No. 871,436. PATENTED NOV. 19, 1907.

R. PARMELEE.

PIPE WRENCH.

APPLICATION FILED SEPT. 21, 1905.

Fig. 1.

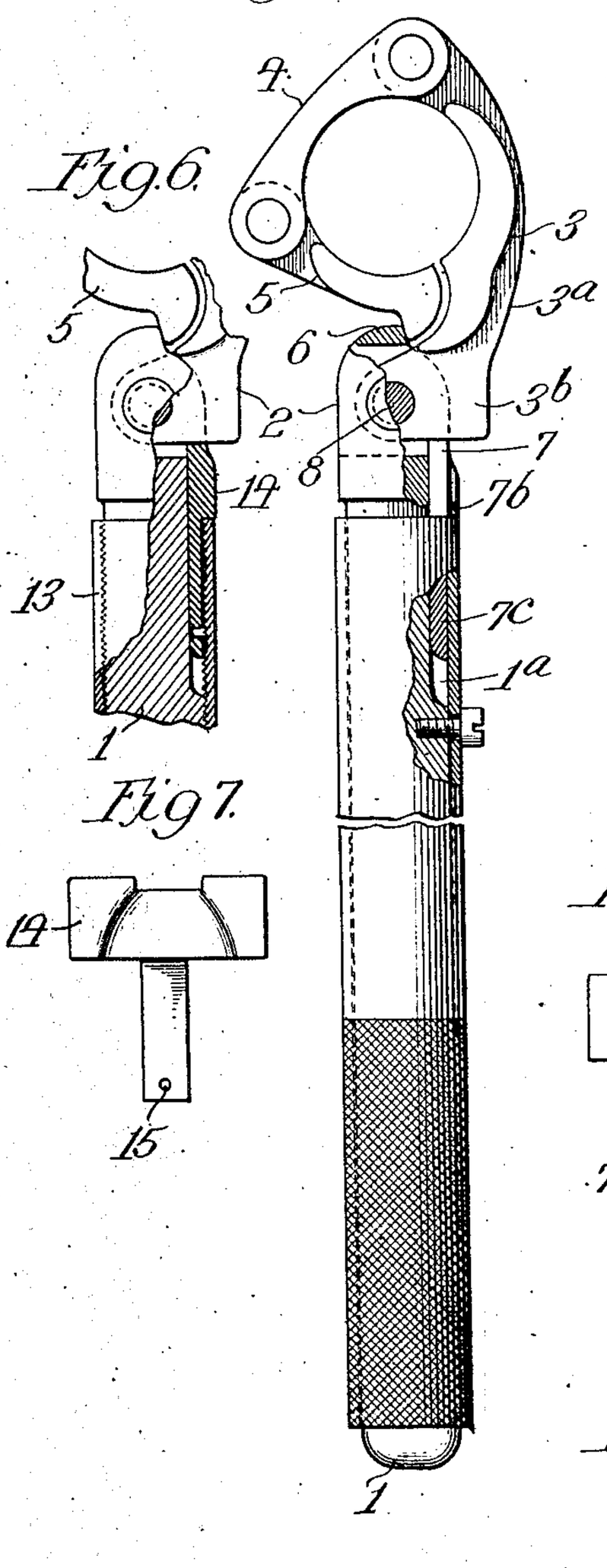


Fig. 2

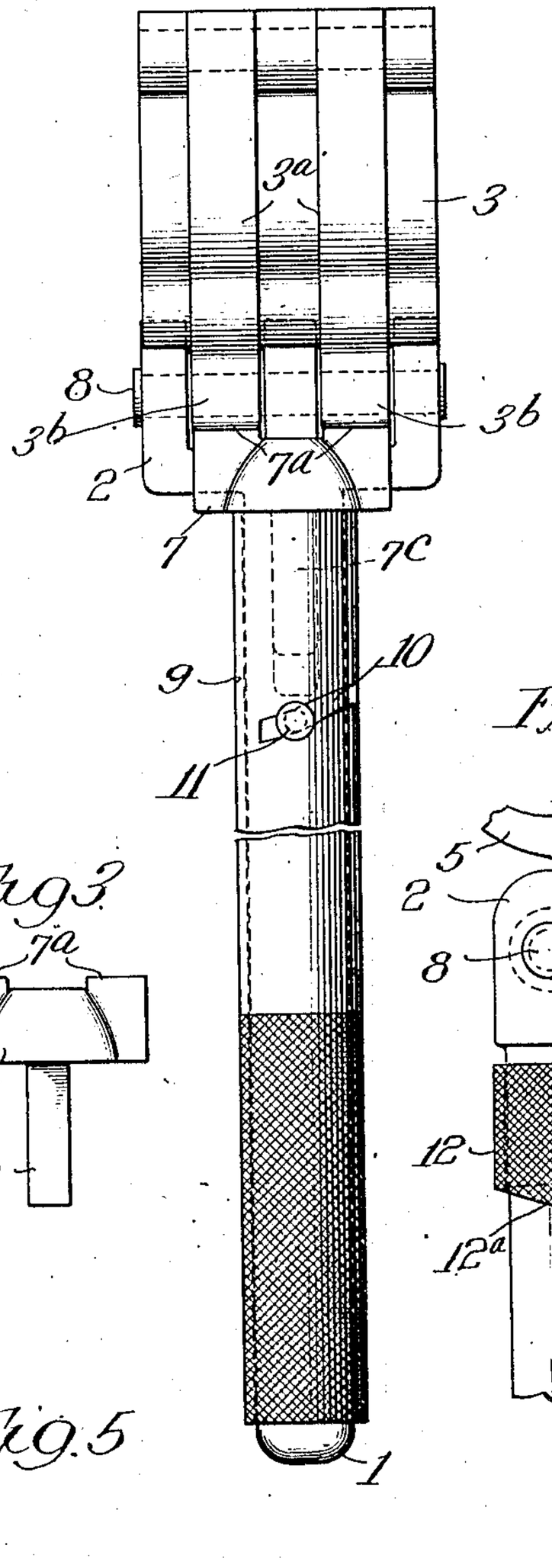
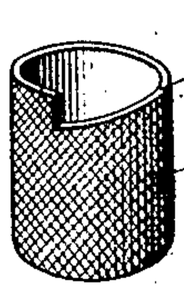


Fig. 4

Fig. 7.

Fig. 3

Fig. 5



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PIPE-WRENCH.

No. 871,436. Specification of Letters Patent. Patented Nov. 19, 1907.

Application filed September 21, 1905. Serial No. 279,437.

To all whom it may concern:

Be it known that I, ROY PARMELEE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Pipe-Wrenches, of which the following is a specification.

My invention relates to pipe wrenches more particularly of the general type and character described in Parmelee patent No. 648,706 issued on May 1, 1900, in which type of wrenches the girth is made in sections adapted to encompass the pipe.

My invention is designed as an improvement upon the pie wrench described and claimed in said Parmelee patent and the object is to provide improved means for locking the girth to the fulcrum piece on which one end of the girth is fulcrumed, the features of advantage and utility of such improved means being apparent from the description hereinafter given.

In the accompanying drawing Figure 1 is an elevation of my improved pipe wrench in one position; Fig. 2 a similar view thereof in another position; Fig. 3 a detailed view of the head or abutment 7; Fig. 4 an elevation of a portion of a pipe wrench illustrating a modified form of construction; and Fig. 5 a perspective of the adjusted sleeve or nut of the construction shown in Fig. 3 and Figs. 6 and 7 detailed views of a modified form of construction for the operation of the head or abutment.

The pipe wrench, as herein shown, comprises essentially a handle proper marked 1 having at its inner end a fulcrum piece 2 on which is fulcrumed the girth which in the present instance is composed of three sections, to-wit, the base section 3, middle section 4 and the end or lip section 5. The lip section, in this character of pipe wrench, is arranged to engage and bear against a shoulder 6 formed on the fulcrum piece whereby the girth is adapted to tightly clamp a pipe or the like which is to be operated upon.

The purpose of my present invention is to provide improved means, coöperating with the base section 3 of the girth in such manner as to prevent disengagement of the girth from the pipe occasioned through any disengagement of the lip section of the girth from the shoulder 6 and also to grip the wrench on the pipe. In the present instance such means comprises a movable head or abutment 7 arranged to slide upon a recessed portion of the fulcrum piece and to be projected, by manual operation, against the base section 4. As herein shown and by preference the base section is formed with two parallel ribs 3^a and in order to coöperate therewith said head or abutment 7 is formed with a recessed middle portion so as to form projecting end portions 7^a arranged to bear directly against and to engage said ribs 3^a. In this manner when the head or abutment 7 is projected against the base section 3, in the manner hereinafter described, such base section is held securely against displacement by a pressure exerted at two different points on opposite sides of its central longitudinal line that is on opposite sides of the central longitudinal axis of the girth when viewed as in Fig. 2, and at the same time, the wrench is tightly gripped onto the pipe, inasmuch as the pressure of the movable head is exerted against the girth at a point on one side of the pivotal point or pin 8 of its base section. As above explained, the pressure of the movable piece or head is exerted at two points located on either side of a plane passing through the longitudinal axis of the handle and at right angles to the longitudinal axis of the pipe operated upon (see Fig. 2), and also located on one side of the pivotal axis of the base section of the girth (see Figs. 1, 2 and 6).

In order to manually operate this head or abutment 7 a sleeve 9 is provided which in the form of construction illustrated in Figs. 1 and 2 extends substantially the full length of the handle proper but which in the modification of Figs. 4 and 5 and also of Figs. 6 and 7, extends only part-way thereof, the length of the sleeve being immaterial in the broader aspect of my invention but preferably of the same length as the handle as shown in Figs. 1 and 2. This sleeve has a pin and slot connection with the handle proper, in the present instance the sleeve having an oblique slot 10 which receives a stud or pin 11 in the handle. By reason of this connection between the sleeve and handle a partial rotation of the sleeve causes the latter to move longitudinally of the handle according to the particular direction of the rotation of such sleeve. This sleeve coöperates with the head or abutment 7 to which the longitudinal movement of the sleeve is communicated inasmuch as the shoulder 7^b of such head or abutment is arranged in the path of move-

ment of the inner end of the sleeve. In order to provide a proper bearing for the sliding movement of the head or abutment, the same has a flat shank or stem portion 7^c received and arranged to slide in a longitudinal groove or channel 1^a in the handle, Fig. 1. Thus when the sleeve is turned in one direction the same is moved longitudinally and the head or abutment thereby moved towards the base section of the girth to hold the latter against displacement and to thereby prevent disengagement of the lip section. Consequently by simply turning the sleeve the fixed relation of all of the sections of the girth upon the pipe is maintained.

Referring to the modified form of construction illustrated in Figs. 4 and 5, this construction is substantially the same as that already described with the exception of the length of the sleeve which here terminates where the other sleeve had its pin and slot connection with the handle. According to this construction the sleeve 12 is made rather short with a cam-shaped edge 12^a arranged to coöperate with the pin 11. By partially rotating this short sleeve 12 the same results are accomplished with respect to the movable head or abutment 7 as when the longer sleeve 9 is employed.

Although it is preferred to employ one or the other construction as above described, yet so far as my invention is broadly considered, the head or abutment 7 may be operated in a slightly different manner as illustrated in Figs. 6 and 7 wherein a sleeve 13 is shown as externally screw threaded to engage screw threads formed upon the handle and adapted to press upon the head or abutment 14 which is similar to the head 7 with the exception of a hole 15 to receive a pin 16 in the sleeve 13. By turning or rotating the sleeve 13 the head is caused to move in one direction or the other, according to the direction of rotation, with the same results as in respect to the other forms of construction.

By preference, the inner ends of the ribs 3^a are enlarged so as to provide shoulders or humps against which the head or abutment is arranged to press, the point of contact being, as indicated clearly in Fig. 1, on one side of the pivotal point or axis of the base section 3 of the girth, with the result that when the head or abutment 7 is forced against the girth, in the manner already explained, such girth is not only prevented from unlocking, but is also gripped the more securely and effectively upon the pipe which is encompassed by the girth. Moreover, although my invention is herein shown as applied to wrenches of the girth type and for convenience in description has been illustrated and described in connection with such type of wrench, yet it will be understood that my invention is not limited thereto, but that it may be applied to other forms of wrenches having a swinging or pivoted jaw section.

I claim:

1. A pipe wrench comprising a hand portion, a girth fulcrumed thereon and adapted to engage the handle portion with its free end, and means for preventing disengagement of the girth from the pipe or the like operated upon, consisting of a head movable longitudinally of the handle and arranged to engage the girth on either side of a plane passing through the longitudinal axis of the handle and at right angles to the longitudinal axis of the pipe.

2. A pipe wrench comprising a handle portion, a girth fulcrumed thereon and adapted to engage the handle portion with its free end, and means for preventing disengagement of the girth from the pipe or the like operated upon consisting of a head movable longitudinally of the handle having projecting bearing portions on either side of its longitudinal axis and adapted to engage said girth on either side of a plane passing through the longitudinal axis of the handle and at right angles to the longitudinal axis of the pipe.

3. A pipe wrench comprising a handle, a sectional girth fulcrumed thereon and adapted to engage the handle portion with its free end, and means for preventing disengagement of the girth from the pipe or the like operated upon comprising a head movable longitudinally of the handle and having projecting bearing portions arranged to engage and press against one section of the girth on either side of a plane passing through the longitudinal axis of the pipe, the engaged section of the girth having projecting portions or ribs which are contacted by said projecting portions of the head.

4. A pipe wrench comprising a handle, a girth fulcrumed thereon and adapted to engage the handle portion with its free end, and means for preventing disengagement of the girth from the pipe or the like operated upon, comprising a head arranged to be projected against said girth to move the same on its fulcrum and provided with a shank or stem sliding longitudinally on the handle, and a sleeve around the handle and coöperating with said head, whereby the girth is locked to the pipe.

5. A pipe wrench comprising a handle, a girth fulcrumed thereon and adapted to engage the handle with its free end, and means for preventing disengagement of the girth from the pipe or the like operated on, comprising a head arranged to be projected against said girth and provided with a shank or stem sliding longitudinally on the handle, said handle having a longitudinal groove receiving said shank, and a sleeve around the handle and coöperating with said head.

6. A pipe wrench comprising a sectional girth, a head on which the base section of the

girth is fulcrumed and which is engaged by the free end thereof when applied to the pipe or the like operated upon, a movable member adapted to be pressed against such base section to grip the girth on to the pipe, and a rotatable sleeve coöperating with such member to so move the same, said member being arranged to be projected against said base section on one side of its fulcrum.

7. A pipe wrench comprising a handle, a sectional fulcrum thereon, the base section 3 of the girth having projections 3^b at one side of the fulcrum thereof and the outer section coöperating with the handle when the pipe or the like is engaged, a head 7 arranged to slide upon the exterior of the handle and to contact the said projections, and a sleeve around the handle and arranged to move longitudinally to force the head against the projections.

8. A pipe wrench comprising a handle, a girth fulcrumed thereon and adapted to engage the handle with its free end when the pipe or the like operated upon is engaged thereby, and means for preventing disengagement of the girth from the pipe comprising a head arranged to be projected against said girth and provided with a shank or stem sliding longitudinally on the handle, a stud or pin projecting from the handle; and a sleeve coöperating with said stud to cause longitudinal movement of the sleeve upon partial rotation of the stem, said head being arranged in the path of longitudinal movement of the sleeve.

9. A pipe wrench comprising a handle, a girth fulcrumed thereon and arranged to engage the same as to its free end when applied to the pipe or the like operated upon, and means for preventing disengagement of the girth from the pipe comprising a head arranged to be projected against said girth and provided with a shank or stem sliding longitudinally on the handle and a sleeve around the handle and having a pin-and-slot connection with the handle to cause longitudinal movement of such sleeve upon partial rotation of the latter, said head being arranged in the path of longitudinal movement of the sleeve.

10. A pipe wrench comprising a handle, a girth fulcrumed thereon and arranged to engage the same as to its free end when applied to the pipe or the like operated upon, and means for preventing disengagement of the girth from the pipe comprising a head arranged to be projected against said girth and provided with a shank or stem sliding longitudinally on the handle, a sleeve arranged around the handle and having an oblique slot and a pin projecting from the handle and passing through the slot, whereby partial rotation of the sleeve moves the latter longitudinally of the handle, said head being arranged in the path of longitudinal movement of the sleeve.

11. A pipe wrench comprising a handle, a girth fulcrumed thereon and arranged to engage the same as to its free end when applied to the pipe or the like operated upon, and means for preventing disengagement of the girth from the pipe comprising a head arranged to be projected against said girth and provided with a shank or stem sliding longitudinally on the handle and a sleeve arranged around and substantially of the same length as the sleeve and having a pin-and-slot connection with the handle to cause longitudinal movement, said head being arranged in the path of longitudinal movement of the sleeve.

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