March 21, 1933. B. J. TAMARIN 1,902,593

VACUUM CLEANER HANDLE STRUCTURE

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Fig. 1.

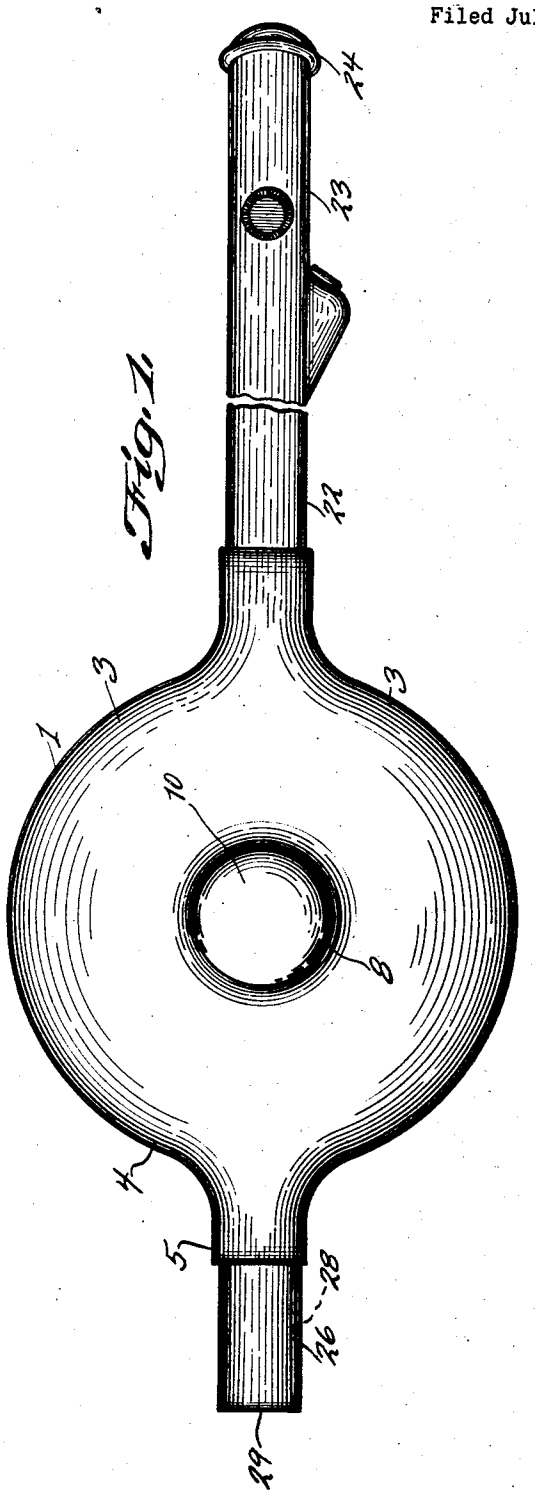
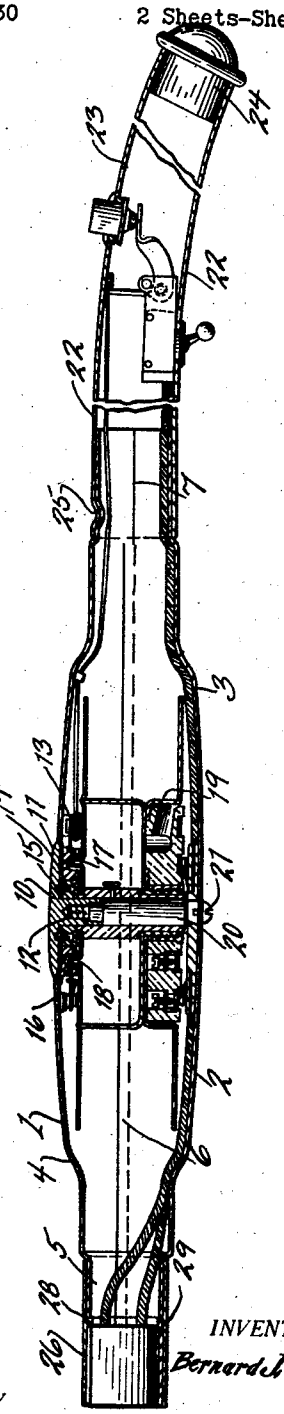


Fig. 2.



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Fig. 3.

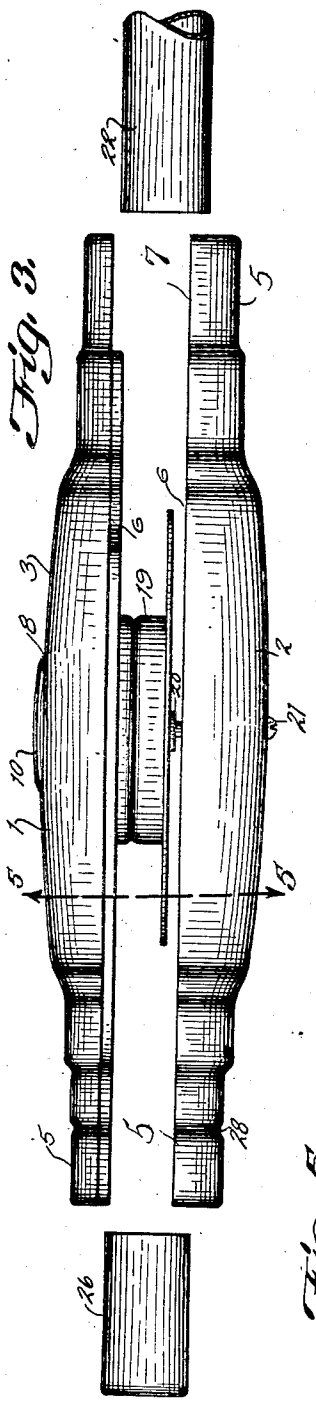


Fig. 4.

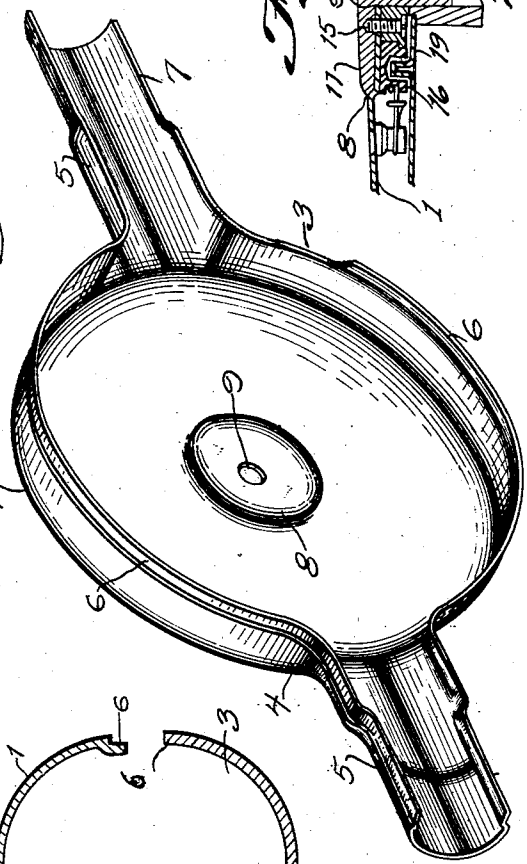


Fig. 5.

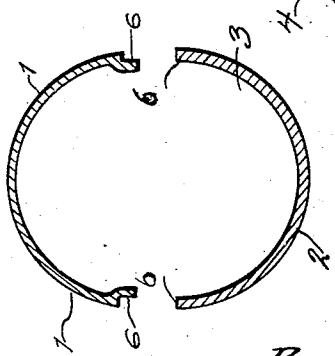
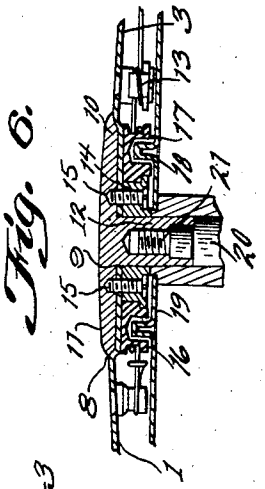


Fig. 6.



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UNITED STATES PATENT OFFICE

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VACUUM CLEANER HANDLE STRUCTURE

Application filed July 19, 1930. Serial No. 469,247.

An object of the invention resides in the novel manner of shaping and constructing the various parts of the handle structure so that by a very simple assemblage operation by unskilled help the various parts will automatically move into proper interfitting connections with each other and will be positively held against accidental displacement.

Another object of the invention relates to the forming of the major members of the handle from sheet metal stampings so designed that they will have a positive interlocking connection with each other when assembled and secured by a novel form of interfitting connection with a handle unit and a removable sleeve.

A feature of the invention resides in the form of interconnection between the casing members, the brake mechanism, the reel unit, the sleeve and the handle unit which enables by a simple operation the interconnection of the brake mechanism with one of the housing members, the quick placement of the reel unit in position with the brake mechanism, the quick interconnection of the casing members and the locking of the casing members in position by the forcing of the handle unit and the sleeves into attaching connection with the casing members.

Another feature of the invention resides in the providing of the casing members with companion flanges and neck sections so that the members may be readily forced into interlocking engagement with each other and held in such engagement by a sleeve and tubular handle unit which are slipped over the neck sections which not only establishes a rigid connection between the sleeve, handle unit, and the casing members but positively locks the latter from moving in a direction that would disconnect the same.

Besides the above my invention is distinguished in the formation of the component parts of metal stampings that are so designed they are capable of being connected to each other by a chain system of production.

With these and other objects in view the invention will be better understood from the following detailed description taken in connection with the accompanying drawings wherein—

Figure 1 is a plan view of the handle structure.

Figure 2 is a longitudinal sectional view.

Figure 3 is a side elevation partially disconnected.

Figure 4 is a perspective view of one of the casing members.

Figure 5 is a cross sectional view of a portion of the casing members disconnected.

Figure 6 is an enlarged detailed sectional view through the bearing and associated parts.

Again referring to the drawings illustrating one of the many constructions of my invention, the numerals 1 and 2 designate the companion members of the casing 3 of the handle structure. In the particular showing the members are illustrated as metal stampings which enables the production of the members at a low cost. In the stamping of the members the bodies 4 are provided as well as the neck sections 5, there being companion flanges 6 formed along the abutting edge portions of the bodies so that the bodies may be brought into interlocking connection with each other. In a particular showing one of the flanges 6 is offset from the body 4 whereas the other flange is in alignment with the body 4 so that when the bodies are brought together the casing 3 will have a smooth exterior surface. One of the neck sections is minus flanges so that the edge portion 7 may be brought into flat abutting relation with each other to eliminate projections interiorly of the neck.

The member 1 in the stamping thereof is formed with a depression 8 and a hole 9 centrally of the depression for the reception of a bearing 10.

This bearing 10 is further provided with a plate 11 received within the depression 8 and further provided with a hub 12 passed through the hole 9 so as to occupy a position interiorly of the casing. This bearing 10 may be locked in position in any desired manner such as by spot welding or insertable fastening devices so as to secure the same in position

in conjunction with the parts of a brake mechanism hereinafter described.

The brake mechanism illustrated is practically identical with that shown in the above mentioned co-pending application with the exception that the bearing ring 14 is directly secured to the plate 11 through the wall of the casing by means of the screws 15. The brake ring 16 that is movably mounted on the bearing ring 14 is provided with recesses 17 with which interconnects the lugs 18 projecting from the reel unit 19. This reel united designed along the lines of the unit shown in my above mentioned co-pending application is mounted on an axle 20 that is secured to the hub 12.

A screw 21 passing through the casing member and engaging the end of the axle 20 not only supports the axle but provides a rigid connection between the casing members at a central point.

As far as I have proceeded it will be appreciated that the bearing 10 may be readily slipped into place and the brake assembled on the hub and the reel unit slipped on to the hub 12 and brought into interlocking engagement with the brake ring 16 through the disposing of the lugs 18 within the recesses 17. After this has been accomplished the inserting of the screw 21 provides a second bearing support for the axle 20 and besides draws the component parts together with the flanges of the casing members in proper interlocking connection.

For the purpose of providing a more rigid connection for the casing members, and also decrease the cost of assemblage operation, I provide a rigid connection between the handle proper and the casing and between the casing and a socket structure and to accomplish this I take advantage of the arrangement of and the abutting relation provided between the neck sections.

The handle unit 22 is formed from a tube and provided with a hand grip 23 with the outer end portion closed by the plug 24. The inner end portion of the handle is slipped over and has a snug fit with a set of the companion neck sections 5 thereby locking the neck sections together and the handle in engagement with the casing. To provide a more positive connection, the handle as well as the neck sections may be upset at the point 25 or the handle may be spot welded to the neck sections.

The remaining set of neck sections are positively held in abutting relation with each other by interengagement therewith of the sleeve 26 forming one of the members of the socket unit 29. The neck sections 5 that I associated with the sleeve 26 are formed with a bead 28 which provides an abutment for the socket 29 when the same is forced into place.

For the purpose of clarity I have eliminated from this specification a detailed description of elements that do not enter into the combination claimed in this particular application as such elements are more clearly set forth in my various pending applications. The basic feature of the present invention resides in the design and correlation of the major parts of the handle structure which will greatly facilitate assemblage operations and reduce production cost to a minimum.

In the assemblage of the handle structure I can take advantage of a chain system of production due to the fact that large quantities of the component parts may be assembled at various points in an assemblage lane. That is to say, a group of the casing members 1 may be arranged at the start of the production system, arranging in a progressive line groups of associated parts terminating with a group of sockets 29. It will be appreciated it is a very simple operation to assemble the various parts due to the fact that the bearing 10 may be very quickly slipped into position within the depression 8 and locked in said position by the screws 15 that secure the bearing ring 14. The brake ring 16 can be very easily mounted upon the bearing ring and then the axle 20 may be secured to the hub 12. A further step in the assembling operation relates to slipping onto the hub 12, the reel unit 19, bringing the lugs 18 thereof into interlocking connection with the recesses 17 in the brake ring for providing a positive connection between the brake ring and the reel unit. As a next step in the assemblage of the parts the casing unit 2 is forced into interfitting connection with the casing unit 1 through the interrelation of the flanges 6. When this has been accomplished the screw 21 is in mounted position which locks the heretofore described parts in assemblage relation.

As a final operation the handle unit 22 is slipped onto the neck sections and locked thereto by upsetting at the point 25. Sleeve 26 is then forced onto the remaining set of neck sections and the socket 29 forced into position in abutting relation with the bead 28.

It will now be apparent that I provide a very substantial type of handle structure for vacuum cleaners incorporating an automatic cord take-up device in which the various parts are so designed that they may be economically produced and assembled at a minimum cost. Of course it is to be understood that the design of the component parts may be changed and the mode of assemblage may be varied without departing from the spirit of the invention and therefore I do not desire to be limited in protection in any manner whatsoever except as set forth in the following claims.

What I claim is:

1. A vacuum cleaner handle structure comprising companion casing members having marginal flanges arranged in overlapping re-

lation with each other and further provided with two sets of neck sections extending from opposite points from the casing members, a sleeve slipped over and secured to one set of neck sections, a tubular handle having one end portion slipped over and securing the remaining neck sections together, a bearing supported by one of the casing members, an axle secured to the remaining casing member, and also secured to said bearing thereby forming an interconnection between the central portions of the said casing members, and a reel unit removably mounted on said axle and said bearing.

2. A vacuum cleaner handle structure comprising companion casing members having marginal flanges arranged in overlapping relation with each other and further provided with two sets of neck sections extending from opposite points from the casing members, a sleeve slipped over and secured to one set of neck sections, a tubular handle having one end portion slipped over and securing the remaining neck sections together, a bearing supported by one of the casing members, an axle secured to the remaining casing member, and also secured to said bearing thereby forming an interconnection between the central portions of the said casing members, and a reel unit removably mounted on said axle and said bearing, a braking element associated with said bearing, said reel having lugs struck therefrom and interlocking with said brake element to form a positive connection between the brake element and the reel unit.

In witness whereof I have hereunto set my hand.

BERNARD J. TAMARIN.