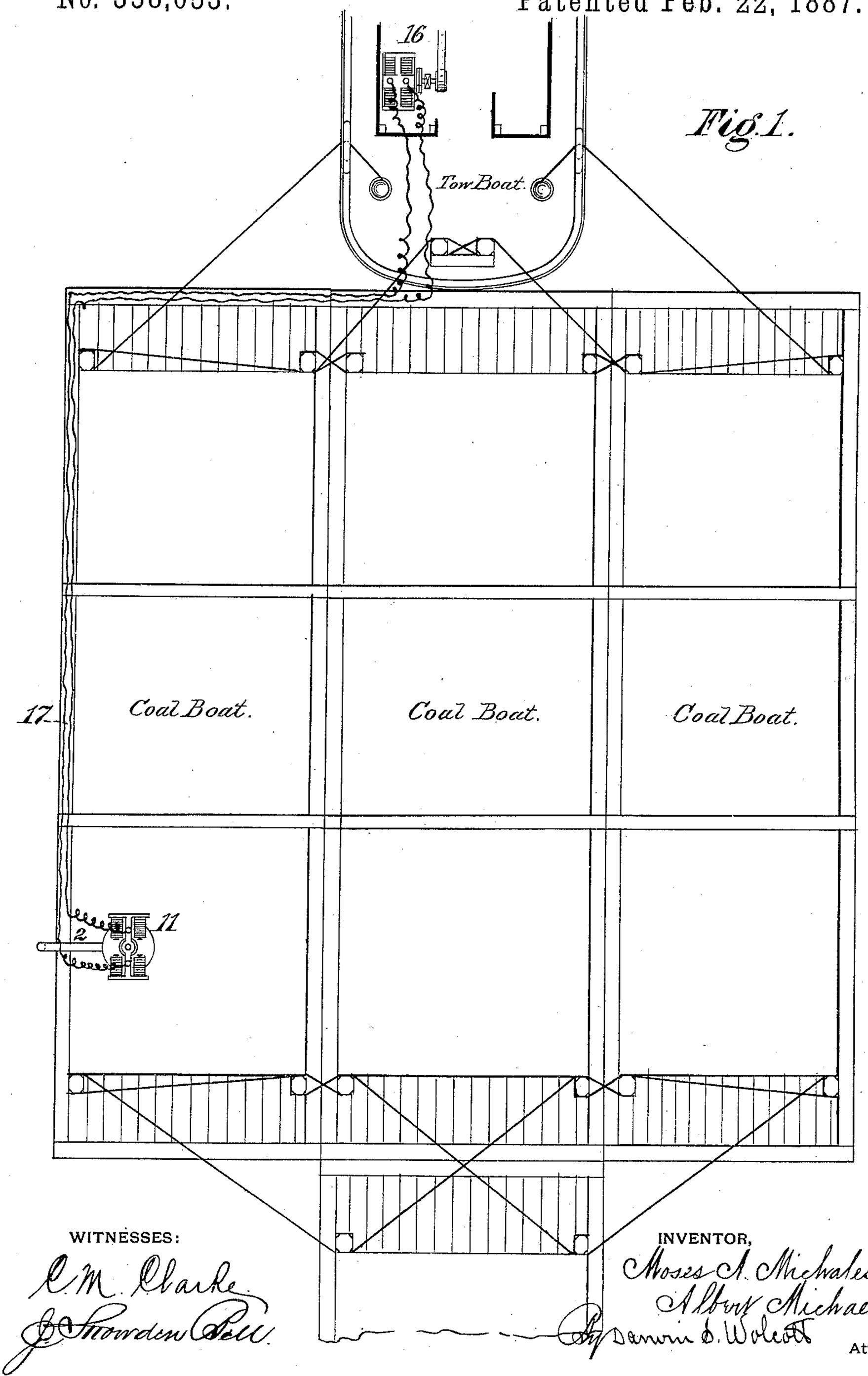
(No Model.) 2 Sheets—Sheet 1.

M. A. MICHALES & A. MICHAELS.

ELECTRICAL PUMPING APPARATUS.

No. 358,053. Patented Feb. 22, 1887.

Fig. 1.



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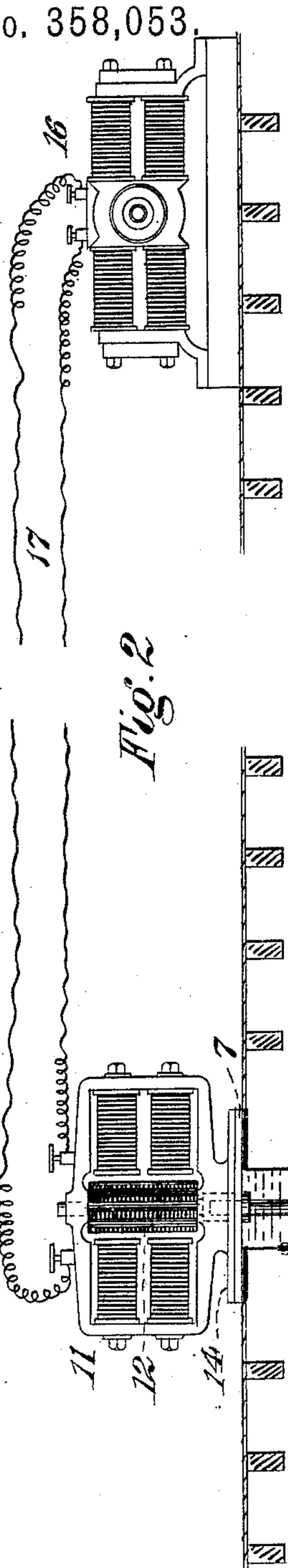

Fig. 2.

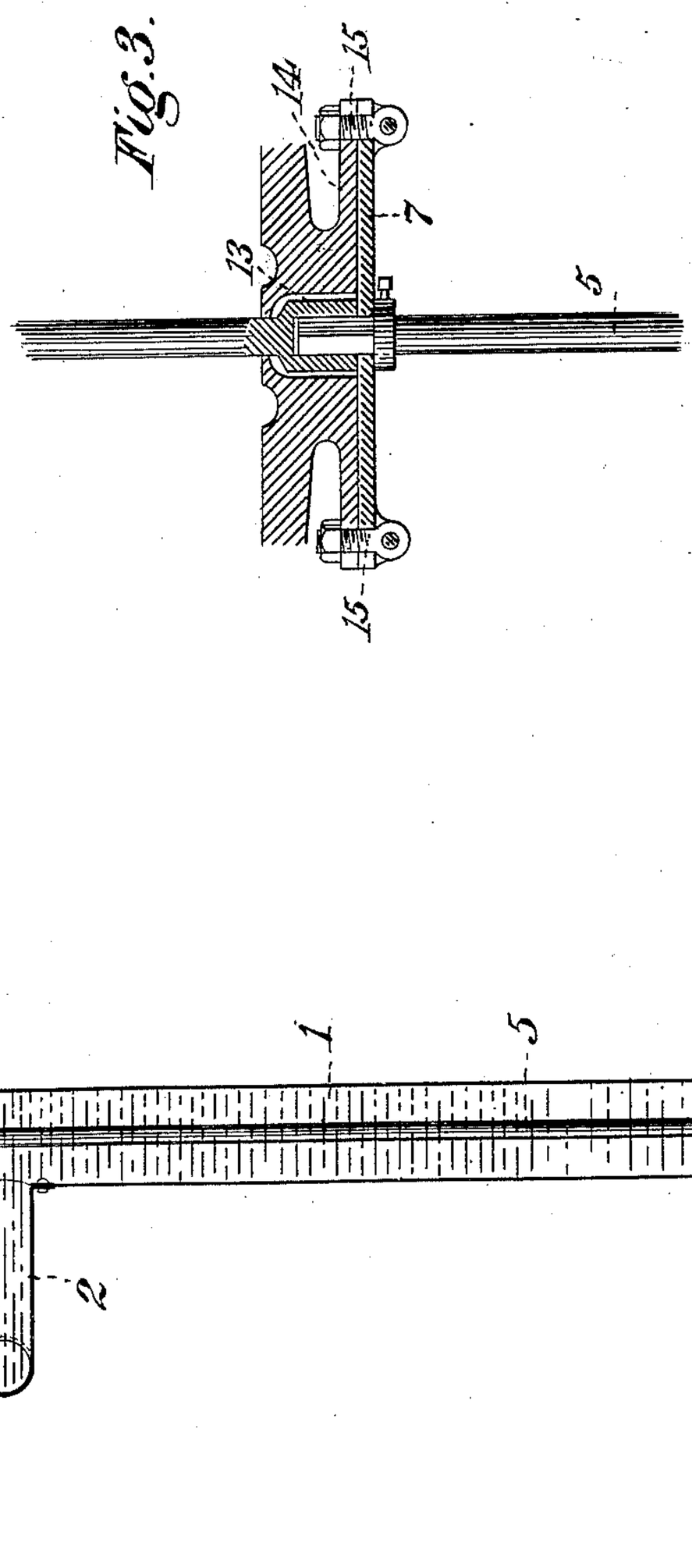

Fig. 3.

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UNITED STATES PATENT OFFICE.

MOSES A. MICHALES, OF ALLEGHENY, AND ALBERT MICHAELS, OF PITTSBURG, ASSIGNORS OF ONE-FOURTH TO JOHN B. SNEATHEN, OF PITTSBURG, PENNSYLVANIA.

ELECTRICAL PUMPING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 358,053, dated February 22, 1887.

Application filed August 20, 1886. Serial No. 211,379. (No model.)

To all whom it may concern:

Be it known that we, MOSES A. MICHALES, residing at Allegheny, and ALBERT MICHAELS, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, citizens of the United States, have invented or discovered certain new and useful Improvements in Pumping Apparatus, of which improvements the following is a specification.

In the accompanying drawings, which make part of this specification, Figure 1 is a diagrammatic view of a tow and its barges having our pump apparatus applied thereto. Fig. 2 is a view, partly in section and partly in elevation, of our improved pump apparatus. Fig. 3 is a detail view of the manner of connecting the pump and motor.

The invention herein relates to certain improvements in pumping apparatus wherein is employed a portable pump and motor therefor, and stationary or relative stationary generator for supplying the power to the motor.

Although the apparatus, as hereinafter described, can be used for other purposes, it is especially applicable for pumping out boats, barges, or other vessels, whether the same are collected around or in proximity to a tow-boat or wharf-boat. In towing coal boats or barges on western rivers and other waters, the boats or barges are collected around and attached to a steam tow-boat, and as these boats or barges are somewhat frail structurally, and are also subjected to hard usage, they require frequent pumping out to keep them afloat. Very frequently the leaks are so serious that hand-pumps are practically useless; and in such cases resort is had to what is known as a "steam siphon-pump," the steam necessary for operating these pumps being obtained from the boilers on the tow-boat. As the boat or barge to be pumped out is very often three or four or five boat or barge lengths from the tow-boat, three, four, or five hundred feet of pipe is necessary to connect the siphon-pump with the boiler; hence a great deal of valuable time is lost in making the connections over the intervening boats or barges; and, further, it requires quite a high boiler-pressure to obtain the necessary steam-pressure at the pump. This is especially true in cold weather, when the radiation from the exposed pipe-connections is very rapid, thereby effecting a great amount of condensation of the steam in the pipes. It also frequently occurs that the boat to be pumped is located at such a distance from the tow-boat that it is impracticable to obtain the necessary force of steam at the pump, and hence it is necessary to remove the intervening boats in order that the tow-boat may get sufficiently near the boat or barge requiring the services of the boat. The delay involved in the removal of the intervening boats is frequently so great that a leaking boat or barge will sink before the pump can be put into operation.

The object of the invention herein is to provide a pumping apparatus which can be easily moved from boat to boat, as circumstances require, the power-generator remaining relatively stationary, and the power employed being of such a character as to suffer but little loss in transmission from the point of generation to the point or points of use.

In general terms, the invention consists in the construction and combination substantially as hereinafter described and claimed.

In carrying out our invention we employ what is known as a "rotary pump," consisting of the tubular body portion 1, formed of sheet-iron or light boiler-iron, and provided near its upper end with a discharge-spout, 2. At the lower end of the body portion 1 is formed a chamber, 3, in which is located a screw, 4, similar in construction to a propeller-screw. This screw is mounted on a shaft, 5, extending through the body portion 1, and supported at its lower end in a step, 6, secured to the lower end of the chamber 3, the upper end of the shaft being centrally supported by the cap-plate 7, forming the top of the body portion, and secured thereto in any suitable manner. Over the lower end of the chamber 3 is placed a perforated plate, 8, to prevent foreign substances from entering and thereby clogging the screw, and around the chamber is arranged a conical shield, 9, having perforated sides for the same purpose. On the upper end of the

pump is placed an electric motor, 11, having a vertically-arranged armature, 12, the lower end of the shaft of said armature being provided with a socket, 13, for the reception of the squared end of the shaft 5. The frame of the motor is provided with a pedestal, 14, adapted to rest upon the cap-plate 7 of the pump, the cap-plate and pedestal being secured together by bolts 15, which are pivoted between suitable lugs on the under side of the cap-plate, and when used are turned up into notches in the peripheries of the cap-plate and pedestal. (See Fig. 2.) Any other suitable means may be employed to clamp the motor to the pump, the above-described means being mentioned as one of the readily-applied means for that purpose.

A pump constructed as above described, and provided with a readily-detachable motor, can be easily transported from boat to boat of a tow, as required, and can be quickly put into operation. The generator 16 is located on the tow-boat or wharf-boat around which the boats or barges are arranged, and is connected to the motor by insulated conductors 17, which can be allowed to rest upon the intervening boats or barges.

The use of a stationary electric generator and a portable motor and pump will permit of the pumping out of a boat or barge at a comparatively great distance from the tow or wharf boat without any material loss of power between the generator and motor, and without the effectiveness of the apparatus being impaired by atmospheric influences.

We are aware that it is old to arrange an electric motor and a pump horizontally in line with each other on a truck or carriage, the shafts of the pump and motor being connected in line with each other.

We claim herein as our invention—

A pumping apparatus having in combination a stationary dynamo-electric generator and a portable pump provided with an electric motor detachable from the pump, substantially as set forth.

In testimony whereof we have hereunto set our hands.

MOSES A. MICHALES.
ALBERT MICHAELS.

Witnesses:
DARWIN S. WOLCOTT,
R. H. WHITTLESEY.