J. F. Cass, Wrenches

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PATENTED OCT 18 1870

Fig: 1.

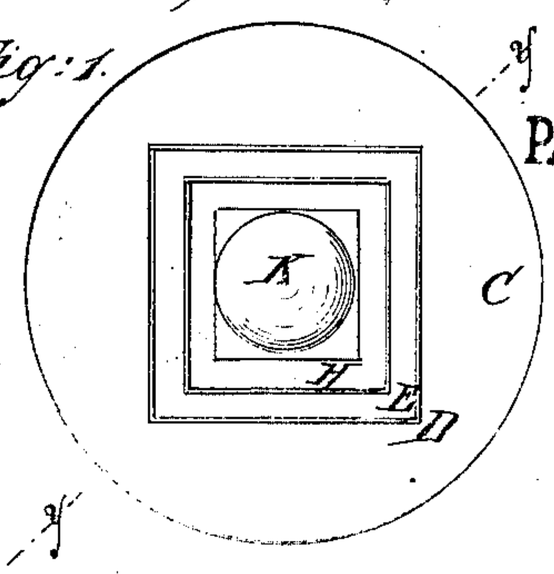
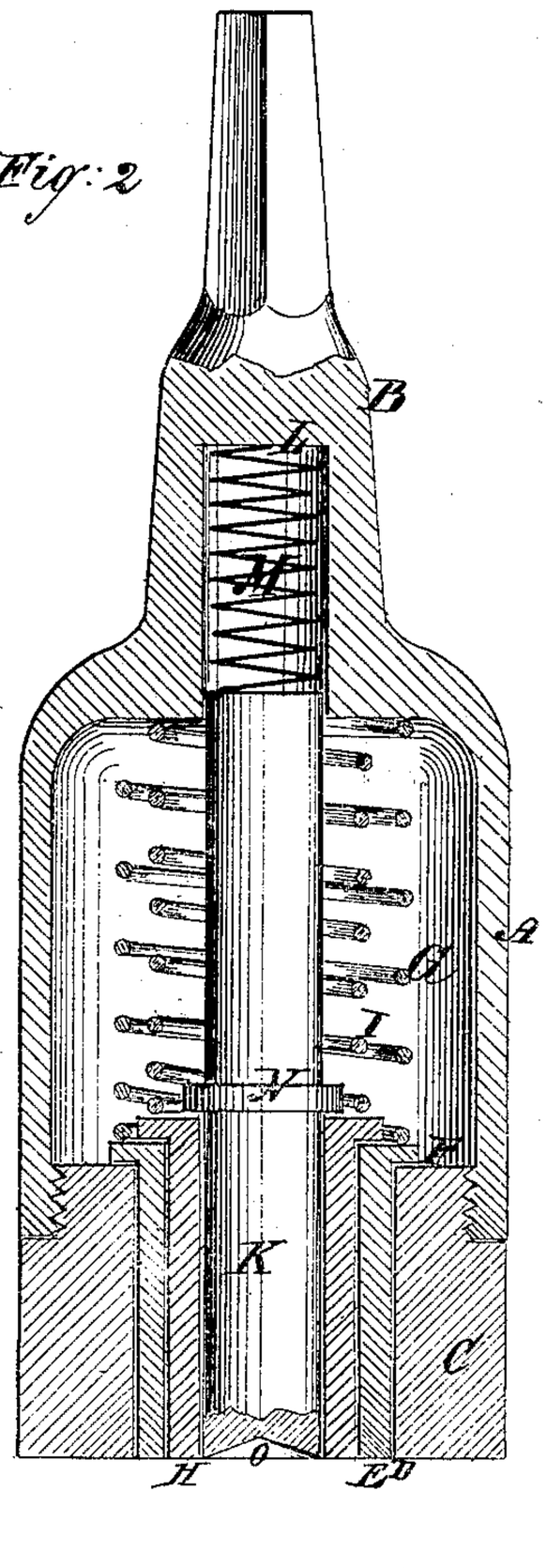


Fig: 2



Witnesses:
Alex. F. Roberts
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Inventor:
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per Munn & Co
Attorneys.

United States Patent Office.

JAMES F. CASS, OF L'ORIGINAL, CANADA.

Letters Patent No. 108,330, dated October 18, 1870.

IMPROVEMENT IN WRENCHES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, JAMES F. CASS, of L'Original, in the county of Ontario and Province of Canada, have invented a new and useful Improvement in Wrenches; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

This invention relates to improvements in socket-wrenches, and consists in a combination with a piece of metal having a socketed end, of one or more sleeves, arranged in the socket the smaller within the larger, for nuts of different sizes, so arranged that the smaller sleeves will be forced inward against spiral springs by the nuts, if too large for the said sleeves, but the smaller nuts will be received and acted on by the said smaller sleeves, all as hereinafter described.

Figure 1 is a sectional elevation of my improved wrench, and

Figure 2 is an end view of the same.

Similar letters of reference indicate corresponding parts.

A is a hollow stock, having a shank, B, fitted for the application of a lever or turning instrument like a bit stock, or any other suitable device by which it may be turned readily.

C is a strong piece screwing into the hollow end of the stock, and having a socket, D, in its center, as large as the largest nut which it is intended the wrench shall be capable of turning, the said socket being square, or of other form suited to the form of the nuts for which it is designed.

E is a hollow sleeve fitted in the socket D; it has a flange, F, at the top, resting on the top of C, to prevent it from falling or being forced out.

G is a spiral spring resting on the top of flange F, and at the other end against the bottom of the socket of A.

H is another sleeve similar to E, but smaller and working within E. It is also provided with a spring, I, operating in the same manner that G does. As many more of such sleeves may be employed as the nature of the case will admit.

K is a centering-pin fitted within the smallest sleeve and a small socket, L, in stock A, at the bottom of the large socket, as shown, to slide in and out. It has a spring, M, behind it, to force it out, and a collar, N, to arrest the outward movement when the end projects as far as the outer ends of the sleeves. This pin has a conical depression, O, in the end, and is designed for centering the nuts with the wrench by engaging the top of the bolt, which projects above the nut when the wrench is to be applied.

In the application of the wrench this pin is first placed on the bolt, as above indicated; pressure is then applied to the stock sufficiently to overcome the springs, and it is turned so that the sides of the sleeves are parallel with the sides of the nut; the latter will then be forced into the sleeve of the right capacity to receive it, forcing the others back, or if too large for any of the sleeves, it will force them all back and be received in the socket of C. The piece C is made separate from A and screwed into it for inserting the sleeves with the flanges at the top.

These sleeves may be made with thin walls, and graduated for nuts varying in size in any preferred measure.

The graduation may be extended by making the sleeves in two parts, the line of division being through the corners diagonally, as indicated by the line *x x* in fig. 1. In this case, one half the sleeve being forced back, would admit a nut between the other half remaining down and two sides of the next larger sleeve, but the centering-pin would have to be held at one side of the upper end of the bolt.

A smaller nut could be turned by the wrench in this way than if the whole of the sleeve be forced back.

I propose to make these wrenches either with the sleeves made whole or divided, as above described.

The sleeves may be used without the springs with good results, the gravity being depended on to keep them down, and I propose to make use of the spring or not, as may be preferred.

Having thus described my invention,

I claim as new and desire to secure by Letters Patent—

1. The combination, with a socket-wrench, C A, of one or more sleeves D H, either divided or whole, and a centering-pin, K, substantially as specified.

2. The combination, with the sleeves and the stock A, of the springs G I, substantially as specified.

The above specification of my invention signed by me this 10th day of August, 1870.

JAMES F. CASS.

Witnesses:

GEO. W. MABEE,

ALEX. F. ROBERTS.