

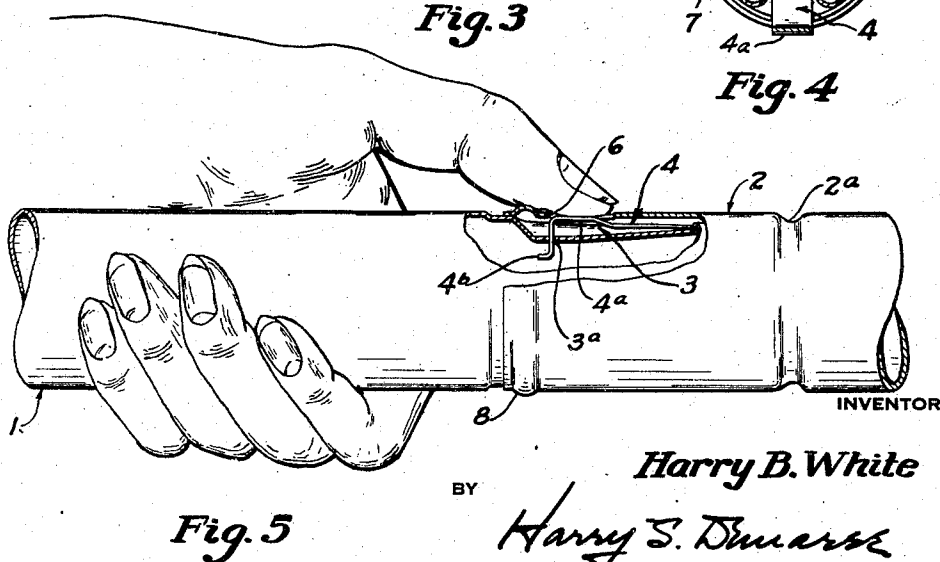
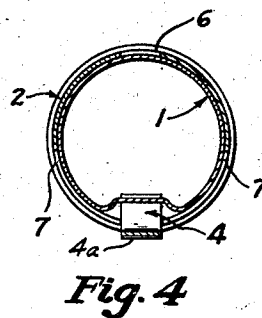
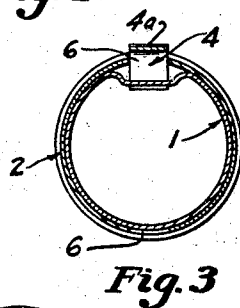
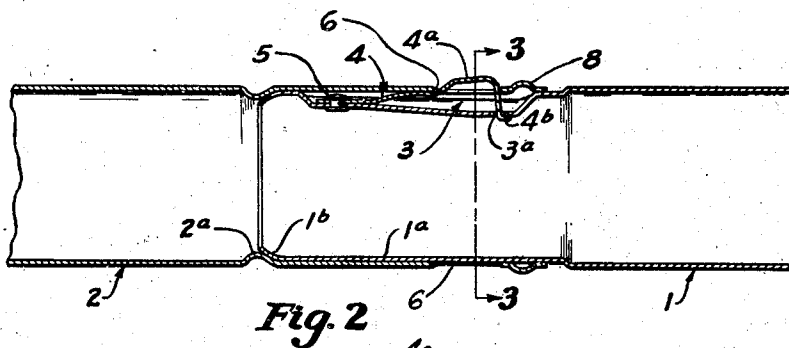
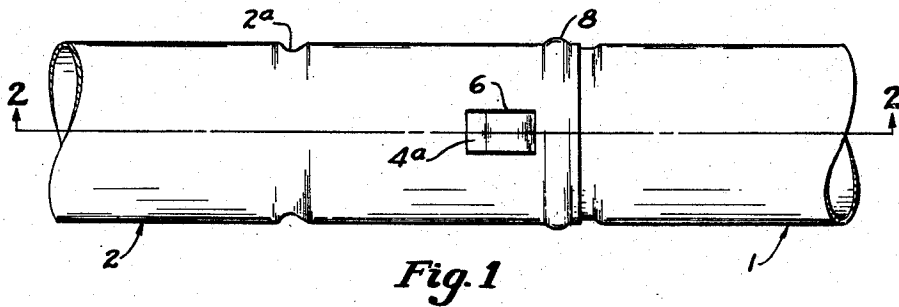
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DUSTING TOOL FOR SUCTION CLEANERS

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DUSTING TOOL FOR SUCTION CLEANERS

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2 Claims. (Cl. 285—174)

This invention relates to the improvements in latching connections for tubular fittings and more particularly to a novel spring latching arrangement for the several interchangeable fittings that make up the dusting tool equipment of a suction cleaner.

The object of the invention is to provide a simple and comparatively inexpensive latching device between the extension hose and the dusting tools, and including a spring having a detent which serves both as the finger piece or button and as the latching member, thereby reducing the number of parts to a minimum and greatly simplifying the assembly operation.

A preferred embodiment of the latching device is fully disclosed in the accompanying sheet of drawings, in which

Figure 1 is a view in elevation showing two tubular members joined and latched together;

Figure 2 is a view in longitudinal section taken through the tubular members at the spring latch member, as on line 2—2 of Figure 1;

Figure 3 is a cross sectional view through the latch member as taken on line 3—3 of Figure 2;

Figure 4 shows a slightly modified arrangement wherein one of the slots in the outer tubular section is extended circumferentially to afford a limited swivel movement between the connected members, and

Figure 5 is a view illustrating the manner in which the latch member is operated to disconnect the members.

As shown in Figures 1 and 2, the ends of two metal tubes are connected together by fitting the reduced end portion of one into the socket-like end portion of the other. Thus, the right hand tube 1 has this extreme end portion 1a reduced slightly in diameter in order to fit snugly into the corresponding end portion of the left hand tubular member 2, the latter having its receiving socket defined by an internal shoulder 2a formed by grooving the tube circumferentially at a point, say two or three inches inwardly from its extreme end, as clearly shown in Figure 2. This shoulder 2a provides an air-tight seat for the bevelled edge 1b of the tubular member 1.

Extending lengthwise of the reduced end portion 1a of the internal tubular member 1 is a shallow recess or trough 3, having its beginning a short distance inwardly from the bevelled edge 1b and increasing slightly in depth as it approaches its inner or opposite end. This recess accommodates a spring latch member 4 consisting of a flexible strip of thin spring metal anchored at one end in the forward end of the recess 3 by

means of a rivet or other suitable fastener 5, thence extending rearwardly along of the recess with a slight outward bow and finally terminating at its rear end in a detent 4a formed by bending the strip abruptly outwardly at an angle of 45 degrees, then inwardly at about the same angle to form a flat finger piece and finally bending its extreme end portion inwardly at right angles so as to pass through a slot 3a at the bottom of the recess 3 near its inner and deeper end. And finally the extreme tip end of the strip is bent at right angles as at 4b to form a stop to limit the outward springing movement of the latch member.

Now, formed in the external socket portion of the tubular member 2 is at least one, and preferably two, rectangular slots 6—6 located and dimensioned to register with and engage the projecting detent 4a of the spring latch member 4. As shown in Figures 2 and 3 the slots 6—6 are positioned diametrically opposite each other to the end that the two tubular members can be connected together and latched in either one of two positions 180 degrees apart. In this connection, however, one of the slots may preferably be extended circumferentially to include an arc of substantial angularity as at 7 in Figure 4, so that it is possible to latch the tubular ends together to prevent them from being separated, but yet permitting a relative turning or swivel movement through an angle of approximately 120 degrees. The purpose of this swivel connection is to permit certain tools to rotate or turn while in use. For example, a floor brush is preferably attached to the end of the tubular extension of the dusting tool hose in this manner in order that it may be more effectively maneuvered beneath and around articles of furniture or other obstructions.

Moreover, it should be noted in this connection that while the drawing illustrates a connection or joint between the ends of two similar lengths of metal tubing, they may represent the ends of various other parts which make up a complete dusting tool set. For example, the end portion of the tubular member 2 also finds its counterpart in the socket-like connecting portions of the dusting tools, whereas the tubular member 1 may either be an elongated metal extension tube or a short tube permanently attached to the end of the dusting tool hose. In short, it is to be understood that the various parts of a dusting tool set are interchangeable.

Regardless of the particular elements to be connected or joined together, the action is quite the same as in completing the latching engage-

ment as well as the unlatching operation. Thus to connect two parts together it is only necessary to insert the end of one into the other as far as possible and then turning them relative to each other until the detent 4a registers with one of the receiving slots 6 or 7 as the case may be, whereupon the latching connection takes place, thus holding the parts together. Obviously, to disengage the two connected parts, it is only necessary for the operator to press inwardly with thumb or finger upon the detent, at the same time pulling members apart. It may be noted in passing that surrounding the outer end of the external tubular member 2 is a convex bead 8 spaced just inwardly from the extreme edge and immediately adjacent the end of the slot 6. The purpose of this bead is primarily that of strengthening the end of the tube against distortion, but it also serves to facilitate the location of the detent by the thumb or finger and as a rest in the act of pressing the detent inwardly as shown in Figure 5.

Thus, a latch member which springs into latch position merely by bringing it into register with an open slot and which has a detent which acts as a latch as well as a press-button provides an arrangement which approaches the ultimate in simplicity as compared, for instance, with a latch member which has a separate press button and a separate detent and all enclosed within a housing. However, for dusting tools designed for moderately priced suction cleaners, the spring latching arrangement herein disclosed is

entirely satisfactory, although perhaps not as finished in appearance.

Having set forth a preferred embodiment of the invention I claim:

1. A joint for metal pipe comprising a socket member and a spigot member for cooperation therewith, said spigot member having a portion of its wall depressed near an end thereof to define a recess, a spring latch member received in said recess and anchored therein, a portion of said latch member being normally urged outwardly beyond the recess for interlocking engagement with said socket member, and said socket member having a slot formed through its wall to receive said portion of said latch member.

2. A joint for metal pipe comprising a socket member and a spigot member for cooperation therewith, said spigot member having an inwardly directed housing provided near an end thereof, the wall of said housing containing a slot near one end thereof, a leaf spring latch member received in said housing having one end anchored therein, the other end of said latch member projecting through said slot and being bent to serve as a detent and to normally close said slot, an intermediate portion of said latch member normally urged outwardly beyond the housing for interlocking engagement with said socket member, and said socket member having a slot formed through its wall to receive the intermediate portion of said latch member.

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