

No. 640,005.

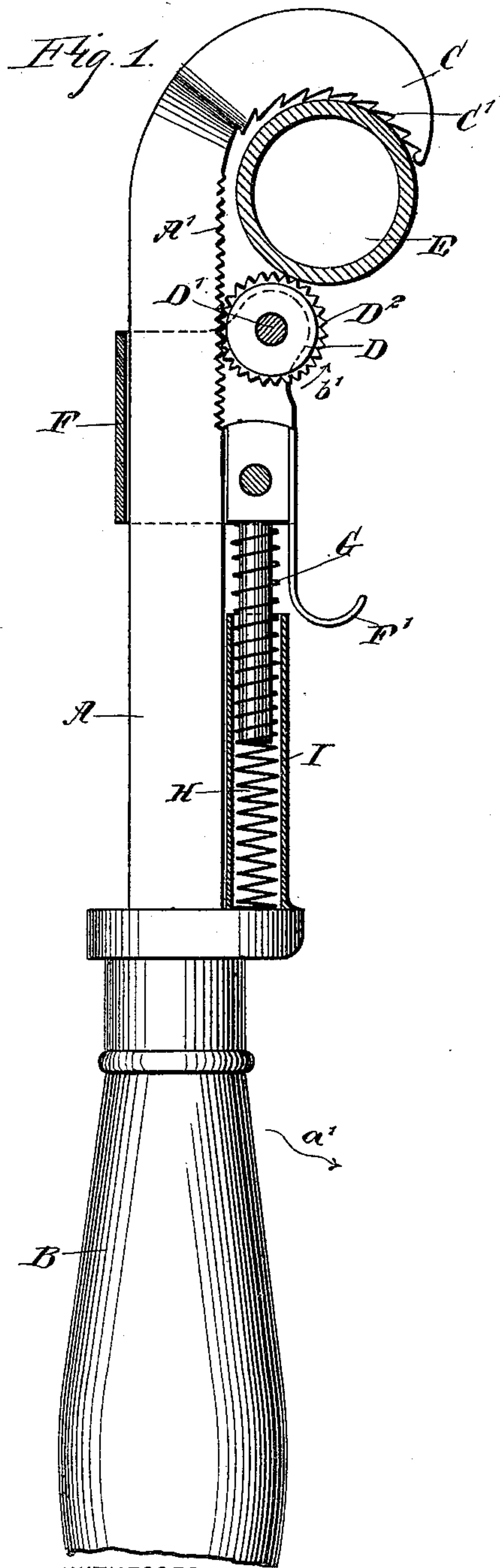
Patented Dec. 26, 1899.

H. W. LIBBY & C. R. SWETT.

WRENCH.

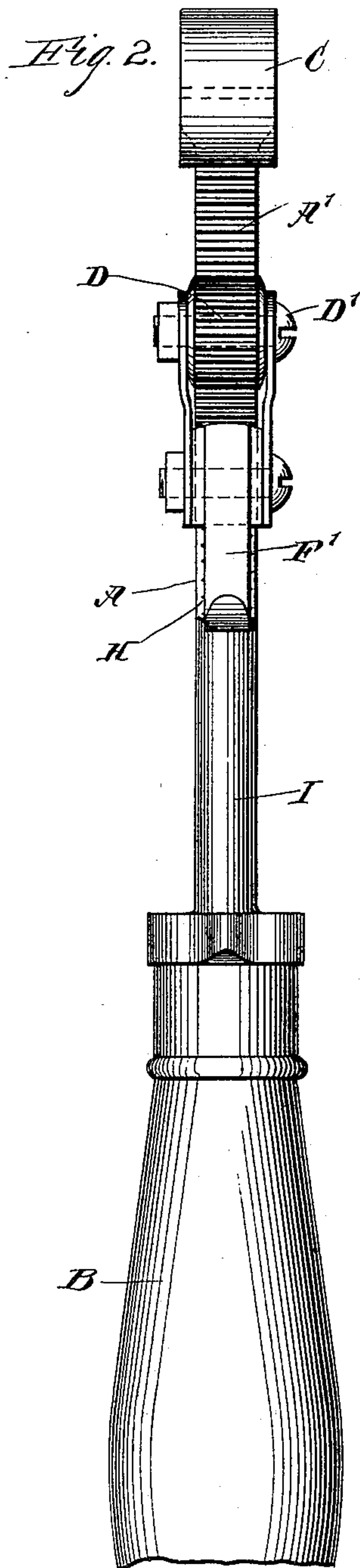
(Application filed May 27, 1899.)

(No Model.)



WITNESSES:

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# UNITED STATES PATENT OFFICE.

HARRY W. LIBBY AND CHARLES R. SWETT, OF CANTON, MAINE.

## WRENCH.

SPECIFICATION forming part of Letters Patent No. 640,005, dated December 26, 1899.

Application filed May 27, 1899. Serial No. 718,560. (No model.)

*To all whom it may concern:*

Be it known that we, HARRY W. LIBBY and CHARLES R. SWETT, of Canton, in the county of Oxford and State of Maine, have invented a new and Improved Wrench, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved wrench which is simple and durable in construction, very effective in operation, more especially designed for use on pipes, nuts, and other articles, capable of self-adjustment for large or small articles, not liable to slip, and arranged to release itself on jammed and flattened pipe as readily as on perfect pipe.

The invention consists of novel features and parts and combinations of the same, as will be fully described hereinafter and then pointed out in the claim.

A practical embodiment of our invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in both the views.

Figure 1 is a sectional side elevation of the improvement, and Fig. 2 is a front edge view of the same.

The improved pipe-wrench is provided with a shank A, terminating at one end in a handle B and at its other end in a fixed jaw C, preferably curved, with teeth C' at the inner face, as is plainly illustrated in Fig. 1. Opposite the fixed jaw C is arranged a movable jaw D, preferably in the form of a roller, journaled on a pin D', and having peripheral teeth D<sup>2</sup>, adapted to engage a pipe E or other article at one side—that is, opposite the side engaged by the teeth C' of the fixed jaw C. (See Fig. 1.) The teeth D<sup>2</sup> of the roller-jaw D are in mesh with teeth A' on one side of the shank A, and the pin D' on which the roller-jaw is journaled is carried by a U-shaped slide F, embracing and movable longitudinally on the shank A, so that the said jaw rolls off on the teeth A' of the shank A. The slide F is provided with a pin G, the head of which is fastened between the side portions of the slide at the front of the shank, the head thus closing the slide to hold it in place. The pin G is pressed by a spring H, held in a tubular casing I, secured to the handle B and extending along the front of

the shank, the head of the pin being free to slide against the side of the shank A having the teeth A', so as to hold the slide in proper position relatively to the shank and the roller-jaw in proper mesh with the teeth A'. Attached to the head of the pin G is a finger-piece F', adapted to be taken hold of by the operator to draw the slide F downward toward the handle B and against the tension of the spring H when it is desired to place the wrench in position on the article to be turned.

When the article is engaged, as shown in Fig. 1, and the operator has released the finger-piece F' and the spring H has pushed the slide F forward toward the jaw C and the operator imparts a swinging motion to the handle B in the direction of the arrow a', with the object or article E as the fulcrum, then the teeth D<sup>2</sup> of the roller-jaw firmly engage the article as the said jaw tends to rotate in the direction of the arrow b' during this movement of the wrench. Now it is evident that the turning of the roller-jaw causes it to travel outward on the teeth A', so as to firmly grasp the article in question; but when the operator swings the handle B in the inverse direction of the arrow a' then the roller-jaw will turn in the inverse direction of the arrow b', and thereby travel inward on the teeth A', so as to release the article sufficiently to allow a convenient and ready return movement of the wrench. Thus by alternately swinging the wrench forward in the direction of the arrow a' and backward in the inverse direction thereof, the article is automatically and securely grasped between the jaws D and C and then released to allow of obtaining a new grip upon the forward movement of the handle.

As the slide F is spring-pressed, as shown, it is evident that the roller-jaw readily moves in contact with the surface of the article whether it is round, jammed, or flattened, it being understood that the slide F yields sufficiently to compensate for the irregularities in the peripheral surface of the article.

Having thus fully described our invention, we claim as new and desire to secure by Letters Patent—

A wrench having a shank terminating at one end in a fixed jaw and also having teeth adjacent to the jaw, a handle attached to the

other end of the shank, a U-shaped slide  
mounted on the shank, a pin the head of which  
is fastened in the front portion of the slide to  
close the same and hold it slidably on the  
5 shank, a tubular casing carried by the handle  
and extending along the shank, the casing re-  
ceiving the pin, a spring mounted in the cas-  
ing and bearing between the handle and the  
pin to move the slide toward the fixed jaw,

and a roller-jaw mounted in the slide and 10  
meshing with the teeth of the shank, the  
roller-jaw acting with the fixed jaw.

HARRY W. LIBBY.  
CHARLES R. SWETT.

Witnesses:

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