R. Bulkley

Pump Lift.

No. 5,030. Patented Mar. 20, 1847.

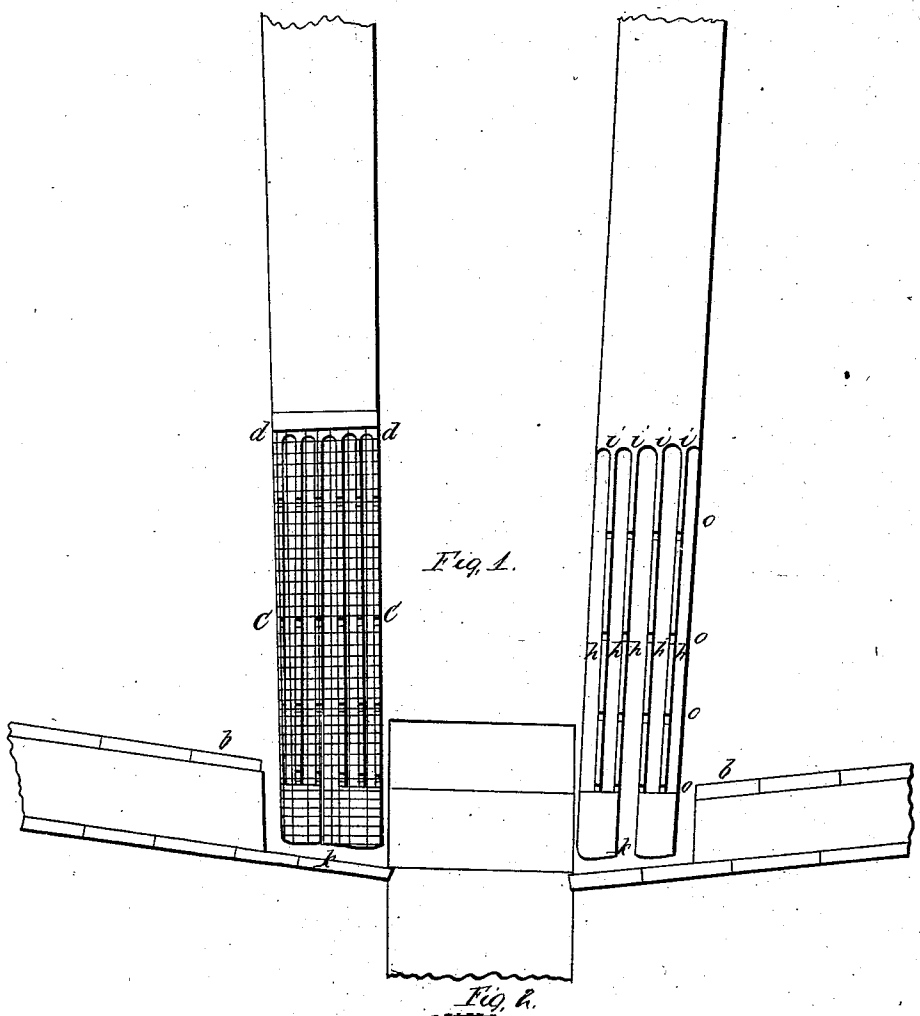
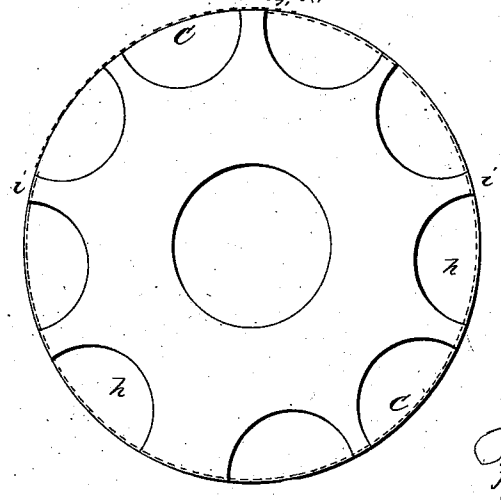


Fig. 1.

Fig. 2.



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UNITED STATES PATENT OFFICE.

RALPH BULKLEY, OF NEW YORK, N. Y.

PUMP FOR SHIPS.

Specification of Letters Patent No. 5,030, dated March 20, 1847; Antedated December 19, 1846.

To all whom it may concern:

Be it known that I, RALPH BULKLEY, of the city of New York, in the county and State of New York, have invented a new and useful Improvement in Vessel-Pumps, which may be called "the Fluted or Transverse-Fluted Pump."

The nature of my invention consists in the application to and combination with vessels' stepped pumps a vertically applied indentation or indentations on the outer surface of the pump, extending upward from or near the lower end of the pump to any required distance, about four, or five feet, upward, more or less. These indentations may be made by fluting or by grooves or by battens placed at suitable intervals; and these indentations may extend entirely around the pump, or around any required section of it. And, through the projections so formed by fluting—grooving, or by battens, transverse indentations or orifices, are to be made sufficient to form a communication for water, from each indentation to the others; and one or more of the vertical indentations are to extend to, and communicate with the lower, or receiving orifice of the pump; and those not so communicating, are to have a stop water at foot; leaving only the horizontal or transverse communications open: Around these transverse fluted indentations downward, in sections, or entire, including the main orifice, is to be applied,—appended thereto, a metallic, or other covering; containing small perforations, so that water may pass through into the indentations on the outer surface of the pump—to the receiving orifice; so that if the covering at the lower end of the pump should become "choked" or clogged by swelled grain, or otherwise; the water would rise upon the pump, until it found an entrance into the indentations or transverse flutes: and in the outer canals formed thereby, the water will pass downward unobstructed, into the receiving orifice of the pump; the object of which is, to preserve an unobstructed passage for water to the orifice of the pump, though the lower end, and lower part of the pump, become "choked," and clogged, with swelled grain, or otherwise; a casualty of common occurrence, arising from a variety of causes, by which the pumps, frequently at times most needed, become useless, endangering life, and property.

To enable others skilled in the art to make and use my invention I proceed to describe its construction and operation, reference being had to the annexed drawing, making a part of this specification.

Figure 1: Let *a* represent the lower end of a pump standing in the timbers in a transverse section of a vessel frame, with metallic casing, with suitable perforations or texture to permit water to pass, and to prevent grain or other particles from passing to the indentations or perforations in the pump: *a*, *a*, the pump: *b*, *b*, the ships frame and step chamber for the pump, *c*, *c*, the metallic casing extending upward about four feet more or less: this casing may be applied entire as shown at *c*, *c*, or in sections; or they may be made a suitable fit to the step chamber and extended up any required distance upon the side or circumference of the pump and secured by clamps, bands, or screws in such a manner that they can be taken off at pleasure for repairs of pumps; *d*, *d*, the cap piece of metal or other substance. The fluting, or grooves, within the casing may be made vertically about two inches broad—and about one inch in depth, more or less: and one or more of them are to extend downward, so as to form a communication with the receiving orifice of the pump; the other flutes are to contain, each, a stop water at the lower end, near, and above the ceiling of the vessel at *b;* and to have an open communication each with the other by transverse flutings, one line of these transverse flutings to be near the lower end of the vertical flutings, and any required number of others above as shown at *o*, *o*, *o*, *o*, in Fig. 1 pump *w*.

The tongue, or space between the vertical flutes may be about three fourths of an inch as shown at *i*, *i*, in the transverse section Fig. 2 and at *i*, *i*, in pump *w* Fig. 1: This pump *w* at Fig 1,—is intended to show the form of the transverse flutings before the metallic casing is applied: *h*, *h*, *h*, the vertical, and *o*, *o*, *o*, the transverse flutes; showing one flute or indentation only, as extending down to the receiving orifice *k:* by which it is shown, that if any portion of the apertures, in the metallic casing, from the step of the pump *k*, upward, should become clogged, or obstructed, by particles resting on the outer surface of the casing, the water on rising above the obstruction, would pass inward through the casing, and

then unobstructed, downward through the flutings on the outer surface of the pump to the receiving orifice *k:* The indentations may be applied as above described, on the outer surface of the pump; or in the form of the thread of the screw or in any other convenient form: and the metallic casing *c*, *c*, may extend entirely around the pump, or only to cover any required section of it.

This improvement, "the fluted or transverse fluted pump" is believed to differ from all others in use; It preserves a free passage for water to the orifice of the pump, though the step chamber around the pump between the ceiling plank, and outside plank should become entirely choked, or clogged, with swelled grain, or otherwise, so as to render the pump entirely useless except through the fluted entrances herein described which may be so applied as to present a protected surface for water to enter the pump more than a hundred times greater than the ordinary surface of the pump orifice as now used—and to let in water as freely after the pump would otherwise become choked below the ceiling, as before.

The improvement herein described is in its nature permanent, and may be applied to any description of pumps so as not to enlarge their diameter above the ceiling of the vessel, nor at the foot where they enter the timbers.

What I claim as my invention and desire to secure by Letters Patent is—

The application to, and combination with vessels pumps, the indentations and appendages connected therewith as herein described, for the objects and purposes herein set forth, using therefor any description of materials that will effect the object.

RALPH BULKLEY.

Witnesses:
WILLIAM BURNETT,
WALTER R. SMITH.