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W. M. KOENIG
RIGID-JAW WRENCH HAVING JAW-FACE
EXTENSIONS ON OFFSET SHANK
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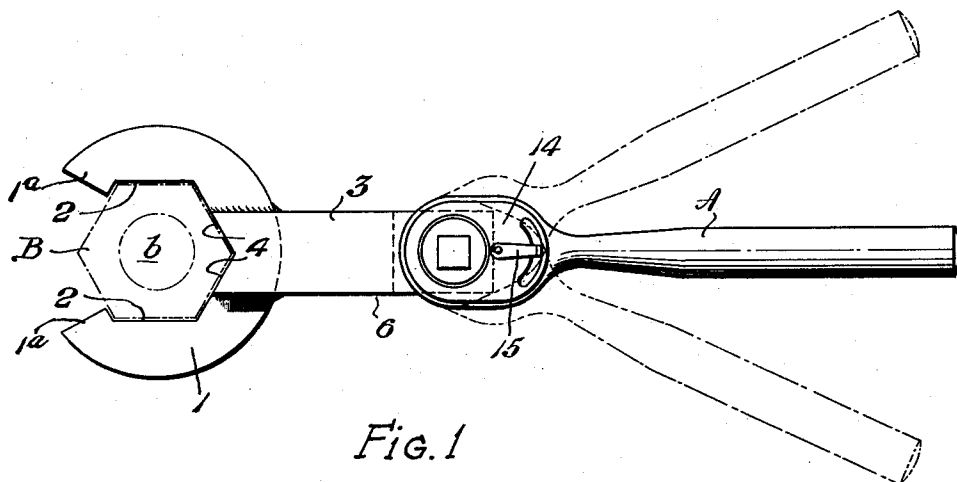


Fig. 1

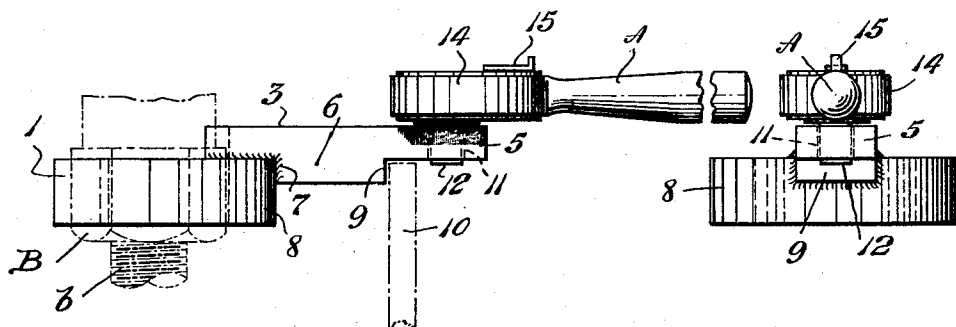


Fig. 2

Fig. 3

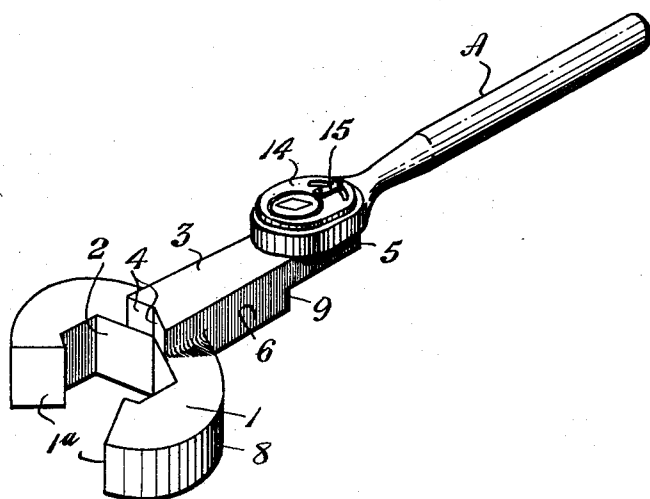


Fig. 4

INVENTOR
WILLIAM M. KOENIG
BY *Ralph J. Bonnett*
ATTORNEY

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RIGID-JAW WRENCH HAVING JAW-FACE
EXTENSIONS ON OFFSET SHANK

William M. Koenig, Webster, S. Dak.

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4 Claims. (Cl. 81-119)

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This invention relates to a novel type of wrench.

In the conventional tractor track the tractor belts must be maintained tight on their respective sprocket wheels and for this purpose there is provided a spring tensioned bolt which from time to time must be tightened to maintain the parts under tension and adjustment. The bolts in the conventional tractor are so located that an ordinary wrench cannot be used.

The primary object of the invention is to provide a wrench particularly for use in tightening main tension bolts on endless tracks of a tractor.

A further object of the invention is to provide a short wrench of integral construction which can be utilized in a restricted area of such a character that the conventional wrench cannot be utilized, the short integral wrench being designed for association with the conventional ratchet wrench.

Another object of the invention is to provide a short wrench structure in which the jaw and shank are built into an extremely rigid assembly capable of transmitting torque from a ratchet wrench, the wrench jaw being offset from the shank structure to permit the application of the force from the ratchet wrench from a plane above the wrench jaw.

A further object of the invention is the provision of an integral wrench structure so designed that the conventional ratchet wrench may be utilized in a manner permitting any angular position between the pull handle and the nut engaging head.

Other features of the invention will more clearly hereinafter appear by reference to the accompanying drawings forming a part of the instant application and in which like characters of reference designate corresponding parts throughout the several views, in which:

Fig. 1 is a top plan view of the wrench in engagement with a nut and having the conventional ratchet wrench associated therewith;

Fig. 2 is a side elevation of the structure of Fig. 1 showing associated parts of an endless tractor belt;

Fig. 3 is an end view of the structure of the assembly; and

Fig. 4 is a perspective view of the invention.

The wrench structure is of integral form and includes a rigid head 1 shaped to receive a nut or bolt B of hexagonal form, although it will be obvious to one skilled in the art that a work-engaging recess 2 of the wrench head may have a suitable number of walls so as to receive a bolt

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or nut head of other shape or design. A shank 3 for the wrench head 1 includes a forward extension which overlies the top medial portion of the head 1 and terminates flush with the recess in inclined or outwardly diverging faces 4 which lie in the planes of the underlying walls or work-engaging faces of the wrench head 1, so that free passage of the wrench head onto the nut B is provided. The forward superimposed end of the shank 3 is welded or otherwise formed as an integral part of the wrench head 1 with the end faces of the shank vertically aligned or coplanar with adjacent faces of the wrench head as heretofore described. The shank 3 of the wrench head extends rearwardly with its upper surface in a horizontal plane, and adjacent an outer end 5 thereof a socket 11 is provided for the reception of a shank 12 of a conventional ratchet wrench A to be hereinafter described.

The shank structure 3 is substantially thickened medially at 6 to provide a forward shoulder 7, which abuts the wrench head 1 and is welded thereto, and a rearward shoulder 9, the latter being spaced sufficiently inward from the outer end 5 of the shank to clear intervening wall parts, such as shown at 10. The provision of the thickened medial portion 6 of the wrench shank 3 while providing an extremely rigid torque transmitting body is so constructed and arranged as to clear the inner face of the part 10 so that the wrench can be swung on the axis of the nut without striking the inner face of the wall 10 by application of the reversible ratchet wrench structure A. The ratchet wrench A includes the usual shank and wrench head, the wrench head 14 including conventional reversible mechanism indicated generally at 15. It will be understood that the ratchet wrench A, in itself, forms no part of the instant invention, the invention being comprehended by the integral wrench structure and being designed for association and use with a ratchet wrench.

The illustrations of the instant invention embody its use in association with the nut head B on the bolt b which comprehends a tensioning bolt used in tightening the track links of an endless track and in such installations the machine frame embodies a wall structure or element illustrated and indicated generally at 10. This arrangement obviously prohibits the use of any long shanked wrench structure and requires the offset superimposed relation between the wrench head 1 and the ratchet head 14 for the application of necessary forces in the rotation of the nut B. It will be obvious to one skilled in the art that the

structure may be used not only as a special tool in the tightening of tensioning bolts of endless tracks for tractors, but could be used in other assemblies embodying the same association of parts and the structure also permits a reversing of the wrench unit in instances where the parts are oppositely positioned from the arrangement illustrated in the instant drawings.

It will be noted that the wrench head 1 includes inwardly projecting extremities 1^a which partially embrace the outer faces of the nut B as viewed from the top plan view of Fig. 1, these extensions 1^a increasing the area of engagement between the wrench head 1 and the nut B and preventing separation of the associated parts during operation, as well as increasing the working surfaces of the parts. It will also be noted that the end faces 4 of the shank add to the areas of the working faces between the wrench and the nut and tend to maintain the wrench head 1 on the nut B against rotational movement which might be present due to the inconvenient arrangement of the work and necessary angle of operation because of this arrangement.

By the proposed construction applicant has provided a novel device of great strength and sturdiness which is capable of use in tightening the tension bolts of the endless tracks of tractors by means permitting control of the operation and thus enabling the proper tension to be applied on the structure, it being obvious that the ratchet wrench shown at A may be in the nature of a tension wrench whereby predetermined tension may be applied should this be found desirable. It will also be obvious to one skilled in the art that the wrench embodies maximum strength and at the same time provides an offset position for the operator so that the operator without inconvenience can accomplish his work and apply to the tension bolt direct forces to accomplish the required result.

What I claim is:

1. In a wrench for use in tightening tension bolts for endless tracks for tractors, a shank member having a downwardly depending shoulder adjacent one end, a wrench head formed rigidly with the shank and having one of its faces abutting said shoulder and welded thereto, the end faces of said shank terminating flush with

work-engaging jaw portions of said wrench head, an outer end portion for said wrench shank having a socket for receiving a wrench part, and the medial portion of said shank being relatively thick and extending substantially below the outer end portion of said shank.

2. In a wrench structure including an elongated shank, said shank having a medial depending thickened portion defined by shoulders, a wrench jaw rigidly fixed to a bottom face of said shank at one end and abutting one of said shoulders, and an operating part for said shank superimposed upon the other end of said shank.

3. In an integral wrench structure including a jaw and a shank, said shank having one end overlying a medial portion of said jaw and terminating flush with work-engaging faces of the jaw, said shank including a thickened medial portion formed by a portion lying below an upper face of the jaw, and means for operating said wrench superimposed above said shank at its outer end.

4. In a wrench including a jaw and shank, said jaw being formed with a recess to provide walls for engaging all of the faces of an associated nut, said shank being formed with a forward shoulder adjacent one end, said shoulder abutting an outer face of the wrench jaw and the end of said shank terminating flush with the recess and lying in the plane of certain walls of the recess, said shank including an elongated medially thickened portion terminating in an outer shoulder, the outer extremity of the shank being adapted to be engaged by an operating part.

WILLIAM M. KOENIG.

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