L. Wilson,

Pump Lift.

No. 48,880. Patented July 18, 1865.

Fig. 1.

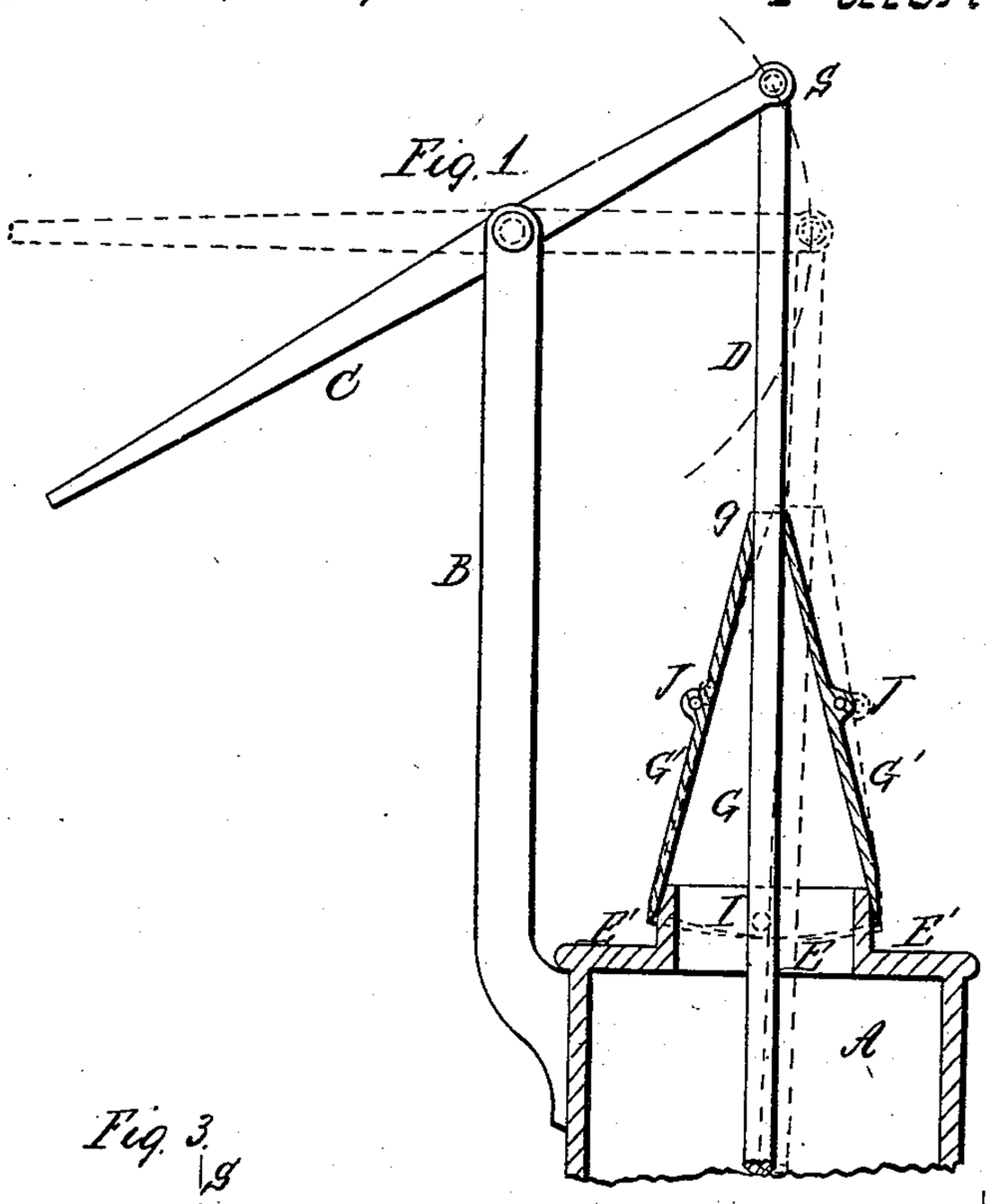


Fig. 2.

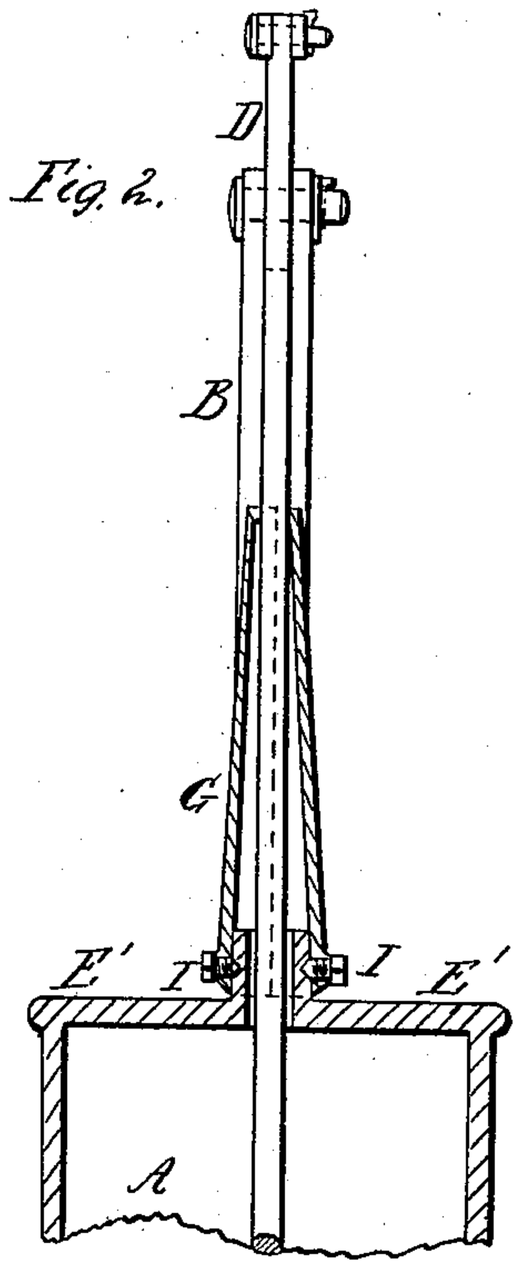


Fig. 3.

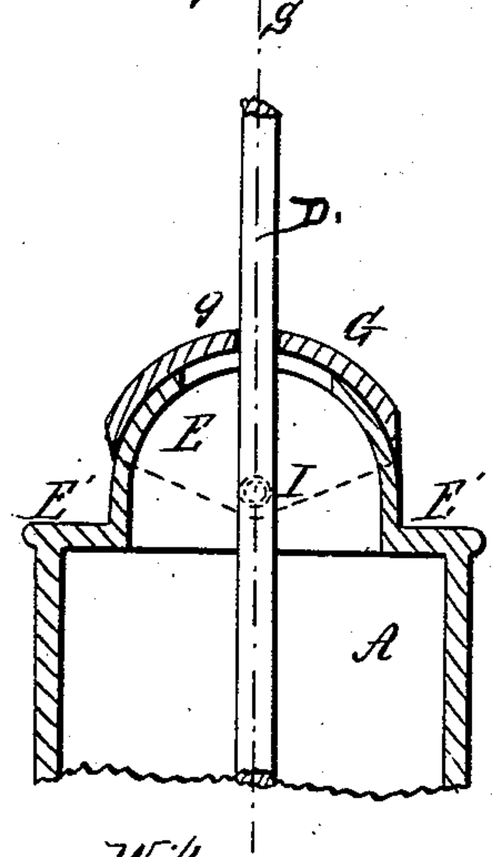


Fig. 4.

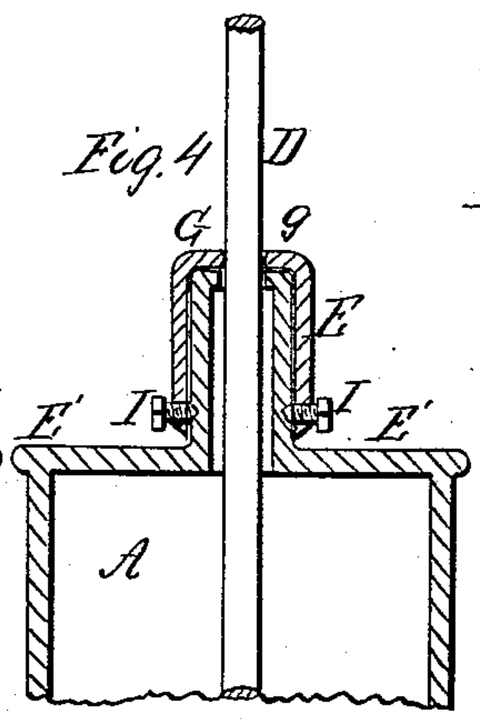


Fig. 5.

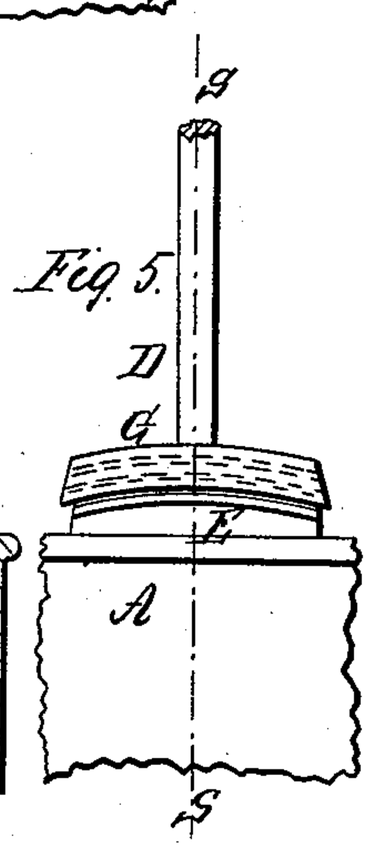
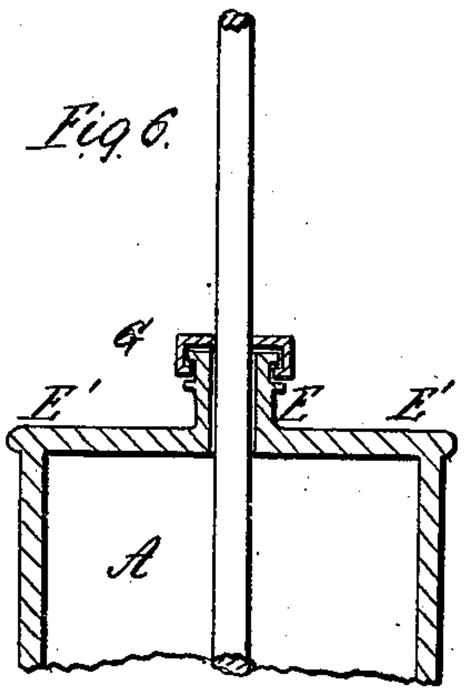


Fig. 6.



Witnesses;
A. B. Calef
H. C. Woodman.

Inventor;
Levi Wilson

UNITED STATES PATENT OFFICE.

LEVI WILSON, OF MIDDLETOWN, CONNECTICUT, ASSIGNOR TO J. NELSON BUELL, OF SAME PLACE.

IMPROVEMENT IN PROTECTORS FOR PUMP AND OTHER OSCILLATING RODS.

Specification forming part of Letters Patent No. **48,880**, dated July 18, 1865; antedated July 14, 1865.

To all whom it may concern:

Be it known that I, LEVI WILSON, of Middletown, in the county of Middlesex and State of Connecticut, have invented certain new and useful Improvements in Protections for Pumps, Center-Boards on Shipboard, &c.; and I do hereby declare that the following is a full and exact description thereof.

My invention is intended more especially for covering the tops of pumps and center-board apparatus on vessels used for transporting coal, sand, or other loose material on their decks. It is based on the invention described in the patent issued to J. Nelson Buell, dated November 15, 1864.

The accompanying drawings form a part of this specification.

Figure 1 is a side elevation, and Fig. 2 a vertical section on the line S S in Fig. 1. The red outlines show the same parts as the black, but in a different position. Figs. 3 and 4 are corresponding views of a modification of my invention. Figs. 5 and 6 are corresponding views of another modification.

Similar letters of reference indicate corresponding parts in all the figures.

The drawings represent the parts in which the novelty is contained, together with so much of the other parts as is necessary to indicate their relation thereto.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation by the aid of the drawings and of the letters of reference marked thereon.

Figs. 1 and 2, A is the body of the pump. B is a fixed support. C is the hand-lever or pump-brake, and D is the pump-rod, which is subjected to an endwise or vertical movement, and also to a vibratory movement, in the ordinary manner, with each reciprocation of the brake C. All these parts, as also the pump-box or bucket, (not represented,) which slides up and down in the body of the pump by the working of the rod D, are of the ordinary construction and are arranged in the ordinary manner.

E is a casing or coaming, open at the top and bottom, and supported on the top of the pump by the horizontal rim E′, which extends outward and is fitted upon the upper end of the pump A. It may be attached by screw-bolts or otherwise, if desired. The space or vertical passage inclosed within the coaming E is long and narrow. Its length is a little greater than the whole horizontal traverse of the rod D, and its width is a little greater than the diameter of said rod. In short, the coaming E incloses the rod D and allows it to play freely up and down and to conform to the circular motion imparted to its upper extremity, but without inclosing any considerable space more than is required for this purpose.

G is a movable top piece fitted over and surrounding the coaming, and projecting farther upward. The upper end of the top piece, G, loosely incloses the rod D. The hole *g* in the upper end of G, through which the rod D passes, is not elongated, like the space inclosed by the coaming E, but corresponds to the cross-section of the rod D.

I I are pivots fixed on the exterior of the coaming E, and projecting horizontally through corresponding holes in the top piece.

The top piece, G, is formed to vibrate or tilt on these pivots with each reciprocation of the brake C. The lower edge of the top piece, G, is sharpened or beveled, as represented, and fits very closely against the exterior of the coaming E. The form of the parts allows the top piece, G, to vibrate freely on the axis I I, to accommodate the lateral motion of the rod D as it plays easily and smoothly through the hole *g*. The sharpening of the lower edge of G allows it to readily cut itself a channel sufficient to allow the vibratory motion, even if coal, sand, manure, loose stone, or other yielding or movable material is lying against it. The edges G′ G′ of the top piece, G, may be sharpened to facilitate the movement of the same into the adjacent material under such circumstances. I can make the top piece, G, in a single casting, or a single piece of boiler-iron, or other suitable material properly bent around and secured; but I prefer to make it in two halves and attach them together by one or more short bolts at the edges G′ G′, as indicated by J J. In such case I can form the

pivots I I by casting them upon the coaming E in the manner which will be obvious.

It will be observed that a rude stuffing-box or other analogous packing may be made to encircle the rod D at the point where it passes through the hole *g;* or such stuffing-box may, if desired, be made with a ball-joint, as also that the holes in the top piece, G, which receive the pivots I I may be bushed or boxed in any approved manner; but I do not consider such usually necessary. My device, as represented and described above, will serve all the purposes ordinarily required of completely protecting the pump from fouling with any kind of deck-load, and the top piece, G, will vibrate and will fulfill all the conditions usually required without involving difficulty.

Figs. 3 and 4 represent a modification of my invention in which the height of the top piece, G, is reduced and the longitudinal extent of the hole through the coaming is increased. The vibration of the top piece, G, is greater in this form of my invention, and for most purposes this would be objectionable; but there may be some instances in which this form is preferable.

Figs. 5 and 6 represent a construction in which the pivots I I are omitted. The top piece, G, in this form of my invention performs as above described, except that it does not turn on the centers I I, but slides laterally in and is guided by grooves and lips catching each other, lips on the inner surface of the top piece, G, fitting into grooves on the outer surface on the coaming E, or the reverse. This construction conforms somewhat to the characteristics of the invention described in the patent of Buell above referred to. It possesses the considerable advantage, however, of diminishing the liability of becoming obstructed by ice forming in the grooves. The inclination given to the lips and grooves in this case and the protection afforded by their arrangement render it almost impossible for water to lie between the rubbing-surfaces. My invention differs from oscillating the entire pump, as described in the patent to S. Davis, issued 1836, in the fact that my pump is stationary, and is constructed and connected in the ordinary cheap, durable, and efficient manner, while Davis' or any other oscillating pump is expensive and requires complex and troublesome connections. My pump is protected under all circumstances, however the vessel may be loaded, while an oscillating pump requires a very great freedom of motion, and is exposed to injury if any part of its great surface is brought in contact with a hard or immovable mass.

I consider the forms represented in Figs. 1 and 2 preferable to any of the others.

One of the marked advantages due to all the forms of my invention comes from the fact that the movable piece G, by being elevated above the deck and caused to cover the entire coaming, without any exposed or longitudinal grooves, protects the moving parts both from clogging by the cargo and from becoming obstructed by ice. The axis I I also greatly aids in insuring ease of motion and trueness of path.

Having now fully described my invention, what I claim as new in the fittings of vessels, and desire to secure by Letters Patent, is as follows:

1. The covering E and top piece, G, so arranged relatively to the reciprocating and vibrating rod D as to allow the top piece to cover and inclose the coaming, and to move thereon to accommodate the lateral motion of the rod, substantially as and for the purposes herein set forth.

2. The central pivots or axis, I, arranged relatively to the coaming, E, top piece, G, and rod D, substantially in the manner and for the purpose herein set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

LEVI WILSON.

Witnesses:
A. B. CALEF,
H. C. WOODMAN.