(No Model.)

E. H. SMITH.

COMBINED NUT AND PIPE WRENCH.

No. 560,438. Patented May 19, 1896.

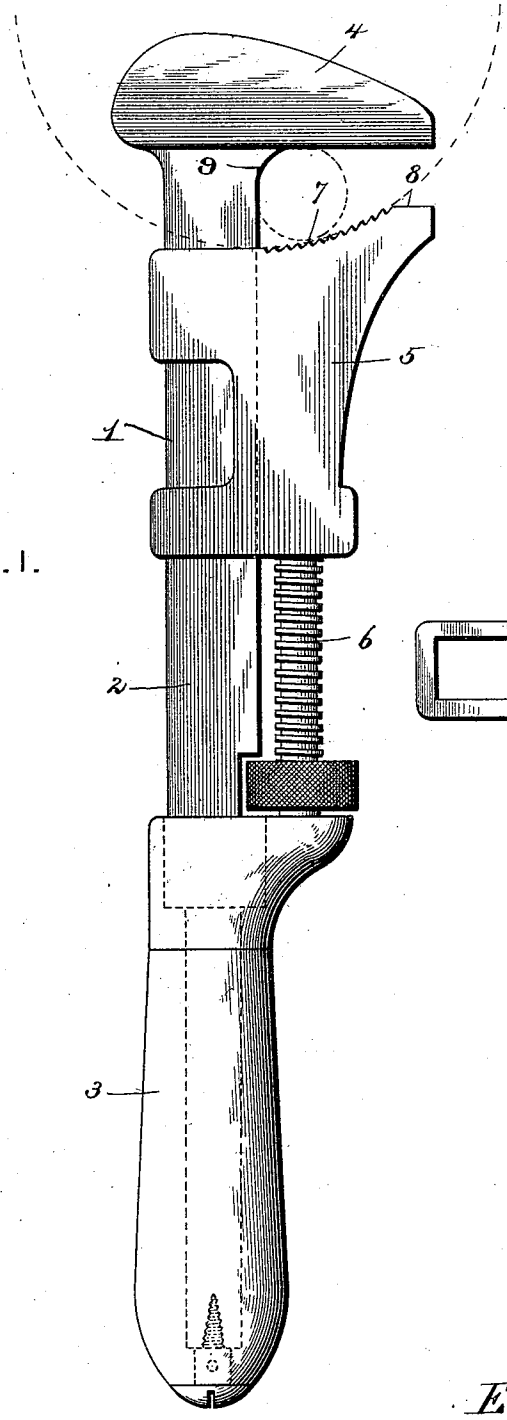
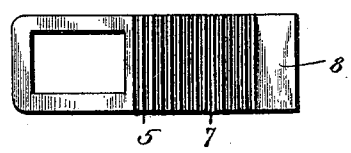


FIG. 1.

FIG. 2.



Inventor

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Witnesses

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UNITED STATES PATENT OFFICE.

ELBERT H. SMITH, OF CANISTEO, NEW YORK.

COMBINED NUT AND PIPE WRENCH.

SPECIFICATION forming part of Letters Patent No. 560,438, dated May 19, 1896.

Application filed April 17, 1895. Serial No. 546,081. (No model.)

To all whom it may concern:

Be it known that I, ELBERT H. SMITH, a citizen of the United States, residing at Canisteo, in the county of Steuben and State of New York, have invented a new and useful Combined Nut and Pipe Wrench, of which the following is a specification.

This invention relates to combined nut and pipe wrenches; and it has for its object to effect certain improvements in the jaws or gripping part of that class of wrenches adapted to grip either a nut or pipe.

To this end the invention primarily contemplates a construction of wrench-jaw to make provision for not only gripping either nuts or pipes, but especially for gripping pipes in such a manner as to make it practically impossible for the wrench to become accidentally disengaged from the pipe after being closed thereon.

With these and other objects in view, which will readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts hereinafter more fully described, illustrated, and claimed.

In the drawings, Figure 1 is a side elevation of a wrench embodying the herein-described improvement. Fig. 2 is a plan view of the wrench-jaw having two working faces for gripping a nut or a pipe especially.

Referring to the accompanying drawings, 1 designates a wrench essentially consisting of the shank 2, having at one end the handle 3 and at its opposite end a fixed jaw 4, provided with a flat working face, and opposite to which works the movable jaw 5, adjusted in the usual manner by the screw 6.

In the present invention the jaw 5 is provided with two working faces 7 and 8, respectively, which faces are opposed to the flat face of the jaw 4 to provide for gripping either a nut or a pipe. The gripping face or surface 7 is serrated or toothed and is curved on the arc of a circle and leads from a point near the outer edge of the gripping-face of the jaw 5 up to the shank 2 of the wrench, whereby the pipe-gripping surface or portion of the wrench will be located next to and directly at one side of the shank of the wrench. The outer gripping-surfaces of the wrench-jaws are disposed closer together than the surfaces next to the shank by reason of the fact that the gripping face or surface 7 lies in the arc of a circle whose center is disposed substantially in the same longitudinal plane as the inner side of the shank 2, and it is also due to this disposition of the center of said circle that the gripping face or surface 7 lies in the best possible plane for insuring a firm grip on the pipe.

The gripping-face 8 is plain and is disposed parallel with the flat face of the jaw 4 to combine with such jaw for gripping squared objects, such as nuts, and the said face or surface 8 is formed on the jaw 5 between the outer end of the gripping face or surface 7 and the outer edge of the face of the jaw 5. In connection with the curved gripping face or surface 7 for pipes an important feature of the invention is to provide the shank 2 with a curved friction-surface 9, located at the inner end of the flat face of the jaw 4 and merging into the flat face of said jaw to form a pocket to receive one side of a pipe when the wrench is gripped and turned thereon.

The manner of using the wrench for gripping squared objects between the jaw 4 and the flat face 8 will be readily apparent; but at this point it will be observed that when the jaws of the wrench are closed on a pipe the outer gripping-surface of the wrench-jaws will be disposed closer together than the surfaces next to the shank between which the pipe is gripped, thereby absolutely preventing the wrench from accidentally falling off or disengaging the pipe. It will be further observed that the fact of having the curved face 7 lead at its inner end directly up to one side of the shank 2 of the wrench is very important, because it will be obvious that when a pipe is being gripped between the jaws and the wrench is turned in a direction for turning the pipe the latter will be forced against the shank 2 and within the curved friction-surface 9, so that practically all sides of the pipe will be embraced excepting the side opposite the shank. This necessarily provides for a firm gripping of the pipe and insures the attainment of the objects sought for.

Having thus described the invention, what is claimed, and desired to be secured by Letters Patent, is—

In a combined nut and pipe wrench, the combination of the shank having a fixed jaw and a curved friction-surface 9, located at the inner end of and merging into the flat face of said fixed jaw, and the movable jaw provided on its working face with an outer flat nut-gripping surface 8, parallel with the opposing face of the opposite jaw, and an inner curved pipe-gripping surface 7, leading from a point at the inner edge of the nut-gripping surface directly up to the shank of the wrench and lying within the arc of a circle whose center is disposed in substantially the same longitudinal plane as at the inner side of the shank, whereby the curved pipe-gripping surface will lie in a plane farther from the opposite jaw than the flat nut-gripping surface, the particular disposition and curvature of the pipe-gripping surface insuring the wedging of the pipe between the two jaws and directly against the inner side of the shank and within the curved friction-surface 9, thereof, substantially as set forth.

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

ELBERT H. SMITH.

Witnesses:
ALMON W. BURRELL,
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