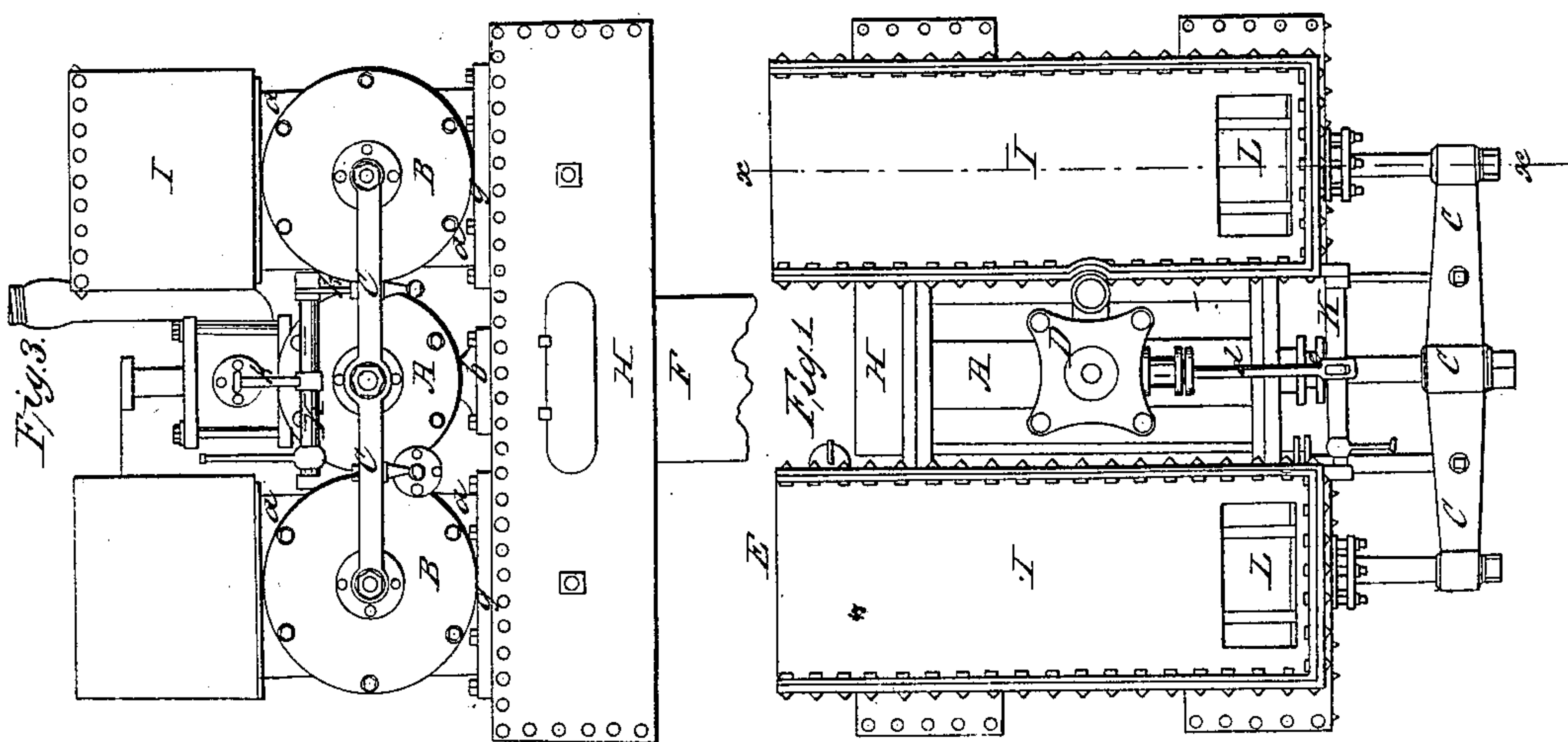
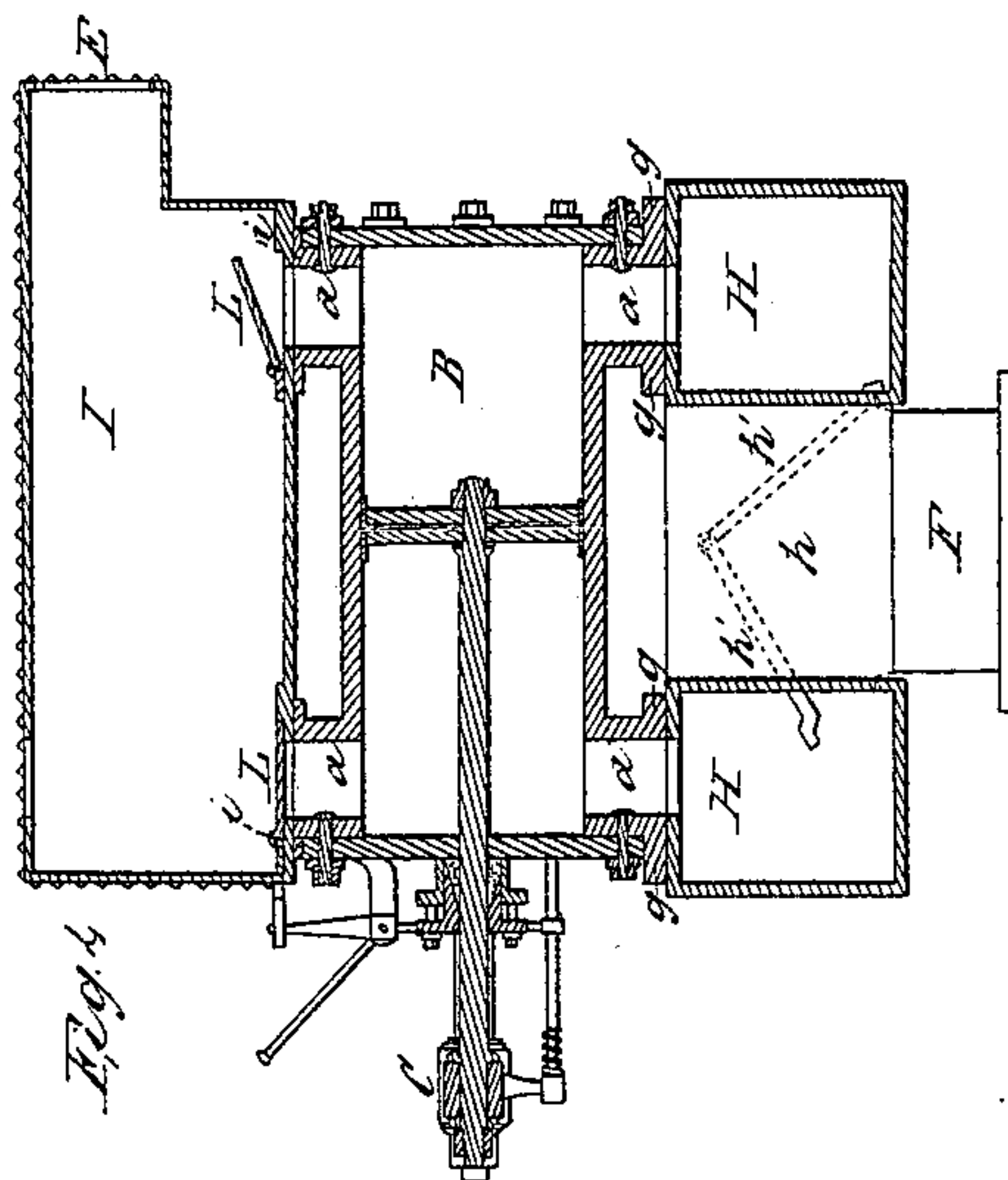
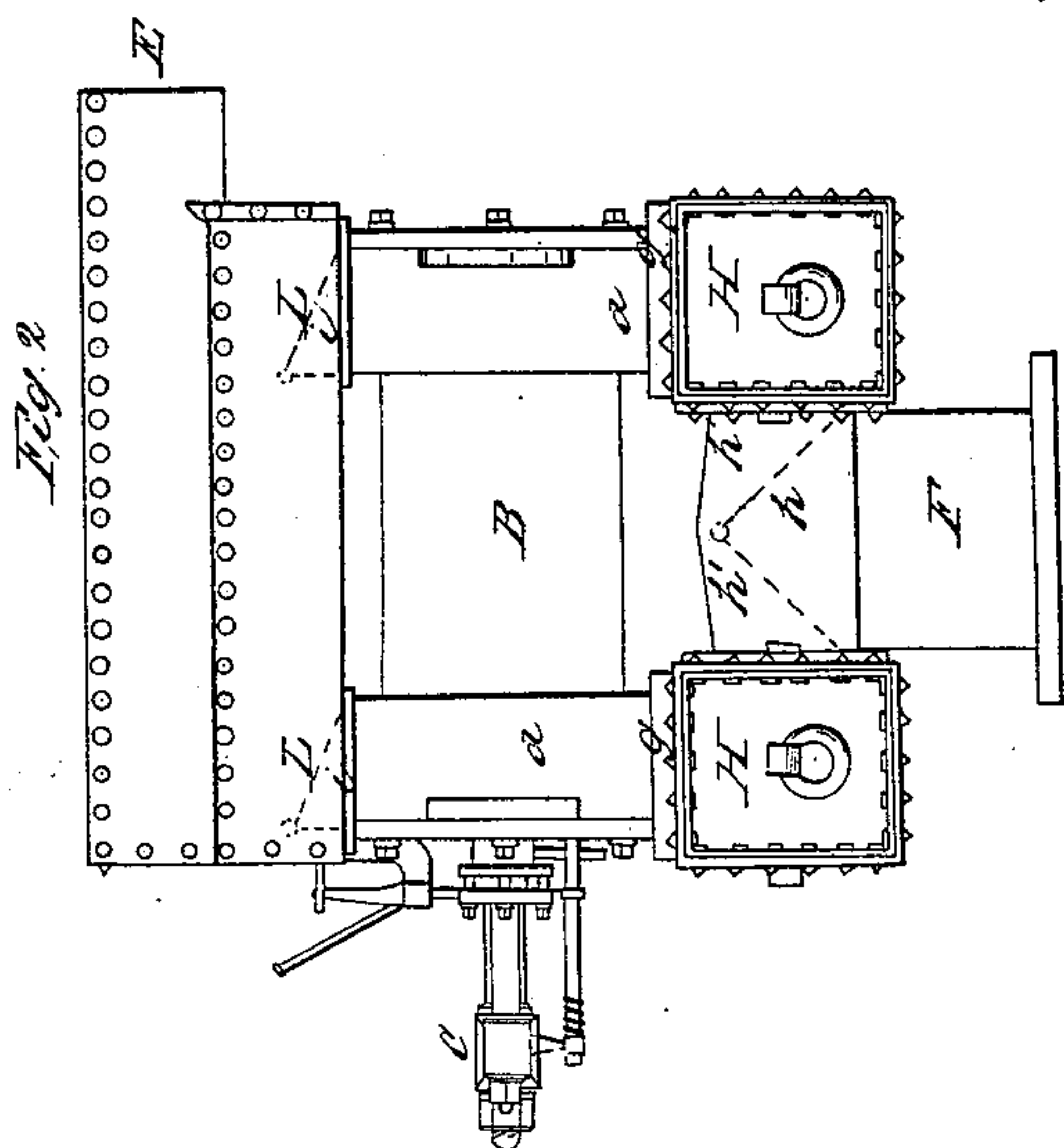


W. Boardman, Jr.,

Steam Pump.

N^o 5,352.

Patented Nov. 6, 1847.



UNITED STATES PATENT OFFICE.

WILLIAM BOARDMAN, JR., OF NEW YORK, N. Y.

PORTABLE STEAM-PUMP.

Specification of Letters Patent No. 5,352, dated November 6, 1847.

To all whom it may concern:

Be it known that I, WILLIAM BOARDMAN, Jr., of the city, county, and State of New York, have invented a new and Improved
5 Portable Steam-Pump for Relieving Stranded Vessels and other Purposes; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings,
10 making a part of this specification.

My portable steam pump is composed of a steam engine cylinder placed between and parallel with two pump cylinders; the piston rods of the steam cylinder and of the
15 two pump cylinders are all connected to the same cross-head; which combination causes the steam engine piston rod to operate the two pump piston rods by direct action, and obviates the necessity of supporting and
20 guiding ways for the respective piston rods. The steam and pump cylinders—thus connected—are placed upon and secured to horizontal hollow supporting beams which constitute the induction water ways of the
25 pump cylinders, with which they have free communication—eduction ways—or chambers—for discharging the water from the pump—are placed over the pump cylinders and connected to the same by valves:—the
30 main induction pipe, for supplying both pump cylinders, descends from between the hollow beams and is connected to each by valves. The above combination, substantially as hereinafter set forth and represented in the accompanying drawings, constitutes my invention; and forms a lighter,
35 more compact, and therefore more portable steam pump than has ever before been known.

40 In the accompanying drawings Figure 1, is a top view of my portable steam pump; Fig. 2, a side elevation, Fig. 3, an elevation of the front end, and Fig. 4, a vertical longitudinal section through the same in the line
45 *x, x*, of Fig. 1.

Similar letters indicate like parts in all the figures.

A, is the cylinder of the steam engine.

B, B, are the pump cylinders.

50 C, is the cross head to which the piston rods of the steam engine, and the pump cylinders are connected. The ends of the steam engine and pump cylinders have their bearings upon the hollow beams H, H, passing transversely under the same, to which
55

they are connected as follows:—Lugs *b*, are cast on the under side of each end of the steam cylinder which rest upon the hollow beams, (H, H,) and are secured to the same by means of bolts passing through the projecting base of the lugs. Water passages
60 *a, a*, are cast opposite each other on the sides of both ends of the pump cylinders, surrounded by the flanches *g, g*, and *i, i*; the flanges *g, g*, surrounding the induction
65 passages, rest upon and are bolted to the tops of the hollow beams (H H,); supporting the pump cylinders, and securing them to the hollow beams; at the same time that the induction passages form a free communication
70 between each end of the pump cylinders and the hollow beams, or induction water ways.

The eduction ways or water chambers I, I, rest upon, and are bolted to the flanches *i, i*,
75 surrounding the eduction water passages leading from the pump cylinders into the eduction chambers.

L, L, are valves, opening upward, placed over the eduction passages between the
80 pump cylinders and eduction chambers or ways I, as shown in Fig. 4.

A valve chamber *h*, is placed between the central portion of the hollow beams or induction water ways H, H, connected to each
85 by the inclined clack valves *h', h'*.

F is the induction pipe descending from the valve chamber *h*, through which water is drawn into the induction water ways and
90 pump cylinders.

In Fig. 4, of the accompanying drawings, the pump pistons are represented as passing to the right, opening the left hand receiving valve *h'*, and drawing the water through the induction pipe F, into the hollow beam
95 at the left and the pump cylinders; at the same time that it closes the left hand eduction valves L, and the right hand induction valve *h'*, and opens the right hand eduction valves L, through which apertures
100 the water in the cylinders, (drawn in during the passage of the pistons to the left,) is discharged into the eduction ways I, and escapes through the discharging apertures E, at the right hand ends of the same.
105

The steam engine—forming a part of my portable steam pump—may be constructed in any manner deemed most expedient by engineers.

Having thus fully described my improved 110

portable steam pump, what I claim therein as my invention and desire to secure by Letters Patent, is—

5 1. The combination of the steam engine with the two pumps substantially as herein set forth: viz., placing the steam engine cylinder between the two pump cylinders, with the piston rods of three cylinders all connected to the same cross-head.

10 2. I also claim the combination of the steam engine and the pump cylinders (connected as above set forth) with the hollow supporting beams, serving as water ways

to the pump cylinders, substantially as herein set forth.

15 3. I also claim the combination of the steam engine and pump cylinders, with the hollow beams or induction water ways (H, H,) and the eduction chambers or water ways (I, I,) the whole constructed, ar- 20 ranged and operating substantially in the manner and for the purpose herein set forth.

WILLIAM BOARDMAN, JR.

Witnesses:

Z. C. ROBBINS,

GUY C. HUMPHRIES.