(No Model.)

D. N. B. COFFIN.

PUMP.

No. 262,208. Patented Aug. 8, 1882.

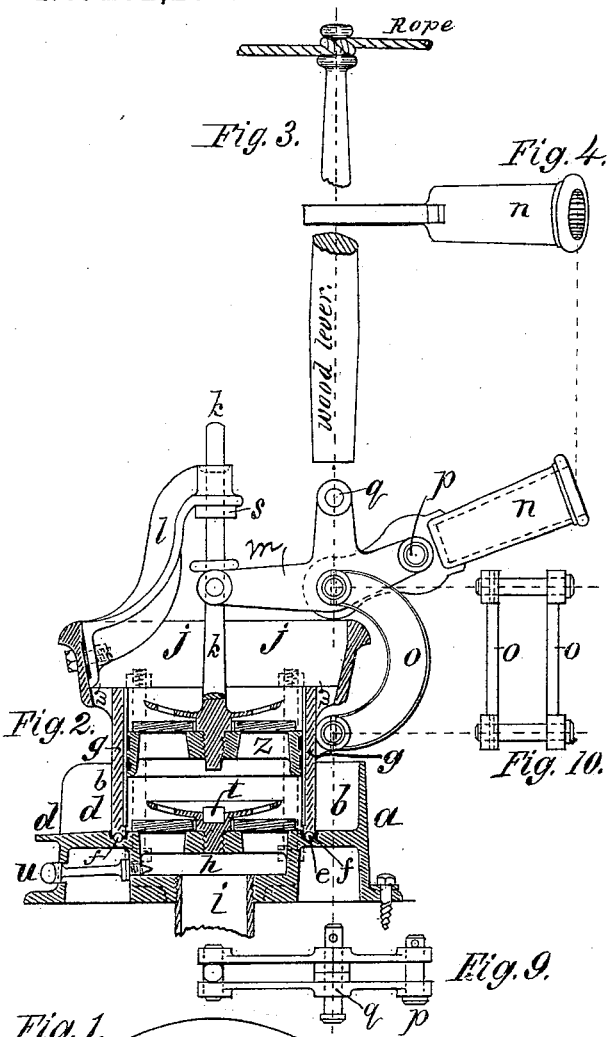

Fig. 3.

Fig. 4.

Fig. 2.

Fig. 10.

Fig. 9.

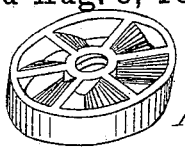

Fig. 11.

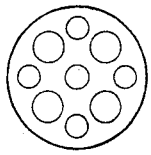

Fig. 5.

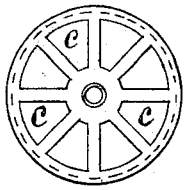

Fig. 6.

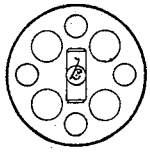

Fig. 7.

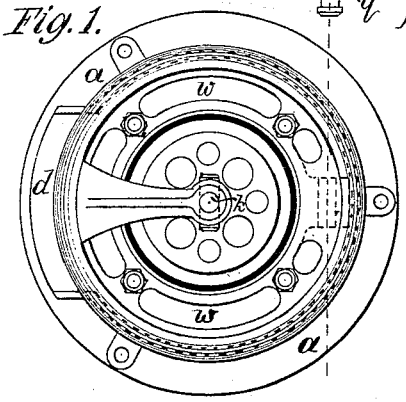

Fig. 1.

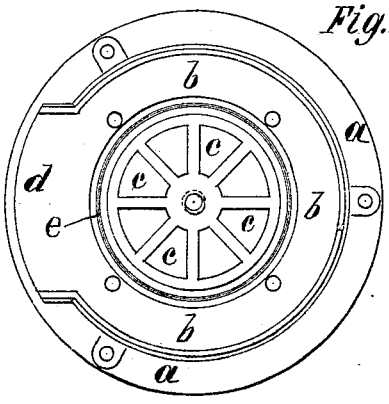

Fig. 8.

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DAVID N. B. COFFIN, OF NEWTON, MASSACHUSETTS.

PUMP.

SPECIFICATION forming part of Letters Patent No. 262,208, dated August 8, 1882.

Application filed December 6, 1881. (No model.)

To all whom it may concern.

Be it known that I, DAVID N. B. COFFIN, of the city of Newton, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Pumps; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

The nature of my invention relates to the various parts and the general construction of a pump to meet requirements especially, but not exclusively, on board of comparatively-shallow vessels, where the water in the bilge and hold requires to be lifted a comparatively-short distance, but in large quantities; where, also, compactness in all its dimensions is a desideratum; where, also, it is sometimes—as on lumber-carrying vessels—desirable to operate the pump when freight is piled high at two or more sides of the pump; where, also, simplicity and cheapness is, if possible, more than ever a requisite.

With reference to the drawings, Figure 1 is a plan of the pump without the levers, lever-socket, and links. Fig. 2 is a sectional elevation, the section cutting centrally through barrel, spout, and openings in the valve-seats, and not through the bars of the seat. Fig. 3 is an elevation showing the wooden lever used in the cast lever-socket. Fig. 4 is a perspective of the lever-socket. Fig. 5 is a plan of the lower valve-guard. Fig. 6 is a plan of the plunger. Fig. 7 is a plan of the plunger rod or stem and upper valve-guard. Fig. 8 is a plan of the base of the pump, showing lower valve-seat, &c. Fig. 9 is a plan of the pump lever or levers, fulcrum-pin, and adjusting-pin. Fig. 10 is an elevation of the fulcrum-links. Fig. 11 is a perspective view of a plunger or valve-seat, provided with obliquely-set bars—like a windmill's fans or a water-wheel's buckets—for the purpose of giving a spiral or circular flow to the water, for the purpose of changing at each stroke the position of the free rubber valve, and so preventing its resting constantly in the same position on the bars of the seat.

Like letters refer to the same or corresponding parts in all the figures.

The base or deck plate is marked *a*, and is constructed with a circular upwardly-projecting rim or flange, between which and the cylinder *g* is formed the water-way *b*, and on the base is formed the spout *d*, to deliver the water. It has also the valve-seat with openings *c*, also the annular packing-seat *e*, to receive the packing *f*, on which is seated the barrel *g*. In the base is formed the water-chamber *h*, under the valve, with which is connected the suction-pipe *i*, either by screwing in, as shown, or by flanging it and bolting, or other suitable means. The barrel is of peculiar construction. To the usual cylindrical part is united the broader reservoir part, *j*, between which and the barrel proper is arranged an annular water-way or annular series of water-ways, *w*, through which the water flows from the top of the barrel and reservoir *j* directly downward around the barrel into the water-way *b* of the base, from which it escapes through the spout *d* into any suitable conductor or upon the deck, as desired. This barrel *g* is seated upon a suitable annular packing in the annular seat *e*, and secured to the base by means of four bolts, so that it can be turned to either of the four angles with the spout, and so deliver in either of the four directions in respect to the lever or brake—*i. e.*, the barrel may be unbolted from the base and turned with reference to it one-fourth, one-half, or three-fourths of a revolution, and bolted to it again at either quarter, according to the direction it is required to place spout *d* with reference to the brake or lever. The lower valve, which, as well as the plunger-valve, is a free annular ring of vulcanized rubber goods or other suitable material, rests upon the valve-seat around the hub, on which the valve-guard rests a little above. The guard is placed just high enough and made just convex enough on its under side to allow the proper volume of water to pass. The guard is securely fixed relatively to the valve-seat, as shown in Fig. 1, and the valve vibrates between it and its seat, as well about the central hub or guide as at its periphery, though not with a movement of equal extent. The valve of the plunger differs only in that the guard is fixed to or about the plunger rod or stem *k*, which extends upward and is kept in proper line by means of a guide, *l*. To the plunger-rod is pivoted the lever or levers *m*, which embrace it on each side, as they also do

the flat part of lever-socket *n*. This lever, or levers, is pivoted to the fulcrum-links *o*, which are pivoted to the barrel *g*. A pin, *p*, adjusts the lever-socket *n* obliquely to the lever *m*, and this is the usual position in which it is used to operate the pump. Another pin-hole (or more, if desired) is provided in the levers *m* at *q*, whereby the lever-socket may be adjusted in an upright or other position when there is not room to use it in the oblique position. The wooden lever is drawn to indicate this upright position, and also with two knobs, or a neck and a rope attached thereto, by means of which two sailors, one at each end of the rope, may operate the pump over two piles of lumber or other freight between which the pump is located. This detachable lever may be of wood or iron, and may be held in the lever-socket by means of a pin or screw.

At *s* is shown a rubber or other cushion, and also at *t*, against which the upward and downward strokes of the plunger are cushioned.

A screw-plug at *u* serves to admit air to let the water out of the valves by the aid of a stroke or two of the lever when necessary to prevent freezing.

The usual materials—iron, brass, &c.—may be used in the construction of parts not otherwise specified.

I claim—

1. The pump cylinder *g*, provided with the overjutting attached reservoir or basin *j* and the annular series of vertical or approximately-vertical delivery-orifices *w*, substantially as shown.

2. The barrel *g*, having the overjutting reservoir *j*, provided with the water-ways *w*, in combination with the base *a*, having the pipe-chamber *h*, the packing-seat *e*, and valve-seat, substantially as shown.

3. The barrel *g*, having the overjutting reservoir *j*, provided with the water-ways *w*, in combination with the base *a*, having the pipe-chamber *h*, the packing-seat *e*, and valve-seat, the water-way *b*, formed by the barrel and base, and the spout *d*, substantially as described.

4. The adjustable lever-socket *n*, in combination with the lever *m* and the plunger *k*, substantially as described.

5. The double knob or necked lever, in combination with the adjustable lever, substantially as described.

6. The combination of the central guide, valve-seat, valve-guard, and annular valve, constructed as described, the valve having free play and space to vibrate between the seat and guard, substantially as described.

7. The valve-seat having the oblique radial bars, in combination with the free annular valve, substantially as shown.

8. The combination of the two links *o*, two levers, *m*, and lever-socket *n*, substantially as described.

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Witnesses:
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