Jan. 2, 1968 N. A. FONTECCHIO 3,360,816

ARTICULATED SWIMMING POOL VACUUM FIXTURE

Filed May 19, 1966

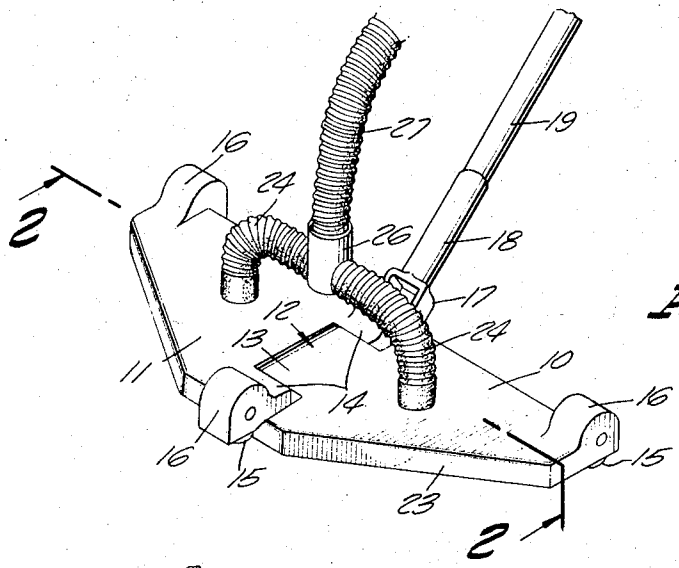


FIG. 1.

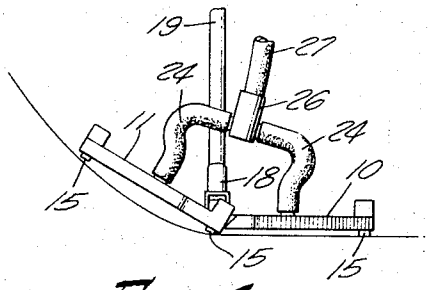


FIG. 4.

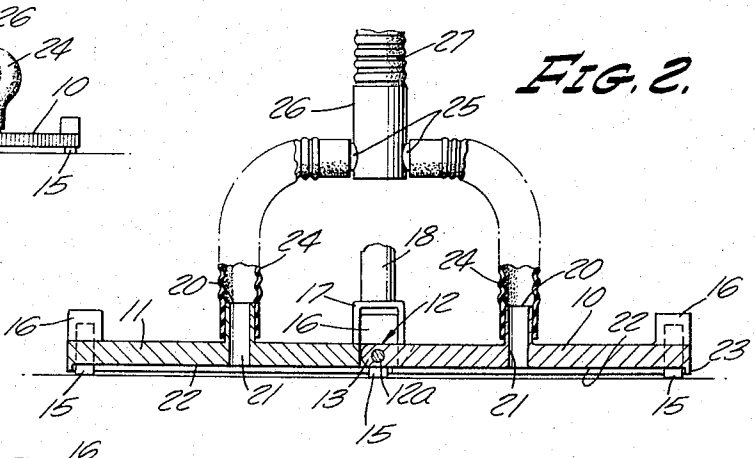


FIG. 2.

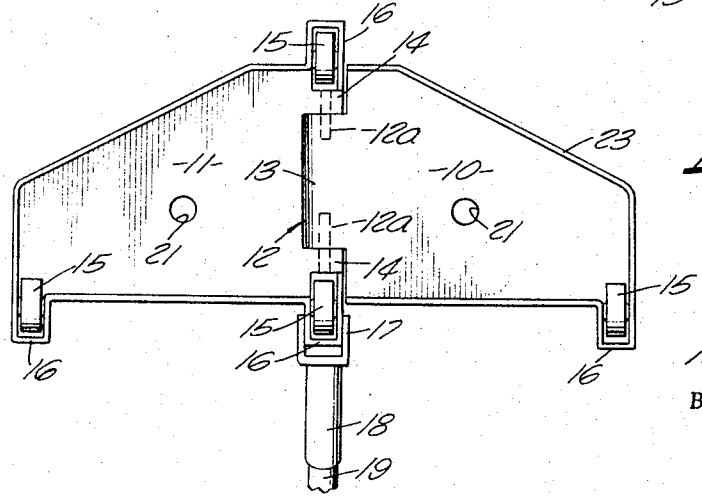


FIG. 3.

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ARTICULATED SWIMMING POOL VACUUM FIXTURE

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The present invention relates generally to fixtures for use in vacuuming swimming pools and more particularly, the invention relates to an improved vacuum fixture which substantially increases the speed and efficiency of swimming pool sweeping.

It has been a known practice for some years to clean swimming pools to remove the collected sediment and dirt by the use of a vacuuming procedure. Such procedures have involved a vacuum line connected to the pool filter with a vacuum similar to the common carpet sweeper type of tool. Thus, by moving the tool along the bottom and sides of the pool, the sediment is picked up with a quantity of water and will be caught by the filter.

A substantial business has grown up in many communities providing maintenance and cleaning service for domestic and commercial pools, and in the conduct of such service businesses, it is the usual practice for a service company to vacuum a considerable number of pools in one day. The number of pools which a man can service in one day is primarily limited by the amount of time it takes him to vacuum each pool, although it is customary for him to perform additional tasks such as cleaning the edge tile, adding chemicals, etc. A skilled serviceman using the best equipment presently available can vacuum a 20′ x 40′ pool of average sedimentation in approximately twenty-five to thirty minutes.

The present invention is an improvement over available equipment. By substantially increasing the effective pickup area of the vacuum fixture, the invention materially decreases the time for vacuuming a swimming pool without decreasing the effectiveness of the results. With the small tools now available, the operator must move the vacuum relatively slowly at a uniform rate in order that he does not cause turbulence in the water to disturb the sediment. The vacuum fixture of the present invention will permit a skilled operator to vacuum the same pool described above in approximately eight minutes even though he will still have to move the tool at about the same speed as before. This will permit him to service a greater number of pools in a given day and do it without any decrease in the efficiency presently attainable.

It is an object therefore of the present invention to provide an improved swimming pool vacuum fixture.

More specifically, it is an object of the present invention to provide an improved vacuum fixture having substantially increased pickup area.

It is another specific object of the present invention to provide an improved vacuum fixture which is articulated to permit its movement over the uneven surfaces of a swimming pool so that all portions thereof can be quickly and efficiently cleaned.

It is one of the advantages of the present invention that the improved vacuum fixture can cover a substantially larger area than heretofore possible without encountering difficulties in reaching the smaller areas and corners of a pool.

Further objects and advantages of the present invention will be apparent upon reading the following description in conjunction with the drawings in which:

FIGURE 1 is a perspective view of a vacuum fixture made in accordance with this invention.

FIGURE 2 is a sectional view taken along line 2—2 of FIGURE 1.

FIGURE 3 is a bottom plan view of the vacuum fixture.

FIGURE 4 is an elevation of the vacuum fixture on reduced scale, exhibiting the articulated features thereof.

Turning now to the details of the drawings, the fixture comprises a pair of substantially flat vacuum plates **10** and **11** which are secured together at the center of the fixture by means of a hinge **12** so that the plate may be freely pivoted upwardly or downwardly. The hinge **12** may be constructed by forming a tongue portion **13** upon one of the vacuum plates **10** and receiving said tongue **13** between the ears **14** of plate **11** where they are affixed by the hinge pins **12***a*. This can best be seen in FIGURE 3.

The entire fixture is supported for movement along the bottom of a pool surface by a plurality of wheels **15** which are suitably mounted to the vacuum plates **10** and **11** and may be enclosed in wheel housings **16** as shown. Thus, the entire plates **10** and **11** including the housings **16** and the portions of the hinge **12** can be integrally cast as single elements. To facilitate the casting procedures, the vacuum plate **11** is formed having three of the wheel housings **16**, while plate **10** carries the fourth wheel. On the rear middle wheel, or connected to the housing thereof, there is a handle yoke **17** pivotally mounted and provided with a cylindrical sleeve **18** adapted to receive therein an elongated handle portion **19**. This handle **19** is the means by which the operator moves the vacuum apparatus slowly over the inner pool surface.

Upon each of the vacuum plates **10** and **11** there are integrally formed the hose bibs **20** providing an opening or passage **21** through the plates communicating with the lower surface **22** thereof. Surrounding the entire periphery of the lower surface **22** there is a molded skirt **23** which extends to a position such that it will be very close to the surface upon which the wheels **15** will be resting. Skirt **23** permits the formation of a better vacuum between the surface **22** and the pool surface.

To each of the hose bibs **20** there are connected flexible branch lines **24**, having their other extremities coupled to the arms **25** of a T section **26**. Flexible vacuum hose **27** couples to the third outlet of T section **26** and, in accordance with customary practice, is of considerable length, and frequently provided with buoyant elements holding it on or near the surface of the water, and the other extremity of vacuum hose **27** is to be connected to the pool filter inlet.

As can be seen readily from FIGURE 4, the hinge **12**, together with the flexible branch lines **24** and the outboard wheels **15***a*, permit the two vacuum plates **10** and **11** to move so that the sweeper can easily cover the upwardly curving portion of a pool bottom to catch any sediment which has collected there. In addition, the articulated plates **10** and **11** will readily pivot to cover downwardly curving surfaces such as where the shallow end drops off into the deep end of the pool. This portion of a swimming pool has always been the most difficult and time consuming part to sweep effectively since it is at a point which is hard to reach from the end of a pool and requires extra sweeping strokes if attacked from the side of the pool. Although the fixture of the present invention is quite large, the fact that it is articulated permits its use in small areas such as the steps, since a very good sweeping action can still be obtained by using one-half of the fixture to cover each step. At the same time, the other half of the fixture will flop down and vacuum the sides of the steps while the top is being vacuumed.

In the preferred embodiment of this invention, the fixture is constructed having a width of approximately 20 inches, this being a little more than twice the width

of sweeping fixtures presently available. It should be noted, that although the device is about twice as large as other similar fixtures, it does the same work in about one-third the amount of time rather than one-half, as might have been expected. The advantages obtained from the articulation of the fixture materially enhance the speed and efficiency of its use. Although the preferred embodiment shows a fixture having two sections, it is also contemplated to employ multiple sections, each hinged together and having separate branch hoses connected thereto. For example, another embodiment may consist of three or four vacuum plates, each having a branch hose connected to it. This may be particularly advantageous for pool bottoms having unusually irregular surfaces.

While a preferred embodiment of the present invention has been shown and described, it will be obvious to persons skilled in the art that changes and modifications might be made therein. It is the aim of the appended claims to cover all such changes and modifications as fall within the true scope and spirit of this invention.

I claim:

1. A swimming pool vacuum fixture comprising a plurality of vacuum plates, means affixing said plates together permitting pivotal movement therebetween; a plurality of vacuum lines, means affixing one of said vacuum lines to each of said vacuum plates, said vacuum lines having means for coupling to a filtering apparatus.

2. A vacuum fixture of the type described in claim 1 wherein said vacuum plates are provided with a plurality of wheels mounted thereon, said wheels being positioned to permit said plates to move in close relationship to the surface being vacuumed.

3. A vacuum fixture of the type described in claim 1 wherein said vacuum plates are provided with a skirt depending from the lower surfaces thereof and extending substantially around the entire periphery thereof.

4. A vacuum fixture of the type described in claim 1 including means pivotally attaching a handle thereto.

5. A swimming pool vacuum fixture comprising a pair of vacuum plates, hinge means securing said plates together, said hinge means adapted to permit relative upward and downward pivotal movement of said plates, a plurality of wheels mounted upon said plates, handle means pivotally attached to said plates; a pair of flexible vacuum lines, means coupling said vacuum lines to a common vacuum line adapted to be attached to filtering apparatus, each of said vacuum plates having a hose bib formed thereon, said bib providing an axial passage to the lower surface of said plate, each one of said flexible vacuum lines coupled to one of said hose bibs; a skirt depending from the lower surface of each of said vacuum plates, said skirt extending substantially around the entire periphery of said fixture.

References Cited

UNITED STATES PATENTS

3,085,267	4/1963	Jacuzzi	15—1.7
3,243,830	4/1966	Conrad	15—1.7
3,273,188	9/1966	Levack	15—1.7

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