(No Model.)

M. COOPER.

PIPE TONGS.

No. 430,768. Patented June 24, 1890.

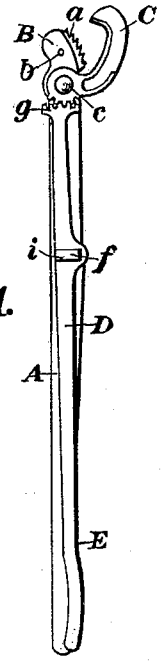


Fig. 1.

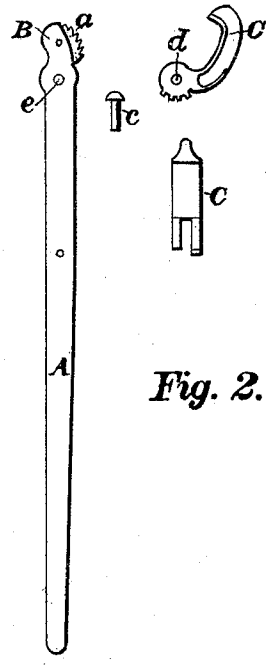
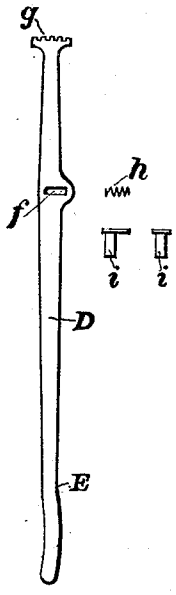


Fig. 2.



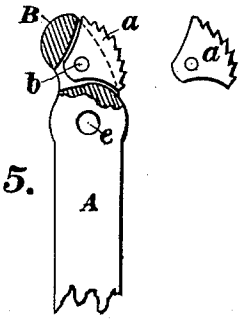


Fig. 5.

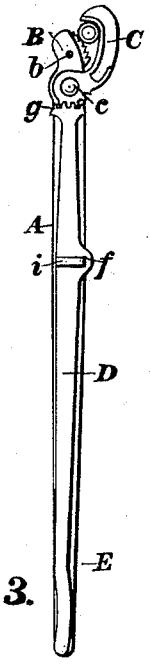


Fig. 3.

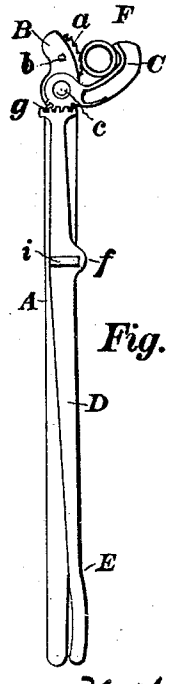


Fig. 4.

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UNITED STATES PATENT OFFICE.

MILES COOPER, OF CHICAGO, ILLINOIS.

PIPE-TONGS.

SPECIFICATION forming part of Letters Patent No. 430,768, dated June 24, 1890.

Application filed November 21, 1889. Serial No. 331,145. (No model.)

To all whom it may concern:

Be it known that I, MILES COOPER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Automatic Pipe-Tongs, of which the following is a specification.

My invention relates to improvements in that class of pipe-tongs in which one pair of tongs is adapted to operate upon several sizes of pipe or other similar cylindrically-shaped bodies.

My object is to so construct a pair of pipe-tongs that it will instantly and firmly seize any size of pipe in its jaws within the limit of its capacity and do this duty automatically, thereby saving the time and labor of making a positive change in the relation of the jaws every time a different-sized pipe is to be operated upon. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side view of the tongs with the jaws open ready to receive a pipe. Fig. 2 is a view of the different parts of the tongs to show construction. Fig. 3 shows position of parts when grasping a small piece of pipe, and Fig. 4 shows position of parts when grasping a large piece of pipe. Fig. 5 shows construction of the stationary jaw.

Similar letters refer to like parts in all the drawings.

The top of the lever or handle A forms the stationary jaw B, which is provided on its face with an auxiliary in the part *a*, which is clearly shown in Fig. 5. This part *a* is made of a good quality of steel, and is provided with teeth on its face, which contact with the pipe to be turned instead of the face of the stationary jaw. By continued use these teeth become dull and need repairing. To accomplish this with the very least amount of expense and labor, the part *a* is set in a mortise in the face of the stationary jaw and is hinged by means of a tapered pin, which can be quickly knocked out to release it. The part *a* is shorter than the mortise in which it is hinged, and can thus have a vibrating motion of about one-eighth of an inch on the pin *b*, so that in releasing its hold upon a pipe it can easily move backward slightly and prevent any injury to its teeth, which would be certain to occur if it were firmly secured to the stationary jaw.

The movable jaw C is in general conformity similar to the shape shown in the drawings, being made with ribs upon the side of greatest strain. The jaw C is slotted out at its lower end and straddles the jaw B when placed in position on the handle A. It is hinged to handle A by means of a riveted pin *c*, which passes through the hole *d* in its lower end and through the hole *e* in the handle A. The movable jaw C at the lower end has a segment of cogs that circle around the hole *d*, Fig. 2. There is a lever D, which is hinged to the handle A at *f* by means of a round rivet *i*. This lever is provided with a segment of cogs *g* at its top end, and has a slotted hole at the point *f*, which slot is not less than four times as long as the diameter of the rivet *i*. The rivet *i* occupies one end of the slot and a small stiff spiral spring the other end. The spiral spring is shown at *h*, and one of its ends bears against the rivet *i* and the other against the end of the slot of lever D. The rivet *i* has a long head, as is shown in the two views in Fig. 2, this head being of sufficient length, each side of the rivet to entirely cover the slot in the lever D and both conceal the spring and prevent the entrance of dirt to impede its proper action.

The operation of this tool is very simple. Referring to Fig. 1, it will be noticed that the movable jaw C is partly open to receive a pipe. If the operator desires to open the jaws wider than the amount shown, it can be done by pulling the lower end of the handle A and lower end of lever D apart at the point E, when the two jaws and the relative position of A and D will be as is shown in Fig. 4, where the maximum size of pipe can be taken in. If now it is desired to seize a very small pipe, the movable jaw is swung into proper position by grasping the lower ends of the handles at the point E and closing them together, as shown in Fig. 3. The lever D being hinged at *f*, its top at *g* always moves in an opposite direction to its handle at E. The cogs at *g*, being engaged, cause the movement of the top end of lever D to be transmitted to the movable jaw C and swing it to the closed

or any desired open position simply by the movement of the lever D. The spiral spring *h* is placed in the slot of lever D for the purpose of preventing any undue strain upon lever D when the tongs are used upon large pipe.

It will be seen in Fig. 4 the lever D at the point E stands to the right of the handle of the main lever A. In the operation of turning the large pipe F the handles would be grasped at E and pulled from right to left. In this instance the whole pressure of the hands would bear upon the handle of lever D. The lever D is intended only for the purpose of closing the movable jaw C, and is made light, so as not to unduly increase the weight of the tool. On this account it would easily bend or break under a heavy strain. To avoid this and at the same time not increase the weight of lever D, the slot at the point *f* is provided with the spring *h*, which permits a change of center sidewise of the lever D at *f*, and thus the handle at E will move to the left under the strain compressing the spring and permit the whole pressure of the hands in pulling to bear directly upon the handle of the main lever A.

What I claim as my invention, and desire to secure by Letters Patent, is—

In a pipe-tongs having a handle A, pivot-bolt *i*, and pivoted jaw C, the combination of a lever D to operate said jaw C, having a transverse slot *f*, and a spring *h* in said slot, substantially as and for the purpose described.

MILES COOPER.

Witnesses:

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