J. P. Pirsson,

Steam-Boiler Condenser.

No. 5,977. Patented Dec. 19, 1848.

Fig. 1.

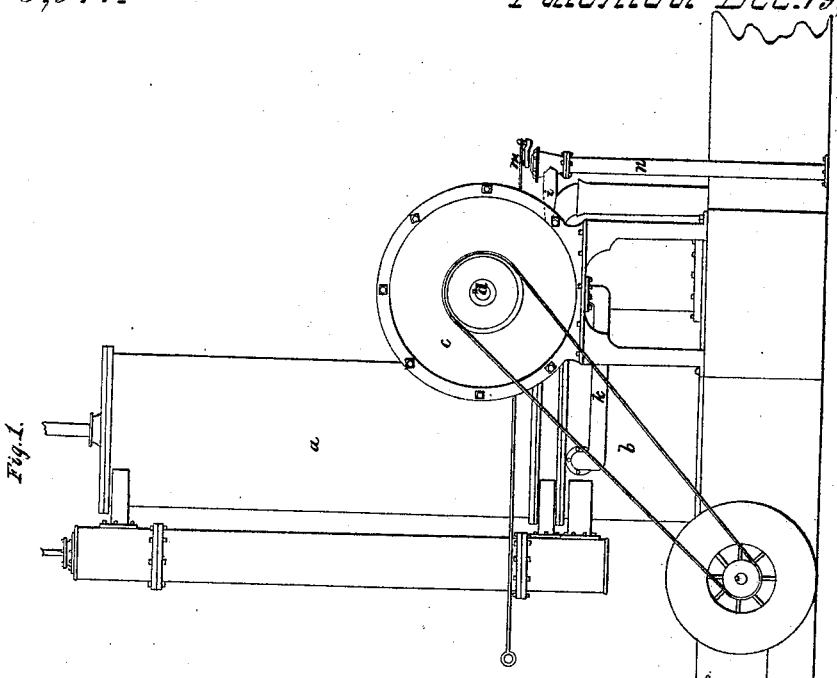
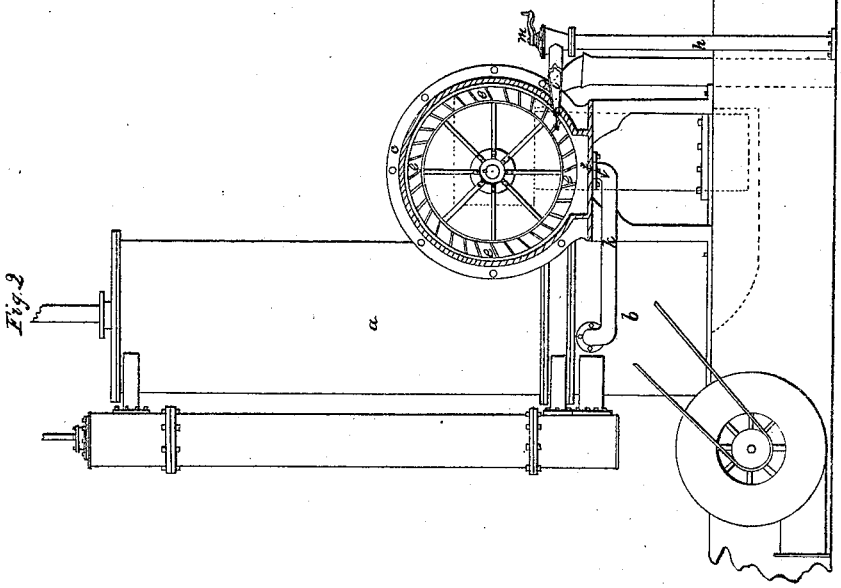


Fig. 2.



UNITED STATES PATENT OFFICE.

JOSEPH P. PIRSSON, OF NEW YORK, N. Y.

METHOD OF EMPLOYING WATER USED FOR CONDENSING STEAM AS A MOTIVE POWER.

Specification of Letters Patent No. 5,977, dated December 19, 1848.

To all whom it may concern:

Be it known that I, JOSEPH P. PIRSSON, of New York, in the county of New York and State of New York, have invented and discovered a new Application and Use of the Condensing Water of a Steam-Engine as a Motive Power; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a longitudinal elevation of the cylinder and condenser of a steam engine, with the injection pipes and wheel case connected Fig. 2 is a longitudinal elevation of the same, showing the wheel case in section.

Similar letters refer to similar parts in all the figures.

The nature of my invention and discovery consists in the application of the water used for condensing the steam of a steam engine, as a motive power, for the purpose of adding to the power of the main engine or for the propulsion of independent machinery as may be desired. By this discovery I am enabled to increase the efficiency of the main engine, to a considerable extent, as will appear from the following; or employ the same usefully as an independent motive power for other machinery.

The power derivable from the injection water of a condensing steam engine, arises from the fact, that it is drawn toward a vacuum and the dynamical effect of such water, results from the vacuum maintained within the condenser; or is equal in power to the continuous discharge of a column of water raised by such vacuum. One method of applying this power usefully I have represented in the annexed drawings, but I do not limit myself, thereto, but shall use any known engine which the force of a current of water, thus generated can be made to act upon.

The illustration represents the force of the water applied to the propulsion of fan blowers, for blowing the fires of the boiler furnaces.

The letter (*a*) represents the usual cylinder of a steam engine and (*b*) the condenser, with the air pump attached, as commonly used; the condenser has also its ordinary supply of injection pipes, cocks, &c.

On a proper base, and in convenient position, which may be adjacent to the condenser, I erect a circular case of metal (*c*) similar in shape to a drum; the case must be air tight, and sufficiently strong to sustain the pressure of the atmosphere. A shaft (*d*) passes through the sides (*c*) of the case, having its bearings in stuffing boxes, or any other contrivance, for keeping the joint perfectly tight. Attached to the shaft (*d*) and within the case, there is a wheel which should be made so as to fit snugly, and yet revolve freely, a series of buckets (*e e e*) are next attached, to its periphery.

The nozzle (*i*) of the injecting pipe enters the side of the case in the best position for directing the water upon the buckets of the wheel. Another pipe (*k*) is attached to the bottom of the case, which latter pipe leads to the condenser (*b*).

In operation, the cock (*m*) is opened; this puts the condenser, at once in communication, and causes the water to pass through the pipe (*n*), and out of the nozzle (*i*), and rush toward the condenser, (the interior of which is in vacuno) being impelled by the pressure of the atmosphere from without, according to the well known laws on that subject. The water in its passage through the nozzle (*i*) impinges upon the buckets (*e e e*) of the wheel with a force due to the pressure of the air. As the wheel revolves the water is disengaged from the buckets of the wheel and drawn through the pipe (*k*) into the condenser (*b*) where it performs its usual office of condensing the steam received from the cylinder. All the other operations being carried on in the ordinary way.

The wheel, (*c c c*) also revolves in a vacuum of the same rarity as that of the condenser, consequently there is but a trifling atmospheric resistance encountered by it in its movements,—its mechanical effect thereby being greatly increased. Upon the shaft (*d*), there is a pulley or gear wheel, by which the power obtained from the injection water may be applied to the propulsion of the desired machinery.

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

1. The employment of the injection water used for condensing the steam of a condensing steam engine, as a motive power.

2. I also claim the peculiar manner herein set forth, in which the force, thus obtained, can be applied to the propulsion of machinery.

JOSEPH P. PIRSSON.

Witnesses:
TALBOT PIRSSON,
WILLIAM BECK.