(No Model.)

# P. O'MEARA.

## MEANS FOR PREVENTING ACCUMULATION OF SAND IN HARBORS, &c.

No. 593,430. Patented Nov. 9, 1897.

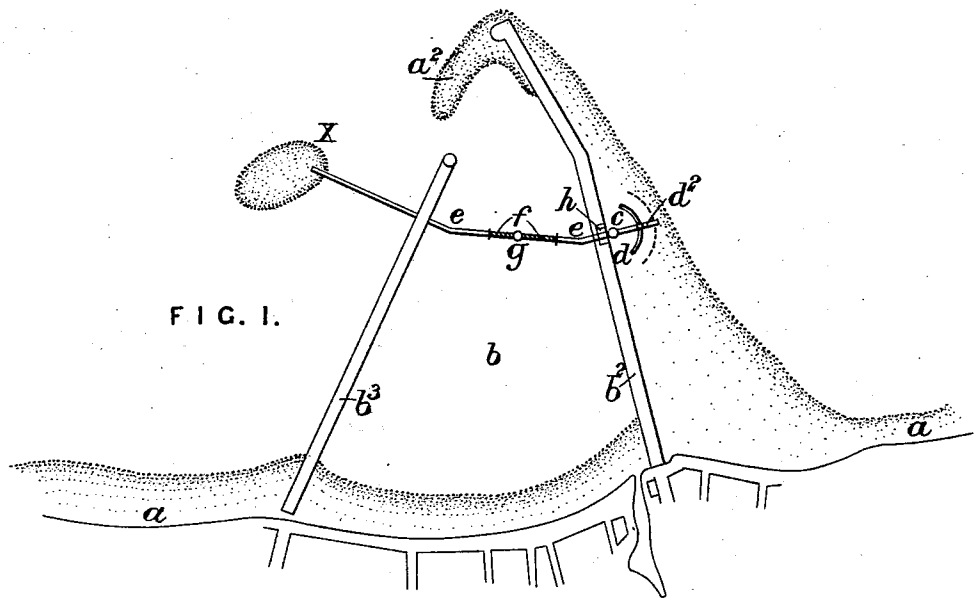



FIG. 1.

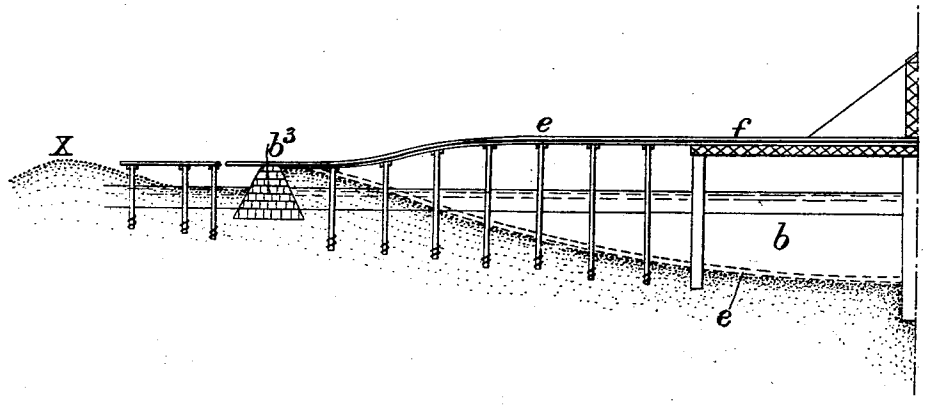
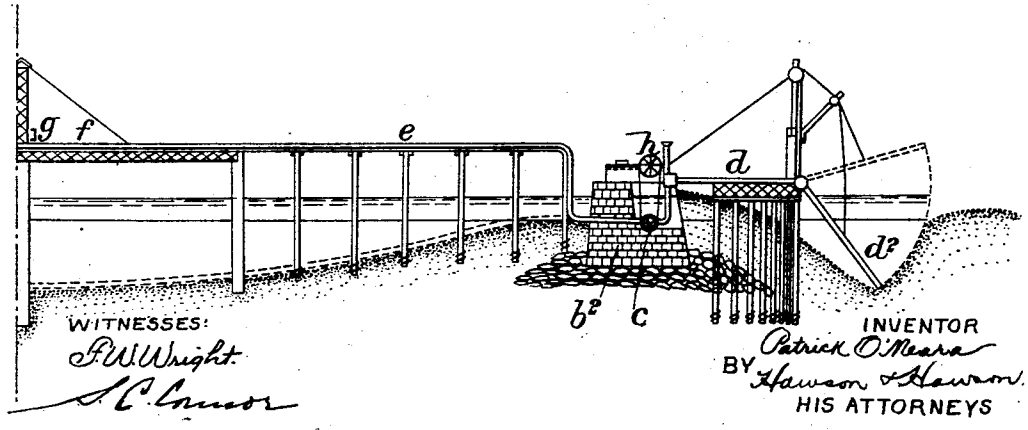



FIG. 2.




WITNESSES:
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HIS ATTORNEYS

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

# UNITED STATES PATENT OFFICE.

PATRICK O'MEARA, OF PIETERMARITZBERG, NATAL.

## MEANS FOR PREVENTING ACCUMULATION OF SAND IN HARBORS, &c.

SPECIFICATION forming part of Letters Patent No. 593,430, dated November 9, 1897.

Application filed April 3, 1897. Serial No. 630,617. (No model.)

*To all whom it may concern:*

Be it known that I, PATRICK O'MEARA, civil engineer, a subject of the Queen of Great Britain and Ireland, residing at Pietermaritzberg, in the Colony of Natal, have invented certain Improvements in Means for Preventing Accumulation of Sand or Detritus at or in Harbors or Harbor-Entrances, Canals, or other Places, of which the following is a specification.

The object of this invention is to provide efficient means for preventing accumulation of sand or detritus at or in harbors, harbor-entrances, canals, or other places. This I effect by means of stationary forcing or pumping apparatus, which is so placed as to intercept encroaching sand or detritus before it arrives at the harbor, harbor-entrance, canal, or other place to be protected therefrom, the said sand or detritus being pumped or forced through a pipe or conduit, which is either overhead or submerged, and is led to the place at which the sand or detritus is to be discharged or deposited either on land or out at sea. If the said tube or conduit be overhead, it may be arranged as a swing-aqueduct to allow of the passage of vessels, it being, if desired, worked by hydraulic power from the shore or center pier. The pumps or equivalent apparatus may be worked by steam, electrical, or other suitable motors. The pumping or forcing apparatus will excavate a trench or trap, into which the sand or detritus will be impelled by the currents and breakers, and it will then be forced therefrom through the said tube or conduit to the place whereat it is to be discharged or deposited.

The accompanying diagrams will illustrate a manner in which this invention may be performed.

Figure 1 is a plan, and Fig. 2 an enlarged sectional elevation.

*a* indicates a foreshore, and *b* a harbor, with a breakwater $b^2$ on one side and a pier $b^3$ on the other side, the entrance to which harbor is to be protected, although it is to be understood that it may be any other place which can be similarly protected.

$a^2$ is the harbor-bar.

*c* indicates a pumping apparatus, a branch $d^2$ from the suction-pipe *d* of which descends therefrom to a depth sufficient to receive the sand or detritus when the pumping apparatus is in operation; and this suction-pipe and branch radiate horizontally around a pivot-head in front of the pump. The said sand or detritus is drawn in and forced through the pump-outlet and along a conduit *e*, which is led to the place X, at which the sand or detritus is to be deposited.

*f* indicates a part of the said conduit, which is formed as a swing-aqueduct, which is worked on the center pier by hydraulic apparatus (indicated at *g*) to allow of the passage of vessels.

*h* indicates the engine which works the pumping apparatus.

In place of the conduit *e* being overhead it may be submerged, if desired, as indicated by the dotted lines in Fig. 2.

Having now particularly described and ascertained the nature of the said invention and in what manner the same is to be performed, I declare that what I claim is—

The combination of a harbor, harbor-entrance, canal or other such place with means for intercepting and preventing accumulation of sand or detritus there, said means including a stationary forcing or pumping apparatus and a suction pipe or pipes at a point to intercept the volume of sand or detritus on its way to the harbor, &c., and a pipe or conduit through which such intercepted material may be forced to a suitable point of discharge, all substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

P. O'MEARA.

Witnesses:
J. M. HILLIER,
CHAS. HARVEY.