

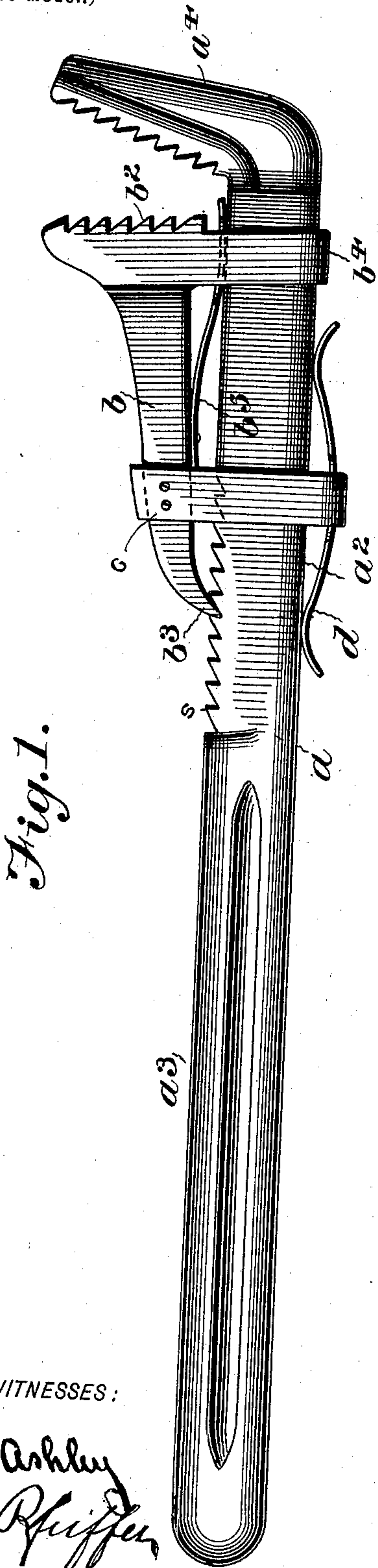
No. 671,143.

G. A. MUSSELMAN.  
WRENCH.

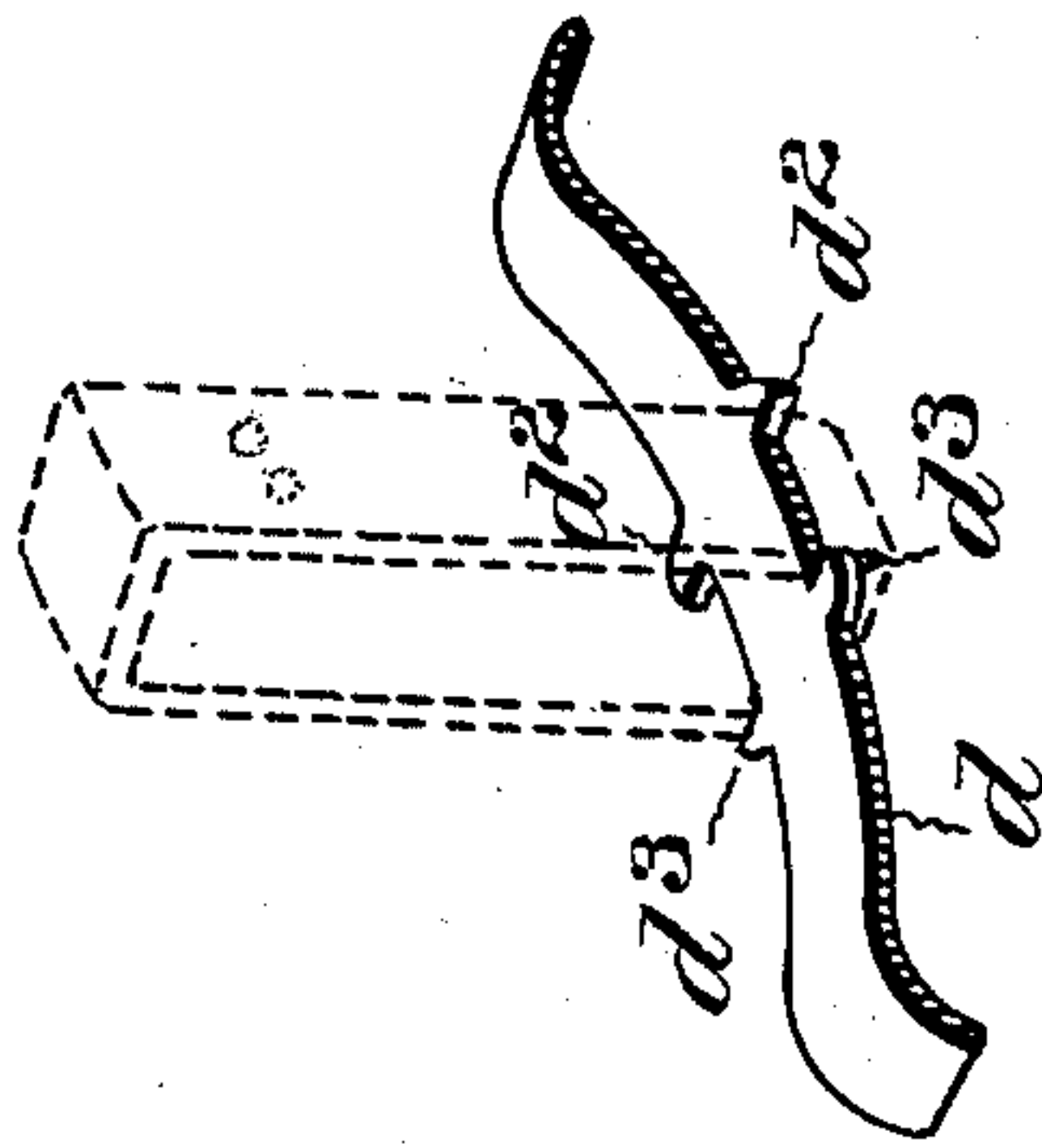
Patented Apr. 2, 1901.

(No Model.)

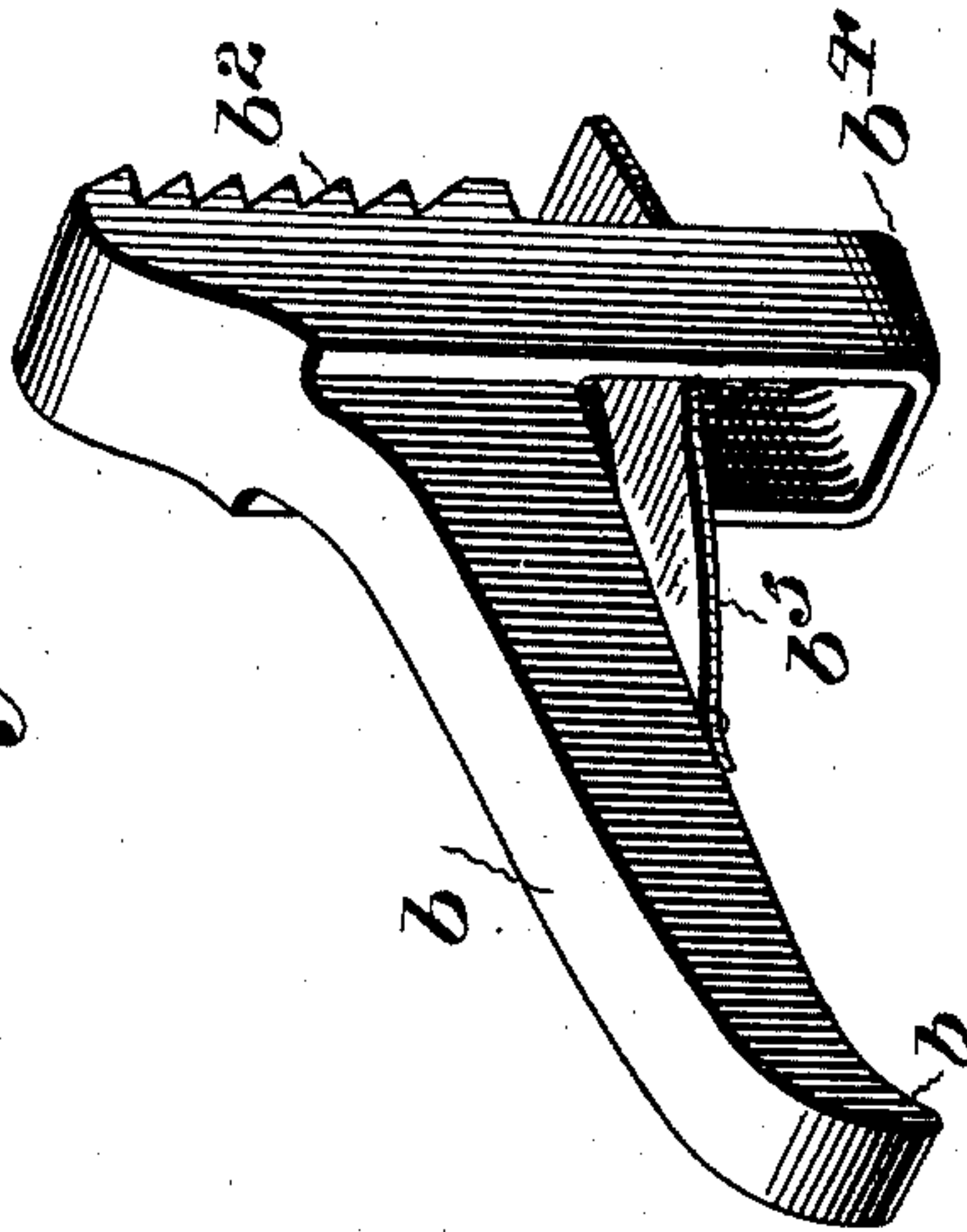
(Application filed Dec. 26, 1900.)



*Fig. 3.*



*Fig. 2.*



WITNESSES:

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# UNITED STATES PATENT OFFICE.

GEORGE A. MUSSELMAN, OF CRESTLINE, OHIO.

## WRENCH.

SPECIFICATION forming part of Letters Patent No. 671,143, dated April 2, 1901.

Application filed December 26, 1900. Serial No. 41,029. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE A. MUSSELMAN, a citizen of the United States, residing at Crestline, in the county of Crawford and State of Ohio, have invented certain new and useful Improvements in Wrenches; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

The object of this invention is to provide a wrench for use by mechanics and others which while comparatively light and inexpensive shall be simple in its construction and effective and durable in operation and use.

In the accompanying drawings, which constitute a part of this specification, Figure 1 represents a view of the wrench as when seen from one side thereof. Fig. 2 is a perspective view of the slidable jaw as it appears before the several parts are assembled and united for operation. Fig. 3 is a detail in perspective showing the relation of the detachable spring to its yoke or guide.

The operating arm or bar  $a^2$  of the wrench  $a$  is in the main of ordinary construction, having handle or grasping portion  $a^3$  at one extremity, the outer engaging jaw  $a^4$  being provided with an engaging surface at the opposite extremity. The slidable jaw  $b$  has engaging surface  $b^2$  and terminal engaging point or toe  $b^3$ , and  $b^4$  is a yoke which may be either integral with the sliding jaw or attached thereto in any suitable manner, said yoke loosely receiving in one part the body of the bar  $a^2$ . A spring  $b^5$  is at one extremity secured by a screw or other suitable means to the inner face of the slidable jaw, the opposite end of the spring extending within the yoke and bearing against the bar in the manner shown, and thereby insuring engagement of the toe  $b^3$  with one of the series of stops  $s$ .

The supplemental yoke or band  $c$  is received upon the outer or smaller portion of the slidable jaw  $b$  and securely fastened thereto by means of screws, rivets, or other means. It is provided with a reversely-curved spring  $d$ , which at its sides is provided with shoulders  $d^2 d^2$  and  $d^3 d^3$ , the two pairs being at such distance apart as exactly to receive between

them the body of the yoke or band  $c$ . In bringing these parts into engagement the spring  $d$  is first inserted within the yoke in a position at a right angle to its position, as seen in Fig. 3, and being then given a quarter-turn the body of the yoke is engaged both above and below by the shoulders already described. In this position the yoke carrying the spring is moved over the handle  $a^3$  of the arm or bar  $a^2$  to the position indicated in Fig. 1, in which, by reason of the action of the spring, both the slidable jaw  $b$  and the body of the arm or bar  $a^2$  are firmly engaged.

It has been found that this construction insures the utmost possible facility in adjusting the wrench to the pipe upon which it is to operate, as the operator has only to press with his thumb upon the end of the yoke carrying the reversely-curved spring to release the nose  $b^3$  from engagement with the stops on the bar  $a^2$ , after which the sliding jaw may be easily pushed forward or backward on the bar or handle and without the necessity of the use of a second hand. By the construction shown, the two springs cooperate to positively hold the parts in an adjusted relation, and the sliding jaw is securely held in place while the jaws are under strain.

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

A wrench consisting of the handle  $a$  with shank portion having a fixed jaw at one end and ratchet-teeth  $s$ , the sliding jaw  $b$  with nose  $b^3$  at one end, an integral yoke  $b^4$  at its other end and surrounding said shank portion, a spring secured to the inner edge of the sliding jaw, and extending through said integral yoke and bearing yieldingly against said shank portion, a supplemental yoke  $c$  secured to the sliding jaw and surrounding the shank portion of the fixed jaw, a loosely-mounted spring  $d$  having recesses on opposite edge thereof, in which recesses, the longitudinal portions of the yoke  $c$  are confined by the end walls of said recesses engaging the edges of said supplemental yoke, as set forth.

In testimony whereof I have, on this 17th day of December, 1900, affixed my signature in the presence of two subscribing witnesses.

GEORGE A. MUSSELMAN.

Witnesses:

JAS. AGNEW,  
R. U. MILLER.