

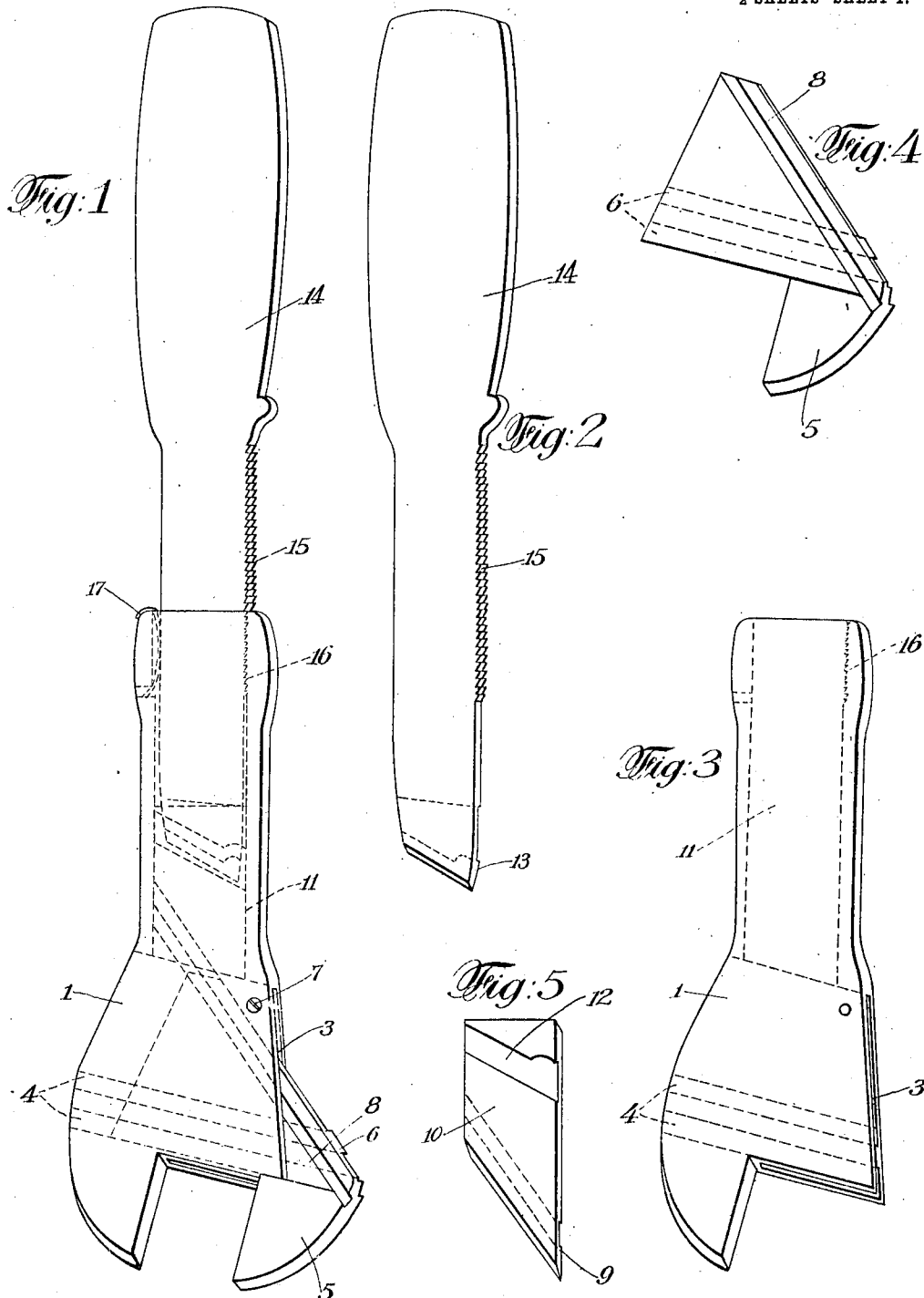
C. E. TOWNSEND.
WRENCH.

APPLICATION FILED MAR. 31, 1911.

1,035,921.

Patented Aug. 20, 1912.

2 SHEETS—SHEET 1.



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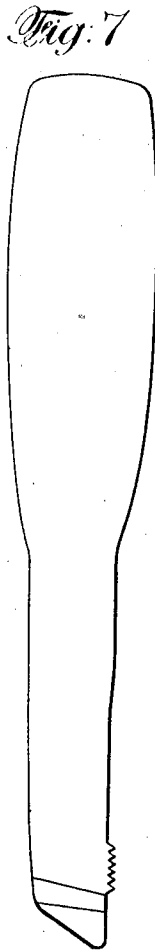
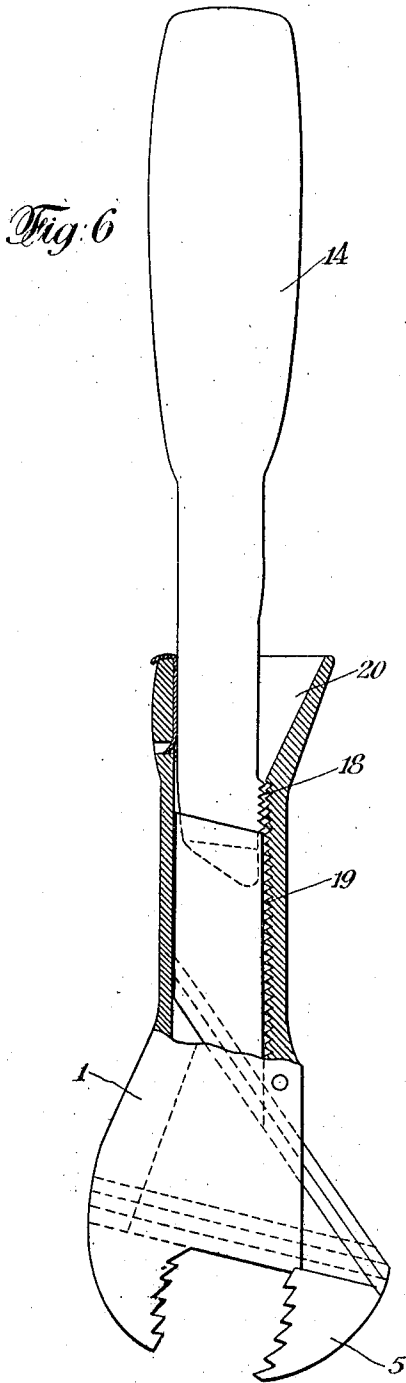
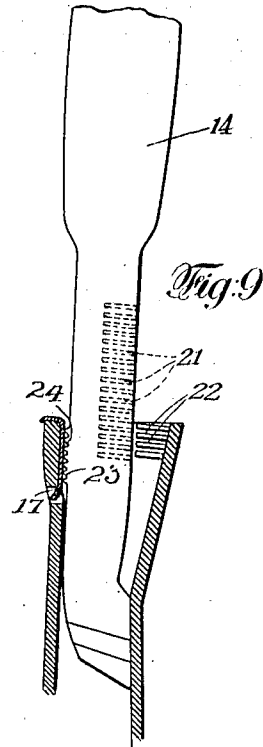


Fig. 8



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UNITED STATES PATENT OFFICE.

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WRENCH.

1,035,921.

Specification of Letters Patent.

Patented Aug. 20, 1912.

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To all whom it may concern:

Be it known that I, CHARLES ELMER TOWNSEND, of Billings, in the county of Yellowstone and in the State of Montana, have invented a certain new and useful Improvement in Wrenches, and do hereby declare that the following is a full, clear, and exact description thereof.

The object of my invention is to provide a wrench of a simple construction which may be operated with the greatest ease and a minimum expenditure of time.

My invention comprises, in general, a wrench which may be adjusted to a nut or a pipe by a mere longitudinal movement of the handle in the body of the wrench but which tightly clamps the nut or pipe as soon as the handle is released, and which, furthermore, has a tendency to exert a pressure upon the nut or pipe when the handle is pressed for the purpose of rotating the wrench together with the nut or pipe.

I have shown certain forms of my invention in the accompanying drawings in which:

Figure 1 is an elevation of one form of wrench constituting an embodiment of my invention; Fig. 2 is an elevation of the handle used in the same; Fig. 3 is a similar view of the body of the wrench carrying the stationary jaw; Fig. 4 is a similar view of the movable jaw; Fig. 5 is a similar view of the movable cam carried in the interior of the wrench; Fig. 6 is an elevation of a pipe-wrench constituting another embodiment of my invention; Fig. 7 is a plan view of the handle used in the same; Fig. 8 is a similar view of the cam used in the same, and Fig. 9 is a plan view of another form of wrench showing the teeth in a different location.

In the drawings, reference being had particularly to Figs. 1 to 5, 1 represents a wrench body and jaw. The wrench body is provided with a transverse slot 3 having a pair of transverse grooves 4, the slot 3 and the grooves 4 being designed to receive a movable wrench jaw 5 having a similar pair of ribs 6 to fit in the grooves 4. A screw 7 prevents the movable jaw 5 from being entirely removed from the wrench body 1 once that it has been inserted in the slot 3. The movable wrench jaw 5 is also provided with an inclined groove 8. The inclined

groove 8 is designed to receive a similar rib 9 upon the forward end of the sliding cam 10, the cam 10 being fitted to slide within a longitudinal slot 11 carried by the wrench body. 1. Upon the rear end of the sliding cam 10, there is located an inclined groove 12 to receive an inclined rib 13 carried upon the forward end of the handle 14. One edge of the handle 14 is provided with a series of teeth 15 to cooperate with a similar series of teeth 16 upon the interior of the slot 11 on the wrench body and jaw 1. A spring 17 carried by the wrench body 1 and bearing against one edge of the handle 14, normally forces the series of teeth 15 and 16 into engagement with each other.

The form shown in Figs. 6, 7 and 8 is constructed in a similar manner, except that the stationary wrench-jaw and the movable wrench-jaw 5 are provided with series of teeth located in a curved position so as to adapt the device to be used as a pipe wrench. A further difference in construction of this form lies in the fact that the handle 14 is provided with a series of teeth 18 very near its forward end to cooperate with a similarly located series of teeth 19 upon the interior of the wrench body 1. The wrench body 1 is furthermore, provided at its rear end with a flaring slot 20. The arrangement of these parts is such that the handle 14 has a very wide range of movement thereby permitting the wrench jaws to be moved to a considerable degree toward each other even if the series of teeth 18 and 19 have become engaged with each other.

The form shown in Fig. 9 is the same as that shown in Figs. 1 to 5 except that the handle 14 is provided at its side with a series of teeth 21, cooperating with a similar series of teeth 22 located on the interior of the wrench body 1 and on the side thereof adjacent to the series of teeth 21. A further difference consists in the fact that the rear edge of the handle 14 is provided also with a series of teeth 23 to cooperate with a similar series of teeth 24 carried by the wrench body in the interior of the slot 11. In this instance the spring 17 is countersunk alongside of the series of teeth 24.

In the operation of the form of wrench shown in Figs. 1 to 5, the handle 14 is moved in opposition to the pressure of the spring 17 to remove the series of teeth 15

and 16 from engagement with each other. The handle 14 can now be adjusted longitudinally in the wrench body 1, so as to move the wrench jaws to or away from each other. When an approximate adjustment of this kind has been made, the handle 14 is released, thereby permitting the spring 17 to move the series of teeth 15 and 16 into engagement with each other. When now the wrench is rotated by pressing on the handle 14, the forward end of the handle 14 carrying the rib 13 has a tendency to move transversely in the slot 12 thereby wedging the cam 10 forwardly and causing the jaws to approach each other and firmly grip the nut being operated upon. When it is desired to take the wrench apart, it is merely necessary to remove the screw 7 when the various parts can be removed from the slots.

The form shown in Figs. 6, 7 and 8 operates in the same manner as the form already described except that the arrangement of the parts permits a very great degree of movement of the jaws toward each other, even after the teeth 18 and 19 have become engaged with each other. This form therefore acts as an efficient pipe wrench.

The form shown in Fig. 9 operates in the same manner as the forms already described except that the series of teeth 21 and 22 engage with each other laterally. The gripping action of the jaws in this instance, is therefore, only limited by the size of the object being gripped, as the engagement of the series of teeth 21 and 22 does not in any way limit the gripping action of the jaws. A further difference in the operation of this form of my invention consists in the fact that because of the provision of the teeth 23 and the teeth 24 in addition to the teeth 21 and 22 the wrench can be operated in either direction and when so operated the series of teeth at one or the other edge of the handle 14 will be in engagement so as to retain the wrench jaws in their adjusted position during the operation of the wrench.

While I have described certain forms of my invention above in detail, I wish it to be understood that many changes may be made

therein without departing from the spirit 50 of my invention.

I claim:

1. In a wrench, a pair of jaws one of said jaws having a socket and teeth on the interior thereof, and a handle movable longitudinally in said socket to adjust the jaws and laterally to lock the jaws in adjusted position. 55

2. In a wrench, a pair of jaws, a handle movable longitudinally with respect thereto to adjust the jaws and laterally to lock the jaws in adjusted position and means to normally move said handle laterally. 60

3. In a wrench, a pair of jaws, a handle movable longitudinally with respect thereto to adjust the jaws and laterally to lock the jaws in adjusted position and a spring to normally move said handle laterally. 65

4. In a wrench, a pair of jaws opening transversely of the wrench, and a handle movable with respect thereto to adjust the jaws, said handle and jaws having cooperating teeth both sets of teeth being adapted to be thrown into and out of engagement to lock the jaws in adjusted position. 70

5. In a wrench, a pair of jaws, a handle movable with respect thereto to adjust the jaws, said handle and jaws having cooperating teeth both sets of teeth being adapted to be thrown into and out of engagement to lock the jaws in adjusted position and means to normally move said teeth into engagement. 75

6. In a wrench, a pair of jaws, a handle movable with respect thereto to adjust the jaws, said handle and jaws having cooperating teeth both sets of teeth being adapted to be thrown into and out of engagement to lock the jaws in adjusted position, and a spring to normally move said teeth into engagement. 80

In testimony that I claim the foregoing I have hereunto set my hand.

CHARLES ELMER TOWNSEND.

Witnesses:

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