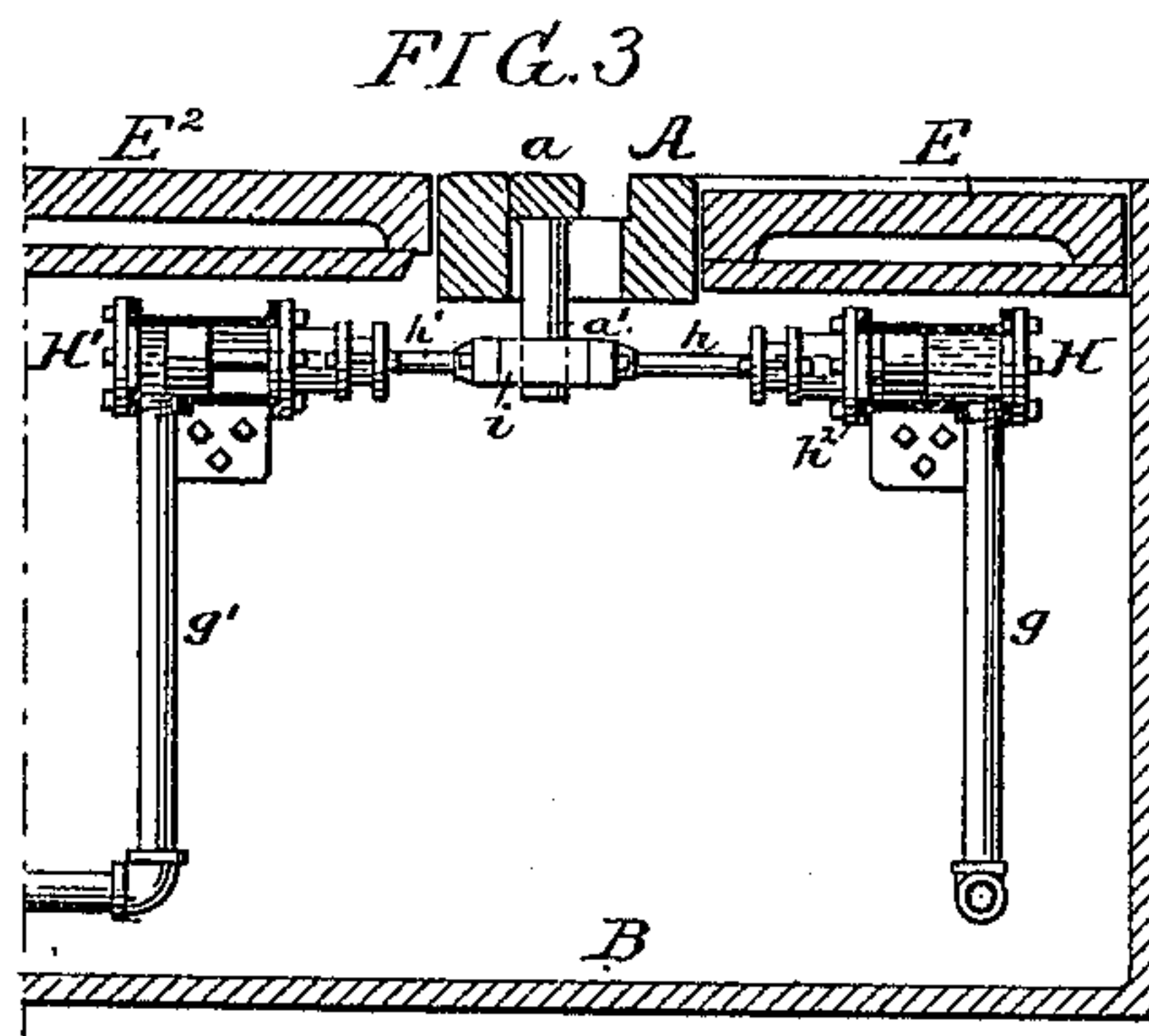
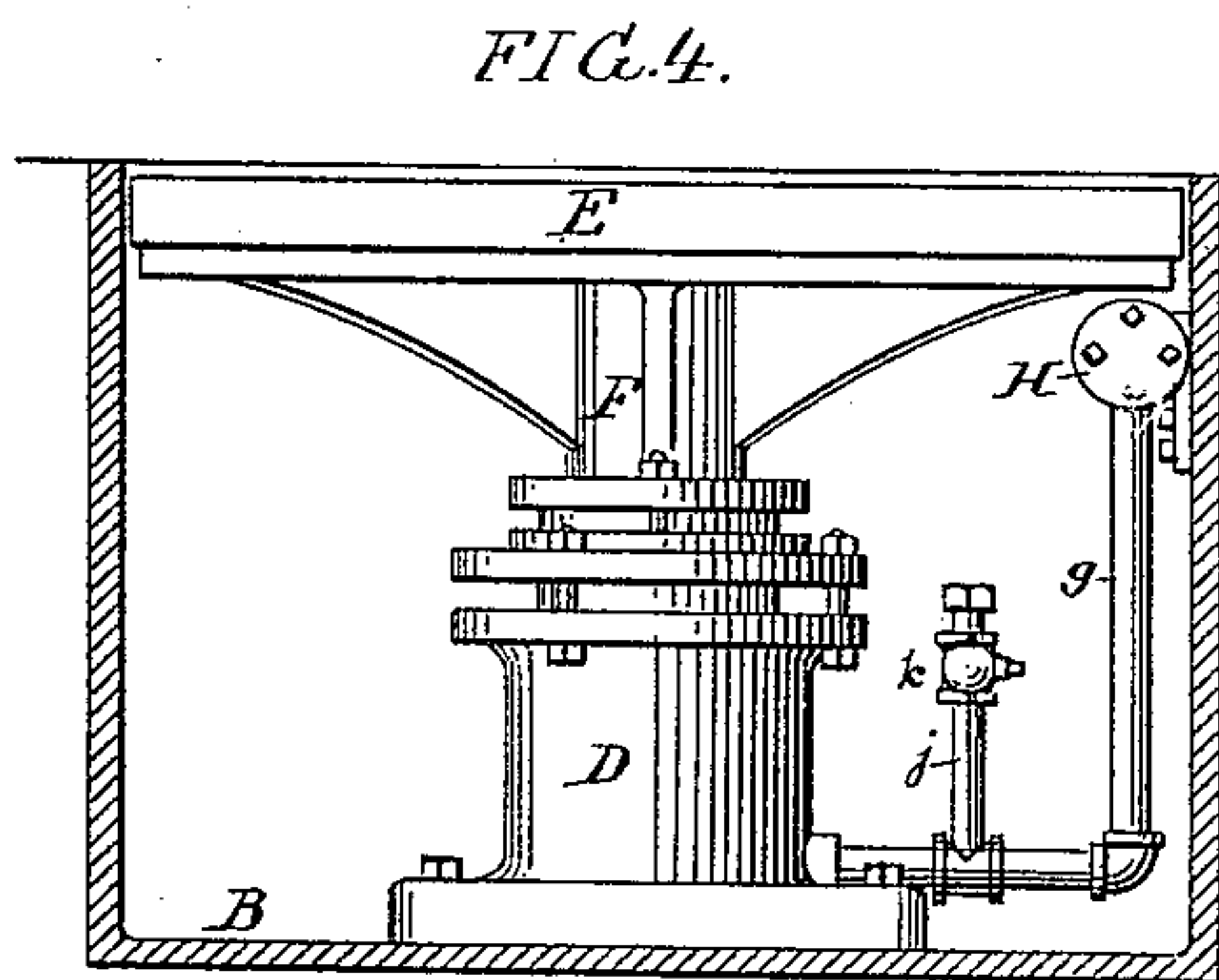
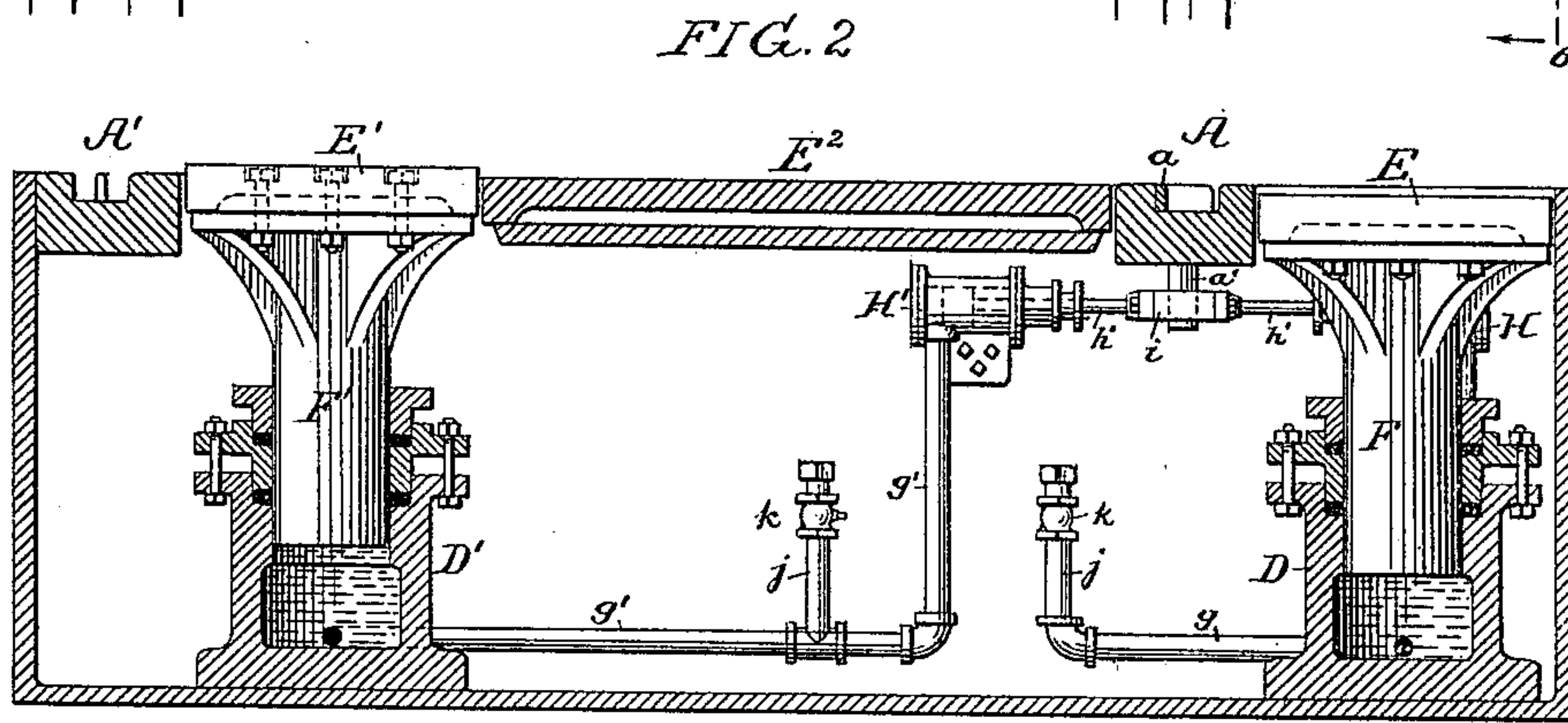
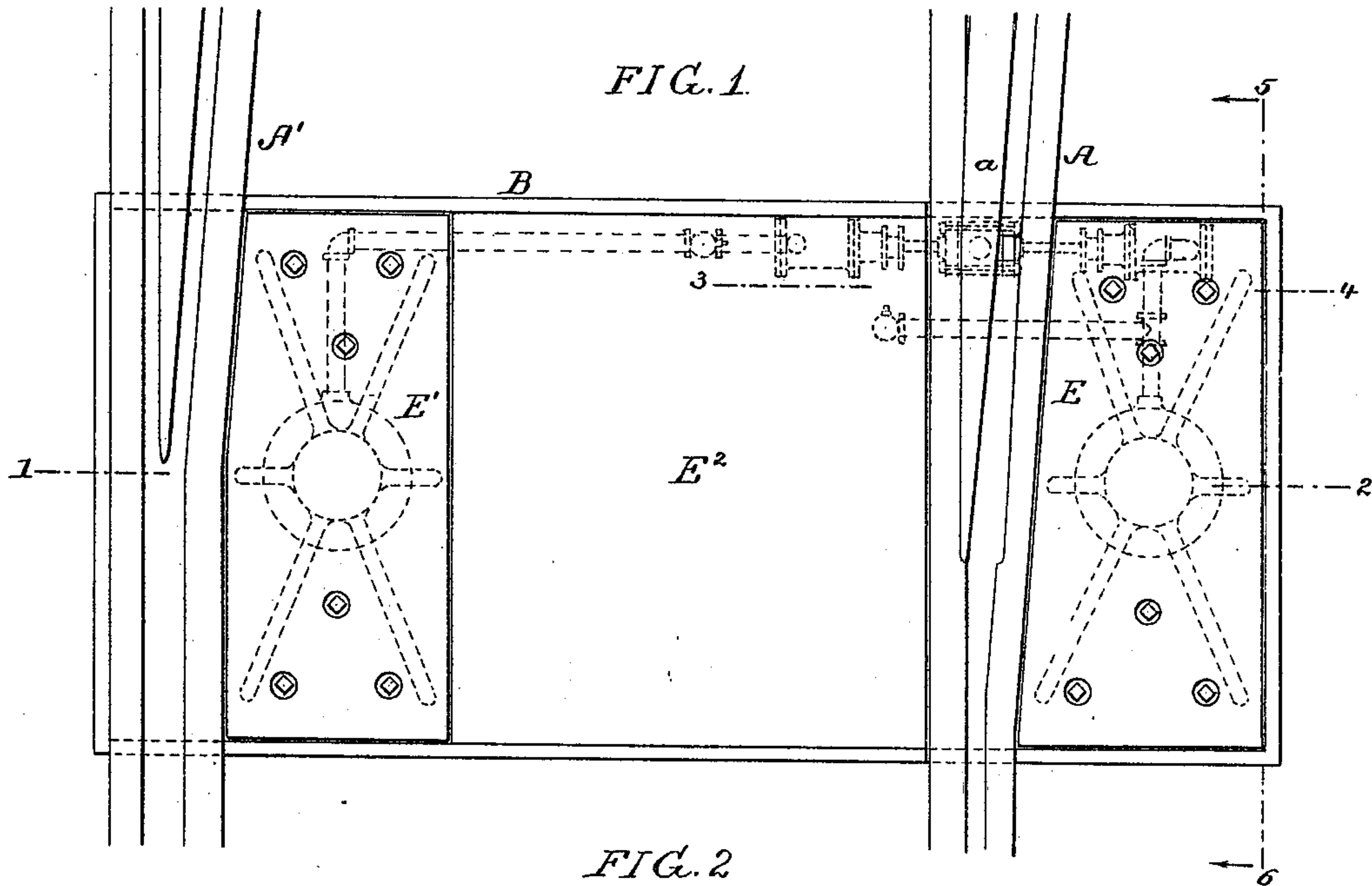


(No Model.)

E. SAMUEL.
RAILWAY SWITCH.

No. 335,484.

Patented Feb. 2, 1886.



Witnesses:
David S. Williams
William F. Davis

Inventor
Edward Samuel
by his Attorneys
Housman & Co.

UNITED STATES PATENT OFFICE.

EDWARD SAMUEL, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
WILLIAM WHARTON, JR., & CO., (LIMITED,) OF SAME PLACE.

RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 335,484, dated February 2, 1886.

Application filed December 19, 1885. Serial No. 186,181. (No model.)

To all whom it may concern:

Be it known that I, EDWARD SAMUEL, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain
5 Improvements in Railway-Switches, of which the following is a specification.

My invention relates to improvements in the construction of that class of street-railway switches which are operated by the weight of
10 the draft-animals attached to the cars as they pass over the movable platforms connected with the movable switch-point; and the object of my invention is to so construct the device as to facilitate the operation of the switch.
15 This object I attain by combining with the switch-tongue and movable plates hydraulic mechanism for transmitting the motion.

In the accompanying drawings, Figure 1 is a plan view of part of the track, showing my
20 improved switch mechanism; Fig. 2, a transverse section on the line 1 2, Fig. 1; Fig. 3, a section on the line 3 4, Fig. 1; and Fig. 4, a section on the line 5 6, Fig. 1.

A A' are the switch-castings connecting the
25 main and side tracks, the casting A' being provided with the pivoted movable tongue *a'*, as shown in Fig. 1.

B is a box, preferably made of cast-iron, to contain the operative parts of the switch.
30 This box is below the level of the road-bed, and is cut out for the reception of the switch-castings.

E E' are two platforms or plates, on which the draft-animals tread as they pass over the
35 switch. Directly under these plates E E' are two hydraulic cylinders, D D', as shown in Fig. 2. The plungers F F' of these cylinders are firmly secured to the plates E E', respectively. The cylinders are provided with the
40 usual double packing-glands, *d d'*.

Projecting downward from the switch-point *a* is a pin, *a'*, which is secured to a block, *i*, connected on opposite sides to the piston-rods
45 H H', of two pistons, *h*², in the small cylinders H H', Fig. 3. These cylinders are secured, in the present instance, to one end of the box B.

The interior of the cylinder D is in communication with the cylinder H by a pipe, *g*, while the cylinder D' is similarly in communication with the cylinder H' by a pipe, *g'*. I fill the
50 cylinder with water, oil, or other fluid, and I provide each pipe *g g'* with a stand-pipe, *j*, having a check-valve, *k*, in order that the apparatus may be refilled at any time by removing the plate E² and connecting the stand-
55 pipes *j* with a suitable pump, the check-valve preventing the liquid from escaping. When the plate E, for instance, is depressed by a draft-animal of an advancing car stepping
60 upon it, under the guidance of the driver, the plunger F is also depressed, as shown in Fig. 2, thereby causing a displacement of the fluid from the cylinder D into the cylinder H, and a corresponding movement of the pistons in
65 the cylinders H H', accompanied by a displacement of the fluid from the cylinder H' into the cylinder D'. If the plate E' is depressed, the switch-point *a* will be moved in the opposite direction and raising the plate E.

I claim as my invention—

1. The combination of the movable point of
70 a railroad-switch, with plates E E' and intermediate hydraulic mechanism, substantially as set forth.

2. The combination of the movable point of
75 a railroad-switch with plates E E', carrying plungers F F', the hydraulic cylinders D D', and the cylinders H H', having pistons connected together and to the switch-point, substantially as specified. 80

3. The combination of the movable point with the cylinders H H', carrying pistons and piston-rods, and the block *i*, attached to both piston-rods and connected to the switch-point,
85 substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWD. SAMUEL.

Witnesses:

WILLIAM SELFRIDGE,
J. MCK. BARRON.