Nov. 5, 1935. O. A. PRICE 2,019,829

DEVICE FOR PRODUCING ARTIFICIAL WAVES

Filed Jan. 30, 1935

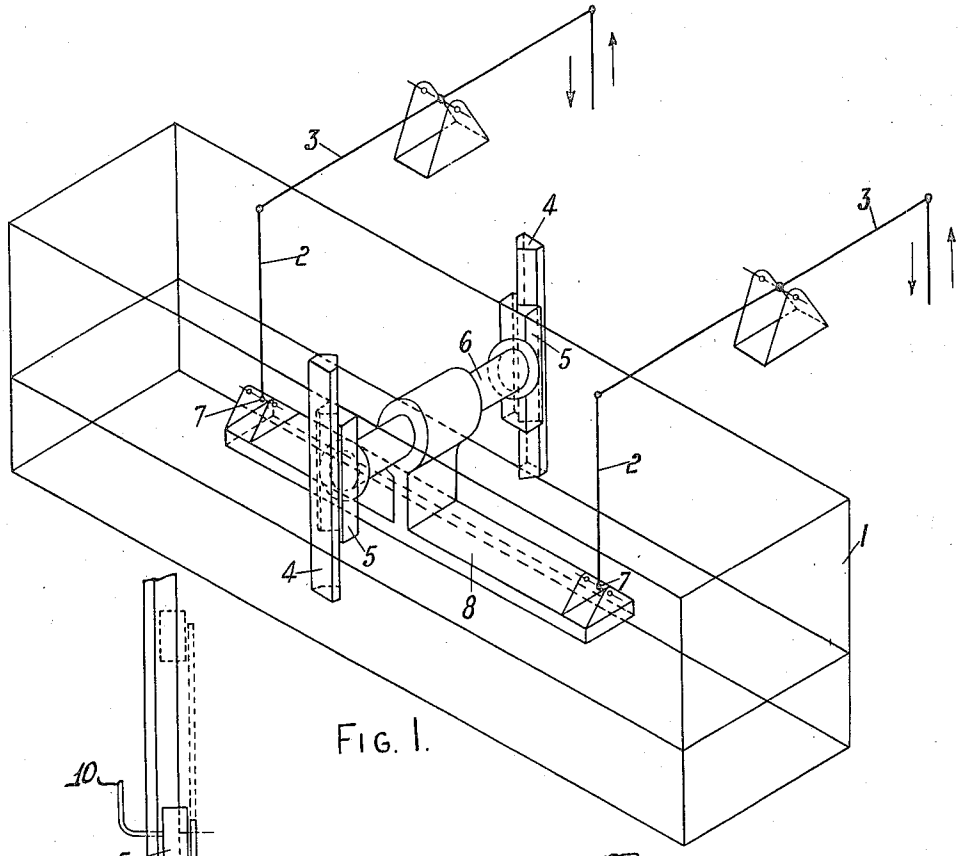

FIG. 1.

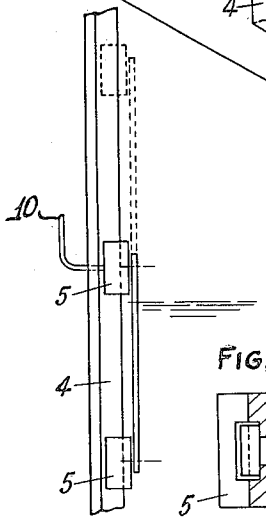

FIG. 6

FIG. 3.

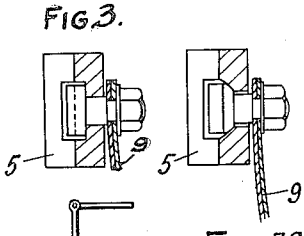

FIG. 3a

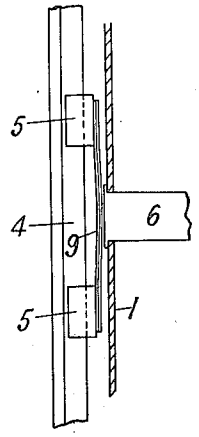

FIG. 2.

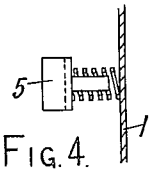

FIG. 4.

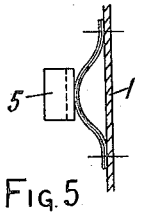

FIG. 5

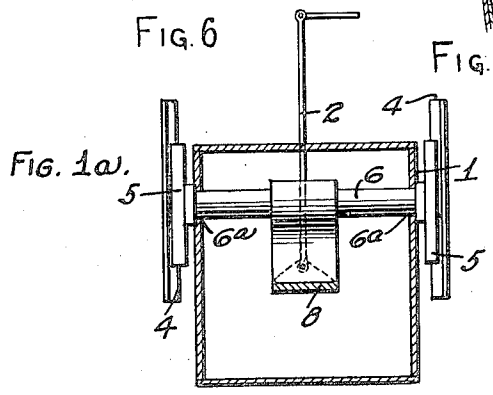

FIG. 1a.

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DEVICE FOR PRODUCING ARTIFICIAL WAVES

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Application January 30, 1935, Serial No. 4,012
In Great Britain November 18, 1933

7 Claims. (Cl. 308—3)

In devices incorporating a reciprocating displacer or displacers for producing artificial waves in swimming pools and the like, the displacer or each displacer is ordinarily about twenty feet long, or more, and is usually constructed of wood. On account of the large size of the displacer and the difficulty of constructing it accurately to design dimensions, and of its liability to deformation or alteration in length under the action of the water in which it operates, efficient guidance of such a displacer was always a problem.

An object of the present invention is to provide an improved construction which permits easy removal of the displacer and which provides sufficient flexibility to accommodate small dimensional inaccuracies of construction, or slight changes of form, or of dimensions, which may occur, during service under the action of the water, while maintaining efficient unimpaired guidance under all conditions.

A further object of the invention is to effect satisfactory lubrication of the guides or portions of the guides which are necessarily located below the surface of the water.

The invention is particularly applicable to constructions of the type in which the displacer or each displacer is reciprocated by a pair of rocking beams operating in parallel and linked to the displacer.

The invention is illustrated in the accompanying drawing in which Fig. 1 is a diagrammatic perspective "ghost" view showing a displacer and guide assembly, Fig. 1*a* is a transverse cross-sectional view through the displacer structure and showing the means for supporting and guiding it in its reciprocating movement, and Figs. 2–6 fragmentary detail views of modifications drawn to a larger scale.

As shown, 1 denotes a closed hollow displacer structure adapted to be reciprocated vertically within a pressure shaft at one end of a swimming pool or the like, being actuated by mechanism including connecting rods 2, which extend through the top of the displacer 1, and overhead rocking beams 3 which are rocked in parallel by power means (not shown). The side walls of the displacer 1 may, if desired, be formed of upper and lower portions which meet on a median line as shown in Fig. 1 of the drawing.

The displacer is guided in its reciprocatory movements by a pair of vertical guide bars 4 fixed in opposed relation one to each side wall of the pressure shaft and slidingly engaged by a pair of slides 5 interconnected, and reciprocating with, the displacer structure, being mounted on opposite ends of a rigid transverse member 6 which passes through openings 6*a* in the side walls of the displacer structure 1.

The guides 4 and slides 5 are contained in or about the transverse median plane of the displacer structure 1 and are of V-form in cross section, but it will be understood that they may be of other cross sectional shape.

A rigid longitudinal member 8 attached to the transverse member 6 serves as an anchorage for connections at 7 to the connecting rods 2.

As will readily be understood, the construction is such that, while the displacer structure 1 proper, which may be constructed of wood, is free to warp, twist, expand and shrink almost without restriction, there is afforded a rigid guiding system the efficiency of which is unimpaired by any distortion of the displacer structure.

Each slide 5 may comprise separate pads which may be resiliently interconnected by a laminated spring 9 as shown in Fig. 2. Again, each slipper pad may be pivotally connected to the spring 9 as shown in Fig. 3, or as shown in Fig. 3*a*, so as to render the pads self-aligning on the guides. Further, a spring may be interposed between the rear face of each slipper pad and the adjacent side wall of the displacer, as shown in Fig. 4 or Fig. 5.

To ensure that lubricant when applied to the guides 4 will be swept over their whole length, above and below the water level, the overall length of a one-piece slide as shown in Fig. 1 is made greater than the length of the stroke of the displacer, so that lubricant may be fed to a central point on the guide as shown at 10 in Fig. 6 which is always covered by the slide. When further lubrication is required, a supplementary supply of lubricant can be fed to the guides in the usual way.

Where each slide comprises two pads, the pads are so spaced apart in relation to the stroke of the displacer, as shown in Fig. 6, that the paths of the pads overlap, so that lubricant is transferred from one pad to the other.

As will be evident, the construction of the guides and slides is such that the displacer may readily be raised or lowered clear of the guides to permit removal of the displacer.

I claim:—

1. In a device for producing artificial waves in swimming pools and the like, a displacer structure, means for imparting vertical reciprocating movements to said displacer structure, and means for guiding said displacer structure in its recipro-

cating movements, said means including vertical opposed guides, slides reciprocating with said displacer structure and engaging the opposed sides of said guides, and means interconnecting said slides.

2. In a device for producing artificial waves in swimming pools and the like, a displacer structure, means for imparting reciprocating movements to said displacer structure, and means for guiding said displacer structure in its reciprocating movements, said means including opposed guides located substantially in the transverse median plane of said displacer structure, slides engaging the opposed sides of said guides, and a member disposed transversely of and reciprocating with said displacer structure and interconnecting said slides.

3. In a device for producing artificial waves in swimming pools and the like, a displacer structure, means for imparting reciprocating movements to said displacer structure, and means for guiding said displacer structure in its reciprocating movements, said means including opposed guides, slides reciprocating with said displacer structure and engaging the opposed sides of said guides, and means rigidly interconnecting said slides.

4. In a device for producing artificial waves in swimming pools and the like, a displacer structure, means for imparting reciprocating movements to said displacer structure, and means for guiding said displacer structure in its reciprocating movements, said means including opposed guides, slides reciprocating with said displacer structure and engaging the opposed sides of said guides, each slide comprising a pair of spaced pads, and means interconnecting said slides.

5. In a device for producing artificial waves in swimming pools and the like, a displacer structure, means for imparting reciprocating movements to said displacer structure, and means for guiding said displacer structure in its reciprocating movements, said means including opposed guides located substantially in the transverse median plane of said displacer structure, a member disposed transversely of and reciprocating with said displacer structure, and slides resiliently mounted on the ends of said member and engaging the opposed sides of said guides.

6. In a device for producing artificial waves in swimming pools and the like, a displacer structure, means for imparting reciprocating movements to said displacer structure, and means for guiding said displacer structure in its reciprocating movements, said means including opposed guides located substantially in the transverse median plane of said displacer structure, slides reciprocable with said displacer structure and engaging the opposed sides of said guides, a member disposed transversely and reciprocating with said displacer structure and interconnecting said slides, and springs carried by said member, each slide comprising pads pivoted to said springs.

7. In a device for producing artificial waves in swimming pools and the like, a displacer structure, means including connecting rods for imparting reciprocating movements to said displacer structure, and means for guiding said displacer structure in its reciprocating movements, said means including opposed guides located substantially in the transverse median plane of said displacer structure, slides engaging the opposed sides of said guides, a transverse member reciprocating with said displacer structure and interconnecting said slides, and a rigid longitudinal member attached to said transverse member and serving as an anchorage for connection to said connecting rods.

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