

(No Model.)

2 Sheets—Sheet 1.

M. HANNIGAN & M. McKENNA.
REVERSIBLE SPRAY NOZZLE.

No. 542,825.

Patented July 16, 1895.

FIG 1.

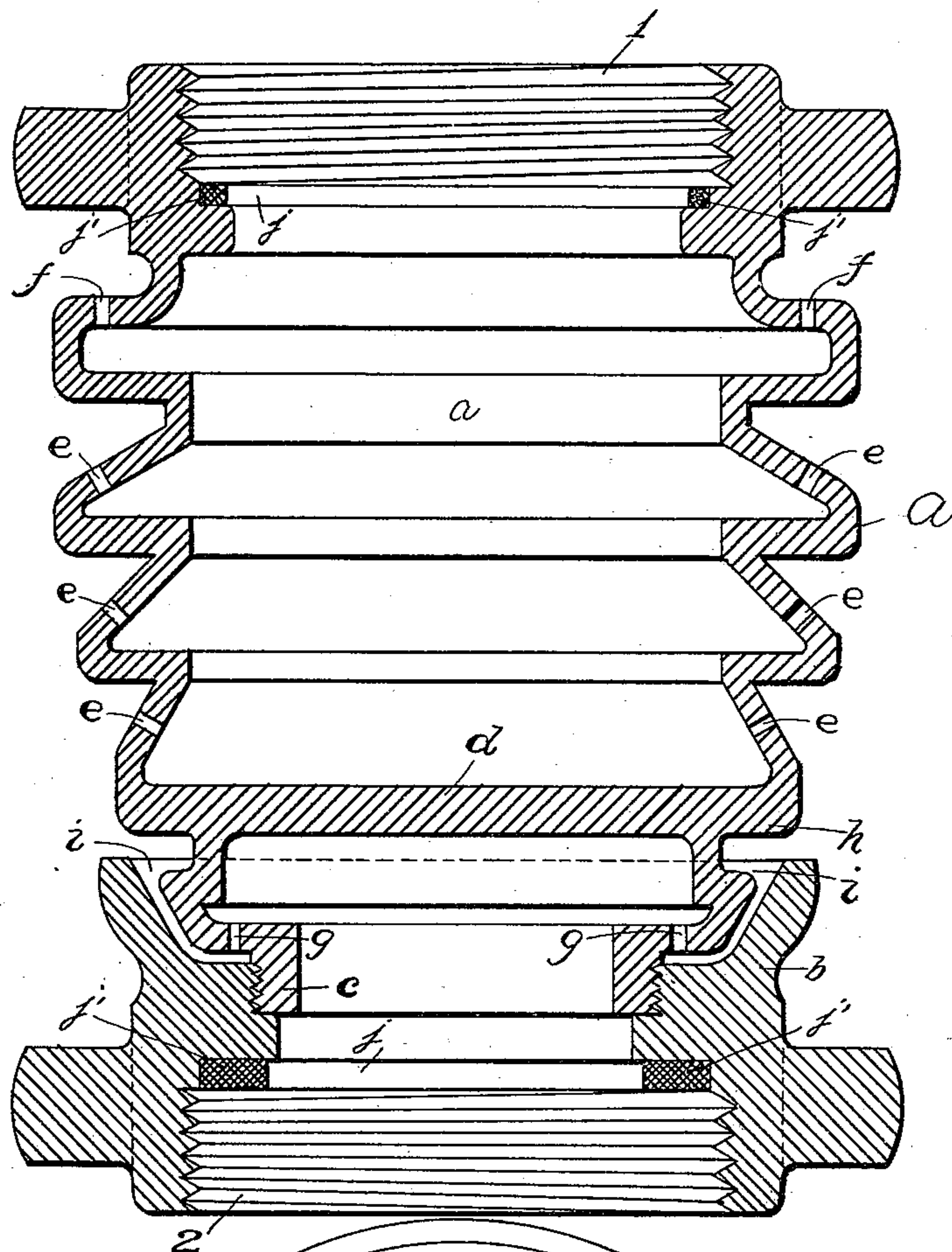
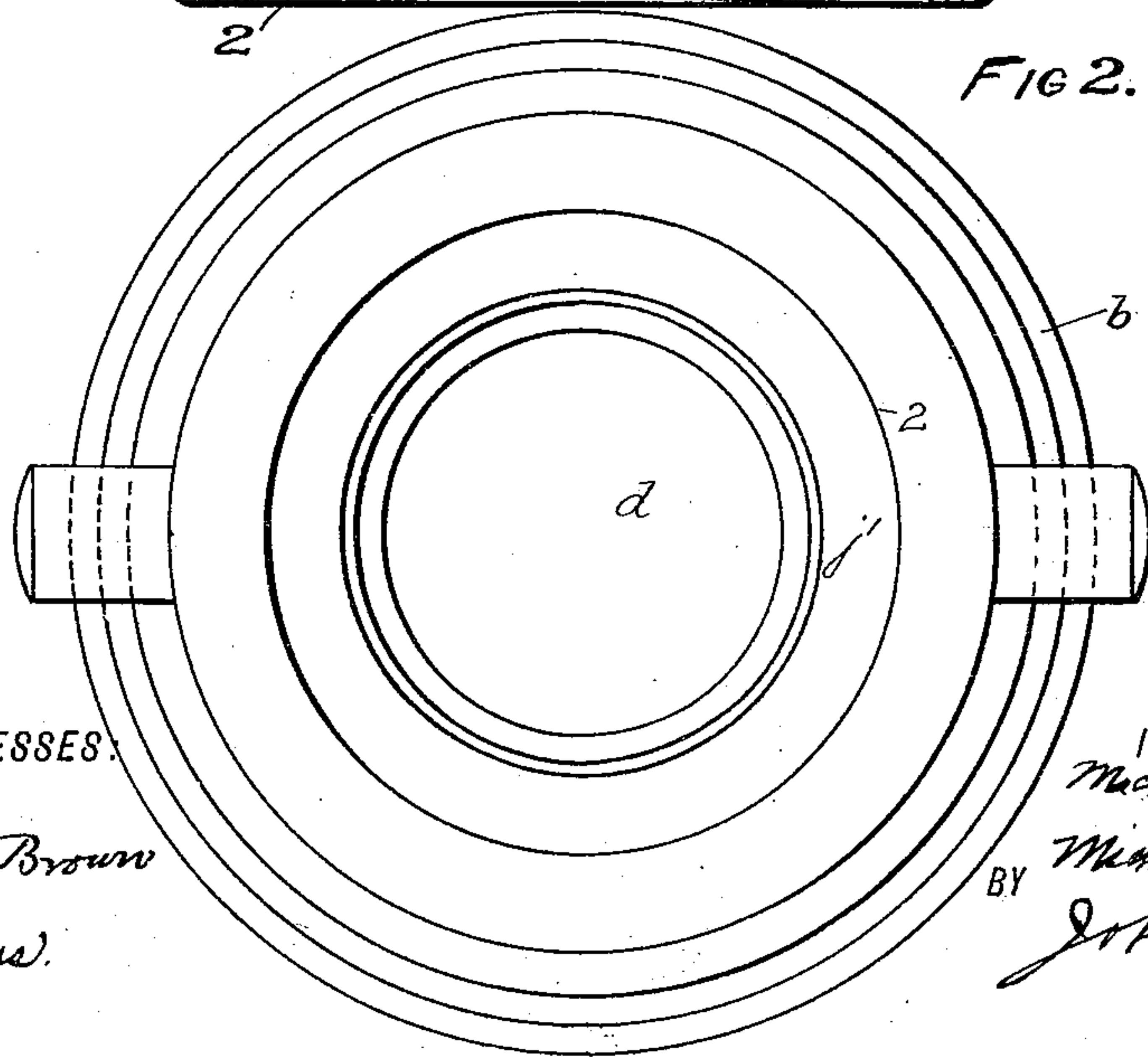


FIG 2.



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FIG 3.

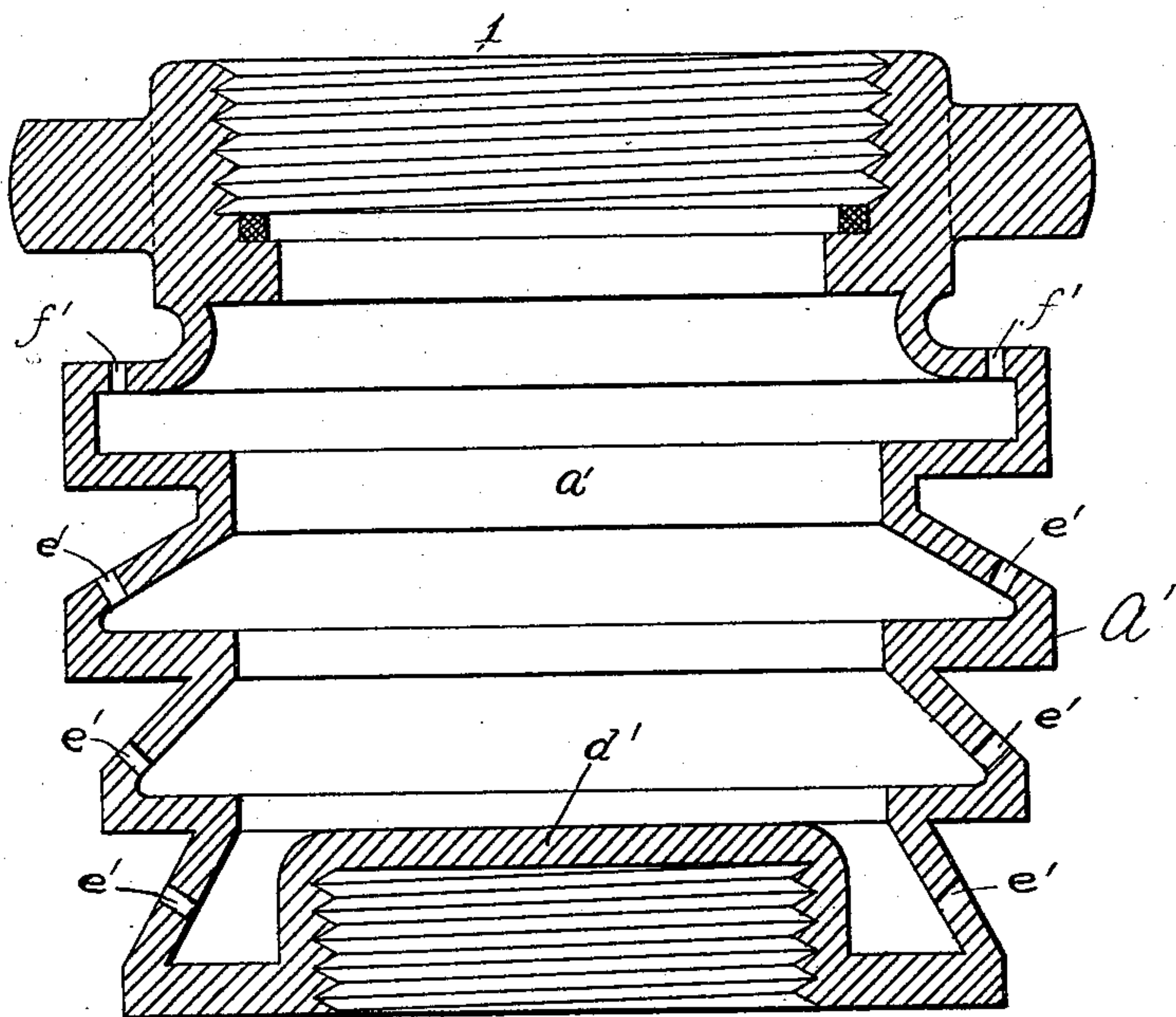
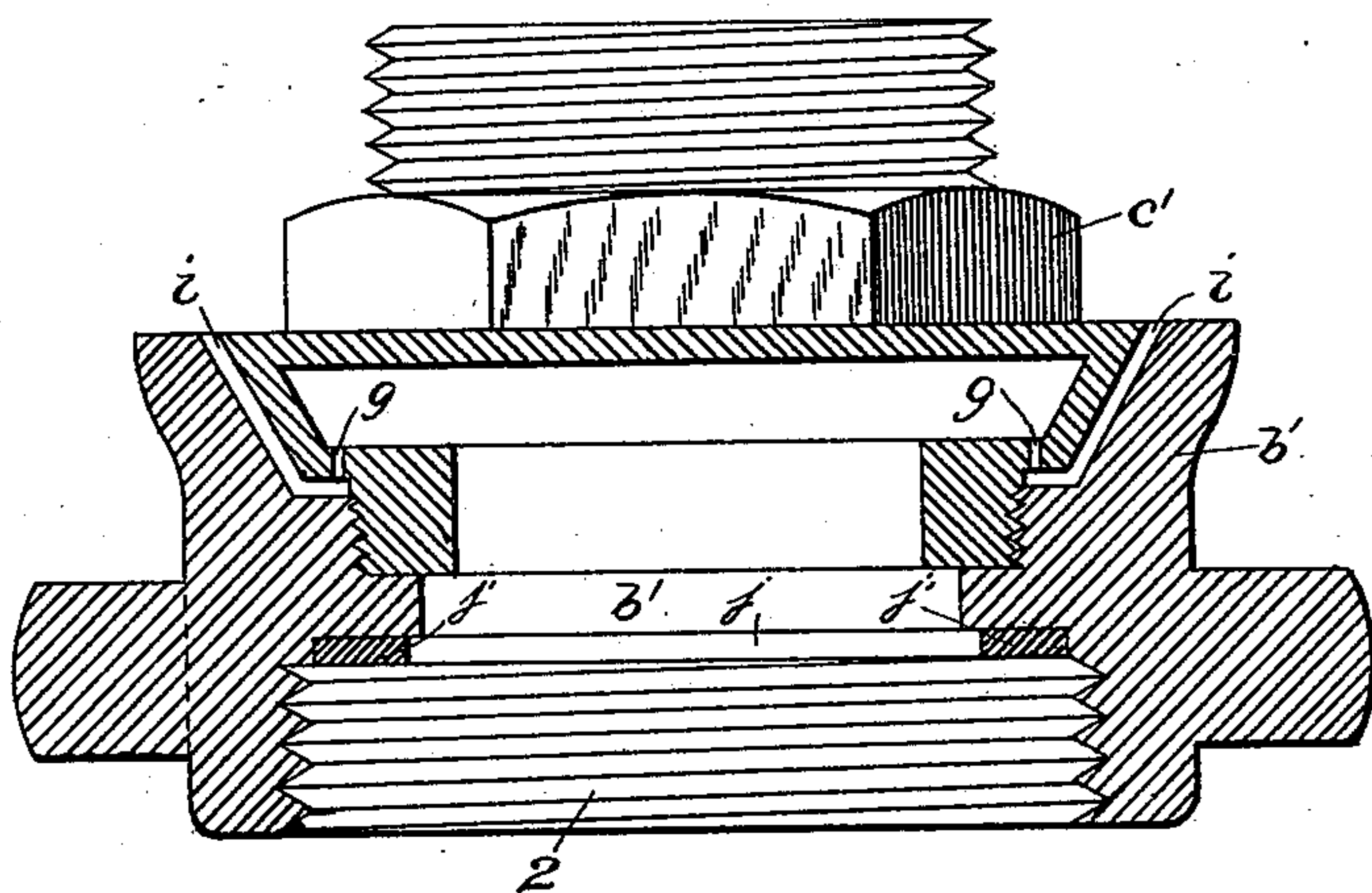


FIG 4.



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UNITED STATES PATENT OFFICE.

MICHAEL HANNIGAN AND MICHAEL MCKENNA, OF PITTSBURG, PENNSYLVANIA.

REVERSIBLE SPRAY-NOZZLE.

SPECIFICATION forming part of Letters Patent No. 542,825, dated July 16, 1895.

Application filed January 5, 1895. Serial No. 533,966. (No model.)

To all whom it may concern:

Be it known that we, MICHAEL HANNIGAN and MICHAEL MCKENNA, citizens of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Reversible Spray-Nozzles; and we do hereby 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 pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, in which—

Figure 1 indicates a longitudinal section of our improved reversible spray-nozzle. Fig. 2 is a plan view of the lower end of the same. Fig. 3 is a longitudinal section of a modification of the upper portion of the device shown in Fig. 1. Fig. 4 is the same of a modification of the lower portion of the device shown in Fig. 1.

Our invention relates to improvements in nozzles to attach to hose used on engines for extinguishing fires, our object being to produce a device of this character adapted to throw a spray forward and when reversed to throw a spray rearwardly and upwardly, for the purpose hereinafter more specifically described, and to this purpose consists of the novel construction and arrangement of parts hereinafter specifically described, reference being had to the accompanying drawings forming part hereof, in which like letters and numerals indicate like parts wherever they occur.

Referring to said drawings, and more particularly to Fig. 1, A is a nozzle formed of sections *a* and *b*, section *a* having an external thread and section *b* having an internal thread to enable the said sections to be connected, as at *c*. Said sections are also provided with screw-threads 1 and 2 respectively for the purpose of enabling the same to be secured upon a correspondingly-threaded hose-coupling. (Not shown.) Section *a* is provided with a front wall *d*, which forms the partition-wall between said sections when they are connected as shown in Fig. 1. Section *a* is also provided with a series of diverging perforations *e e* through the portions of the same, inclined to the axis thereof for the purpose of throwing a spray of water at various angles rearward to put out or quench a fire burning upon the walls or ceiling of a room beneath that in which the firemen are operating, an opening being made in the floor of the upper room and the hose with the nozzle attached projected through said opening to admit of this. Said section is also provided with perforations *f f* for the purpose of throwing a spray toward the rear and parallel with the hose to protect the same against fire when thrust into a burning room, as previously described. Reversing said nozzle—that is, attaching the lower end of section *b* to the hose-coupling—the spray is projected through the perforations *g g* in the end *h* of section *a* and thence forwardly through the funnel-shaped opening *i*, formed between the lower end *h* of section *a* and the upper end of section *b* for the purpose of driving smoke forwardly from a room which the firemen desire to enter, also for the purpose of extinguishing fire therein. Both said sections may be provided with a recess *j* for the reception of gum gaskets *j' j'* at the inner end of the screw-threads 1 and 2 respectively, for the purpose of making a water-tight joint.

In Figs. 3 and 4 we show modifications of our device, in which three sections *a'*, *b'*, and *c'* are connected. Section *a'* is internally screw-threaded at both ends, and section *b'* likewise threaded to admit of the lower end of section *a'* being connected to the upper end of section *b'* by section *c'*, the ends of which are externally threaded correspondingly with the lower end of section *a'* and the upper end of section *b'*, and when so connected form a nozzle substantially similar to that shown in Fig. 1, having perforations *e'* and *f'*. This construction enables us to disconnect section *a'* from sections *b'* and *c'* and to use these sections independently—that is, sections *b'* and *c'* independently of section *a'*—thus forming a nozzle in three sections instead of two sections, as shown in Fig. 1. It also simplifies the foundry work.

Having described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a reversible spray nozzle, the combi-

10 nation of two or more tubular sections, screw threaded together, each of the terminal sections adapted to be connected to a hose, one section being provided with portions inclined 5 to the axis of the sections in which portions are diverging perforations, and with perforations parallel to said axis, and the section attached thereto having a funnel shaped flange forming a passage between the two sections, and a communication between said passage and the interior of the nozzle, and one of said sections having a transverse partition, as and for the purpose set forth.

15 2. In a reversible spray nozzle, the combination of two or more tubular sections, screw threaded together, each of the terminal sections adapted to be connected to a hose, one

section being provided with portions inclined to the axis of the sections in which portions are diverging perforations, and the section attached thereto having a funnel shaped flange forming a passage between the two sections, and a communication between said passage and the interior of the nozzle, and one of said sections having a transverse partition, as and 25 for the purpose set forth.

In testimony that we claim the foregoing we hereunto affix our signatures this 22d day of December, A. D. 1894.

MICHAEL HANNIGAN.

MICHAEL MCKENNA.

In presence of—

JAS. J. MCAFEE,

C. A. WILLIAMS.