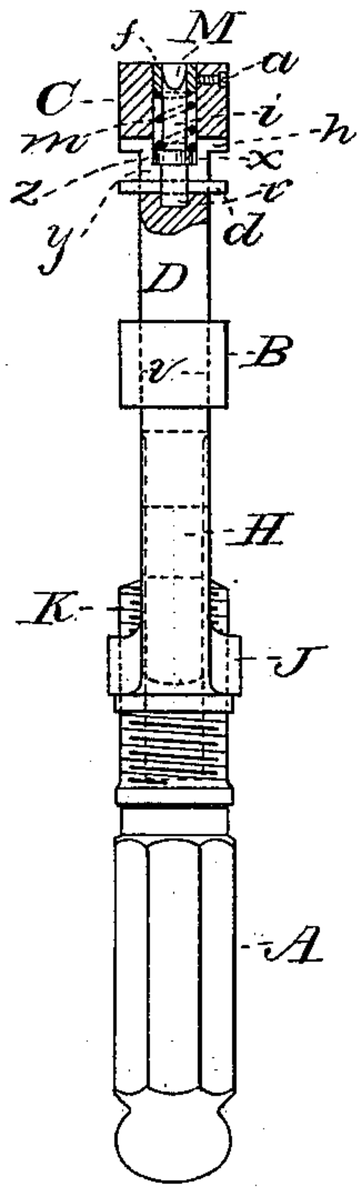

Fig. 2.

WITNESSES

L. C. Briggs.

L. J. White.

INVENTOR

Henry Bornstein,

PER

C. C. Shaw

ATTORNEY

UNITED STATES PATENT OFFICE.

HENRY BORNSTEIN, OF BOSTON, MASSACHUSETTS.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 338,707, dated March 30, 1886.

Application filed January 18, 1886. Serial No. 188,868. (No model.)

To all whom it may concern:

Be it known that I, HENRY BORNSTEIN, of Boston, in the county of Suffolk, State of Massachusetts, have invented a certain new and useful Improvement in Wrenches, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation of my improved wrench, a portion of the head and movable jaw being represented in section to show the edge of the screw-driver; and Fig. 2, a bottom plan view of the same, a portion of the head being represented as removed to show the side of the screw-driver.

Like letters of reference indicate corresponding parts in both the figures of the drawings.

My invention relates to that class of wrenches which are known to the trade as "monkey-wrenches;" and it consists in a novel construction and arrangement of the parts, as hereinafter more fully set forth and claimed, the object being to produce a more effective and otherwise desirable article of this character than is now in ordinary use.

The nature and operation of the improvement will be readily understood by all conversant with such matters from the following explanation:

In the drawings, A represents the handle, B the fixed jaw, and C the movable jaw. The movable jaw is mounted on the outer end of a bar, D, which is rectangular in cross-section, and passes through a corresponding mortise in the jaw B, as shown by the dotted lines *v*, its inner end being round in cross-section, and provided exteriorly with a right-hand screw-thread, as shown at E. The fixed jaw B is provided with two rearwardly-extending arms, H, arranged in parallelism with each other, and carrying at their outer end the cross-head J, said jaw, arms, and cross-head being preferably cast integral or in one piece. They may, however, be made in separate pieces, if preferred, and properly united. One of the arms may also be omitted, if desired; or the space between the arms may be so closed as to cover the screw E when deemed necessary. The inner end of the handle A is round in cross section, and provided exteriorly with a left-hand screw-thread, as shown at K. It is also bored longitudinally from its inner end, and provided interiorly with a right-hand screw-thread for receiving the screw E. The cross-head J is also bored transversely, and provided exteriorly with a left-hand screw-thread for receiving the screw K, the handle A therefore forming a nut for the screw E, and the cross-head J a nut for the handle K. The head of the wrench is drilled or bored on a line corresponding with the central axial lines of the bar D and handle A, to form a socket, *i*, for receiving a screw-driver, M. The screw-driver is flat or rectangular in cross-section, and provided with a fixed collet or annular boss, *x*, which rests on a shoulder, *z*, when the screw-driver is withdrawn or housed. A plug, *f*, is fitted into the outer end of the socket *i*, said plug being held in position by the set-screw *a*, and provided with a slot, *t*, in which the screw-driver works. The socket *i* is of greater diameter from the shoulder *z* to its outer end than it is from said shoulder to its bottom or inner end, the screw-driver being provided with a shank-piece, *r*, which is fitted to work in the inner or smaller portion of the socket. An elongated transverse slot, *y*, is formed in the bar D, near the jaw C, and fitted to work in said slot there is a pin, *d*, which is secured firmly in the shank *r* of the screw-driver, and which projects beyond the sides of the bar D, as best seen in Fig. 2. A coiled spring, *m*, is disposed around the body of the screw-driver within the socket *i*, one end of said spring abutting against the inner end of the plug *f* and the other against the outer side of the collet *x*, the spring acting expansively to force the screw-driver inwardly or to house it.

In the use of my improvement, the jaws B C and screw-driver M being in the position shown in Fig. 1, if now the handle A is turned to the right it will be withdrawn from or turned out of the cross-bar J, while at the same time it will be turned onto the screw E of the shank D, thereby causing the jaw C to approach the jaw B with twice the rapidity it

would travel if but one screw were used, or if the inner end of the handle K were adapted to revolve in but not to pass back and forth through the cross-head J. The handle A continuing to be turned, as described, and the bar D to pass inwardly through its mortise in the jaw B, the pin *d* will be brought into contact with said jaw, thereby compressing the spring *m* and forcing the screw-driver M outwardly through the slot *t*, or causing it to protrude beyond the head of the wrench, in a manner which will be readily obvious without a more explicit description. The slot *y* is extended into the head of the wrench, as shown at *h*, to receive the pin *d*, and thereby permit the jaws B C to be brought into close contact, if desired.

It will be obvious that the screw-driver may be caused to protrude to a greater or less distance beyond the head of the wrench by moving the jaw C in or out accordingly, and also that the screw-driver will be automatically housed or withdrawn as the jaws of the wrench are separated or distanced.

I do not confine myself to the use of the screw-driver, as this may be omitted, if desired, or to using a screw-driver in the socket *i*, instead of some other implement, as a brad-awl, bit, punch, or other tool may be substituted for the screw-driver, if desired. The screws E K may also be reversed, or E cut left-hand and K right-hand, if preferred, and produce substantially the same results.

When the screw-driver is not required for use, the pin *d* may be removed, and thus prevent it from being pushed outwardly from the socket, as described, and to enable the pin to be removed readily it may be so constructed as to screw into the shank *r*, if desired. The pin may also be made of such length as to protrude from the slot *y* on one side only of the shank D, if preferred.

The plug *f* not only prevents the screw-driver from being entirely expelled from its socket, but being secured in said socket by the screw *a*, aids the pin *d* in causing the driver to rotate or revolve with the wrench when the driver is in use.

The socket *i* and plug *f* form ways in which the screw-driver works; but it may be mounted in any other suitable ways either on or in the wrench, when provided with means for causing it to be extended and withdrawn, substantially as described, without departing from the spirit of this portion of my invention.

Having thus explained my invention, what I claim is—

1. In a wrench, the combination of the following instrumentalities, to wit: a fixed jaw, a movable jaw, a handle, and a screw-driver or other implement, said jaws being adapted to be closed or opened by turning said handle to the right or left, as the case may be, and said screw-driver or other implement adapted to protrude from or be housed in the wrench by the act of closing or opening its jaws, as the case may be, substantially as described.

2. In a wrench, the screw-driver M or other implement disposed in a socket or in suitable ways therein or thereon, and provided with the spring *m*, in combination with the jaws B C, bar D, means for causing the jaws to close and open, means for causing the screw-driver to protrude, means for withdrawing or housing it, means for preventing it from being entirely expelled from its socket or ways, and means for causing it to turn with the wrench when the screw-driver is in use, substantially as set forth.

HENRY BORNSTEIN.

Witnesses:
C. A. SHAW,
L. J. WHITE.