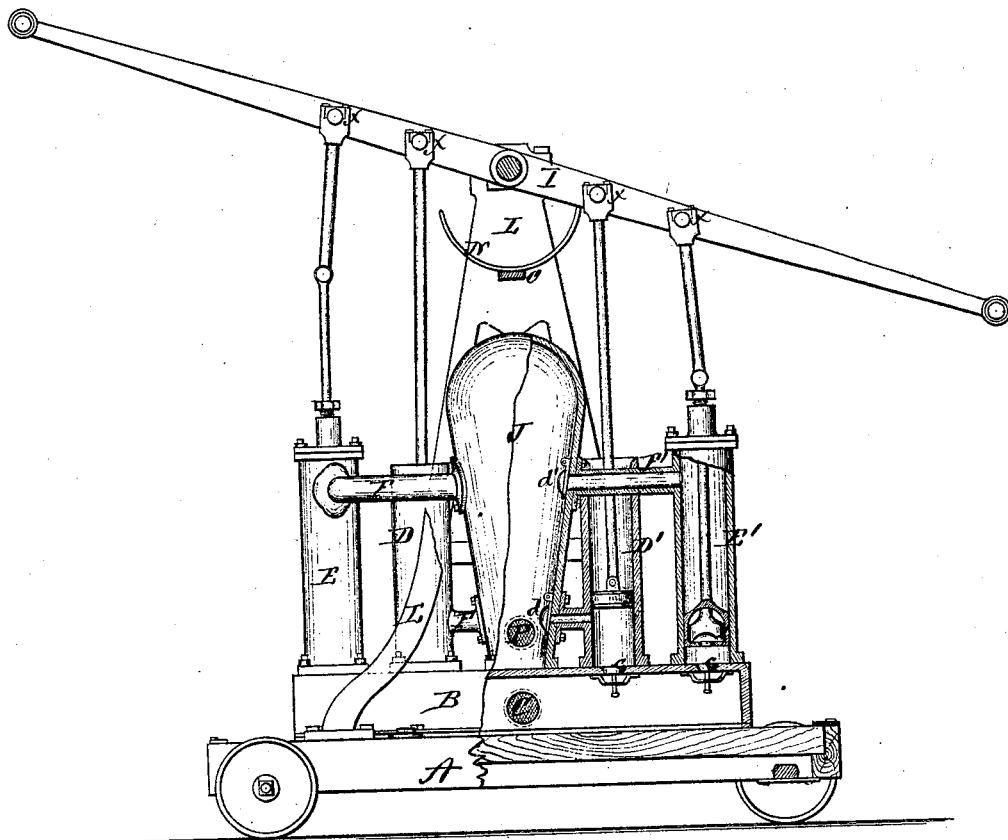


*J. Icard,*

*Pump.*

*No. 109624.*

*Patented Nov. 29. 1870.*



Witnesses:

*Chas Jacobs*

*J. V. White*

Inventor:

*Joseph Icard.*

*Per*

*J. T. Alexander*  
*Att'y.*

# United States Patent Office.

JOSEPH ICARD, OF DONALDSONVILLE, LOUISIANA.

Letters Patent No. 109,624, dated November 29, 1870.

## IMPROVEMENT IN PUMPS.

The Schedule referred to in these Letters Patent and making part of the same.

*To all whom it may concern:*

Be it known that I, JOSEPH ICARD, of city of Donaldsonville, in the parish of Ascension and State of Louisiana, have invented certain new and useful Improvements in Combination Pumps; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon which form a part of this specification.

The nature of my invention consists—

First, in a combination pump composed of two or more forcing, and two or more elevating pumps;

Second, in a combination pump arranged and constructed so that at each single stroke of the working lever, whether up or down, one or more forcing and one or more elevating pumps, at the opposite sides, supply the liquid to the air-chamber; and

Third, in the construction of a safety arrangement, whereby the pistons are prevented from striking the valves and injuring them.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, which represents a side elevation partly in section of my improved combination pump.

My pump is a novel combination of the suction, forcing, and elevating pumps, whereby the power necessary to produce a given effect is saved; a continuous stream of pumped liquid is obtained independently of the usual air-chamber, and a perfect equality of the strain in working up and down the pump-rods is insured.

A is a frame, mounted on wheels, and supporting the platform upon which the whole apparatus is placed.

B is a valve-chest or supply-reservoir, connected by means of a hose to be attached to the orifice C, with the water or other fluid to be pumped.

D D' are forcing; and

E E', elevating pumps, communicating by means of channels F F', with the air-chamber J, and worked by means of the lever I, to which the rod of each pump is pivoted, as shown at x.

This lever I is supported by uprights, L, and as either end of said lever moves downward, it strikes a

segment, N, attached to a cross-bar, O, connecting said uprights, whereby any injury to the valves by the piston of the pump striking them is prevented.

The channels F F' are provided with valves, d d', opening into the air-chamber J, to prevent the return flow of the liquid after the stroke of the pump is finished.

The pumps D D' are provided with solid pistons, while those of the pumps E E' are of the kind known as bucket-pistons, i e, provided with an upward opening valve.

All the pumps have at the bottom the usual inward opening valves e e, communicating with the supply-reservoir B.

P is the opening through which the liquid pumped is conveyed to its destination.

It is obvious that when the lever I is worked up and down, there will be at each stroke, two pumps at the opposite sides of the center of the lever, furnishing the liquid to the air-chamber J, alternatively with the two others.

For use in a sugar factory, for pumping molasses or other liquid, or when only a comparatively small power has to work the pumps, one, two, or more of them may be stopped by disconnecting the same at x, with the lever I, thus leaving only the number of pumps deemed to be necessary; and for draining, extinguishing of fires, or other similar purposes, the pumps previously disconnected may be again attached with the greatest ease.

The platform upon which my apparatus rests may be taken off the wheels and set on the floor &c., if so desired.

Having thus fully described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

A pump, consisting of two or more forcing and two or more lifting pumps, in combination with air-chamber J, and pipes F F', said pipes and pumps being provided with suitable valves, and all arranged as and for the purpose set forth.

In testimony that I claim the foregoing as my own, I affix my signature in presence of two witnesses.

JOS. ICARD.

Witnesses:

E. SURGITT,

A. ROCKE,