(No Model.)

S. KREISHER.

PIPE WRENCH.

No. 523,356. Patented July 24, 1894.

Fig. 1.

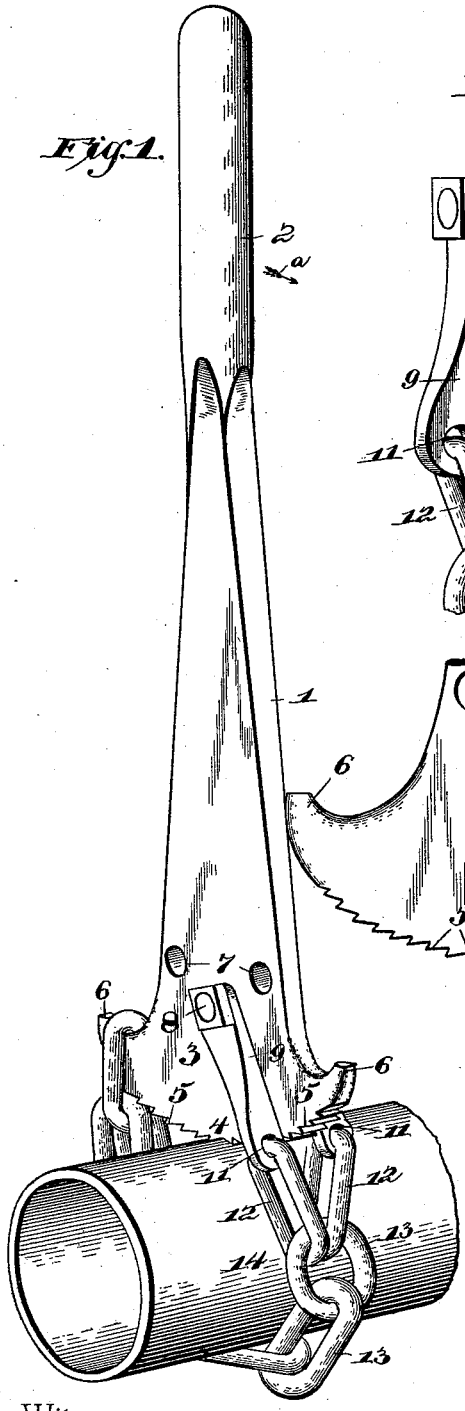


Fig. 3.

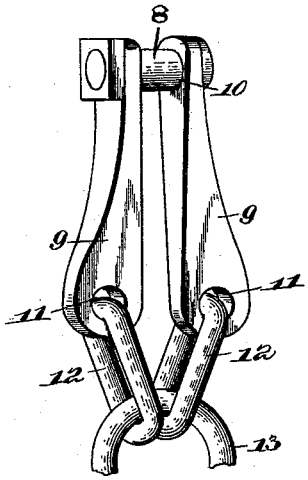


Fig. 4.

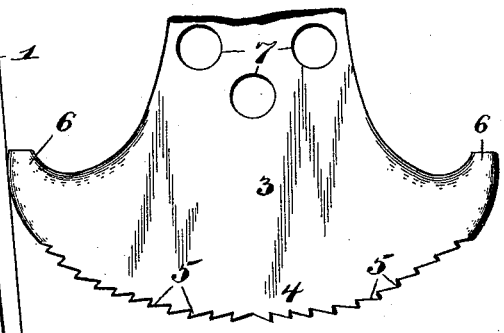
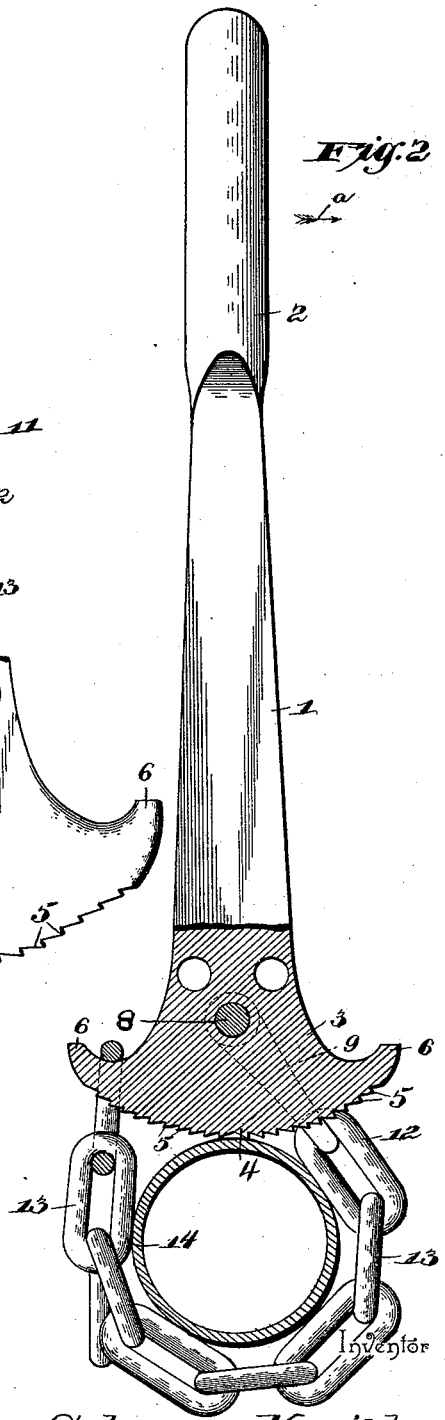


Fig. 2.



Witnesses

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UNITED STATES PATENT OFFICE.

SOLOMON KREISHER, OF SNYDERTOWN, PENNSYLVANIA.

PIPE-WRENCH.

SPECIFICATION forming part of Letters Patent No. 523,356, dated July 24, 1894.

Application filed April 16, 1894. Serial No. 507,745. (No model.)

To all whom it may concern:

Be it known that I, SOLOMON KREISHER, a citizen of the United States, residing at Snydertown, in the county of Northumberland and State of Pennsylvania, have invented a new and useful Pipe-Wrench, of which the following is a specification.

My invention relates to an improvement in pipe wrenches of that class in which a chain is employed in connection with a ratchet faced head to engage a pipe-rod or similar article; and the objects in view are to provide means whereby without special adjustment at the time of any of the parts of the wrench the same may be reversed and used in either direction; to provide means whereby the contact of the ratchet faced head with the pipe or rod is approximately in alignment with the longitudinal center of the handle or lever, whereby in plumbing and similar work the wrench may be used above the pipe and in a narrow ditch instead of at the side of the pipe, as with wrenches heretofore constructed; and, furthermore, to provide simple means of adjustment, whereby the strain of the handle or lever upon the chain may be varied to suit special conditions under which the tool is used.

Further objects and advantages of the invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings:—Figure 1 is a perspective view of a wrench constructed in accordance with my invention applied in the operative position to a pipe. Fig. 2 is a side view of the same, partly in section. Fig. 3 is a detail view in perspective of one end of the chain and the link-rods to which said end of the chain is connected. Fig. 4 is an enlarged detail view of the serrated or ratchet faced head.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates a handle or lever provided with a rounded portion or hand-hold 2, and attached to or integral with said handle or lever at one end is the laterally enlarged or flattened head 3, provided with a curved or segmental bearing face 4, provided with ratchet-teeth 5. The lateral extensions of the head are curved upward or toward the rounded hand-hold to form the terminal hooks 6. It will be noted that the teeth or serrations 5 on the bearing face of the head are inclined in opposite directions respectively from a point at the center of such bearing face or a point in alignment with the longitudinal center of the handle or lever. The head is provided at a point adjacent to its center with a series of openings or perforations 7, one of said openings, which I will for convenience term the central opening or perforation, is arranged concentric with the curved or segmental bearing face of the head and in alignment with the longitudinal center of the handle. The other openings are arranged respectively upon opposite sides of said longitudinal center of the handle, and are set back at a greater distance from the curved or segmental bearing face of the head.

8 represents a pivot-bolt, which is adapted to be fitted in one of said perforations 7, and upon this pivot-bolt respectively upon opposite sides of the plane of the head are fulcrumed the link-rods 9, the length of which is approximately equal to the distance between the central opening 7 and bearing-face of the head. These link-rods are provided at their outer or free ends with eyes 11 in which are engaged the connecting-links 12 for attaching one end of the chain 13 permanently to the link-rods. After passing the chain around a pipe, such as indicated at 14, one of its links is engaged with one of the terminal hooks 6.

From the above description it will be seen that inasmuch as the link-rods form a connection between one end of the chain and the center, or approximately the center, of the bearing head and approximately in alignment with the longitudinal center of the handle or lever, the loose end of the chain may be engaged with either of the terminal hooks 6 to adapt the tool for operation either in the direction indicated by the arrows in Figs. 1 and 2, or in the opposite direction, as may be more convenient. This change from one position or one direction or operation to the other requires no special adjustment of the parts, but depends merely upon the direction in which the chain is passed around the pipe or rod. Furthermore, it will be seen that in-

asmuch as the center from which the curve or segment of the bearing-head is struck is upon the longitudinal center of the handle or lever, the normal position of the said handle or lever prior to applying power thereto is substantially in alignment with a radius of the pipe, with the center of the bearing face of the head in contact with the surface of the pipe. Furthermore, inasmuch as the connection of one end of the chain to the head is in alignment, or approximately in alignment, with the longitudinal center of the handle or lever, and inasmuch as the bearing face of the head is concentric with such point of connection of one end of the chain, said point of connection remains at the same distance from the center of the pipe or tube in all positions of the tool, and therefore one side of the chain is not slackened while the other is tightened. Furthermore, inasmuch as one end of the chain is connected to the head at a point approximately in alignment with the longitudinal center of the handle or lever, and the other end of the chain is connected to a terminal hook which is arranged below but near a plane embracing the pivot-bolt 8 and arranged perpendicular to a plane embracing the longitudinal center of the handle or lever, the lateral movement of the free end of the handle or lever causes a strain upon the chain which is almost directly from the pipe, thus giving a leverage sufficiently powerful to prevent slipping of the chain upon the surface.

The advantage of the above construction resides in the fact that the bearing face of the head bears upon the surface of the pipe at a point in alignment with the longitudinal center of the handle, said longitudinal center passing through the axis of the pivot-bolt, and that the attachment of the other end of the chain to the head is at a point between said pivot-bolt and the point of contact of the head with the pipe or between the planes of said pivot-bolt and point of contact.

The other openings 7 may be employed as seats for the pivot-bolt when a slightly different bearing of the head on the pipe is required. If said pivot-bolt is engaged in the opening adjacent to the side of the head to which the loose end of the chain is connected, both sides of the chain will be strained from the pipe, thus increasing the leverage and causing the bearing face to engage the surface of the pipe at a point between the center of said face and that hooked terminal to which the free end of the chain is connected. The engagement of the pivot-bolt with the other opening 7 allows the head to roll beyond the vertical position shown in Figs. 1 and 2.

It will be understood that in practice various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit of the invention or sacrificing any of the advantages thereof.

Having described my invention, what I claim is—

1. In a pipe-wrench, the combination of a handle or lever provided at one end with a head extended laterally to form hook-shaped extremities and having a serrated bearing-face, link rods pivotally connected to the head at or near its center and substantially in alignment with the longitudinal center of the handle or lever, and a chain connected permanently at one end to the free ends of said link-rods and having one of its links engaged temporarily with either of said hook-shaped terminals, substantially as specified.

2. A wrench of the class described, comprising a handle or lever, an enlarged head rigidly connected to the handle or lever and provided with lateral hook-shaped extensions, and a serrated bearing face, said head being provided with perforations arranged respectively at the center and on each side of the center of the head and substantially in alignment with the longitudinal center of the handle or lever, the central perforation being concentric with the serrated bearing face of the head, a transverse pivot-pin engaging one of said perforations, link-rods connected to said pivot-rod upon opposite sides of and contiguous to the plane of the head, and a chain permanently connected at one end to the extremities of the link-rods and adapted to have one of its links engaged with either hook-shaped terminal, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

SOLOMON KREISHER.

Witnesses:
W. E. BLOOM,
EUGENE A. SHIPE.