

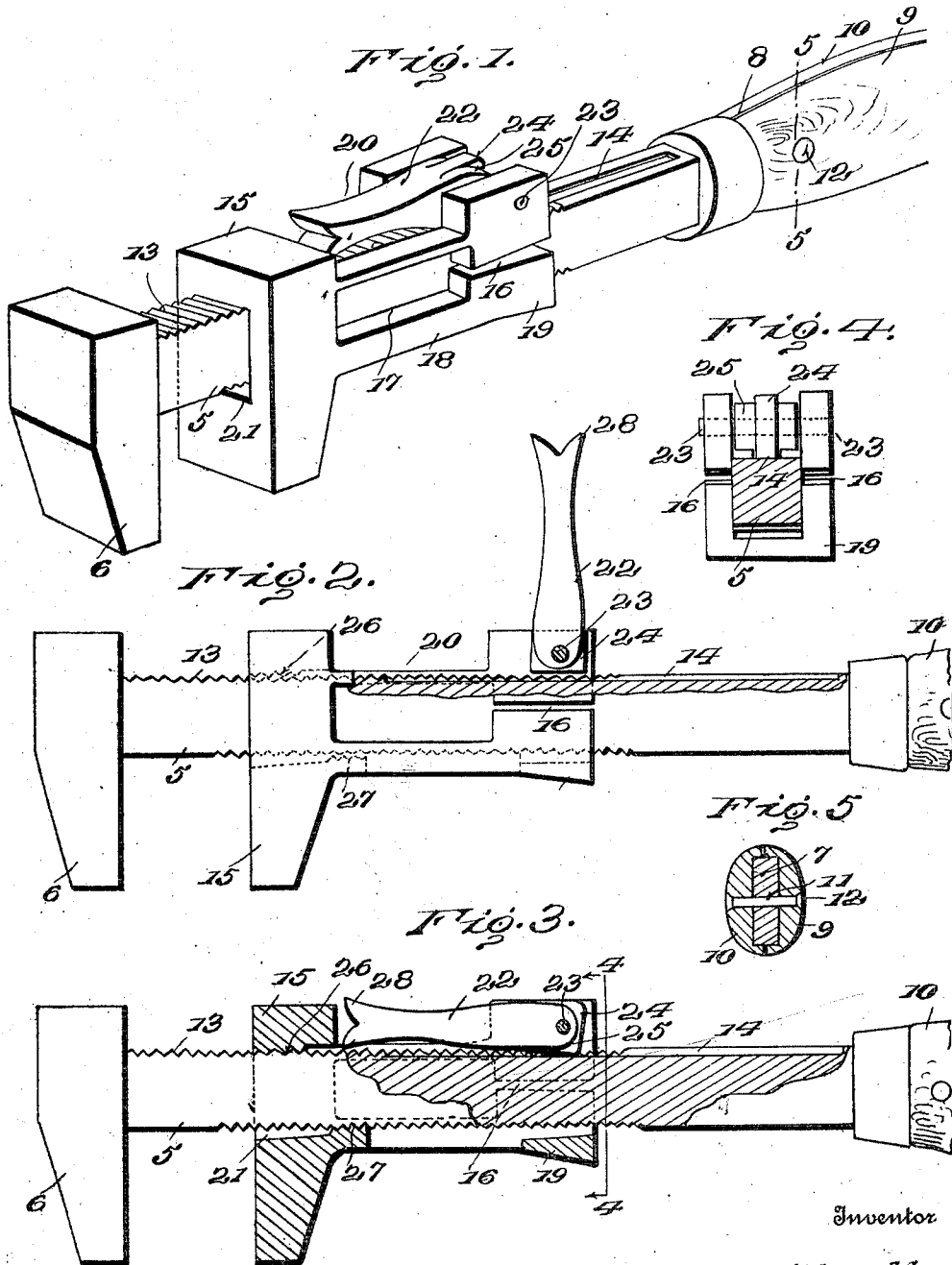
B. B. CALDWELL.

WRENCH.

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1,038,846.

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UNITED STATES PATENT OFFICE.

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WRENCH.

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To all whom it may concern:

Be it known that I, BENJAMIN B. CALDWELL, a citizen of the United States, residing at Culdesac, in the county of Nez Perce and State of Idaho, have invented certain new and useful Improvements in Wrenches, of which the following is a specification.

This invention relates to wrenches of the sliding jaw type and has for its object the provision of a comparatively simple and thoroughly efficient device of this character, the construction of which is such that the movable jaw thereof may be quickly adjusted into engagement with a nut or other object and securely held against accidental displacement during the operation of the tool.

A further object is to provide a wrench including a shank having a movable jaw slidably mounted therein and provided with a lever adapted to grip the shank and clamp the movable jaw in engagement therewith after said jaw has been moved in contact with the work.

A further object is to provide a wrench, the movable jaw of which is split longitudinally so as to compensate for any wear on the cam surface of the lever.

A still further object of the invention is generally to improve this class of devices so as to increase their utility, durability and efficiency.

Further objects and advantages will appear in the following description, it being understood that various changes in form, proportions and minor details of construction may be resorted to within the scope of the appended claims.

For a full understanding of the invention and the merits thereof, reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a perspective view of a wrench constructed in accordance with my invention, showing the movable jaw thereof locked in adjusted position; Fig. 2 is a side elevation partly in section, showing the lever released to permit adjustment of the movable jaw; Fig. 3 is a longitudinal sectional view of Fig. 1; Fig. 4 is a transverse sectional view taken on the line 4-4 of Fig. 3 and looking in the direction of the arrow; Fig. 5 is a transverse sectional view taken on the line 5-5 of Fig. 1.

Corresponding and like parts are referred

to in the following description and indicated in all the views of the drawings by the same reference characters.

The improved wrench forming the subject matter of the present invention comprises a longitudinally disposed shank 5 having one end thereof provided with a fixed jaw 6 and its other end reduced at 7 to form oppositely disposed shoulders 8 for engagement with an operating handle. The handle is preferably formed in two sections 9 and 10, having openings therein and adapted to register with corresponding openings 11 formed in the reduced end of the shank to permit the passage of bolts or similar fastening devices 12. The opposite longitudinal edges of the shank 5, are provided with teeth or serrations 13, there being a slot 14 formed on one edge of the shank and intersecting the adjacent teeth, as shown. Slidably mounted on the shank 5, is a movable jaw 15, the side walls of which are split longitudinally at 16 and provided with oppositely disposed openings 17 communicating with the slot 16 to form relatively thin spring arms 18 terminating in enlarged heads 19.

The rear wall of the movable jaw 15 is provided with a transverse recess 20 communicating with the bore 21 of said jaw, so as to expose the adjacent teeth on the shank and also to reduce the thickness of the arms 18, thus permitting the latter to yield for the purpose hereinafter referred to. Pivotaly mounted between the inner faces of the heads 19, is a lever 22 having oppositely disposed trunnions 23, which latter fit in correspondingly shaped openings formed in the heads 19. If desired, however, a bolt or similar fastening device may be employed for connecting the lever to the spring arms instead of the trunnions. The inner end of the lever 22 is provided with a centrally disposed rib 24 having a cam surface for engagement with the adjacent wall of the recess 14, the inner end of the lever on opposite sides of the rib being cut-away at 25 so as to prevent the curved surface 25 from coming in contact with the adjacent teeth 13 when said lever is moved to operative and inoperative positions.

The inner wall of the bore 21 at the upper end of the movable jaw and at the rear of the wrench, is formed with transverse teeth or serrations 26 adapted to engage the

adjacent teeth on the rear longitudinal edge of the shank, while the wall of the bore at the front of the movable jaw is formed with similar teeth 27 for engagement with the teeth on the other longitudinal edge of the shank, said teeth 26 and 27 being disposed in different planes, as shown.

The lever 22 is preferably of less length than the movable jaw 15 so that when the lever is moved to operative position, said lever will lie within the recess 20 and thus not present any surface projection at the rear face of the wrench. The free end of the lever 22 is preferably bifurcated to form terminal lips 28, by means of which the lever may be conveniently grasped with the fingers and disengaged from the teeth on the shank.

In operation, the lever 22 is swung outwardly at substantially right angles to the arms 18, which movement of the lever disengages the cam face 24 from the recess 14 so as to permit the movable jaw to be adjusted longitudinally of the shank and into engagement with a nut or other object. By moving the free end of the lever 22 in the direction of the shank, the cam face of the rib 24 will bear against the wall of the recess 14, thus moving the lower end of the movable jaw laterally on the shank and causing the teeth 26 and 27 to grip the adjacent teeth on said shank and effectually hold the movable jaw against accidental displacement during the operation of the tool.

It will here be noted that the spring arms 18 not only assist in holding the lever in operative position, but by reason of their resilient properties, also serve to compensate for any wear on the cam face of the rib 24 after the wrench has been used for any length of time. The spring arms 18 also permit the use of a larger cam and dispense with the employment of separate springs and auxiliary lever holding devices. It will also be noted that as the lever 22 is moved in the direction of the recess 20, the walls of the movable jaw at the split portion thereof will be slightly separated and thus exert an outward pressure on the pivoted end of said lever, which pressure has a tendency to hold the free end of the lever within the recess 20 until manually released to effect a further adjustment of said movable jaw.

Having thus described the invention, what is claimed as new is:

1. A wrench including a shank, a movable jaw slidably mounted on the shank and provided with resilient arms, and a cam lever pivotally mounted on the arms and adapted to engage said shank for holding the movable jaw in different positions of adjustment.

2. A wrench including a shank provided with transverse teeth, a movable jaw split

longitudinally to form spring arms slidably mounted on the shank and provided with teeth, and a lever pivotally mounted on the arms and adapted to engage the shank for forcing the teeth on said movable jaw into engagement with the teeth on the shank.

3. A wrench including a toothed shank, a movable jaw slidably mounted on the shank and provided with oppositely disposed sets of teeth arranged in different planes and adapted to engage the teeth on the shank, said movable jaw being split longitudinally to form movable arms, and a lever pivotally mounted on the arms of the movable jaw and having a cam surface adapted to bear against the shank for holding the movable jaw in different positions of adjustment.

4. A wrench including a shank, a movable jaw slidably mounted on the shank and having its side walls split longitudinally to form oppositely disposed resilient arms, and a lever pivotally mounted on the free ends of said arms and movable into engagement with the shank for holding the movable jaw in different positions of longitudinal adjustment.

5. A wrench including a shank having its opposite longitudinal edges provided with transverse teeth, there being a longitudinal recess formed in one edge of the shank and intersecting the adjacent teeth, a movable jaw slidably mounted on the shank and having teeth adapted to engage the teeth on said shank, the side walls of the movable jaw being split longitudinally to form oppositely disposed spring arms, and a lever pivotally mounted between the spring arms and provided with a rib having a cam surface adapted to bear against the wall of the recess.

6. A wrench including a shank, a movable jaw slidably mounted on the shank and having its side walls split longitudinally and provided with openings defining oppositely disposed spring arms terminating in enlarged heads, and a lever pivotally mounted between the heads of the spring arms and provided with a cam face adapted to bear against the shank for holding the movable jaw in different positions of longitudinal adjustment.

7. A wrench including a shank having a fixed jaw and provided with oppositely disposed transverse teeth, there being a longitudinal recess formed in one side of the shank and intersecting the adjacent teeth, a movable jaw slidably mounted on said shank and having its side walls at one end thereof split longitudinally to form oppositely disposed spring arms, and a lever pivotally mounted between the spring arms and provided with a central rib having a cam face adapted to bear against the wall of the recess for clamping the movable jaw in different positions of adjustment, the pivoted

end of the lever on opposite sides of the rib being curved so as to clear the adjacent teeth when said lever is moved to operative position.

5 8. A wrench including a shank having a fixed jaw and provided at its longitudinal edges with transverse teeth, there being a longitudinal recess formed in one side of the shank and intersecting the adjacent teeth, a
10 movable jaw having a longitudinal bore for the reception of the shank, the opposite walls of which bore are provided with teeth adapted to engage the teeth on said shank, the side walls of the movable jaw being split
15 longitudinally for a portion of their length and provided with openings defining oppositely disposed spring arms having enlarged heads, there being a recess formed in one face of the movable jaw to expose the adjacent teeth on the shank, and a lever having
20 its inner end pivotally mounted between the heads of the spring arms, the pivoted end of the lever being provided with a cam face adapted to engage the wall of the longitudinal recess and having the material on each

side of the rib cut-away to produce a curved surface, the free end of the lever being housed within the recess in the rear face of the movable jaw when said lever is in operative position.

30 9. A wrench including a shank, a movable jaw slidably mounted on the shank and having its side walls at one end thereof split longitudinally to form oppositely disposed spring arms, there being a transverse recess
35 formed in the movable jaw, and a lever pivotally mounted between the spring arms and having a cam face adapted to bear against the shank for holding said movable jaw in different positions of longitudinal adjustment, 40
said lever being housed within the recess in the movable jaw when the lever is in operative position.

In testimony whereof, I affix my signature in presence of two witnesses.

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Witnesses:

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