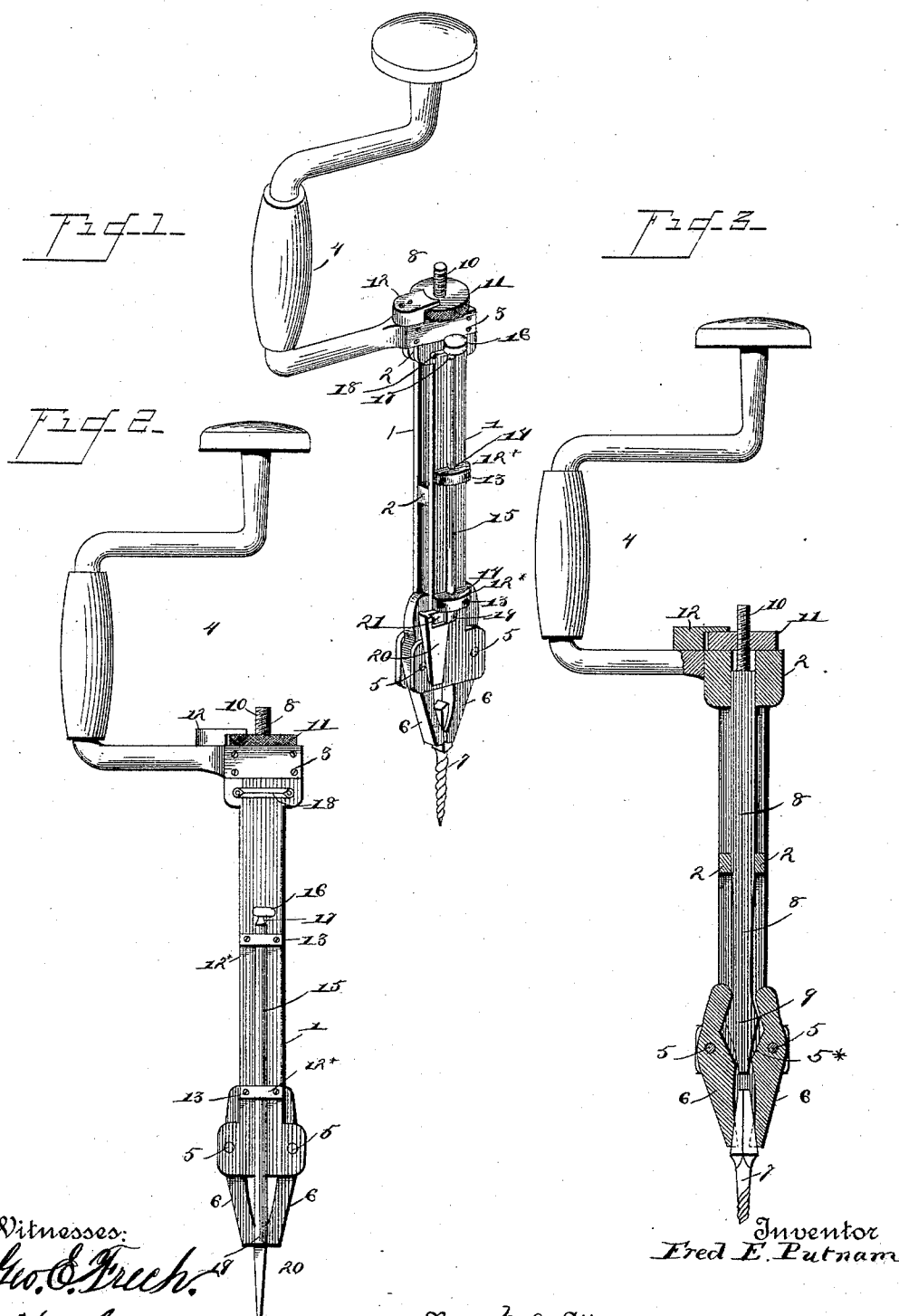


(No Model.)

F. E. PUTNAM.
WRENCH.

No. 441,854.

Patented Dec. 2, 1890.



Witnesses:
Geo. C. French.
W. S. Duwall.

Inventor
Fred E. Putnam
By *his Attorneys*
C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

FRED E. PUTNAM, OF CLINTON, MAINE.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 441,854, dated December 2, 1890.

Application filed April 3, 1890. Serial No. 346,466. (No model.)

To all whom it may concern:

Be it known that I, FRED E. PUTNAM, a citizen of the United States, residing at Clinton, in the county of Kennebec and State of Maine, have invented a new and useful Wrench, of which the following is a specification.

This invention has relation to combination-tools, the object in view being to combine three useful companion tools in one.

Other objects and advantages of the invention, together with the novel features thereof, will hereinafter appear, and be particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a perspective of a wrench constructed in accordance with my invention, the same being adapted for use as a bit-brace. Fig. 2 is an elevation, the same being adapted for use as a screw-driver. Fig. 3 is a central longitudinal section.

Like numerals of reference indicate like parts in all the figures of the drawings.

The stock of the tool consists of two opposite longitudinally-disposed plates 1, which at intervals are spaced apart by space-blocks 2, which blocks are arranged between the plates and near the opposite edges of the same, so as to form an intermediate guide-opening. The upper end or head of the stock is embraced by the bifurcated portion 3 of a brace handle or crank 4. The opposite end of the wrench-stock or casing is widened, as shown, and through the opposite sides of the same are passed a pair of pivot-pins 5, upon each of which is pivoted a rigid jaw 6. The inner extremities of the jaws are recessed, the outer walls 5* of which are oppositely inclined and tend toward each other, forming an arrow-shaped recess back of their pivots, and their opposite extremities are provided with internal angular cavities, adapting them to receive the squared shank of an ordinary bit 7.

Mounted for sliding between the central guide-openings formed by the space-blocks 2, which openings constitute a central bearing, is a spreader rod or plunger 8. The lower end of the plunger terminates in an arrow-shaped head 9, the extremity of which enters between the semi-arrow-shaped recesses upon the inner rear faces of the jaw, so that by moving the plunger longitudinally within its

case the same tends to open or close the jaws in accordance with the movement. To secure means for operating the rod, said rod is extended beyond the upper end of the stock and screw-threaded, as at 10, and mounted upon the threaded end is a milled nut 11, retained in place by a keeper-block 12, secured to the upper end of the stock and having an L-shaped recess, which overlaps the nut.

When the arrow-head of the plunger is fitted within and coincident with the opposite semi-arrow-shaped recesses, the jaws are open, and by operating the milled nut so as to bring the shoulders of the arrow-shaped head at their rear sides against the rear inclines of the jaws, said jaws are spread at their rear ends or in rear of their pivots, and consequently their forward ends travel toward each other and are tightly bound upon any object between the same. By this it will be apparent that the jaws of the wrench may be readily adjusted to receive nuts of various sizes, and by being provided with the brace or crank handle the nuts may be readily removed or applied without the necessity of removing the wrench for the purpose of taking a new grip.

Such a wrench as described is especially adapted for wheelwrights and other trades wherein many of the nuts to be operated upon are located in sockets and other somewhat inaccessible places and where but a partial turn of an ordinary wrench could be secured. By this invention, however, such difficulties are overcome, and the wrench once having been applied to the nut may be continuously revolved until said nut has been removed or seated in its place. It will also be apparent that the wrench may be used as an ordinary bit-brace, the shank of the bit being grasped, as will be understood, in the same manner as a nut, with the exception that the opposite angles of the head of the bit take within the angular cavities formed in the inner faces of the jaws.

Upon one of the plates 1 there is secured a pair of brackets 12* by means of screws 13, said brackets being opposite each other and each provided with a cylindrical opening 14, the opening of one bracket aligning with that of the opposite bracket. Loosely mounted in the aligning openings is a cylin-

drical rod or shank 15, said shank being adapted for rotation and for longitudinal movement. The upper end of the rod or shank 15 is provided with a cam-disk 16, and just below the same the rod is slightly reduced annularly, as at 17.

18 represents an angular rib, over which the cam-disk 16 is adapted to be sprung, said angular rib taking within the annular groove 17. When the rod is in this position, it will be apparent that the rib 18 serves to lock said rod against a longitudinal movement, and by partially revolving the rod, either before or after such locking, the cam-disk 16 binds upon the plate 1 and places the rod under sufficient tension to maintain it against rattling or any play whatever. The lower end of the rod 15 is provided with an elbow 19, which is continued parallel to the rod to form a screw-driving blade 20, which is of the ordinary shape at its driving end. The upper portion of the screw-driving blade has its opposite faces recessed, as at 21, said recesses being of a width agreeing with and adapted to receive the end of the jaws 6. By unlocking the upper end of the rod and reciprocating said rod within the openings 14 it is apparent that the upper portion 21 of the blade 20 may be projected to a point slightly beyond the extremities of the jaws 6. Now by turning the rod 15 slightly or a quarter-turn the blade 20 is brought into line with the said jaws, and by drawing the rod inwardly a short distance the recesses 21 are brought opposite the extremities of the jaws. It only remains now to operate the milled nut in such a manner as to feed the plunger-rod upward and contract the lower or outer ends of the jaws, so as to take within the opposite recesses 21. When this has been accomplished, it will be obvious that I have provided a most efficient, rigid, and easily-operated screw-driver. To replace the screw-driver, it is simply necessary to loosen the jaws slightly to permit of its withdrawal, after which the screw-driver is given a quarter-revolution, when the rod 15 is drawn upwardly and sprung over the locking-rib 18.

From the above it will be apparent that I have provided an exceedingly simple and cheap combination-tool, one embodying all the requisites of three usually separate and distinct tools, and this in such a manner that neither tool will in any way obstruct a free use of the remaining tools.

The advantages of such a tool are many, and will be readily appreciated by those accustomed to the use of such tools separately, wherein much time is usually expended in searching for those tools accidentally mislaid.

Having described my invention, what I claim is—

1. The combination, with the stock and the opposite pivoted rigid jaws arranged at one end of the same, said rigid jaws being provided at their inner rear faces opposite their pivots with recesses, the outer walls of which

are inclined and converge, of a plunger mounted for sliding in the stock and terminating at its front end in an arrow-shaped head adapted to correspond with the recesses in the jaws, and means for operating the plunger, substantially as specified.

2. The combination, with the stock having a central bearing and with a pair of opposite pivoted jaws, the rear inner faces of which are provided with recesses having outer inclined converging walls, of a plunger-rod mounted for longitudinal movement in the stock, the front end of said rod having an arrow-shaped head adapted to fit between the rear faces of the jaws, and the opposite end of the rod being projected beyond the rear end of the stock and threaded, a milled nut mounted on the threads and adapted for operating said rod, and a keeper secured to the end of the stock and overlapping the nut, substantially as specified.

3. The combination, with the opposite plates 1, bound together and spaced apart by the opposite space-blocks 2, combining to form an internal guide-opening, of an operating-crank bifurcated at its rear end to receive the upper portion of the stock, a pair of opposite levers pivoted to the opposite end of the stock between the plates and having their inner rear faces provided with recesses, and the outer walls of which are oppositely inclined and converged and their opposite extremities provided with angular cavities, the plunger-rod mounted in the guide-opening of the stock and having an arrow-shaped head located between the recesses of the jaws, and having its opposite end projected beyond the opposite end of the stock and threaded, a milled nut mounted upon the threads and adapted for operating the rod, and a block or keeper having an L-shaped recess for the reception of the milled nut and overlapping the same, substantially as specified.

4. The combination, with a wrench-stock provided at one end with a pair of jaws and with suitable openings, of a rod mounted for longitudinal movement in the openings and provided at its forward end with a screw-driving blade extended laterally from the rod, the upper end of the blade being adapted to take within the jaws, and means for operating the jaws for grasping the blade, substantially as specified.

5. A wrench-stock provided with a pair of jaws and means for operating the same, and with a pair of perforated aligning brackets, in combination with a rod mounted in the brackets loosely and provided at one end with a blade adapted to be received by the jaws, and means for locking the rod when not connected with the jaws, substantially as specified.

6. The combination, with the stock of a wrench having the aligning brackets provided with openings and above said brackets provided with the angular locking-rib, of the cylindrical rod terminating at its lower

end in a screw-driving blade, jaws mounted in the stock and adapted to lock the blade, the upper end of the rod being provided with a cam-disk, and below the same having a reduced or grooved portion adapted for interlocking with the rib, substantially as specified.

7. The combination, with the stock having a central longitudinal bore, and with a pair of opposite pivoted jaws, the rear inner faces of which are provided with recesses, the outer walls of which are oppositely inclined and converged, of a plunger-rod mounted for longitudinal movement in the stock, the front

end of said rod having an arrow-shaped head adapted to fit between the rear faces of the jaws, and the opposite end of the rod being projected beyond the rear end of the stock and threaded, and a milled nut mounted on the threads and adapted for operating said rod, substantially as specified.

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

FRED E. PUTNAM.

Witnesses:

A. A. PLAISTED,
E. L. LIBBY.