J. L. PRICKETT.

NIPPLE CHUCK.

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1,432,121. Patented Oct. 17, 1922.

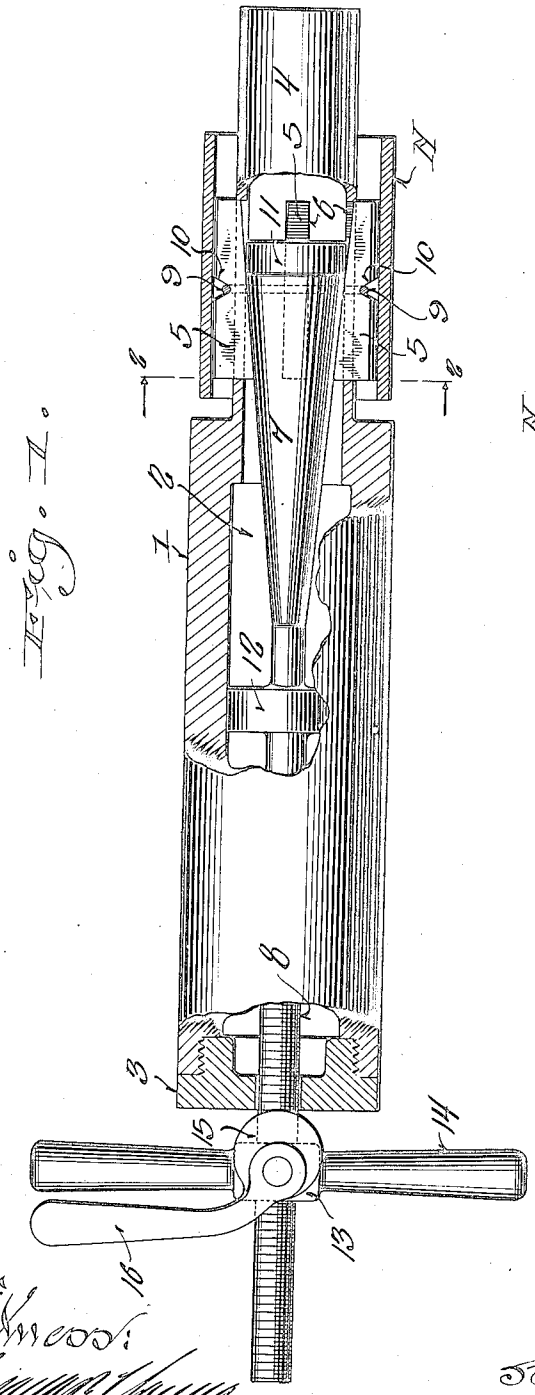


Fig. 1.

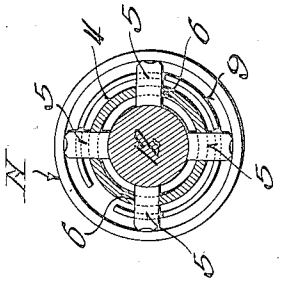


Fig. 2.

Witness:

Inventor:
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by Young & Young
Attorneys

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UNITED STATES PATENT OFFICE.

JOHN L. PRICKETT, OF MANITOWOC, WISCONSIN, ASSIGNOR OF ONE-THIRD TO EDGAR KNAUER, OF MANITOWOC, WISCONSIN.

NIPPLE CHUCK.

Application filed January 26, 1920, Serial No. 353,970. Renewed August 31, 1922. Serial No. 585,555.

To all whom it may concern:

Be it known that I, JOHN L. PRICKETT, a citizen of the United States, and resident of Manitowoc, in the county of Manitowoc and State of Wisconsin, have invented certain new and useful Improvements in Nipple Chucks; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to new and useful improvements in chucks, particularly of the expanding jaw type.

At the present time it is very difficult or impossible to thread short pieces of pipe or nipples owing to the fact that the chucks and vices at present in use are almost all incapable of holding a piece of pipe less than eight or nine inches in length in a position to be threaded. Therefore in making nipples it is customary to thread a piece of pipe of the required length and then cut it from the main or stock portion.

It is therefore the primary object of this invention to provide an arrangement for holding nipples and short sections of any kind of pipe of various diameters while the same are being cut with right or left hand threads, or otherwise exteriorly operated upon. It is also an object to provide a device of this character which may be used for dismantling old fittings without danger of mutilating the parts or marring the threads.

A further object of the inventiton is to provide a simply constructed, quick operating chuck of the expanding jaw type which may be very inexpensively manufactured.

A still further object of the invention is to provide a chuck of this character which can be easily secured in any type of vice and easily operated while so positioned.

With these general objects in view the invention consists in the novel features of structure, combination and arrangement of parts which will be hereinafter more particularly described and claimed.

In the accompanying drawings:

Figure 1 represents an elevational view, partly in longitudinal section, of a nipple and pipe section chuck constructed in accordance with the invention, and

Figure 2 is a transverse sectional view on the plane of the line 2—2 of Figure 1.

Referring now more particularly to this drawing, it will be seen that the preferred form of the invention includes a preferably cylindrical chuck body 1 of appropriate length having a cylindrical bore 2 extending substantially throughout its length, one end being partly closed by the centrally apertured cap plug 3, and the other end having a reduced cylindrical bearing sleeve or extension 4, the same also having a cylindrical bore forming a bearing surface to co-operate with the bearing surface provided by the bore 2 in a manner to be hereinafter more particularly described. The chuck body 1 is designed to be gripped between the jaw of a vice or held in any other convenient form of device so that the extension 4 may project therefrom a sufficient distance to permit a threading tool to operate upon a section of the pipe or nipple N secured thereon.

The means for procuring the rigid securement of the nipple or the like upon the extension 4 consists of a plurality of axially extending chuck jaws 5, the same being circumferentially spaced about the periphery of the extension 4 and radially movable in slots 6 cut therein. It may be noticed from the drawing that the outer edges of the jaws are roughened or grooved to bite into the nipple or the like N and these surfaces are parallel with the longitudinal axis of the body 1 and extension 4.

The inner edges of the jaws, however, are inclined inwardly toward the body 1 and are adapted to have sliding contact with the face of a conical expanding member 7. The apex of this member is disposed within the bore 2 and terminates in a threaded stem 8, the free end portion of which projects through the aperture in the plug 3. Thus by moving the expander cone 7 inwardly of the body 1, the chuck jaws 5 will be urged outwardly, or in other words expanded.

These jaws are held in their slots 6 and prevented from accidentally disengaging from the extension 4 when a nipple or the like is disposed therearound by means of a normally contracting retaining or clip spring 9. This spring is located in notches 10 formed in the jaws 5 and always tends to move the same inwardly into engagement with the inclined wall of the expanded cone 7.

Inasmuch as the cone 7 and its threaded stem 8 are slidable longitudinally within the bores of the body 1 and extension 4, the outer end of said cone is provided with a cylindrical bearing surface 11 with a diam-

eter substantially the same as that of the bore or the extension 4, whereas said stem has a bearing collar 12 of a diameter approximately equal to the bore 2, there is thus formed a two point bearing surface for the longitudinal sliding parts of the chuck.

Accurate movement of these parts 7 and 8 is obtained by the provision of a nut 13 threaded on the latter and adapted to engage the plug 3. Oppositely extending handles 14 projecting from the nut 13 permit the ready manipulation thereof. The nut also carries means for obtaining a quicker shifting or adjustment of the stem 8 and the expander cone 7. In the present instance this consists of a cam or eccentric 15 pivoted to the nut 13 and having an operating lever 16.

In the operation of my improved chuck, the nut 13 is first threaded outwardly of the stem 8 a sufficient distance to permit the expander cone 7 to slide downwardly of the extension 4 with a consequent contraction of the chuck jaws 5. A nipple N may then be placed over the extension 4 and the jaws 5 as shown in the figures of the drawing. The nut 13 may then be threaded inwardly of the stem 8 so as to draw the expander cone 7 inwardly of the body 1 and shift the jaws 5 outwardly into tight engagement with the nipple N.

Various degrees of expansion of the jaws is obviously procured by the threading of the nut 13 more tightly into engagement with the plug 3. However, if a quicker and less accurate movement of the jaws is possible, the nut 13 need not be threaded into engagement with the plug 3, but the lever 16 may be swung to throw the high point of the cam into contact with said plug. This quick adjustable means will be found very efficient when the chuck is to be used on several nipples or pieces of pipe of substantially the same inner diameter. After the nipple has been locked upon the extension 4 of the chuck, the body 1 may be secured in a vice or the like. Or the vice may be clamped upon the body before the nipple has been secured on the chuck and retained in this position until the desired one of the nipples or the like have been threaded.

Various changes may be made in the form and proportion and in the general association of the several parts of the invention without departing from or sacrificing any of the advantages thereof.

I claim:

A chuck of the class described comprising a hollow body adapted to be secured in a vice or other suitable holding device, a hollow nipple receiving extension projecting from one end of the body and integral therewith, expander jaws carried by the extension, said jaws being movable radially of the extension through slots formed therein, a resilient member connecting said jaws and normally urging the same inwardly, an expanding cone slidable within the bore of said body and extension and engageable with the portions of the jaw extending through said slots, said expanding cone having an extension with a cylindrical bearing surface for engagement with the wall of the bore of said extension, a threaded stem extending from said expanding cone, a centrally apertured plug threaded into the end of the body and through which the stem projects, a nut threaded on the end of the stem for adjusting the effective length of the stem or for engagement with the head of the plug to shift the expanding member, an eccentric pivotally mounted on said nut and engageable with the head of the plug for effecting a quick shifting movement of the cone, and a bearing collar carried by the stem and engaging the inner wall of the body to guide the stem and expanding member when shifted.

In testimony that I claim the foregoing I have hereunto set my hand at Manitowoc, in the county of Manitowoc and State of Wisconsin.

JOHN L. PRICKETT.