

(Model.)

W. I. B. McHALE..

TUBE EXPANDER.

No. 338,425.

Patented Mar. 23, 1886.

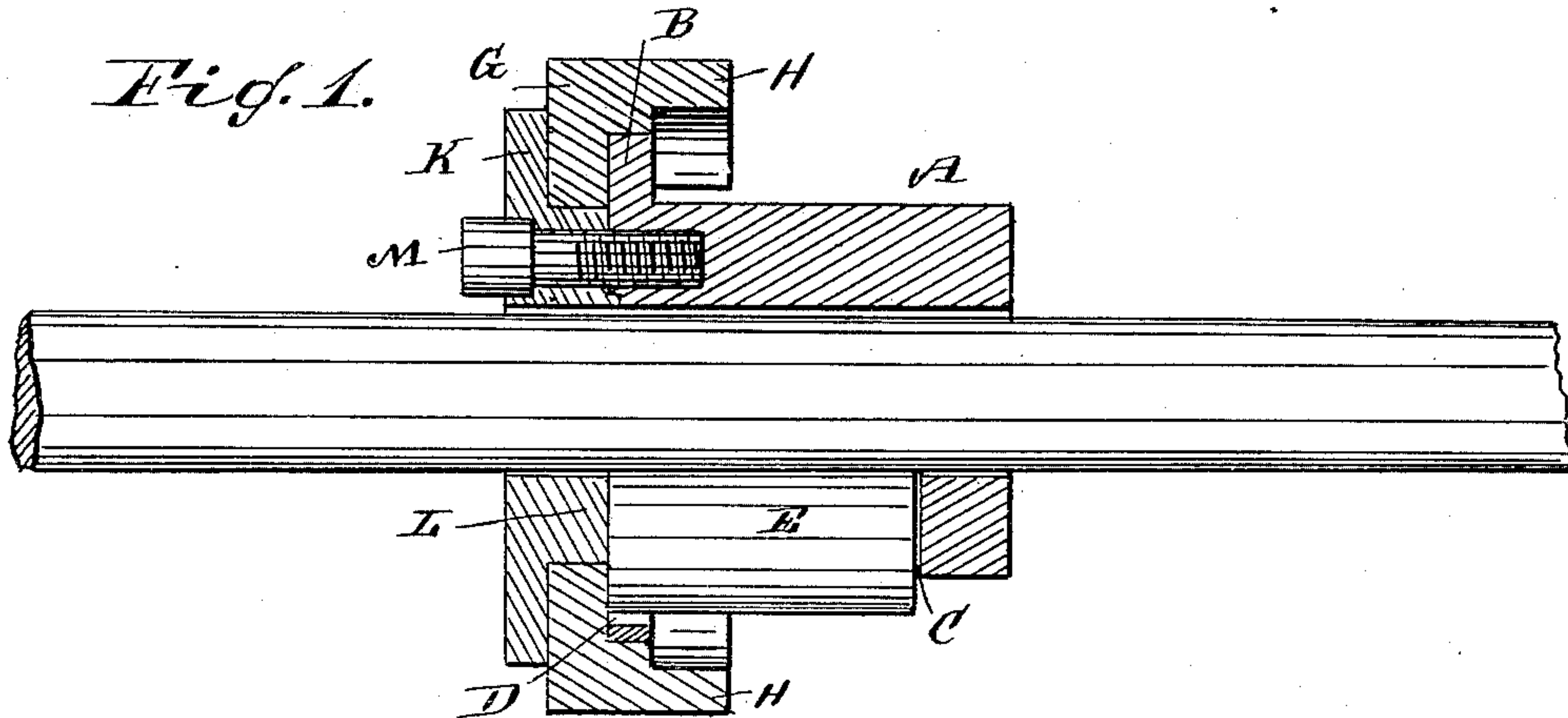


Fig. 2.

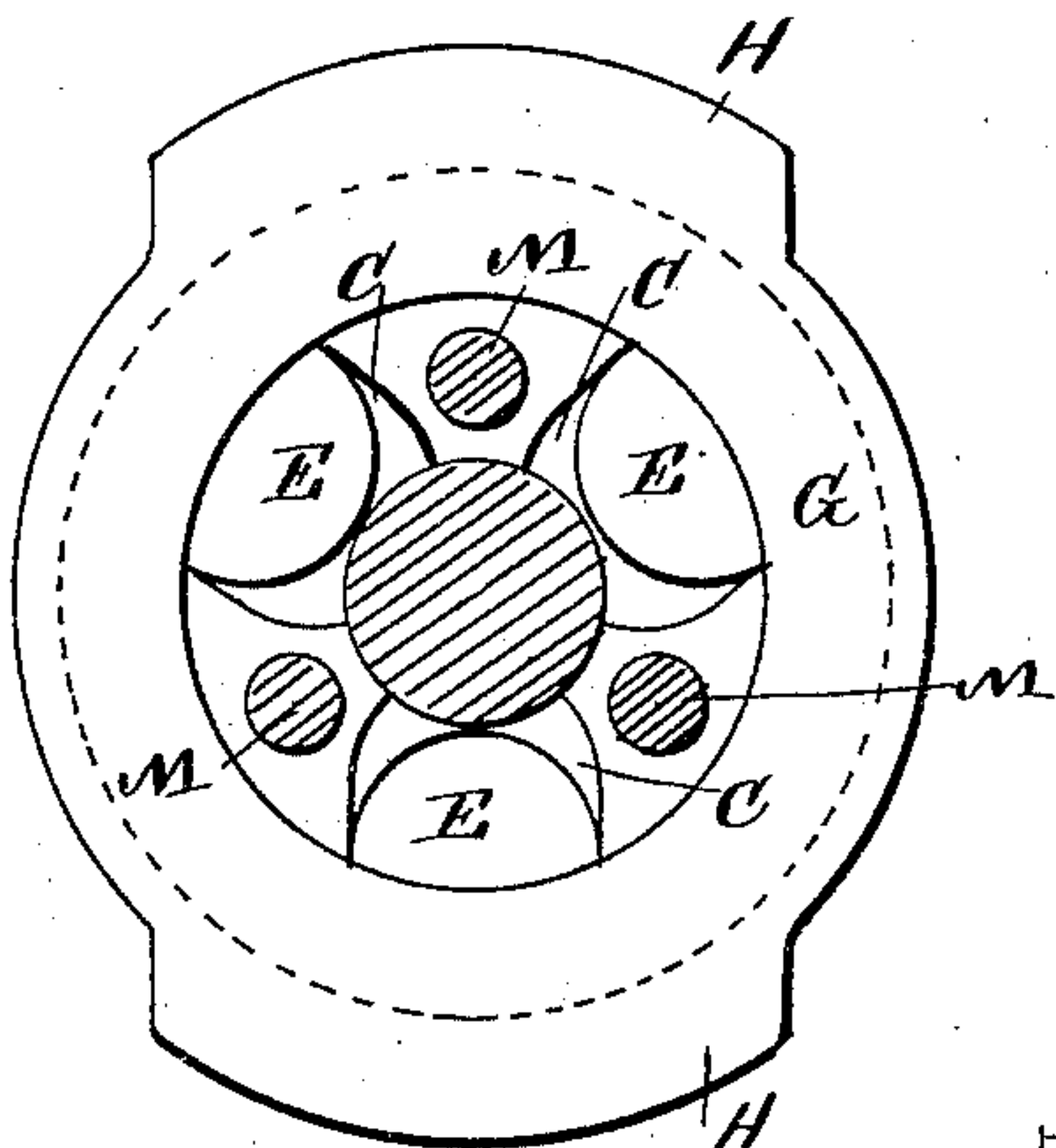


Fig. 3.

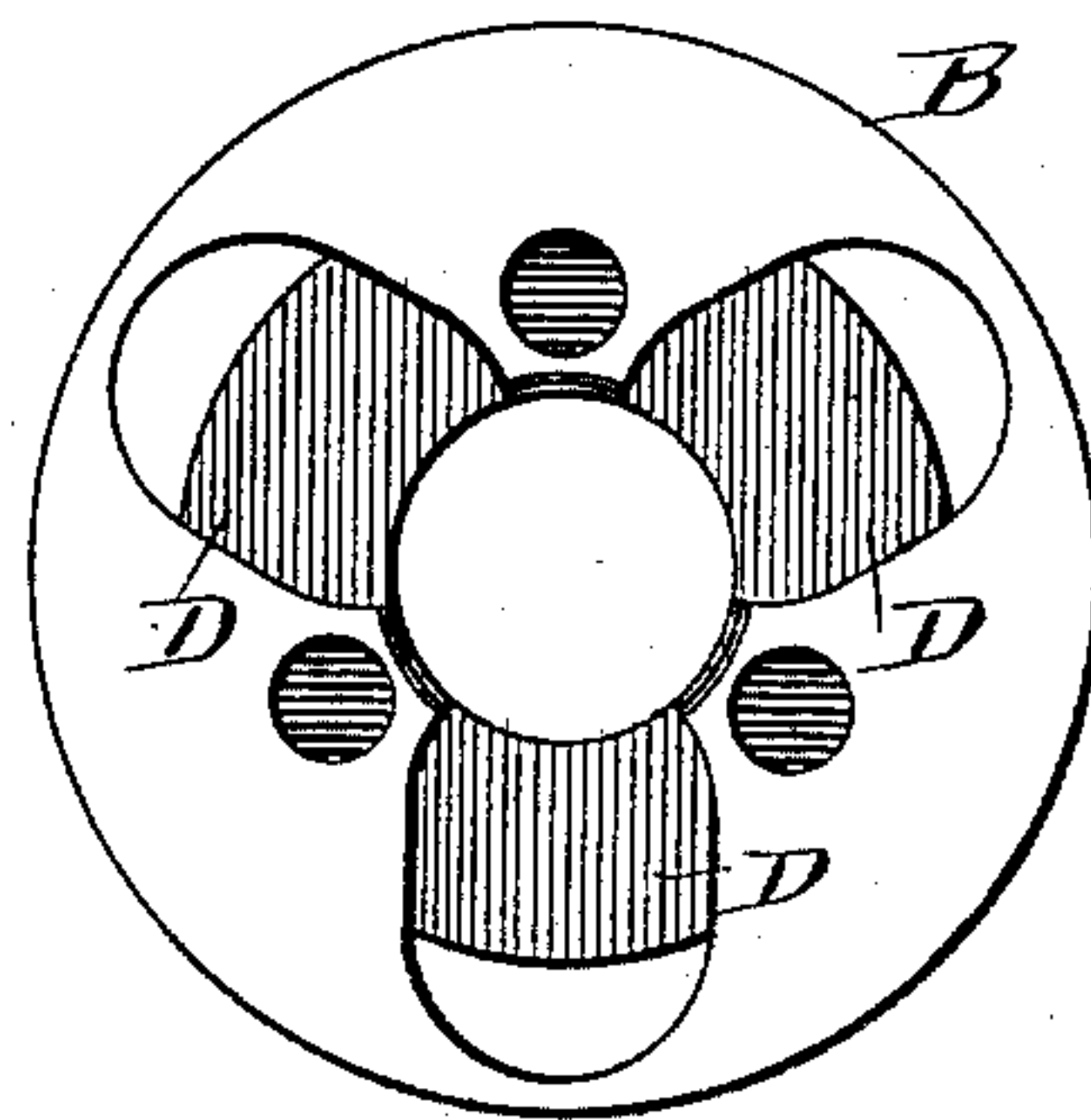
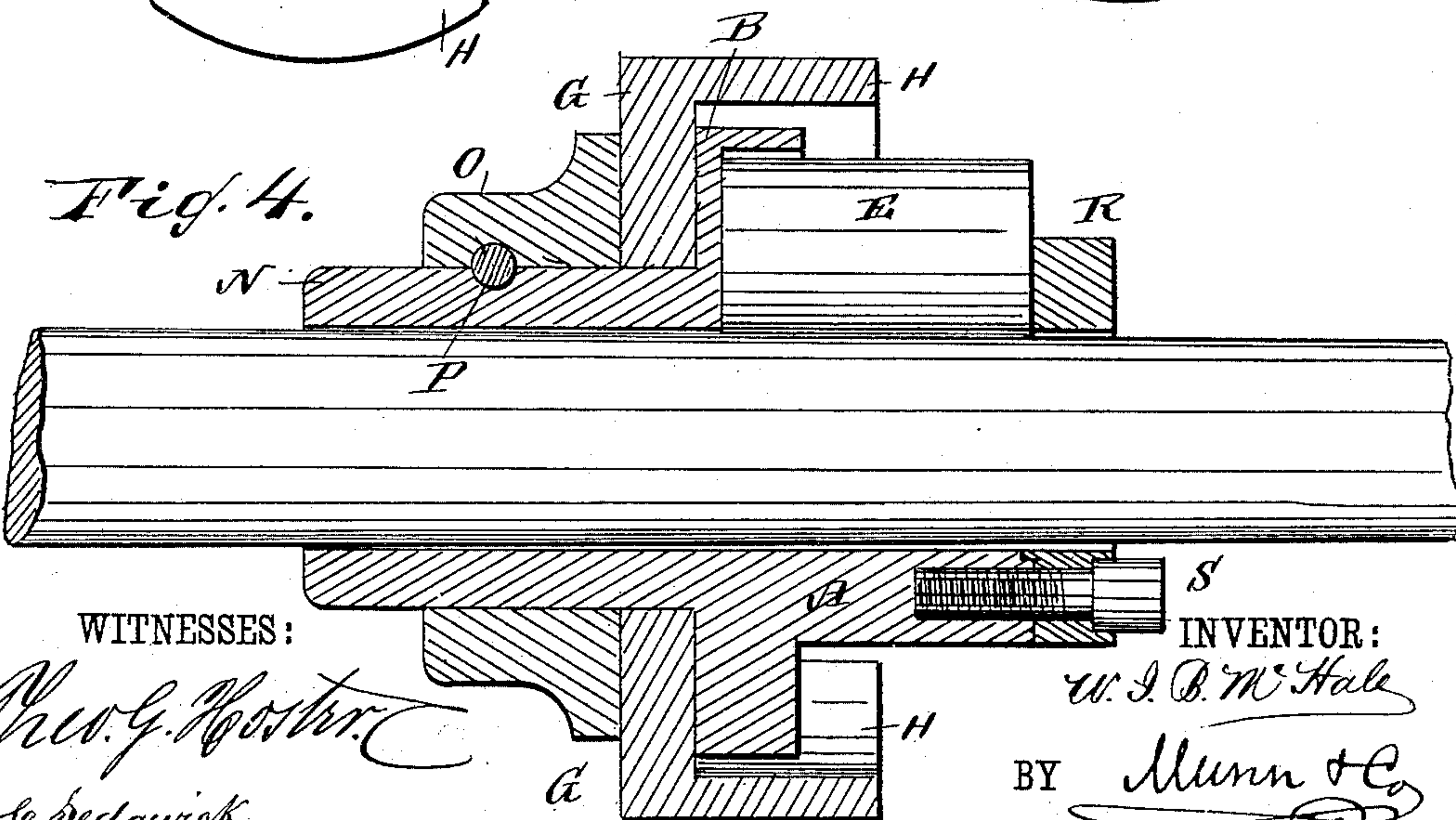


Fig. 4.



WITNESSES:

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UNITED STATES PATENT OFFICE.

WILLIAM I. B. McHALE, OF NEW YORK, N. Y.

TUBE-EXPANDER.

SPECIFICATION forming part of Letters Patent No. 338,425, dated March 23, 1886.

Application filed October 29, 1885. Serial No. 181,298. (Model.)

To all whom it may concern:

Be it known that I, WILLIAM I. B. McHALE, of the city, county, and State of New York, have invented a new and Improved Tube-
5 Expander, of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and improved tube-expander which is simple in construction, effective in use, and
10 which can be used for tubes having different diameters.

The invention consists in the construction and combination of parts and details, as will be fully described and set forth hereinafter,
15 and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

20 Figure 1 is a longitudinal sectional view of my improved tube-expander. Fig. 2 is a plan view thereof, the plate K being removed and the screws and the bar being in section. Fig. 3 is a plan view of the tubular stock. Fig.
25 4 is a longitudinal sectional view of a modified construction of the same.

The tubular stock A is provided at one end with the annular flange B, and also with the longitudinal slots C, which extend from the
30 flanged end of the stock to within a short distance from the opposite end, and which terminate in the radial slots or grooves D in the flange B. Each slot C contains a swage or roller E, which is cut off square at each end
35 and is as long as the slot.

The flange B fits in an annular recess in a ring, G, provided with the two diametrically-opposite lugs H, which are parallel with the longitudinal axis of the stock.

40 The circular centrally-apertured plate K is placed against the flanged end of the stock, and is provided with a projecting part, L, which passes through the ring G and rests against the end of the stock. Screws M are
45 passed through the middle portion of the plate K into the end of the stock, and thus hold the ring G to turn on the end of the stock.

When the ring G and the plate K are removed, the swages E can be withdrawn from
50 the slots in the stock at the flanged end of the stock.

The swages or rollers E have considerable

play radially in the slots C, and are checked from being moved outward too far by the ends of the guide slot or groove in the flange B. 55

In the construction shown in Fig. 4, the stock A is provided with the neck N beyond the flange B, and on said neck the ring G is placed, and is held to turn on the said neck by the collar O on the neck N, which collar
60 O is held in place by the wedge-pin P, passed through the collar and through a groove in the neck. A ring, R, is placed on the front end of the stock, and screws S are passed through the same into the stock, and thus the
65 swages are held in place.

The fundamental features are the same in both constructions—that is, the slotted stock having a flange provided with radial slots or grooves D, for guiding the swages, and the
70 ring G, having the lugs H.

I am aware that a patent has been issued to J. F. Dettmar for a tube-expander, in which the swages are provided on the ends with pins running in guide-grooves formed in the cylin-
75 drical part of the stock.

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

1. In a tube-expander, the combination, with a stock having longitudinal slots for the
80 swages, which stock is provided at one end with a flange the diameter of which is greater than the diameter of the stock, and which flange is provided with radial grooves for receiving and guiding the ends of the swages,
85 the outer ends of said grooves being beyond the outer surface of the stock, of swages in the slots and of a plate held against one end of the stock by screws, for the purpose of holding the swages in the several slots, substantially as
90 herein shown and described.

2. In a tube-expander, the combination, with the slotted tubular stock A, having a flange provided with radial guides for the swages, the collar G, having the lugs H, the
95 circular plate K, having the projecting part L, and of the screws M, passed through the plate K into the end of the stock, substantially as herein shown and described.

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Witnesses:

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