

Sept. 29, 1953

P. BONIN ET AL

2,653,342

BODY SUPPORT AND COVER CLAMP FOR VACUUM CLEANERS

Filed Feb. 8, 1951

2 Sheets-Sheet 1

Fig. 1.

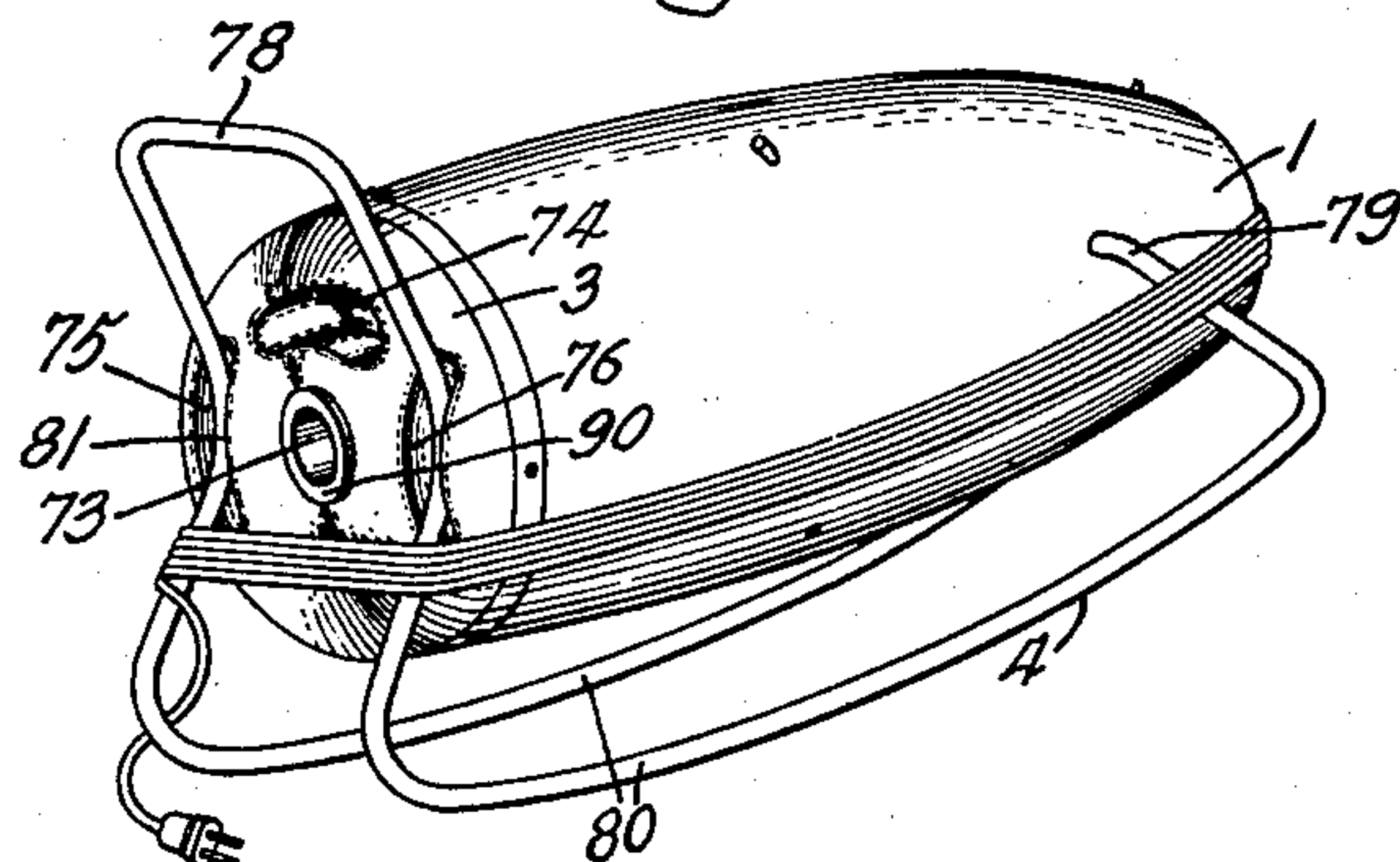


Fig. 2.

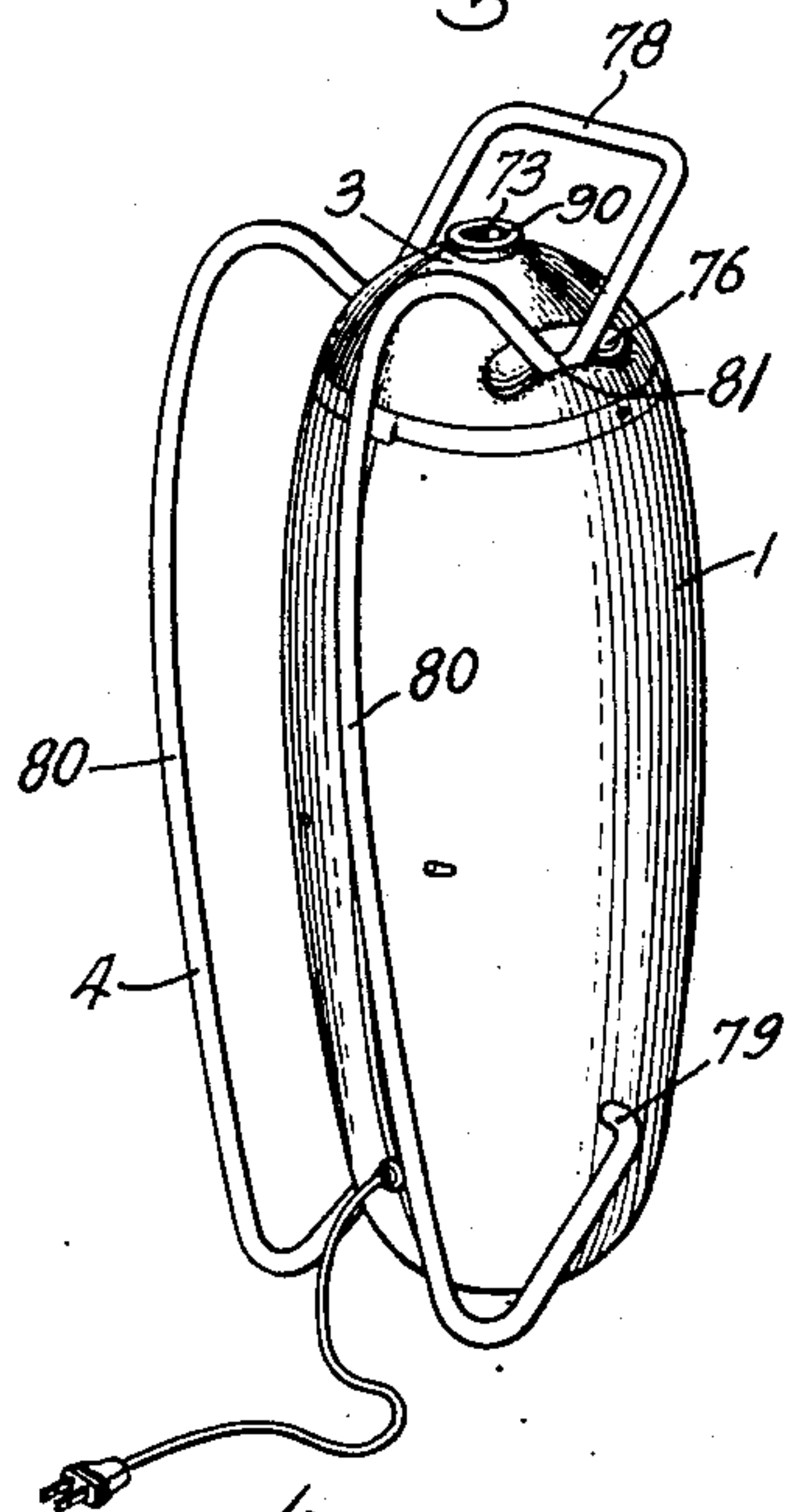


Fig. 3.

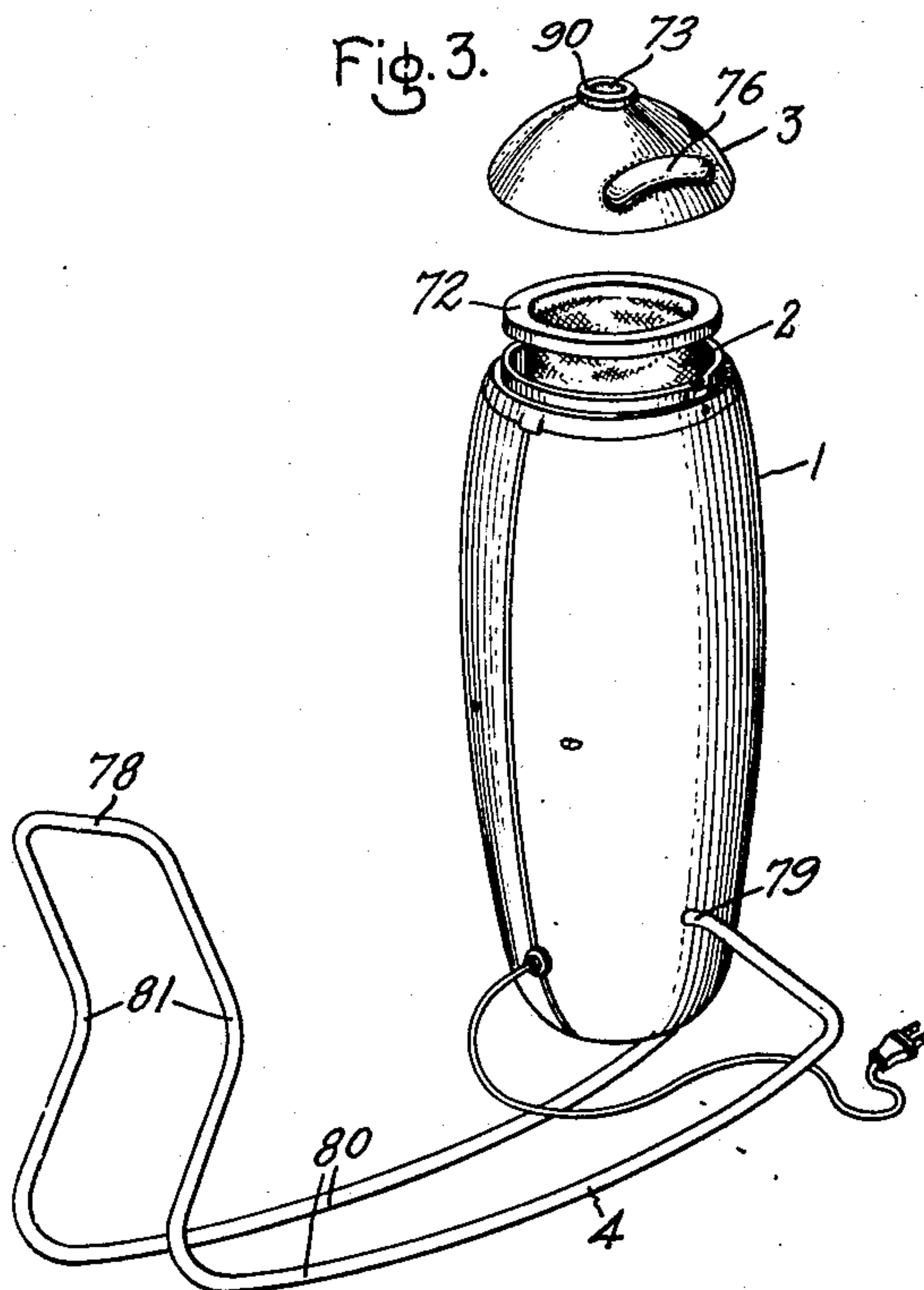
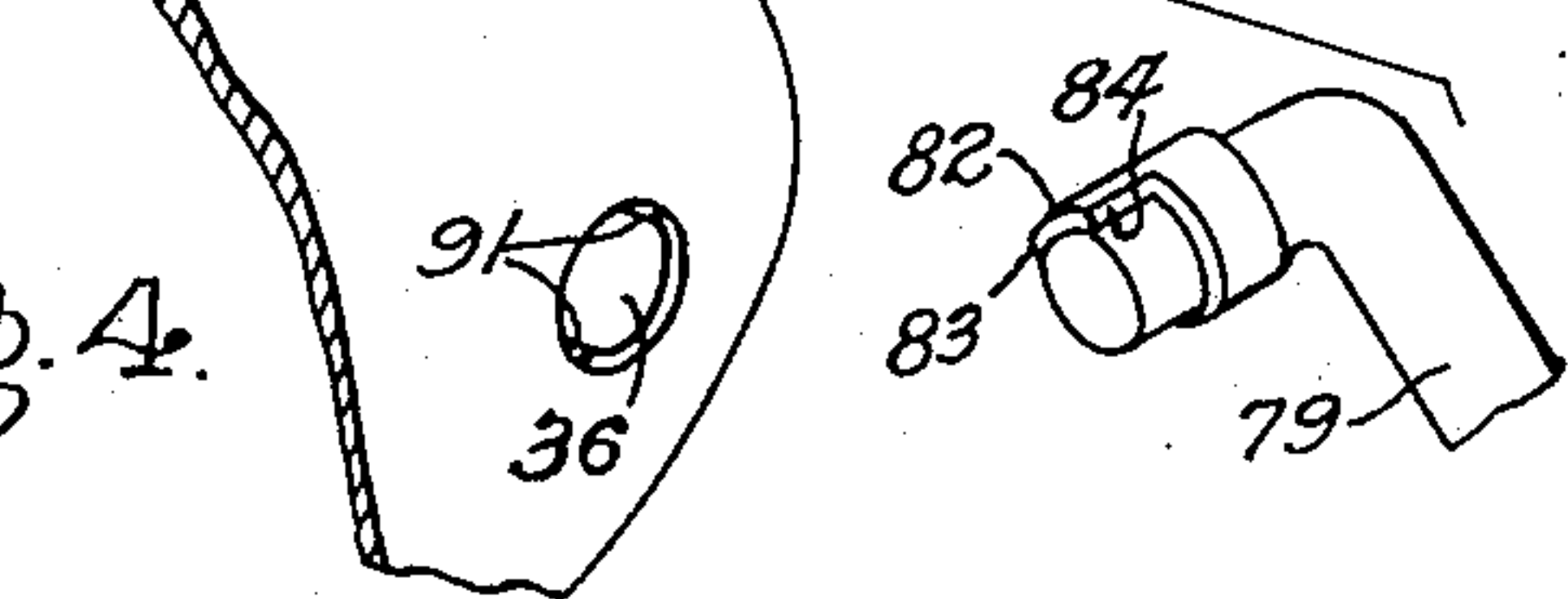


Fig. 4.



Inventors:
Pierre Bonin,
Xavier Randria,
by *Sherridan & Co.*
Their Attorney.

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Fig. 10.

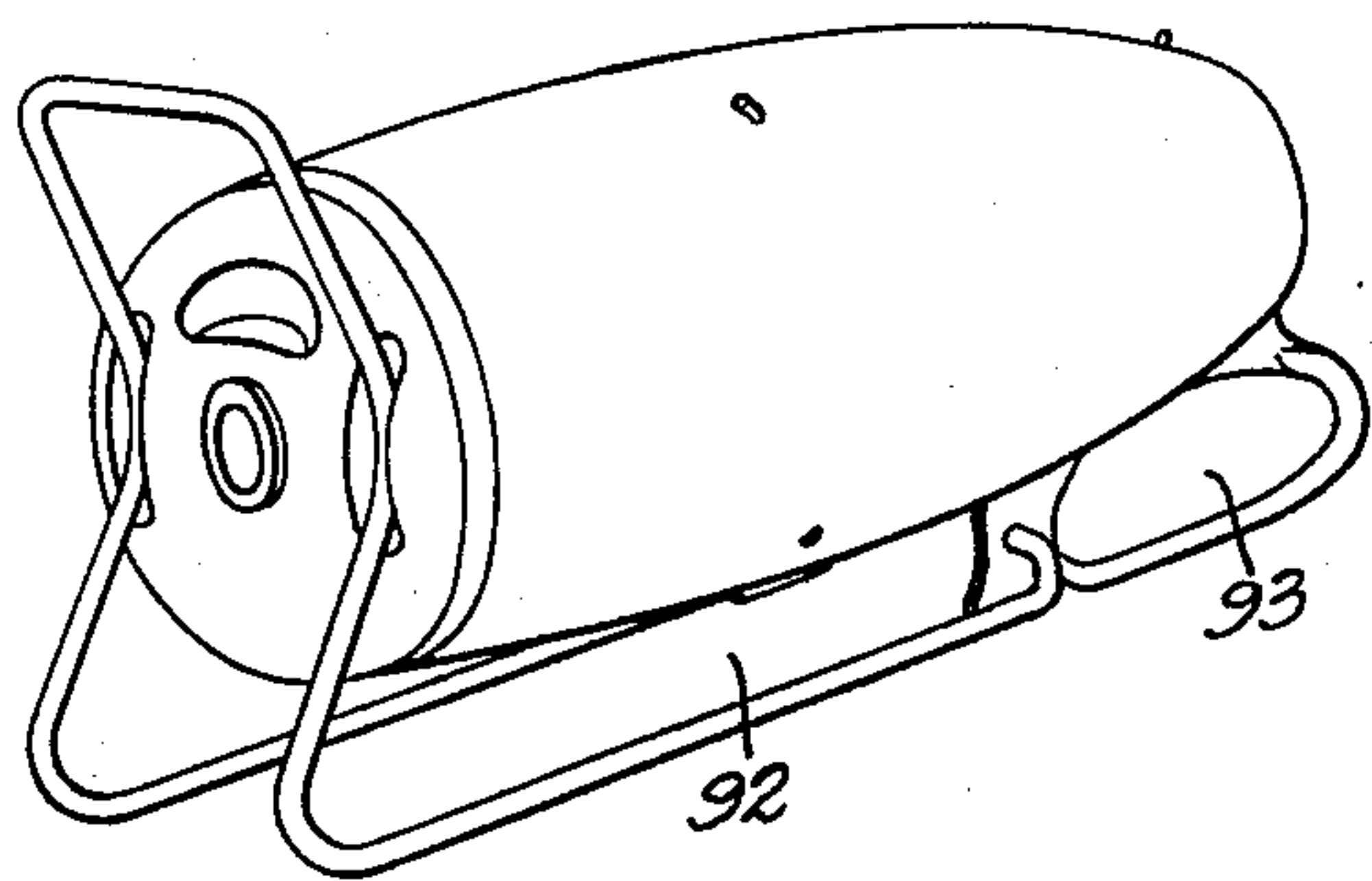


Fig. 5.

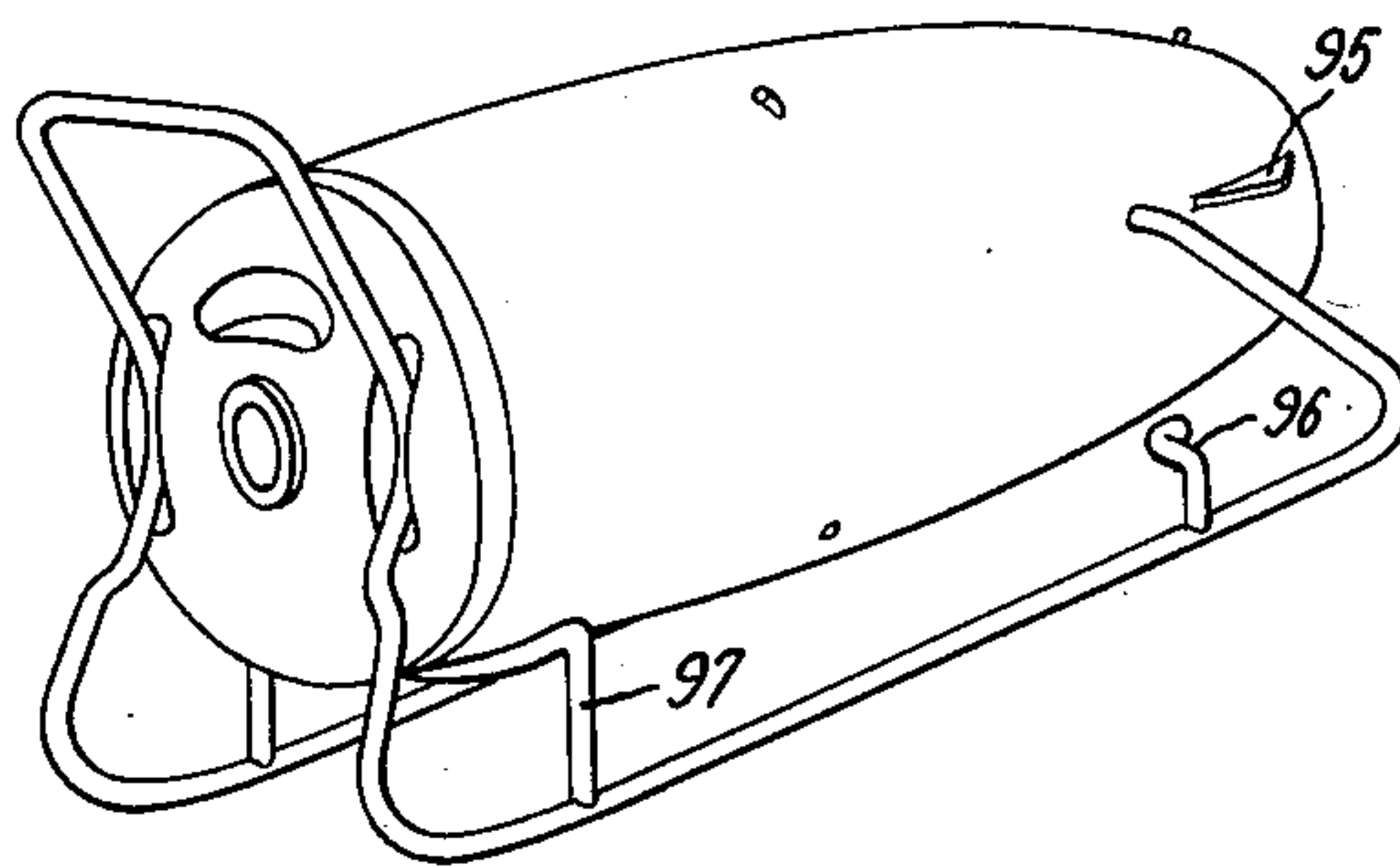


Fig. 9.

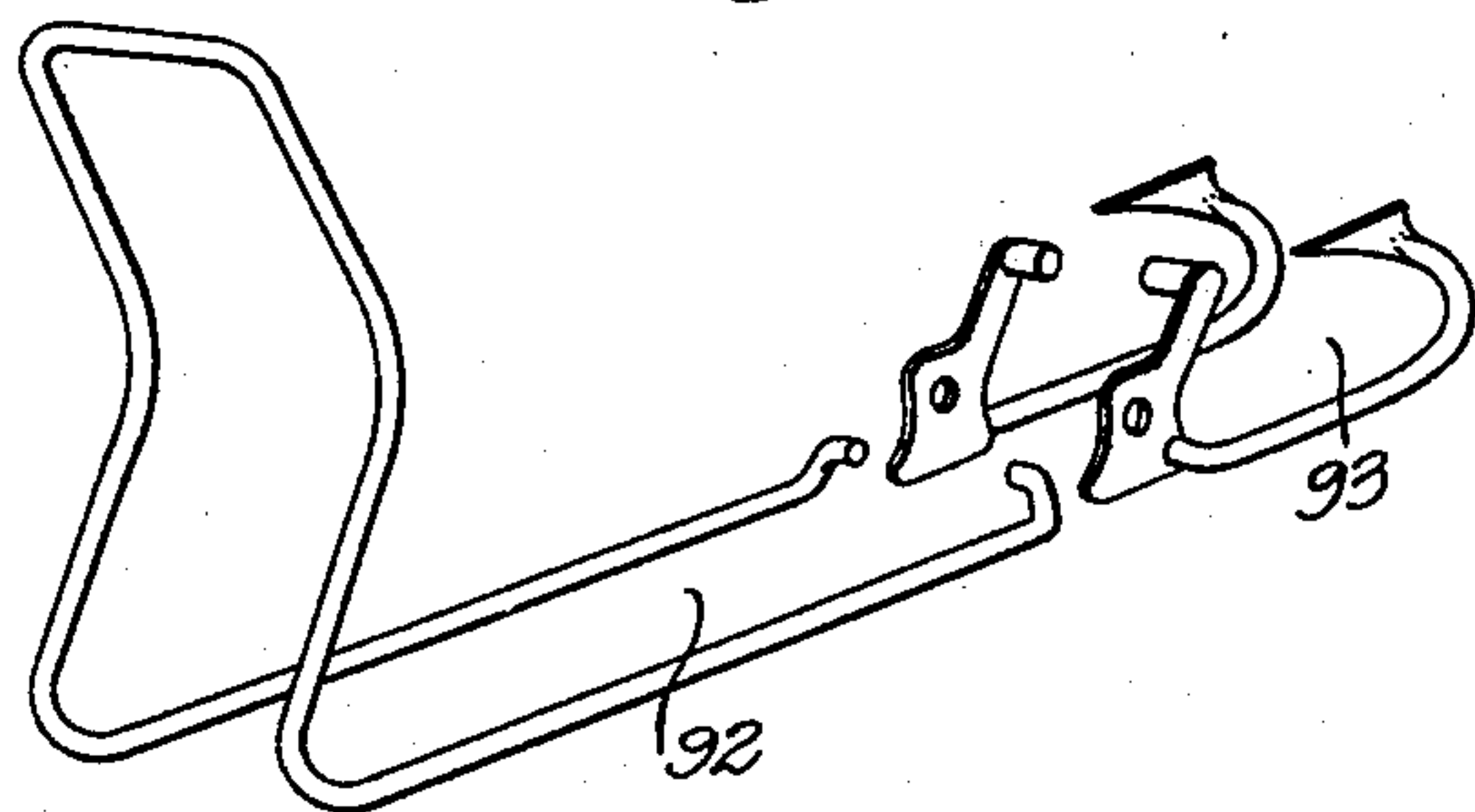


Fig. 6.

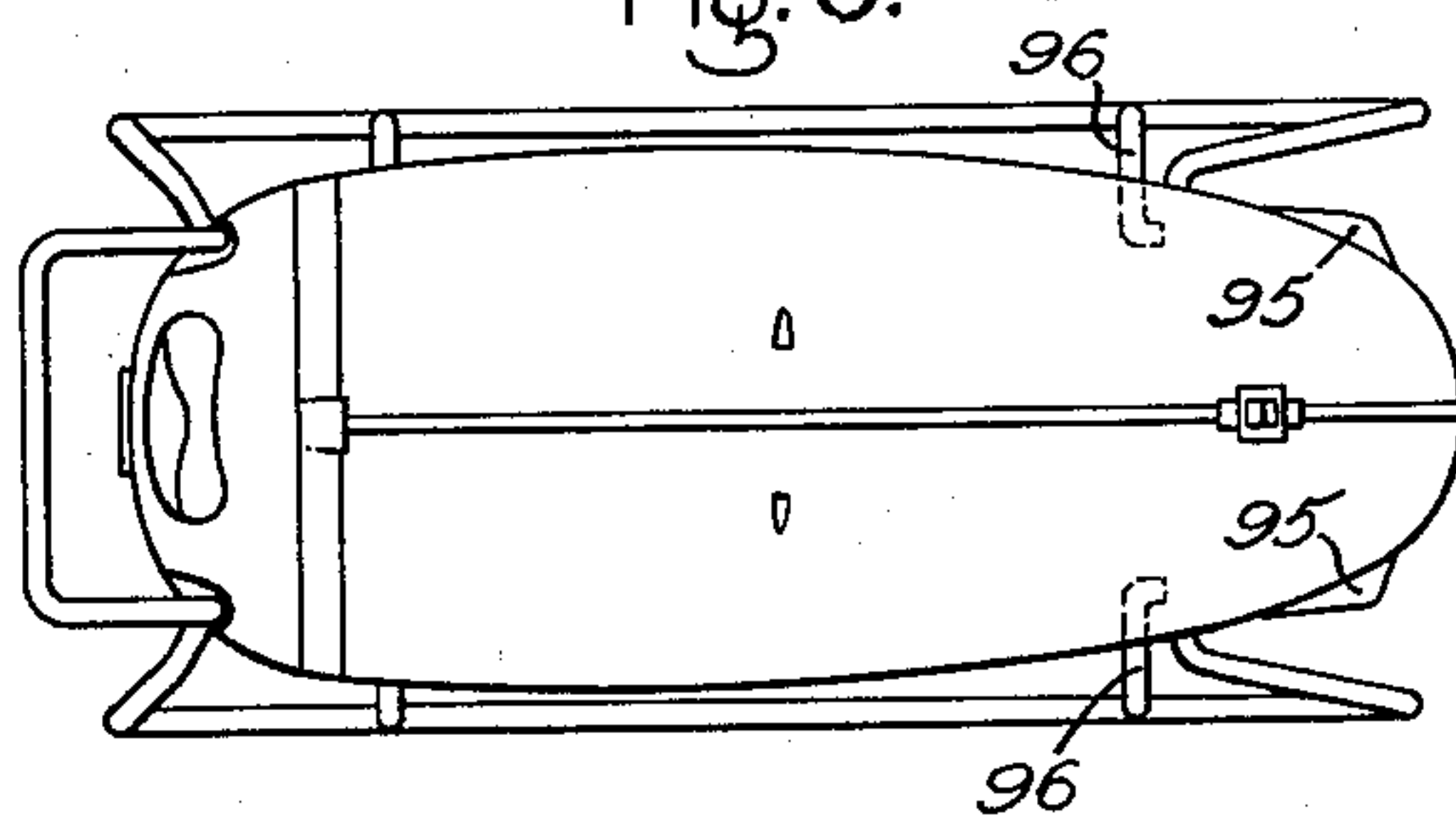


Fig. 8.

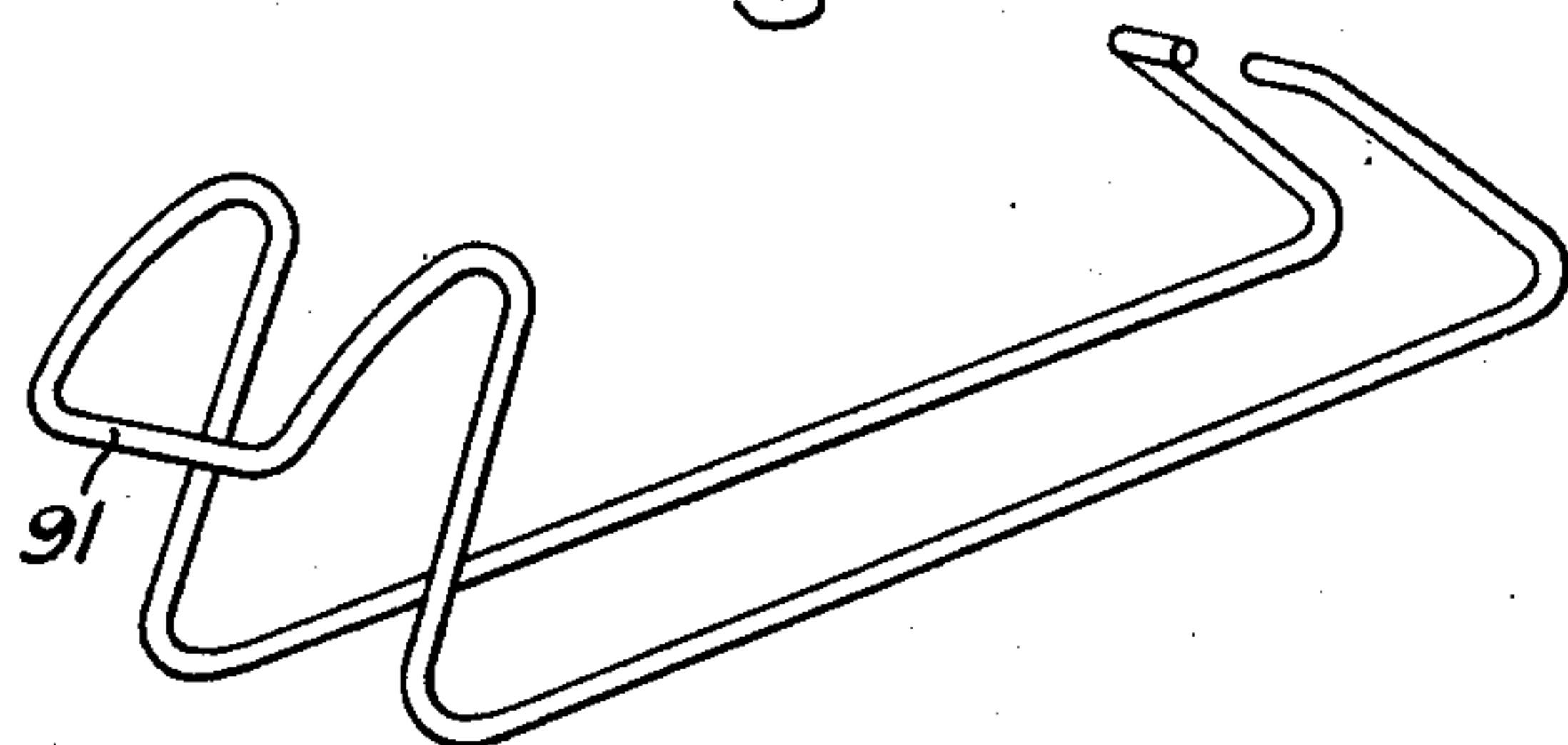
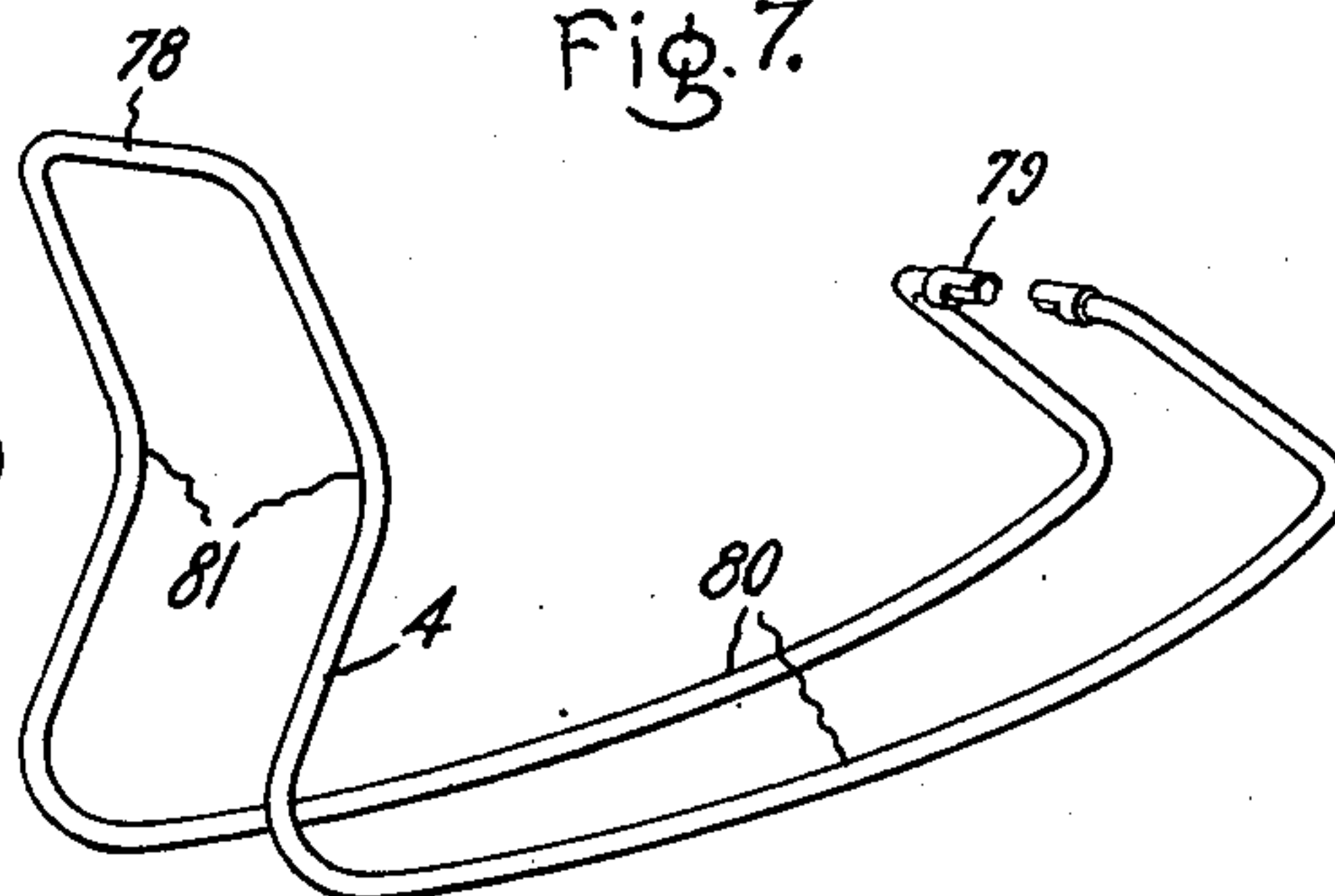


Fig. 7.



Inventors:
Pierre Bonin,
Xavier Randria,
by *Heridant & Co.*
Their Attorney.

UNITED STATES PATENT OFFICE

2,653,342

BODY SUPPORT AND COVER CLAMP FOR
VACUUM CLEANERSPierre Bonin and Xavier Randria, Paris, France,
assignors to General Electric Company, a cor-
poration of New YorkApplication February 8, 1951, Serial No. 209,998
In France February 16, 1950

5 Claims. (Cl. 15—327)

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The present invention relates to a domestic vacuum cleaner, of the conventional sleigh-type, such offers the following advantages and novel features:

The sleigh runners are used for locking the end cap on the cleaner, for protecting it against impacts, and also as a handle.

When the vacuum cleaner has been opened to empty the bag, the runners, because of their particular shape, act as a hinged support so that when the cleaner body is in a vertical position, it will be stable, the runners acting as a buttress or support.

After use the vacuum cleaner body can be placed upright and resting on its rear and on the runners, so that it will occupy less space than when in operation; the power lead can be wound between cleaner body and runners.

Fig. 1 is a perspective view of one form of the invention, the vacuum cleaner resting on its runners; Fig. 2 shows the appliance resting on its rear part; Fig. 3 is an exploded perspective view at the moment the bag is to be removed, the vacuum cleaner being vertical; Fig. 4 is an enlarged perspective view of a runner detail and of a fragment of the body showing the hole in the shell for hinging the runner; Fig. 5 is a perspective view of a modification of a suction cleaner according to the invention; Fig. 6 is a top plan view of the suction cleaner of Fig. 5; Fig. 7 is a perspective view of the runner construction used with the cleaner of Figs. 1-3; Fig. 8 is a perspective view of a modified runner construction with the front end forming the handle bent downwardly; Fig. 9 is a perspective view of another modified runner construction made up of two sections, the front section serving as a locking lever for the end cap of the vacuum cleaner; and Fig. 10 is a perspective view of a cleaner equipped with the runner construction of Fig. 9.

The outside of the vacuum cleaner is a casing or body 1 within which is a dust bag 2, held in place by an end cap 3. A runner construction 4 comprising a pair of runners 80 supports the casing or body.

The dust bag 2 is a conventional one; it is equipped with a rubber rim 72 so as to insure tight fitting.

The end cap has a central hole 73 into which a ring 90 has been molded. A specially shaped recess 74 and two depressions or cavities 75 and 76 have also been provided in the end cap. The bottom profile of cavities 75 and 76 has been designed so as to insure a certain progression in the pressure which the runners will exert on the

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end cap as the runners are moved to clamp the end cap in position on the end of body 1. The cavities serve also as vertical rests for the cleaner body when the device is in a horizontal position (Fig. 1).

The runner construction 4 has a center part 78 which acts as handle; its ends 79 act as pivots; its parts 80 constitute the runners, and finally the curved parts of the runners, parts 81, which can slide in the cavities 75 and 76 of the end cap, act as a locking device. Moreover, it protects the vacuum cleaner against impacts since it surrounds the device quite extensively.

The ends 79 of the runners (Fig. 4) comprise a sector element 82 the edges of which (83, 84) act as stops to limit turning movement of the runner construction and body relatively to each other and thus insure the vertical position of the body at the time the dust bag is being emptied. Said edges 83, 84 abut against the edges 91 which have been provided in the plastic material within holes 36.

In a modification, one could insure the vertical position of the vacuum cleaner as in Fig. 3 by the arrangement represented in Figs. 5 and 6. In this case, the body 1 is provided with rear extensions 95 which abut against two projections 96 that are fixed symmetrically to both sides of the runner construction. In case the body should fall forward towards its horizontal position, a cradle 97 of suitable elasticity fastened to the runner construction would catch said body and prevent its hitting the floor.

The normal position of the vacuum cleaner when being used is that shown in Fig. 1, the body of the cleaner being supported in a horizontal position on the runners. The end cap 3 is held in place by the runners. To remove the dust bag the operator with one hand may hold the runners stationary on the floor by means of handle 78 and with the other hand grasps the cleaner body at the recess 74 in end cap 3 and turn the body on the pivot ends 79 to bring it to the vertical position shown in Fig. 3, it being stopped in the vertical position by edges 91 in openings 36 engaging the stop edges 84 on the runner ends 79. The bag 2 may be then removed as indicated in Fig. 3. After the bag has been emptied and it and the end cap replaced, the body may be pivoted back to the Fig. 1 position. When the body is thus lowered, the parts 81 of the runners slide into the depressions or cavities 75, 76 to again clamp the end cap in place.

Figs. 8, 9 and 10 represent modifications of

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the runner design which have the same general characteristics as those already outlined.
In the runner of Fig. 8, the front end 91 which acts as handle is bent downward towards the floor.

The runner of Fig. 9 is made of two parts 92 and 93. The front part 92 plays exactly the same role as the runners of Fig. 1, but it pivots on the rear part 93, Fig. 10 shows it mounted on its suction cleaner.

Although only a few preferred embodiments have been represented in this specification, it is obvious that the invention is not limited to these particular embodiments, which are given only by way of non-limiting examples. Consequently, all modifications which are based on the same principle and which have the same purpose as the arrangements described in the preceding paragraphs, are intended to come within the scope of the invention.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. A tank type vacuum cleaner comprising a hollow elongated body with an open end, an end cap removably closing said open end, a pair of runners pivotally secured at one end to said body near the end away from the cap and supporting said body in spaced relation from a horizontal supporting surface when in one pivoted position with respect to said body, said runners extending alongside the body toward the end cap and engaging said end cap when in said one pivoted position to hold said end cap in place on said body, and said runners, when in another position with respect to said body, releasing said end cap and supporting said body vertically in spaced relation from the supporting surface.

2. In a tank type vacuum cleaner having an elongated body closed at one end by a removable cap, that improvement comprising a runner assembly pivotally secured at one end with respect to said body and movable about an axis transverse to the body between a first position in which the runner assembly and the long axis of the body extend generally parallel to each other and a second position in which the assembly and body axis are at an acute angle to each other, the free end of said runner assembly engaging said cap and holding it in place on said body when said runner assembly is in said first position, said runner assembly releasing said cap for removal when said assembly is moved to its second position.

3. In a tank type vacuum cleaner having an elongated body closed at one end by a removable end cap, that improvement comprising a pair of body supporting runners pivotally secured at one end with respect to said body and movable about an axis transverse to the body between a first position in which the runners are generally parallel to the body for supporting it in horizontal position and a second position in which the runners are away from the body for supporting it in vertical position, the free end of said runners extending to and releasably engaging said end cap for holding it in place on

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said body when said runners are in said first position, and a handle portion on said runners adjacent said free end of said runners for moving the runners simultaneously and for carrying the cleaner.

4. In a tank type vacuum cleaner having an elongated body closed at one end by a removable end cap, that improvement comprising a pair of body supporting runners each pivoted to the body at one end and movable together about an axis transverse to the body between one position in which each runner extends substantially the length of the body and parallel thereto and other positions in which each runner extends at an acute angle to the body, portions on said runners releasably engaging said end cap to hold it in place when said runners are in said one position and a handle joining said runners at their ends opposite their pivoted ends for manipulating the runners and for carrying the cleaner.

5. In a tank type vacuum cleaner having an elongated body with an open end closed by a removable end cap, that improvement comprising a pair of body supporting runners each pivoted with respect to the body at the end opposite the open body end and movable together between a first position in which each runner extends substantially parallel to the body for supporting said body in a horizontal position and a second position in which each runner extends substantially normal to the longitudinal axis of the body for supporting said body in a vertical position, bent portions near the free ends of said runners, said end cap having a pair of depressions therein removably engaged by said bent portions to hold said end cap in place when said runners are in said first position, stops limiting movement of said runners with respect to said body toward said second position for holding said cleaner vertical with its open end uppermost, portions on said runners engaging said cleaner releasably holding them in said first position for supporting said cleaner horizontally, and a transverse member integrally joining the free ends of said runners, serving as a handle for manipulating the runners and for carrying the cleaner.

PIERRE BONIN.
XAVIER RANDRIA.

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