No. 817,695. PATENTED APR. 10, 1906.

L. W. DUKERSCHIEN & F. ENGLE.

RADIATOR VALVE UNION NIPPLE WRENCH.

APPLICATION FILED APR. 5, 1905.

Fig. 1.

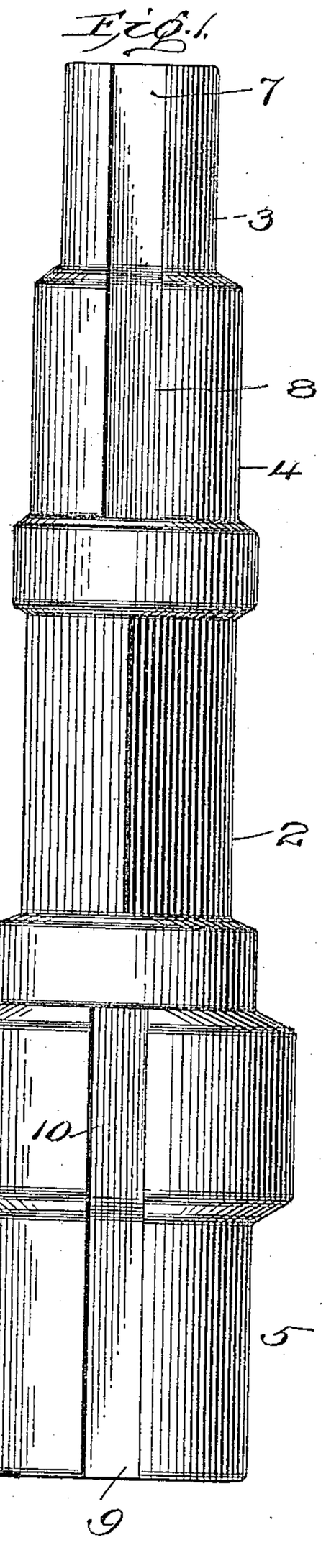


Fig. 2.

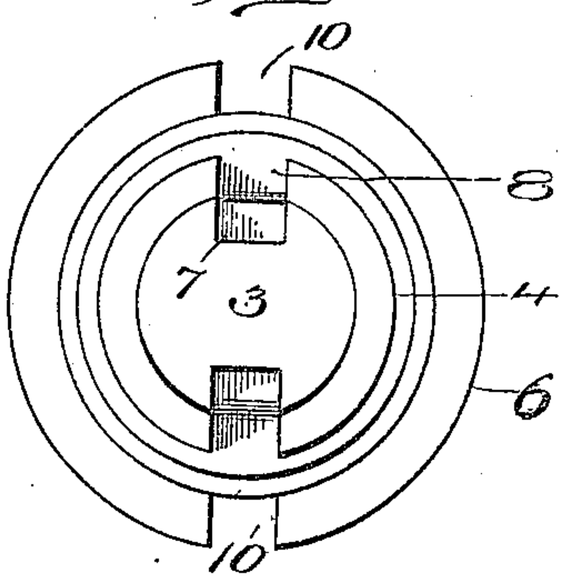
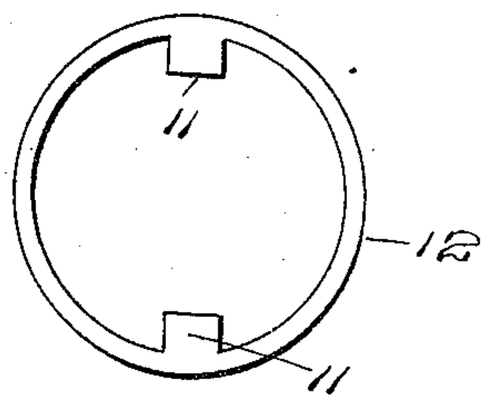


Fig. 3



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UNITED STATES PATENT OFFICE.

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RADIATOR-VALVE UNION NIPPLE-WRENCH.

No. 817,695. Specification of Letters Patent. Patented April 10, 1906.

Application filed April 5, 1905. Serial No. 254,049.

To all whom it may concern:

Be it known that we, LOUIS W. DUKERSCHIEN and FRED ENGLE, citizens of the United States, residing at Oshkosh, in the county of Winnebago and State of Wisconsin, have invented new and useful Improvements in Combination Radiator-Valve Union Nipple-Wrenches, of which the following is a specification.

Our invention relates to improvements in wrenches, and in particular to wrenches applicable for use for turning radiator-union nipples.

The object of our invention is to provide an internal wrench which is adapted to apply to all sizes of nipples, of which there are in use ordinarily four sizes, each of which is provided with internal longitudinal lugs.

A further object of our invention is to provide a simple internal wrench which combines all of the characteristic features of other known wrenches, yet one which is admirably suited for union-nipples and which can readily and without adjustment of parts be accommodated to the various sizes of nipples employed in radiator-valve unions.

The invention consists, furthermore, in such features and details as will be described in connection with the accompanying drawings and then more particularly be pointed out in the claim.

In the drawings, Figure 1 is a side elevation, Fig. 2 an end view, and Fig. 3 an end view, of a union-nipple.

Referring more in detail to the drawings, 2 represents the central portion of the shank comprising the wrench, said portion being angular in section and preferably rectangular, so as to be suited for receiving the jaws of an ordinary wrench, by means of which the internal wrench when applied to the nipples is rotated. The entire wrench is tapering and at certain determined points is provided with projections or heads 3, 4, 5, and 6 of the same conformation as the remaining portion of the shank, with the exception of the angular portion. These projections are graduated to the sizes of nipples to which this wrench is adapted to be applied. These union-nipples being usually of annular form, the wrench is made to conform therewith.

In the drawings it will be seen that the wrench embraces four graduations adapted to fit four different sizes of nipples, the forward end of the wrench 3 being designed for a one-inch size nipple, 4 representing the size for use on a one and one-fourth inch, 5 one and one-half inches, and 6 two inches in diameter. The peripheral side of this wrench has extending longitudinally thereof grooves 7, 8, 9, and 10, respectively, each provided in the respective graduations and adapted to engage that size nipple into the lugs of which the groove portion of this wrench is intended to fit. The engagement of the ribs or lugs in the grooves or channels insures rotation of the nipples with the wrench when the latter is rotated by the engagement of the wrench with the body portion 2, which, as has already been described, is provided with angular faces in order to receive the jaws of the wrench. The central portion of this wrench, which is provided with angular faces, extends along a lower plane than that of the periphery of the wrench and the projections or shoulders formed thereon. In this manner the disadvantage of having the central portion formed as a handle and projecting above the plane of the projections, by reason of which the same will be apt to strike against the radiator-tube containing the nipple through which this wrench is to be inserted, will be obviated.

It will be easily understood that this invention embodies a single tool which is adapted to all sizes of union-nipples in ordinary use and that the use of more than one wrench for a like purpose is dispensed with. Either end of the wrench may be inserted into the nipple until the proper-sized head engages the internal ribs or lugs of the same, whereupon the same can be easily rotated. If the forward end of the wrench—that is to say, the smaller end, shown at 3—is inserted and the nipple is of greater diameter than the diameter of the wrench inserted, then the wrench may be forced farther down into the tube containing the nipple until the longitudinal channels of the same engage the internally-projecting ribs of the same. In like manner the larger end or head 5 of the wrench may be inserted when it is necessary to adjust the same to the nipple of a diameter corresponding to that of the wrench.

The projecting portions of the wrench forming the graduations are easy of construction, and the entire wrench may be cast in one operation without the use of any machinery except that of course for grinding.

Having thus described our invention, what

we claim, and desire to secure by Letters Patent of the United States, is—

A wrench comprising a shank formed with a coaxially-stepped head and diametrically-disposed continuous furrows formed longitudinally of the stepped head.

In testimony whereof we have hereunto set our hands in the presence of two subscribing witnesses.

LOUIS W. DUKERSCHIEN.
FRED ENGLE.

Witnesses:
WM. B. STICKNEY,
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