No. 837,809.

PATENTED DEC. 4, 1906.

J. J. DIXON.

PIPE WRENCH.

APPLICATION FILED JAN. 12, 1906.

Fig. 1.

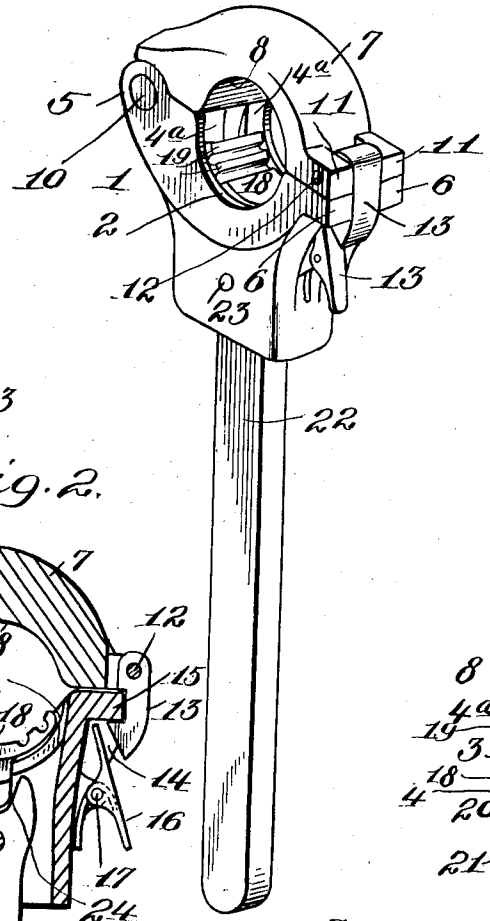


Fig. 2.

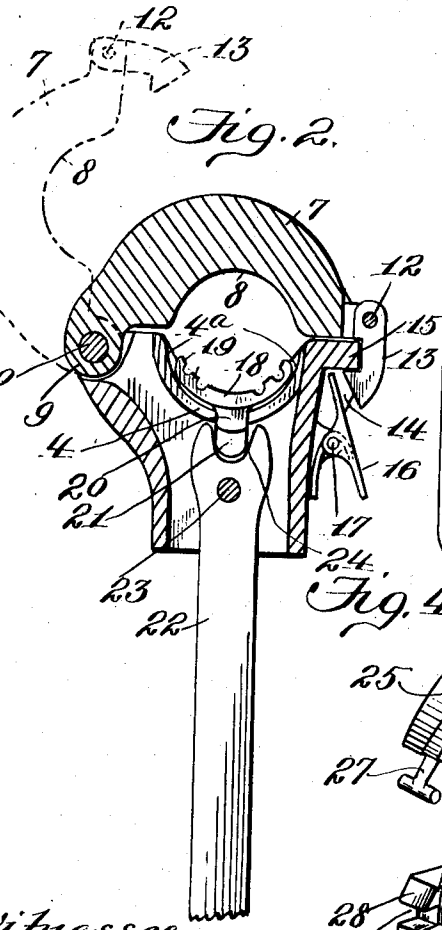


Fig. 3.

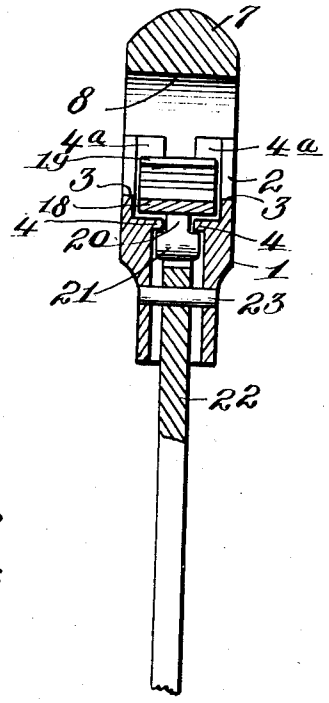
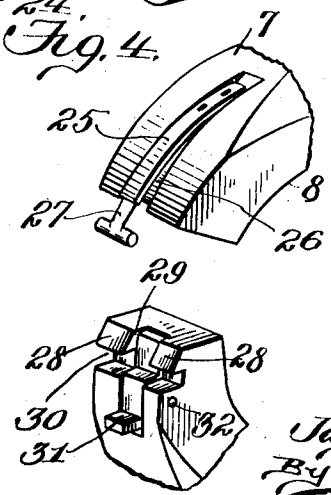


Fig. 4.



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PIPE-WRENCH.

No. 837,809. Specification of Letters Patent. Patented Dec. 4, 1906.

Application filed January 12, 1906. Serial No. 295,808.

To all whom it may concern:

Be it known that I, JAY JEHILE DIXON, a citizen of the United States, residing at Warren, in the county of Warren and State of Pennsylvania, have invented new and useful Improvements in Pipe-Wrenches, of which the following is a specification.

This invention relates to pipe-wrenches, and aims to improve the construction of a wrench of such class, and, furthermore, to provide a pipe-wrench which shall be simple in its construction, strong, durable, efficient in its use, and comparatively inexpensive to manufacture.

With the foregoing and other objects in view the invention consists of the novel construction, combination, and arrangement of parts hereinafter more specifically described, and illustrated in the accompanying drawings, wherein is shown the preferred embodiment of the invention; but it is to be understood that changes, variations, and modifications can be resorted to which come within the scope of the claims hereunto appended.

In describing the invention in detail reference is had to the accompanying drawings, wherein like reference characters denote corresponding parts throughout the several views, and in which—

Figure 1 is a perspective view of a pipe-wrench in accordance with this invention. Fig. 2 is a section through the head of the wrench with the hinged jaw shown thrown back in dotted lines. Fig. 3 is a section taken at right angles to that of Fig. 2, and Fig. 4 shows a modified form of means for connecting the releasable or hinged jaw to the head of the wrench.

Referring to the drawings by reference characters, 1 denotes the head of the wrench, which is hollow, tapers toward its lower end, and has the central part of the top thereof cut away in a semicylindrical manner, as at 2. The head 1 has formed on the inner face of the front and rear wall thereof near the top of each wall a curvilinear ledge 3. The said ledges constitute supports for a pair of members 4, having their ends enlarged, as at 4^a, to constitute cam-faces, said members conforming in contour to the ledges and are secured thereto or may be formed integral therewith and are of such width as to project inwardly off each ledge 3, and said members act as a means for retaining, in a manner as hereinafter referred to, the shiftable clamping-jaw in the head 1, and the cam-faces of said members 4 are adapted to move the clamping-jaw against the pipe when said jaw is shifted to fixedly secure the pipe between the clamping and hinged jaws of the wrench. Said clamping and hinged jaws will also be hereinafter referred to. The head 1 at one side of the top thereof is formed with a pair of apertured ears 5, which are suitably spaced apart, and at the opposite side of the top of the head 1 a pair of laterally-extending lugs 6 are formed. The function of the ears 5 and lugs 6 will be hereinafter referred to.

The wrench comprises a hinged jaw (indicated by the reference character 7) and which has the inner face thereof cut away in a semicylindrical manner, as at 8, said semicylindrical portion 8 of said jaw 7 opposing the semicylindrical cut-away portion 2 of the head, and the pipe is adapted to be mounted in the semicylindrical cut-away portion 2 of the head 1 and be surrounded by the semicylindrical cut-away portion 8 of the jaw 7. The jaw 7 at one end is formed centrally thereof with a depending apertured ear 9, which is positioned between the pair of apertured ears 5 formed on the head 1, and through the ears 5 and 9 is adapted to extend a holdfast device 10 for hinging the jaw 7 to the head 1. The other end of the jaw 7 is formed with a pair of laterally-extending lugs 11, between which is pivotally connected, as at 12, a depending latch 13, which when the jaw 7 is in its operative position is adapted to project down between the lugs 6 and engage in a recess 14, formed in one side of the head 1, and bear against a shoulder 15, which forms one wall of the recess 14. When the latch 13 is in engagement with the shoulder 15, the free end of the jaw 7 is connected to the head and is retained in such position until the latch 13 is released. The releasing of the latch 13 is had through the medium of a spring-arm 16, pivotally connected, as at 17, to one side of the head 1 below the recess 14, and the upper end of the spring-arm 16 normally lies in the path of the free end of the latch 13, so that by pressing upon the lower end of the arm 16 the latch 13 is shifted from its engagement with the shoulder 15 and out of the recess 14, so that the jaw 7 will be released from the head 1 and the free end of the jaw 7 can be swung clear of the head 1 to enable the removing or replacing of a pipe upon the head 1 or the surrounding of a pipe by the wrench.

The wrench further comprises a shiftable clamping-jaw. (Indicated by the reference character 18.) Said jaw 18 has the upper face at each end thereof toothed, as at 19, so that the jaw will grip the pipe and there will be no danger of the jaw slipping when using the wrench. The jaw 18 is mounted upon the members 4, the said members being so positioned within the head 1 that the upper face of the jaw will be substantially flush with the top edge of the head 1. Depending from the lower face of the jaw 18 is an inverted-T-shaped arm 20, the lower portion 21 of which is of such length as to extend below the projecting portions of the retaining members 4. By such an arrangement the jaw 18 is retained in the head 1, as will be evident; but at the same time the jaw will not be prevented from shifting when occasion so requires.

The handle of the wrench is indicated by the reference character 22, which extends up into the head 1 and is pivotally connected to the head 1, through the medium of the pin 23, in such a manner that the handle 22 can oscillate upon its pivot. The upper end of the handle 22 is forked, as at 24, and is adapted to receive the inverted-T-shaped arm 20, so that when the handle 22 is oscillated in one direction the jaw 18 will be shifted in the direction in which the upper end of the handle 22 extends, and when the handle 22 is oscillated in the opposite direction the jaw 18 will be shifted in the direction in which the upper end of the handle moves. By such an arrangement the jaw 18 can be moved to clamping position when occasion so requires.

From the foregoing description it is evident that in order to apply the wrench to a piece of horizontal pipe to turn the same the pipe is first placed in contact with the clamping-jaw 18. The hinged jaw is then swung to closure position and retained in such position through the medium of the latch 13. The handle 22 is then shifted, carrying the clamping-jaw therewith, until the clamping-jaw is moved by the cam-faces 4^a to such position as to cause the fixing of the pipe between the two jaws, and the frictional contact between the pipe and the jaws of the wrench will be sufficient to cause the turning of the pipe when the wrench is moved.

In Fig. 4 a modified form of means for connecting the hinged or releasable jaw to the head is shown, and said means consists of securing to the jaw 17 a spring 25, playing in a recess 26, formed in the top of the jaw 17 and carrying on its free end a T-shaped catch 27, which is adapted to engage the underneath face of a pair of beveled lugs 28, formed on the head 1. The head 1 is cut away, as at 29 30, so that the catch 27 can be moved to the proper position of engagement. Seated in the head 1 is a releasable member 31 for the catch 27. Said member 31 is arranged in the path of the catch 27 and is pivoted to the head 1, as at 32, and a spring (not shown) bears against the lower end of the member 31, so as to retain the upper end of the member in close contact with the head. By pressing on the lower end of the member 31 the upper end of said member 31 is shifted, and such action will move the catch 27 from its position of engagement, so that the hinged jaw can be swung back. Owing to the action of the spring 25, when the hinged jaw is moved to closure position the catch 27 automatically assumes its operative position.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A pipe-wrench comprising a head, a jaw hinged thereto, a clamping-jaw shiftably connected therewith, and a handle extending in the head, pivotally connected therewith and having a forked upper end adapted to engage with the clamping-jaw for shifting it to clamping position.

2. A pipe-wrench comprising a hollow head, a pair of cam members secured therein and constituting seats, a shiftable clamping-jaw mounted upon said seats and provided with means engaging said members to prevent the separation of the jaw from the head, said members when said jaw is shifted adapted to cause the moving of the jaw to clamping position, a jaw having one end hinged to the head, means for connecting the other end of the hinged jaw to the head, and a handle pivoted in the head and having the forked upper end adapted to receive the said means carried by the clamping-jaw.

3. A pipe-wrench comprising a head provided with shoulders, a shiftable clamping-jaw mounted in the head and having a depending inverted-T-shaped arm for retaining the jaw within the head, a jaw having one end hinged to the head, a latch carried by the free end of said hinged jaw and adapted to engage said shoulders for securing the free end of the hinged jaw to the head, means carried by the head and arranged in the path of the latch and adapted when operated to release the latch, and an oscillatory handle pivoted in the head and having the forked upper end adapted to receive said arm and shift the clamping-jaw when the handle is operated.

4. A wrench comprising a head, a semi-cylindrical-shaped shiftable clamping-jaw mounted in said head and having its upper face toothed and its lower face provided with a depending arm engaging with the head for retaining the jaw within the head, and an oscillatory means pivoted in the head and extending on each side of said arm and engaging the arm for shifting the jaw when said means is operated.

5. A wrench comprising a head, a shiftable clamping-jaw mounted in the head and provided with a depending arm engaging with

the head for retaining the jaw within the head, and an oscillating means engaging said arm for shifting the jaw, combined with a releasable jaw hinged at one end to the head, said releasable jaw having a portion of its lower face conforming to the contour of the clamping-jaw.

6. A wrench comprising a head, a semicylindrical-shaped shiftable clamping-jaw mounted in said head and having its upper face toothed and its lower face provided with a depending arm engaging with the head for retaining the jaw within the head, and an oscillatory means pivoted in the head and extending on each side of said arm and engaging the arm for shifting the jaw when said means is operated, combined with a releasable jaw hinged at one end to the head, said releasable jaw having a portion of its lower face conforming to the contour of the clamping-jaw.

7. A wrench comprising a head, a shiftable clamping-jaw mounted in the head and provided with a depending arm engaging with the head for retaining the jaw within the head, and an oscillatory means engaging said arm for shifting the jaw, combined with a releasable jaw hinged at one end to the head, said releasable jaw having a portion of its lower face conforming to the contour of the clamping-jaw, and means for detachably connecting the releasable jaw to the head.

8. A wrench comprising a head, a semicylindrical-shaped shiftable clamping-jaw mounted in said head and having its upper face toothed and its lower face provided with a depending arm engaging with the head for retaining the jaw within the head, and an oscillatory means pivoted in the head and extending on each side of said arm and engaging the arm for shifting the jaw when said means is operated, combined with a releasable jaw hinged at one end to the head, said releasable jaw having a portion of its lower face conforming to the contour of the clamping-jaw, and means for detachably connecting the releasable jaw to the head.

9. A wrench comprising a head, a shiftable clamping-jaw mounted in the head and provided with a depending arm engaging with the head for retaining the jaw within the head, a pair of cam members for moving the jaw against the pipe when the jaw is shifted, and an oscillatory means engaging said arm for shifting the jaw, combined with a releasable jaw hinged at one end to the head, said releasable jaw having a portion of its lower face conforming to the contour of the clamping-jaw, and means for detachably connecting the releasing-jaw to the head.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JAY JEHILE DIXON.

Witnesses:
R. H. DAVIS,
ORREN C. ALLEN.