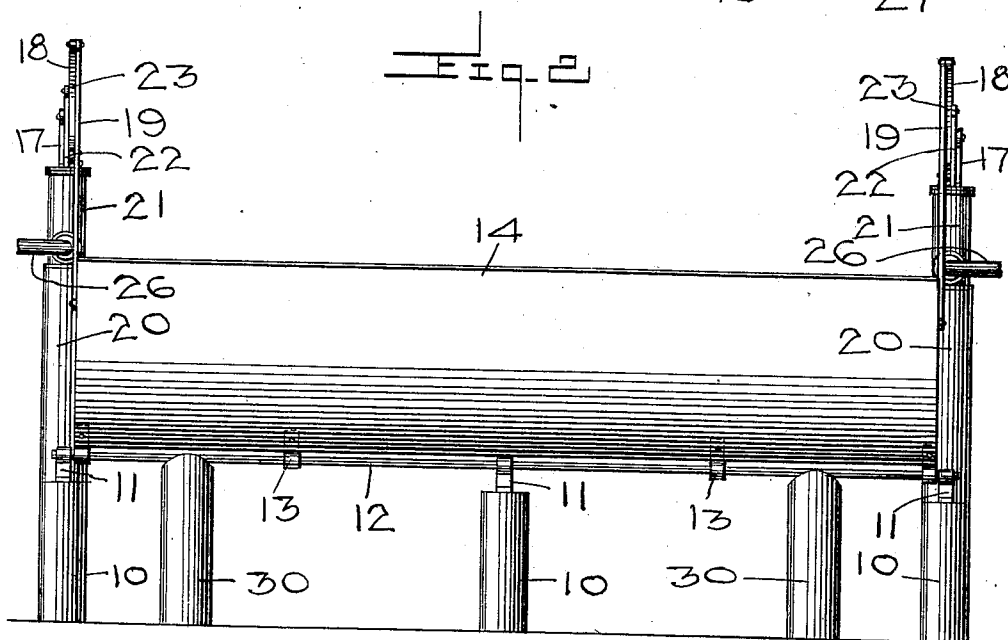
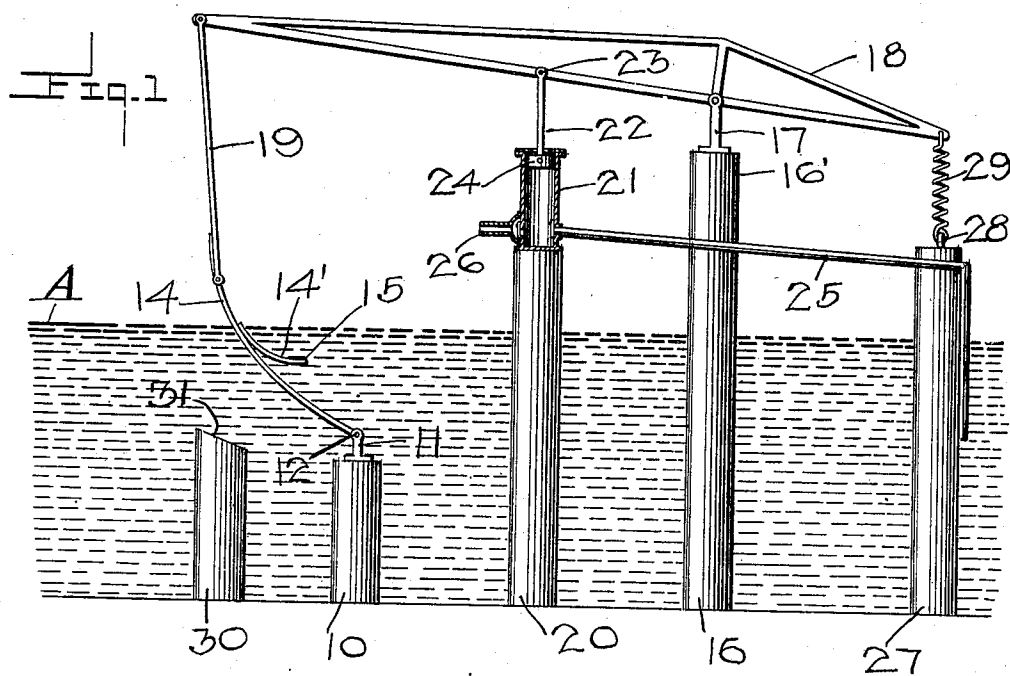


G. W. T. SNARE.
SURF PUMP.
APPLICATION FILED AUG. 13, 1910.

992,390.

Patented May 16, 1911.



G. W. T. Snare

Inventor

Witnesses
Ed. R. Lusby
M. L. Lowe

By Howard & Chandler
Attorneys

UNITED STATES PATENT OFFICE.

GEORGE W. T. SNARE, OF OCEAN PARK, CALIFORNIA.

SURF-PUMP.

992,390.

Specification of Letters Patent.

Patented May 16, 1911.

Application filed August 13, 1910. Serial No. 576,976.

To all whom it may concern:

Be it known that I, GEORGE W. T. SNARE, a citizen of the United States, residing at Ocean Park, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Surf-Pumps, of which the following is a specification.

This invention relates to improvements in pumps, and has particular reference to a wave actuated means for driving the pump.

The principal object of the invention, is to provide a device of this character and of such construction, that the greatest amount of energy in incoming waves will be used to the greatest advantage.

Another object is to provide an impact element of such construction and arrangement, that the weight together with the force of the impact is directed downwardly against said element.

These and other objects will be apparent from the following description and with particular reference to the accompanying drawings forming a part of this specification, and in which,

Figure 1 is an end elevation of the device, Fig. 2 is a front elevation.

Heretofore, in devices of this character, it has been the common practice to provide a pivoted float of such construction and arrangement, that the incoming tide or waves were directed against the under face of the float to raise the float in the operation of either a water pump or an air compressor. In such devices, it was necessary to provide some gravity means for returning the float to its lowermost position, thus requiring and expending a greater amount of power contained in the waves in lifting the combined weights of the float and gravity means, and in this way, losing a great deal of the power. Now by my device, I provide an elongated transversely concave impact element, which points shoreward, so that the impact of the waves directed thereagainst, will bear downward to operate means connected to the pump.

Specifically speaking and with particular reference to the drawing, I provide a plurality of suitably spaced concrete or other piles 10, in the upper ends of which, are secured in any suitable manner, the journals 11, adapted to receive a longitudinally arranged rock shaft 12. Secured to the shaft, by means of the clips 13 is an impact ele-

ment 14, of a length slightly less than that of the shaft, and of a width that one-half or more, will be below the water line A, and above the water line and secured to the outer face of the member 14, is an auxiliary impact plate 14', which curves from the plate 14, as shown at 15. This auxiliary plate is adapted to receive the impact of the curl, which takes place in a breaking wave, and incidentally supports sufficient of the water for a short space of time to help bear down the plate 14. At a suitable distance behind the pile 10 and directly in line therewith, is a second series of piles of similar construction 16, but of greater height, their upper ends 16' extending above the water line. On the upper ends of these piles, are secured the journal brackets 17, to each of which is pivotally secured, a walking beam lever 18, the pivot point on the said bracket being the fulcrum of the said lever. The forward or longer portion of the lever 18 is pivotally connected to the impact plate 14, by means of the links 19, so that when the plate 14 moves up and down on the shaft 12, the lever will be rocked. At a suitable point between the piles 10 and 16, are arranged the piles 20, of slightly less height than the latter, and supporting on its upper end a pump 21, the piston rod 22 of which is pivotally connected to the lever 18, at a point 23. Thus the upward and downward movement of said lever, by means of the operation of the plate 14, will reciprocate the piston 24 in the pump 21, the upward movement of said piston drawing in water through a pipe 25, and discharging the water on its downward stroke through a pipe 26, discharging from the opposite side of the pump. This pipe 26 may lead to any convenient point, where it is desired to store the water. It will of course be understood that an air-compressor may be substituted for this pump, in such case the action being the same, and not altering the principle of the device, the main aim being to utilize the weight of the water as well as the force to drive the fluid from the pump. Directly in line with the aforementioned piles, is arranged another set of piles 27, which have in their upper ends a suitable securing means, as an eye bolt 28, to which is secured one end of a spring 29, the other end of which is secured to the adjacent end of the lever 18, and serves to draw that end of the lever downward into its normal position. (Fig. 1.)

While I have shown two pumps, it will of course be understood that I do not limit myself to any particular number, or design of same, as this may be varied according to circumstances.

In the operation of the device assuming that the piston 24 has descended, the spring 29 draws it up into the position shown in Fig. 1, thus filling the pump cylinder. The impact of the waves against the plate 14, will cause said plate to move downwardly on its pivot, pulling downwardly on the longer end of the lever 18 through the medium of the links 19 and causing the piston 24 to descend and force the water through the pipe 26. It will of course be understood that the pump is provided with suitable check valves.

From the foregoing, it will readily be seen, that I have provided a simple and effective device operable by waves, and one which may as readily be used on a beach as on any other part of a coast.

It will be apparent that changes in the form, proportions and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

To limit the downward movement of the impact element 14, I provide a series of stop members 30, of any suitable construction, but preferably of concrete and having their upper ends beveled as at 31.

What is claimed is:

1. An actuating means for a surf pump comprising a plurality of supports, journals mounted on certain of said supports, a shaft journaled on one set of said supports, a concaved impact element on said shaft and movable therewith, levers mounted in the other of said supports, connections between said levers and said pump, connections between

one end of said lever and the impact element, whereby said lever is moved to operate said pump, and means connected to the opposite end of said lever for returning the device to initial position.

2. An actuating device for a surf pump comprising a set of supports carrying pumps, a second set of supports having levers journaled in their upper ends, a third set of supports having a shaft journaled thereon, an elongated and transversely concaved impact plate secured to and movable with said shaft, said levers having longer and shorter portions, connections between said plate and the longer portions of said levers, connections between the said longer portions and said pump, and a fourth set of supports carrying resilient means on their upper ends, said resilient means being also secured to the shorter portions of said levers.

3. Actuating means for surf pump comprising a plurality of supports, journals mounted on certain of said supports, a shaft journaled on certain other of said supports, a concaved impact element on said shaft, and movable therewith, levers mounted in the other of said journals, connections between said levers and said pump, connections between one end of said levers and the impact element, whereby said lever is moved to operate said pump, means connected to one of said supports and to the opposite end of said lever for returning the device to initial position, and upwardly and outwardly curved auxiliary impact plates secured to said impact element.

In testimony whereof I affix my signature, in the presence of two witnesses.

GEORGE W. T. SNARE.

Witnesses:

R. C. BARRETT,
HARRY M. TEST.