

*John T. Hancock's Machine for Drawing and
Carrying Liquids &c.*

No. 121,515.

Patented Dec. 5, 1871.

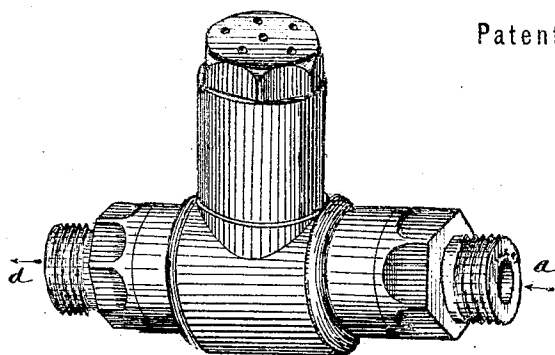


Fig. 1.

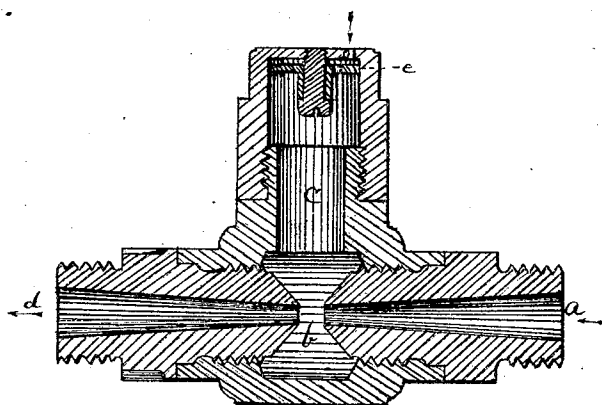


Fig. 2.

Witnesses
H. O. Crane
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UNITED STATES PATENT OFFICE.

JOHN T. HANCOCK, OF WEST ROXBURY, MASSACHUSETTS.

IMPROVEMENT IN EJECTORS FOR FORCING LIQUIDS.

Specification forming part of Letters Patent No. 121,515, dated December 5, 1871.

To all whom it may concern:

Be it known that I, JOHN T. HANCOCK, of West Roxbury, in the Commonwealth of Massachusetts, have invented certain Improvements in the Mechanism for Drawing and Carrying Liquids or Gases from one reservoir or receptacle to another, of which the following is a specification:

The object of my invention is to furnish a simple and cheap mechanism by which to move liquids or gases from one position to another, and to perform those services in connection with steam-generators and engines that have heretofore required injectors and suction and force-pumps, and in so doing to effect a great saving in machinery and steam. Into one end of a chamber, connected by a pipe with a reservoir containing the liquids or gases, I conduct a current or jet of steam from the boiler, and the effect is to draw the liquid or gas from the said reservoir and carry it out through an outlet or conducting-pipe adjusted to said chamber on the end opposite to said steam-pipe. This mechanism will be readily understood by reference to the description of the accompanying drawing.

Figure 1 is an external view of the apparatus. Fig. 2 is a longitudinal section.

a is a tube or pipe in connection with the steam-generator or boiler, and contracted toward the orifice into a jet, through which steam is poured into the chamber *b*. *c* is a pipe opening into said chamber *b*, and extending its other extremity till it connects with the reservoir of liquid or gas to be removed. *d* is an outlet-tube, through which the said liquid or gas is to be conveyed or conducted to its place of destination.

The relative positions and the forms of the different parts of this apparatus should be as follows, viz.: The orifices of the tubes *a* and *d* should be similar in form and area. The tube *d* should gradually enlarge from its orifice outward. The orifices of the tubes *a* and *d* in the chamber *b* should be separated from each other a space, as shown in the drawing. The chamber *b* should be of sufficient capacity to permit the liquid or gas to be removed to have free access to the jet on all sides,

and should have no openings outward save the said tubes *a*, *c*, and *d*, there being no influx of a fluid to be forced or elevated except through the tube *c*. The pipe *c* should be of sufficient capacity to conduct the matter to be moved. The tubes *a* and *d* must be so placed that their axes will be in the same plane—in other words, that the axis of the one being extended will become the axis of the other.

When the duty to be performed requires an apparatus of inconvenient length I use several small instead of one large apparatus. When this apparatus is used to convey air into the cylinder of a steam-engine, or in other places where the flow of steam is periodically arrested, it is necessary to place a check-valve, *e*, in the tube *c*, to prevent the flow of steam at such period through said tube *c*, and to prevent the prejudicial heating of said chamber.

The action of the apparatus is as follows: When steam is permitted to pass through the pipe *a* from the boiler it draws the gaseous or liquid contents of the pipe *c* and of the reservoir with which it is connected from a depth not exceeding thirty feet, more or less, perpendicular, and conveys them through the tube *d* to the point of destination. The distance and height to which said contents may be carried depends in a great measure upon the force of steam employed and the nature of the liquid or gas to be moved.

I claim and desire to secure by Letters Patent—

1. The combination of the conical steam-jet or tube *a* with the tube *d*, when said tube *d* is continuously enlarged from its orifice in the chamber outward.
2. The combination of the chamber *b* with the tubes *a* and *d* and the tube *c* having upon it the valve *e*.
3. The combination of the tubes *a*, *c*, and *d* with the chamber *b*, all constructed in the manner and for the purposes described.

JOHN T. HANCOCK.

Witnesses:

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