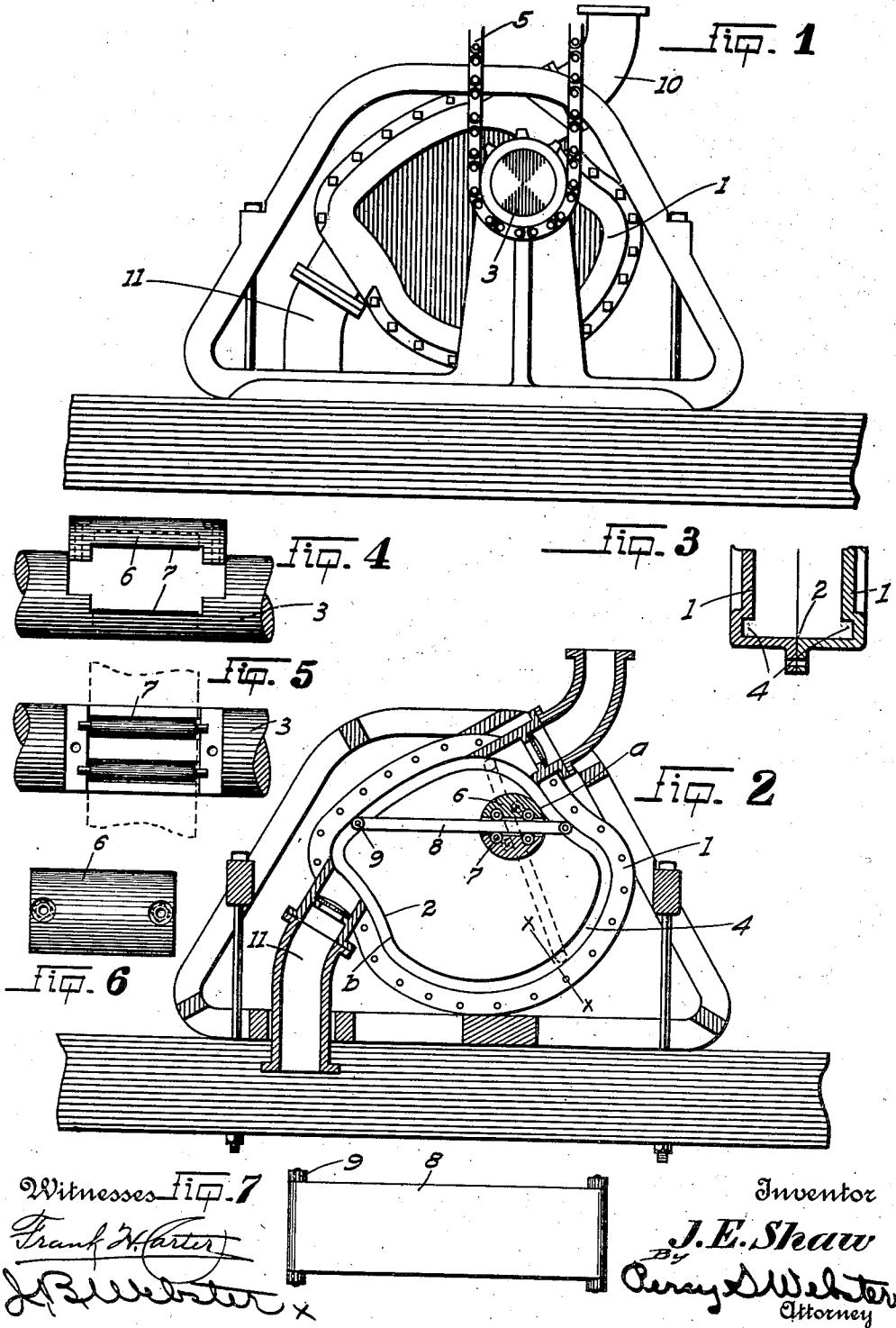


J. E. SHAW.
SHAFT FOR ROTARY PUMPS.

APPLICATION FILED MAY 21, 1910. RENEWED FEB. 4, 1913.

1,058,108.

Patented Apr. 8, 1913.



Witnesses *Fig. 7*
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UNITED STATES PATENT OFFICE.

JOHN E. SHAW, OF MURPHY, CALIFORNIA.

SHAFT FOR ROTARY PUMPS.

1,058,108.

Specification of Letters Patent.

Patented Apr. 8, 1913.

Application filed May 21, 1910, Serial No. 562,616. Renewed February 4, 1913. Serial No. 746,223.

To all whom it may concern:

Be it known that I, JOHN E. SHAW, a citizen of the United States, residing at Murphy, in the county of Calaveras, State of California, have invented certain new and useful Improvements in Shafts for Rotary Pumps; and I do declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this application.

This invention relates to improvements in pumps and particularly that class known as rotary pumps, the object of the invention being to produce such a rotary pump as will have an ease and simplicity of operation and at the same time give a double lifting capacity and a continuous intake and discharge of the liquid which is being pumped.

A further object of the invention is to produce such a device as is simple and inexpensive and yet exceedingly effective for the purposes for which it is designed.

These objects, I accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claim.

In the drawings similar characters of reference indicate corresponding parts in the several views.

Figure 1 is a side elevation of the complete pump. Fig. 2 is a vertical longitudinal section of the same. Fig. 3 is a sectional view taken on a line X—X of Fig. 2. Fig. 4 is a fragmentary view of a driving shaft showing the method of inserting bearing rollers therein. Fig. 5 is a top plan view of the same showing the roller retaining cap or sleeve removed. Fig. 6 is a top plan view of such cap or sleeve. Fig. 7 is a top plan view of a lift plate or diaphragm.

Referring now more particularly to the characters of reference on the drawings 1 designates the main casing of the pump the inner periphery 2 of the same being of such

an irregular or eccentric shape as to permit the operation of the pump lift as will hereinafter appear.

3 is the main driving shaft of the pump which shaft 3 projects into the casing 1 and abuts near the inner edge of the periphery 2 at one point as at "a" Fig. 2, there being side grooves 4 in the inner sides of the casing 1 following the contour of the inner periphery 2 of said casing 1. The shaft 3 is driven by a chain or other driving means 5.

The shaft 3 within the casing 2 has a removable cap or sleeve 6 cut out of its side to permit the insertion of spaced pairs of rollers 7 to be inserted therein, such cap or sleeve 6 being suitably secured over said rollers by bolts, keys or other suitable fastening means. Between these rollers 7 the lift plate or diaphragm 8 is inserted and has rollers 9 on its outer ends which rotate through the slots or grooves 4 thus causing the ends of said member 8 to follow the periphery 2 as the shaft 3 rotates, the pumping being caused by this operation as follows, viz:—As the said shaft 3 rotates the member 8 slips between the rollers 7 as it follows the periphery 2. The neutral position of this lift member is when it extends from the point "a" to the point "b" (Fig. 2). Then as it revolves from this position it pushes or forces the liquid out through the outlet valve and pipe 10 located just ahead of the neutral point "a" and at the same time intakes to its rear more liquid through the inlet pipe and valve 11 located just past the point "b" which operation is repeated "ad infinitum" while the pump is in operation.

From the foregoing description it will be readily seen that I have produced such a rotary pump as substantially fulfils the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention.

Having thus described my invention what

I claim as new and useful and desire to secure by Letters Patent is:

A shaft for rotary pumps, comprising the combination with a pump shaft having a lift member movable transversely through
5 said shaft, of a removable sleeve cut out of said shaft, rollers disposed within said sleeve and within said shaft, said lift mem-

ber being movable between said rollers, as described.

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

JOHN E. SHAW.

Witnesses:

PERCY S. WEBSTER,
FRANK H. CARTER.