

June 1, 1926.

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NOZZLE CONNECTION FOR LARGE SIZED SUCTION HOSE

Filed August 24, 1925

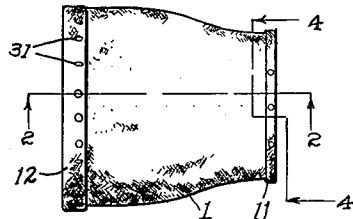


Fig. 1.

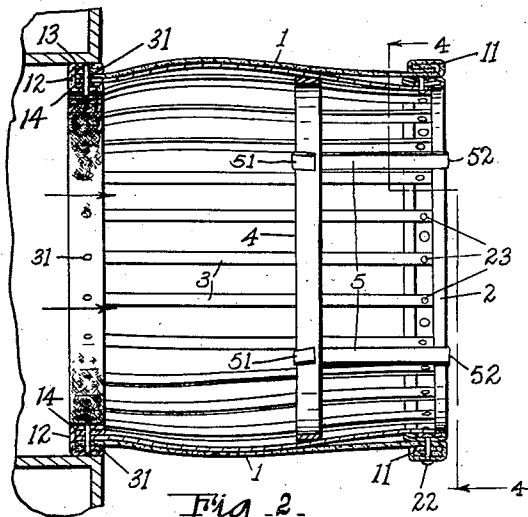


Fig. 2.

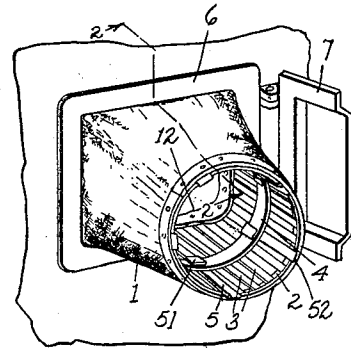


Fig. 3.

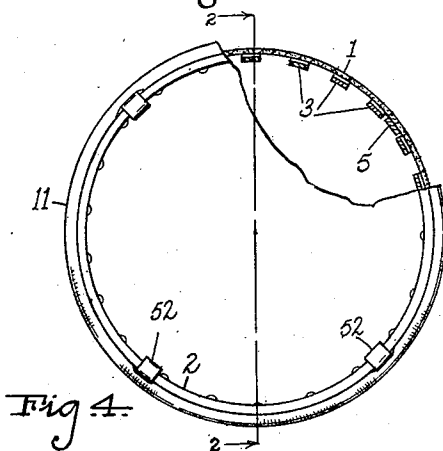


Fig. 4.

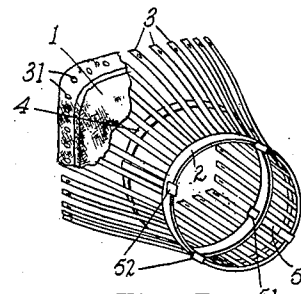


Fig. 5.

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UNITED STATES PATENT OFFICE.

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NOZZLE CONNECTION FOR LARGE-SIZED SUCTION HOSE.

Application filed August 24, 1925. Serial No. 52,177.

This invention relates to an improved nozzle connection for large sized suction hose.

The objects of the invention are:

5 First, to provide such a nozzle which will connect with round or square apertures such as a furnace door or a pipe opening into a furnace casing, and which will connect readily with my improved pipe which I have
10 described in a companion application.

Second, to provide such a coupling which is exceedingly flexible and adjustable as to size and shape and also one which is very durable and economical to manufacture.

15 Objects pertaining to details and economies of my invention will clearly appear from the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in the
20 following specification. The invention is clearly defined and pointed out in the claims.

A structure embodying the features of my invention is clearly illustrated in the accompanying drawing forming a part of this
25 application, in which:

Fig. 1 is a side elevation view of my improved nozzle.

30 Fig. 2 is an enlarged detail longitudinal sectional view showing the nozzle inserted into a furnace door, taken on line 2--2 of Figs. 1 and 3.

Fig. 3 is a detail perspective view showing the nozzle as it is inserted into the door frame of a furnace.

35 Fig. 4 is an enlarged detail view partially in section on line 4--4 of Figs. 1 and 2.

Fig. 5 is a detail perspective view of the nozzle with the outer fabric case removed except as to one corner showing details of
40 construction.

In the drawing the sectional views are taken looking in the direction of the little arrows at the ends of the section lines and similar numerals of reference indicate similar
45 parts in all the views.

The parts of my improved nozzle structure will be identified by their numerals of reference. 1 is the outer fabric shell or casing. 2 is the main supporting or carrying ring at the inner end of the nozzle. The fabric
50 is rolled upon itself at 11 and secured to this main ring 2 by rivets 22 after the manner of construction of my pipe aforesaid.

Longitudinal flat blade spring fingers 3
55 are secured by the rivets 22 to this support-

ing ring 2 and extend with their outer ends free except for a flexible fabric support. The outer end of the nozzle is made up of a reinforced fabric supporting ring 12 which
60 is folded upon itself at 13 on the outside to form a cushion for the flexible connection and packing of the outer end of the nozzle, and is rolled upon itself at 14 on the inside to give strength and support to the outer
65 ends of the springs 3.

These springs 3 are distended and forced outwardly by the expansion ring 4 which is inserted into the wide mouth of the nozzle and crowded inwardly toward the supporting
70 ring 2. It is retained in place by a series of flat hook members 5, the outer ends 51 of which engage over the rings 4 and the inner ends 52 of which are hooked over the rings 2 as clearly seen in Fig. 2.

The fabric support 12 is secured to the end
75 of each spring 3 by a rivet 31. It will be seen that while the normal shape of the outer end of the nozzle is round, owing to the fact that there is a flexible connection between the outer ends of the springs 3, it is
80 possible to conform the nozzle to square or other shapes, and to collapse the same into a considerable range of size openings. It can be readily inserted into the fire door of
85 a furnace, or it can be inserted into the end of the cold air pipe, or into a suitable aperture cut in the casing where it is very quickly applied and effective in use.

Of course, any small leaks about the nozzle may be stopped by a suitable wrapping
90 of any material which will be drawn and held into place by the suction.

I have described my improved nozzle in its preferred form. It can, of course, be considerably varied in its details without
95 departing from my invention.

The particular way in which I dilate the springs is very effective but they might be effectively supported on a broad ring, and, in fact, they need very little support for
100 any purpose. Therefore, I desire to claim the supporting ring specifically, and also to claim the structure without that device. As indicated, I wish to claim the invention broadly as well as specifically as pointed out
105 in the appended claims.

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

1. A nozzle comprising an outer fabric 110

shell, a main supporting ring at its inner end suitably flanged inwardly, the fabric being rolled upon itself to form an outer packing member in connection therewith, a series of longitudinal supporting springs riveted to the said main ring with their outer ends free except for the support of the fabric shell, a flexible support member rolled upon itself within the outer end of the nozzle and outwardly over the outer ends of the said flexible supporting springs and suitably riveted to the ends of said springs, and a dilating ring disposed within the said nozzle and retained in position by hooks over the same and over the main ring, all coacting substantially as described for the purpose specified.

2. A nozzle comprising an outer fabric shell, a main supporting ring at its inner end suitably flanged inwardly, the fabric being rolled upon itself to form an outer packing member in connection therewith, a series of longitudinal supporting springs riveted to the said main ring with their outer ends free except for the support of the fabric shell, and a flexible support member rolled upon itself within the outer end of the nozzle and outwardly over the outer ends of the said flexible supporting springs and suitably riveted to the ends of said springs, all coacting substantially as described for the purpose specified.

3. A nozzle comprising an outer fabric shell, a main supporting ring at its inner end suitably flanged inwardly, the fabric

being rolled upon itself to form an outer packing member in connection therewith, a series of longitudinal supporting springs riveted to the said main ring with their outer ends free except for the support of the fabric shell, and a dilating ring disposed within the said nozzle and retained in position by hooks over the same and over the main ring, all coacting substantially as described for the purpose specified.

4. A nozzle comprising an outer fabric shell, a main supporting ring at its inner end suitably flanged inwardly, the fabric being rolled upon itself to form an outer packing member in connection therewith, and a series of longitudinal supporting springs riveted to the said main ring with their outer ends free except for the support of the fabric shell, all coacting substantially as described for the purpose specified.

5. A nozzle comprising an outer fabric shell, a main supporting ring, longitudinal springs secured to the ring and retained with their free ends secured within the fabric casing, and a dilating ring for the said springs, coacting as specified.

6. A nozzle comprising an outer fabric shell, a main supporting ring, and longitudinal springs secured to the ring and retained with their free ends secured within the fabric casing, coacting as specified.

In witness whereof I have hereunto set my hand.

TITUS RUSSELL.