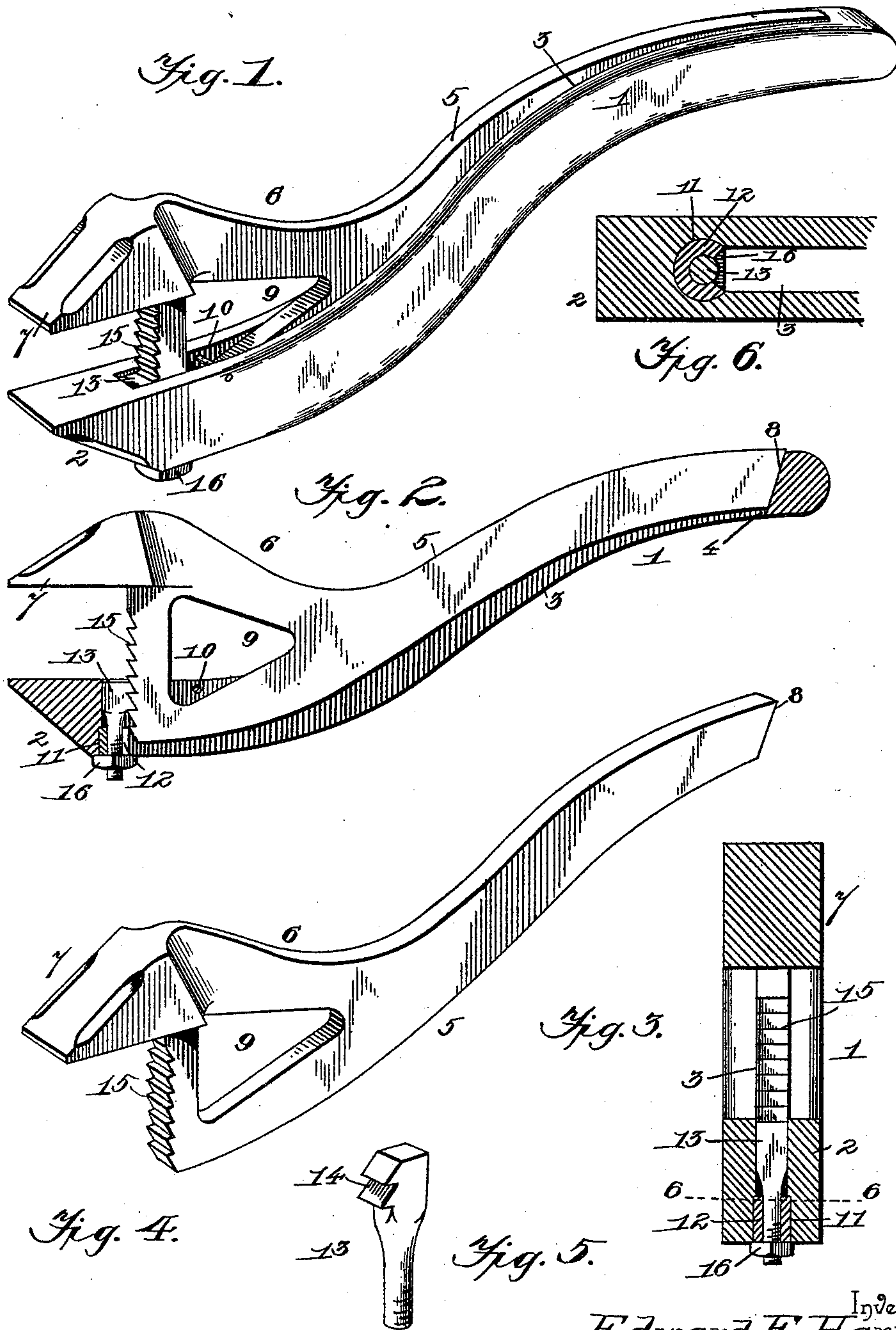


(No Model.)

E. E. HARRIS.  
WRENCH.

No. 582,201.

Patented May 11, 1897.



Inventor  
Edward E. Harris

Witnesses  
T. L. Hockaday  
J. N. Cronwell.

By H. S. Attorneys,

C. A. Snow & Co.



# UNITED STATES PATENT OFFICE.

EDWARD E. HARRIS, OF QUINCY, ILLINOIS.

## WRENCH.

SPECIFICATION forming part of Letters Patent No. 582,201, dated May 11, 1897.

Application filed July 25, 1896. Serial No. 600,551. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD E. HARRIS, a citizen of the United States, residing at Quincy, in the county of Adams and State of Illinois, have invented a new and useful Wrench, of which the following is a specification.

This invention relates to improvements in wrenches; and it has for its object to provide a wrench which shall be inexpensive and durable and adapted to be quickly adjusted to suit different requirements, and, further, to so construct the wrench as to permit the same being handled with ease and efficiency under difficult circumstances.

With these objects in view the invention consists, substantially, in the construction, combination, and arrangement of parts, as will be hereinafter fully illustrated, described, and claimed.

In the accompanying drawings, Figure 1 is a perspective view of a wrench constructed in accordance with the present invention. Fig. 2 is a longitudinal sectional view thereof. Fig. 3 is a transverse sectional view. Fig. 4 is a detail perspective view of the movable jaw. Fig. 5 is a similar view of the adjusting-bolt. Fig. 6 is a sectional view on the line 6 6, Fig. 3.

Similar numerals of reference indicate corresponding parts throughout the figures.

Referring to the drawings, 1 designates a shank which may be formed of any suitable material, and said shank is bent into the form of a compound curve, the side of one end of the shank 1 being flattened to provide a stationary jaw 2. The shank 1, as will be readily seen, forms a handle by which the wrench may be manipulated, and is provided with a longitudinal slot 3, the end of which opposite to the stationary jaw 2 is slightly inclined, as at 4, for a purpose to be hereinafter stated.

Disposed in the longitudinal slot 3 of the shank 1 is a blade 5, which blade conforms substantially to the shape of said shank 1 and is of such a thickness as will permit the same having free movement in said slot, and formed at the end of said blade, which is immediately adjacent to the stationary jaw 2, is a substantially triangular-shaped enlargement 6, having at one of its corners a jaw 7.

By reason of the blade 5 being capable of free movement in the longitudinal slot 3 said jaw 7 will constitute the movable or expanding jaw of the wrench. It is to be noted at this point that the end of the blade 5 which is opposite to the movable jaw 7 is slightly inclined, as at 8, and said inclined end conforms to the inclined end 4 of the slot 3, said inclined end of the slot forming a seat for the inclined end of the blade. The triangular-shaped enlargement 6 has its central portion cut out, as at 9, and passing through said cut-out portion 9 and extending transversely of the longitudinal slot 3 is a retaining-pin 10, which prevents said enlargement being displaced from the slot 3, but allowing the same a limited movement therein, so as to permit the movable jaw being readily adjusted to suit different requirements.

The shank 1 at the end of the longitudinal slot 3, which is immediately adjacent to the stationary jaw 2, but on the edge of said shank which is opposite to said jaw 2, is provided with a socket 11, and disposed in said socket is a split ferrule 12, the split side of said ferrule opening toward the longitudinal slot 3. Extending through said split ferrule 12 is the threaded stem of an adjusting-bolt 13, one end of said stem being substantially squared and provided at one of its edges with teeth 14, which are adapted to engage with similar teeth 15, formed on the end of the triangular-shaped enlargement 6 and extending across said end immediately adjacent to the movable jaw 7. By reason of the teeth 14 of the adjusting-bolt 13 engaging with the teeth 15 of the triangular-shaped enlargement 6 it is evident that the movable jaw 7 may be easily adjusted with respect to the stationary jaw 2, and it is also to be noted that said triangular-shaped enlargement 6 is arranged at a point midway the sides of the movable jaw 7, said jaw 7 being substantially parallel with and lying in a position opposite to the jaw 2. Mounted on the threaded end of the stem of the adjusting-bolt 13 is a nut 16, which nut regulates the movement of the adjusting-bolt 13 and thereby enables the movable jaw 7 being adjusted to suit varying sizes of nuts and the like.

The operation and advantages of the herein-described wrench will be readily under-



stood by those skilled in the art. When it is desired to open the wrench for use, the blade 5 is slid out of the longitudinal slot 3 of the shank 1, and from the fact that the enlargement 6 of said blade has its central portion cut out and the retaining-pin 10 passes through said cut-out portion it will be seen that the jaw 7 may be moved away from the stationary jaw 2, the pin 10 preventing the enlargement 6 from entirely leaving the slot 3. While the blade 5 is in the position described the same may be grasped and any of the teeth 15, formed on the end of the enlargement 6, caused to engage with the teeth 14 on the adjusting-bolt 13, after which said blade may be forced into the longitudinal slot 3, the inclined end 8 of the blade 5 becoming seated on the inclined end 4 of the slot 3 and sliding along said inclined end 4, said enlargement being thus firmly wedged with the adjusting-bolt 13. In this position the wrench may be applied to a nut or the like, and by screwing the nut 16 upon the threaded end of the shank of the adjusting-bolt 13 the movable jaw 7 may be drawn toward the stationary jaw 2 and thereby providing a limited sliding movement of the jaw 7 toward the stationary jaw 2, so as to firmly hold the wrench upon the nut or other article. To remove the wrench, it is simply necessary to slide the blade 5 out of the longitudinal slot 3, when the toothed end of the triangular-shaped enlargement 6 may be drawn out of engagement with the teeth of the adjusting-bolt 13 and the jaw 7 moved away from the stationary jaw 2.

From the foregoing it will be seen that I have provided a wrench which is inexpensive and durable, and one which is adapted to be quickly adjusted for different requirements, and, further, it will be observed that the wrench is so constructed as to permit the same being handled with ease and efficiency under difficult circumstances.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. A wrench comprising a shank provided with a longitudinal slot and having its outer end forming a stationary longitudinal jaw, a blade provided at its outer end with a longitudinal jaw and arranged in the longitudinal slot of the shank and capable of free movement therein to adjust it transversely of the shank, and means for locking the blade in its adjustment, substantially as described.

2. A wrench comprising a shank provided with a longitudinal slot and having a longitudinal jaw at its outer end, a blade arranged in the longitudinal slot and provided at its outer end with a longitudinal jaw and having an enlargement, said blade being capable of free movement in the slot to adjust its enlargement transversely of the shank, and means carried by the shank for engaging the said enlargement to hold the latter at the desired adjustment, substantially as described.

3. A wrench, comprising a shank having

one of its ends formed so as to provide a stationary jaw, a blade connected to said shank and provided with an enlargement having a jaw formed thereon, the jaw of said enlargement constituting the movable jaw of the wrench, and an adjusting-bolt carried by the stationary jaw, the enlargement of the blade being adapted to engage with said adjusting-bolt to hold the movable jaw in a locked position at a desired distance from the stationary jaw, substantially as set forth.

4. A wrench, comprising a shank having one of its ends formed so as to provide a stationary jaw, a blade connected to said shank and having an enlargement constituting the movable jaw of the wrench, teeth formed on said enlargement, and an adjusting-bolt carried by the stationary jaw and provided with teeth, the teeth of the enlargement of said blade being adapted to engage with the teeth on the adjusting-bolt and thereby hold the movable jaw in a locked position at a desired distance from the stationary jaw, substantially as set forth.

5. A wrench, comprising a shank bent to form a substantial compound curve having one of its ends formed so as to provide a stationary jaw, a blade connected to said shank and conforming substantially therewith, said blade having one of its ends provided with a jaw, said jaw constituting the movable jaw of the wrench, a ferrule disposed in a socket formed in said stationary jaw, an adjusting-bolt having its threaded shank passing through said ferrule, and a nut mounted on the end of said shank and adapted to regulate the movement of the adjusting-bolt, said adjusting-bolt being adapted to hold the movable jaw in a locked position at a desired distance from the stationary jaw, substantially as set forth.

6. A wrench, comprising a shank provided with a longitudinal slot and having one of its ends formed so as to provide a stationary jaw, one end of said slot being inclined, a blade disposed in said longitudinal slot and provided with a jaw, said blade being capable of free movement in said slot whereby the jaw thereof constitutes the movable jaw of the wrench, the end of said blade adjacent to the inclined end of the slot being also inclined and adapted to be seated upon and slide along said inclined end of the slot to force the blade into engagement with suitable means for holding the movable jaw in a locked position at a desired distance from the stationary jaw, substantially as set forth.

7. A wrench, comprising a shank bent to form a substantial compound curve and provided with a longitudinal slot, one end of said shank being formed so as to provide a stationary jaw, a blade disposed in the longitudinal slot of said shank and having at one of its ends an enlargement provided with a jaw, said blade being capable of free movement in said longitudinal slot whereby the jaw formed thereon constitutes the movable



jaw of the wrench, said enlargement also having its central portion cut out, teeth formed on said enlargement, a pin extending transversely of the slot and passing through said cut-out portion of the enlargement so as to retain the latter in the longitudinal slot, a ferrule disposed in a socket formed in the stationary jaw, an adjusting-bolt having its stem passing through said ferrule, teeth formed on said adjusting-bolt, the teeth formed on said enlargement being adapted to engage with the teeth formed on said adjusting-bolt to hold the movable jaw in a locked position at a desired distance from the stationary jaw, and a nut mounted on the stem of the adjusting-bolt and adapted to regulate the movement of the latter, substantially as set forth.

8. A wrench, comprising a shank bent to form a substantial compound curve and provided with a longitudinal slot, one end of the shank being formed so as to provide a stationary jaw and the end of the slot opposite to the stationary jaw being inclined, a blade disposed in said longitudinal slot and having at one of its ends an enlargement provided with a jaw, said enlargement having a cut-out portion, and said blade being capable of free movement in the longitudinal slot where-

by the jaw formed on the enlargement constitutes the movable jaw of the wrench, a pin extending transversely of the longitudinal slot of the shank and passing through the cut-out portion of the enlargement of the blade to retain the latter in said longitudinal slot, said enlargement being provided with teeth, a ferrule disposed in a socket formed in the stationary jaw, an adjusting-bolt passing through said ferrule, teeth formed on said adjusting-bolt, and a nut mounted on the stem of said adjusting-bolt and adapted to regulate the movement thereof, the end of the blade adjacent to the inclined end of the longitudinal slot being inclined and adapted to be seated upon and slide along said inclined end of the longitudinal slot, whereby the teeth of the enlargement of the blade are adapted to engage with the teeth of the adjusting-bolt to hold the movable jaw in a locked position at a desired distance from the stationary jaw, substantially as set forth.

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

EDWARD E. HARRIS.

Witnesses:

B. G. VASEN,  
DAVID VASEN.