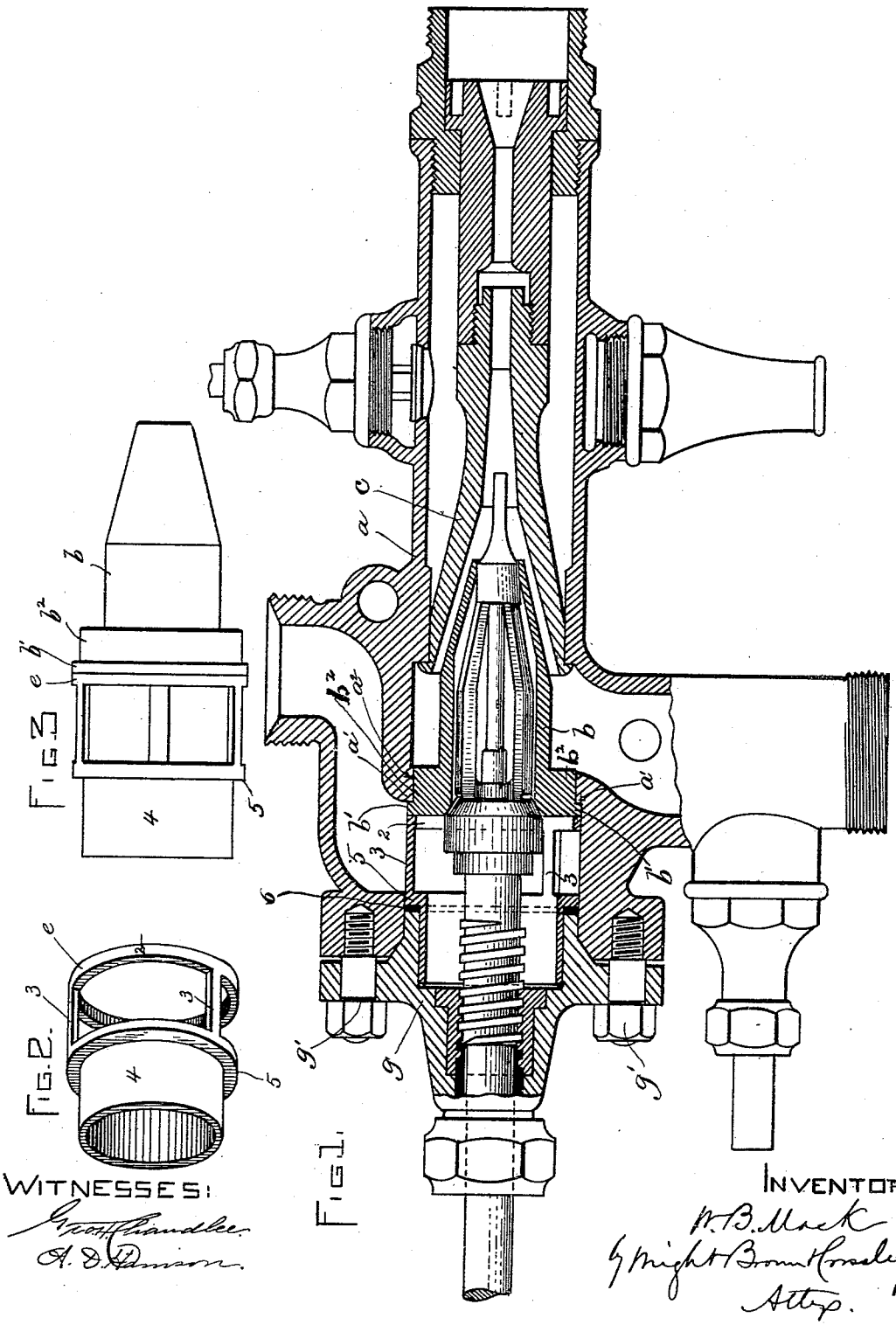
(Model.)

W. B. MACK.

INJECTOR.

No. 457,515. Patented Aug. 11, 1891.



WITNESSES:

Grant Chandlee.

A. D. Dawson.

INVENTOR:

W. B. Mack

by Wright Brown Quinby & Atty.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM B. MACK, OF BOSTON, MASSACHUSETTS.

INJECTOR.

SPECIFICATION forming part of Letters Patent No. 457,515, dated August 11, 1891.

Application filed March 18, 1891. Serial No. 385,493. (Model.)

To all whom it may concern:

Be it known that I, WILLIAM B. MACK, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Injectors, of which the following is a specification.

This invention has for its object to provide improved means for securing the steam-cone of an injector to the casing thereof in suitable relation to the combining-cone in such manner that the said steam-cone shall be readily detached without the necessity of unscrewing it from the casing.

To this end the invention consists in the improvements which I will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a longitudinal section of an injector provided with my improvements. Fig. 2 represents a perspective view of the device which holds the steam-cone in its place; and Fig. 3 represents a side view of the steam-cone and its holding device removed from the casing.

The same letters of reference indicate the same parts in all of the figures.

In the drawings, *a* represents the casing of an injector, *b* represents the steam-cone, and *c* represents the combining-cone, the arrangement of said parts being the same as in the well-known Mack injector, manufactured by the National Tube Works Company, of Boston, Massachusetts, and forming no part of my present invention, which relates entirely to the means for securing the steam-cone.

In carrying out my invention I provide the forward or larger end of the steam-cone with an outwardly-projecting flange or shoulder b', which bears against a corresponding shoulder a' on the casing and limits the movement of the steam-cone toward the combining-cone. I also provide the steam-cone with a circular enlargement b^2, adjoining said shoulder, the said enlargement having a plain or unthreaded periphery which fits the corresponding surface of a seat a^2, formed in the casing for the reception of said enlargement. The unthreaded enlargement b^2 is substituted for the usual external screw-threaded enlargement formed on the steam-cone and enables the steam-cone to be readily inserted and removed without rotating it, or, in other words, without screwing it into and out of the casing.

To prevent endwise movement of the cone *b* away from the combining-cone and from the shoulder a', I provide the casing with a detachably-secured holding device or spider *e*, which comprises a cage or open portion consisting of a ring 2 and bars 3 3 and a sleeve or cylinder 4, of less diameter than the said cage or open portion, the sleeve 4 being fitted in the removable terminal *g* at one end of the casing *a*, while the ring 2 bears upon the outer end of the steam-cone *b*. The said holding device is provided with a shoulder 5, between which and the inner end of the terminal *g* is interposed an elastic washer or packing 6. It will be seen that when the terminal *g* is moved to its place on the casing by means of the attaching-screws g' said terminal will press the holding device or spider *e* firmly against the outer end of the steam-cone, and thus retain the latter in its operative position. When it is desired to remove the steam-cone, this operation may be readily effected by removing the terminal *g*, the spider or holding device *e* being thus released, so that the steam-cone may be readily withdrawn. The packing 6, interposed between the terminal *g* and the shoulder on the spider or holding device, enables the said spider to be forced to its operative position with a somewhat yielding pressure, so that the terminal *g* cannot be screwed up so closely as to bear injuriously on said cage.

I claim—

The casing having the combining-cone, the internal shoulder a', and the detachable terminal *g*, combined with the steam-cone having a shoulder b' and a smooth enlargement b^2, and the steam-cone holder composed of the sleeve 4, fitted in a socket in the terminal *g*, and the spider bearing against the outer end of the steam-cone, as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 16th day of March, A. D. 1891.

WILLIAM B. MACK.

Witnesses:

C. F. BROWN,

A. D. HARRISON.