

No. 767,319.

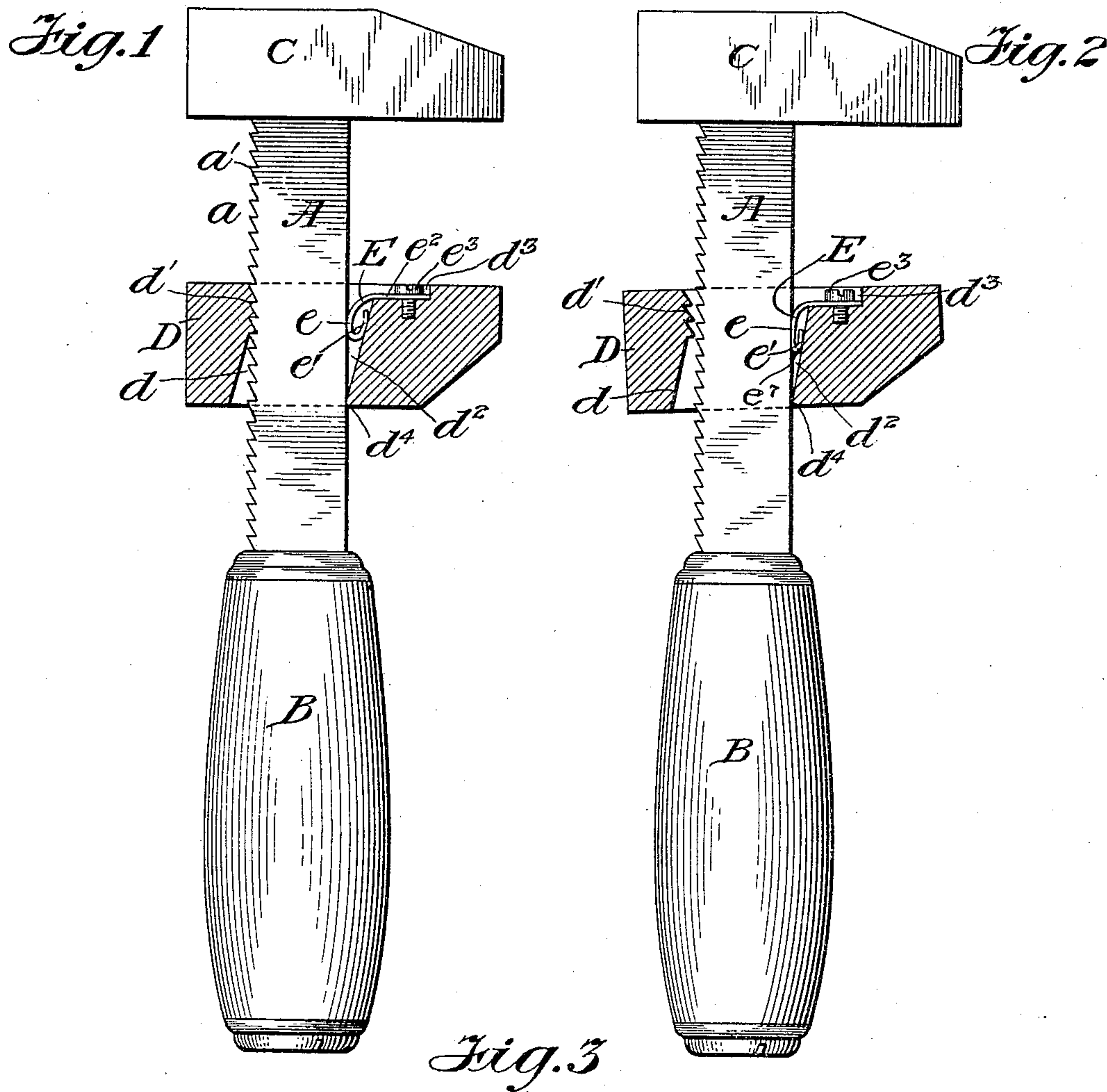
PATENTED AUG. 9, 1904.

J. E. TAYLOR.

WRENCH.

APPLICATION FILED NOV. 30, 1903.

NO MODEL.





## UNITED STATES PATENT OFFICE.

JOHN EDWARD TAYLOR, OF REDBANK, NEW JERSEY.

## WRENCH.

SPECIFICATION forming part of Letters Patent No. 767,319, dated August 9, 1904.

Application filed November 30, 1903. Serial No. 183,136. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN EDWARD TAYLOR, a citizen of the United States, and a resident of Redbank, in the county of Monmouth and State of New Jersey, have invented certain new and useful Improvements in Wrenches, of which the following is a specification.

This invention relates to wrenches, and more particularly to the type of monkey-wrench wherein the shank carrying a fixed jaw at its extremity is provided on its rear edge with rack-teeth adapted to cooperate with corresponding teeth adjacently within the opening of the movable jaw, through which the shank extends and by which said movable jaw is adjustable longitudinally of the shank, the teeth of the movable jaw being normally maintained engaged with those of the shank to lock said jaw through the medium of an expanding leaf-spring carried by the movable jaw at its front and bearing against the forward edge of the shank, the arrangement being such that rearward pressure on the movable jaw counter to the action of the spring will cause the disengagement of the rack-teeth, and thus permit said jaw to be adjusted on the shank, after which the pressure can be released and the spring permitted to automatically restore the engagement of the rack-teeth and effect the locking of the jaw.

The more prominent objects of the present invention are to simplify and render more efficient the type of wrench referred to, and more especially with reference to promoting the efficiency of the spring.

There are other important features connected with the invention, which, besides those alluded to, are clearly set forth in the subsequent detailed description.

In the accompanying drawings, forming part of this specification, Figure 1 is a side view of a monkey-wrench embodying my invention, the movable jaw being represented in vertical section and in the locked position. Fig. 2 is a somewhat similar view with the movable jaw represented in the disengaged position, permitting its adjustment on the shank. Fig. 3 is a detail view of the jaw portion of a wrench, the lower jaw being shown in section and the form of the spring modified.

Similar reference characters are employed to designate corresponding parts of the several figures of the drawings wherein they occur.

The main part of the tool is presented by the shank A, equipped at one end with the handle B and at the other end with the integral jaw C. The rear edge of the shank A is provided with a series of transversely-disposed rack-teeth  $a$ , the horizontal faces  $a'$  of which are uppermost with respect to their inclined backs.

Upon the shank A is mounted the movable jaw D, which is of the general configuration indicated in the several figures. The vertical opening in this jaw for the passage of the shank A is rectangular in a horizontal plane to conform generally to the similar horizontal outline of the shank. The sides of the opening in the jaw D are in closed relation to the contiguous sides of the shank. The rear wall  $d$  of the opening has its upper portion provided with a series of rack-teeth  $d'$ , adapted to engage the teeth  $a$  and retain the jaw against movement toward the handle. The lower plain portion of the wall  $d$  is obliquely parallel with the front wall  $d^2$  of said opening.

The jaw D is normally maintained in the engaged position referred to by means of a leaf-spring E, exerting its expanding action between the forward wall of the jaw-opening and the front edge of the shank. This spring E is peculiarly conditioned, so as to be compact and also exert a uniform bearing pressure against the shank edge and materially prevent the tilting or canting of the jaw on the shank. For these purposes the spring E embodies an extended bearing portion  $e$ , occupying the clearance between the shank edge and front wall of the jaw-opening, said bearing portion being braced at its lower end by an integral turn  $e'$ , which bears against the forward wall of the jaw. The upper end of the portion  $e$  has a forwardly-extending horizontal portion  $e^3$ , which bears in a shallow recess  $d^3$  in the gripping-surface of the jaw, said portion  $e^2$  being securely confined by a screw  $e^3$ , lapped in the bottom of the recess, the capacity of the latter being such that the portion  $e^2$  and screw-head will be below the plane of said gripping-surface.



From the description thus far it will be readily comprehended that the jaw D may be readily tilted on the fulcrum presented by the lower part  $d^4$  of the forward wall in bearing  
 5 contact with the front edge of the shank A. This movement will result in the spring E being compressed and the teeth  $d'$  being disengaged from the teeth  $a$  to permit the jaw D to be moved toward the handle. Manifestly  
 10 when the jaw D is to be moved toward its companion the teeth of the former will ride over those of the shank A, the spring E permitting the relative yield of the parts necessary for such purpose. The jaw D will be  
 15 locked against opposite movement by the action of the spring, which serves to retain the teeth engaged in any position to which the jaw is moved.

When it is required to effect a relative separation of the jaws, it will first be necessary to exert a slight pressure on the forward part of the jaw D, so as to accomplish a limited tilting movement of the latter, which results in compressing the spring E and in disengaging  
 25 the jaw-teeth from those of the shank.

The peculiar character of the spring E serves to provide a spring bearing portion  $e$  in contact with the shank edge suitable for retaining the jaw locked, such portion being braced  
 30 by its upper connection and lower turn, whereby the jaw is steadied and prevented from objectional tilting on the shank. Furthermore, the particular spring disclosed permits of such recessing of the forward jaw portion as  
 35 will avoid any tendency of weakening the gripping portion of the jaw besides reducing the labor and expense involved in the production of the tool. By locating the spring connection, as described, in a plane below the  
 40 jaw top such spring will not be objectionably affected by the gripping operation of the jaw.

The spring may be modified and still perform the functions previously explained. Thus in Fig. 3 I have represented a removable jaw D' as being provided with a leaf-spring E', embodying intermediate forward and upper and lower rearwardly-extending curves  $e^4$   $e^5$   $e^6$ , respectively, the breast of the intermediate curve  $e^4$  bearing against the for-

ward wall of the jaw, while the breast portions of the curves  $e^5$   $e^6$  bear against the forward edge of the shank A' at relatively separated points. This spring E' has the upper horizontal portion  $e^7$  bearing within the recess in the upper part of the jaw D' by a  
 55 screw  $e^8$ .

From the foregoing it will be appreciated that a wrench embodying my improvements will prove not only efficient, but readily operable, and can be quickly manipulated for effecting the changes in the movable jaw and automatic locking of the same in position. Moreover, the improved wrench can be produced at considerably less expense than similar types of tools designed for this purpose.  
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I do not wish to be understood as limiting myself to the precise constructions and arrangements of parts shown and described, but reserve the right to all modifications as may be fairly considered within the scope of my  
 70 invention.

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

In a wrench, the combination with a handled shank rectangular in cross-section, with rack-teeth on its back edge and provided with a fixed jaw, of a movable jaw having an opening rectangular in cross-section for the passage of the shank, said opening being larger  
 75 in area than the horizontal dimensions of the shank and having the upper part of its rear wall provided with rack-teeth for engaging those of the shank, the lower part of such wall being obliquely parallel with the front  
 80 wall of said jaw, and a leaf-spring having a lower forward turn bearing against the front wall, said spring also embodying a forward horizontal portion bearing and secured in a recess in the top of the jaw D, below the  
 85 gripping-surface thereof.

Signed at Redbank, in the county of Monmouth and State of New Jersey, this 12th day of November, A. D. 1903.

JOHN EDWARD TAYLOR.

Witnesses:

JOHN S. APPLGATE,  
 ANNA M. VALENTINE.