

No. 686,098.

Patented Nov. 5, 1901.

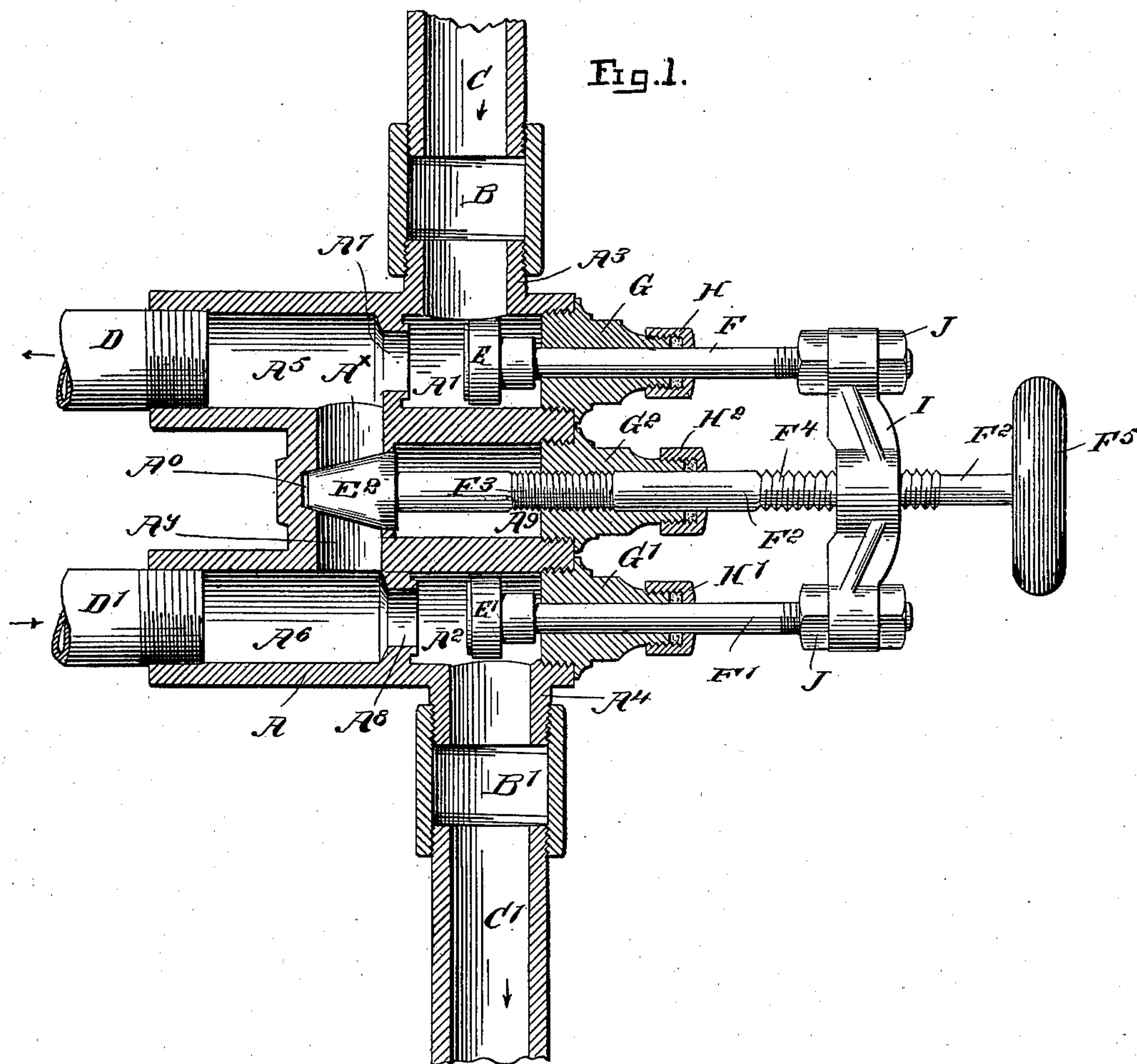
T. S. MARTIN.

VALVE:

(Application filed Feb. 12, 1901.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES :

James F. Duhamel
John Lotka

INVENTOR

Timothy S. Martin

BY

ATTORNEYS

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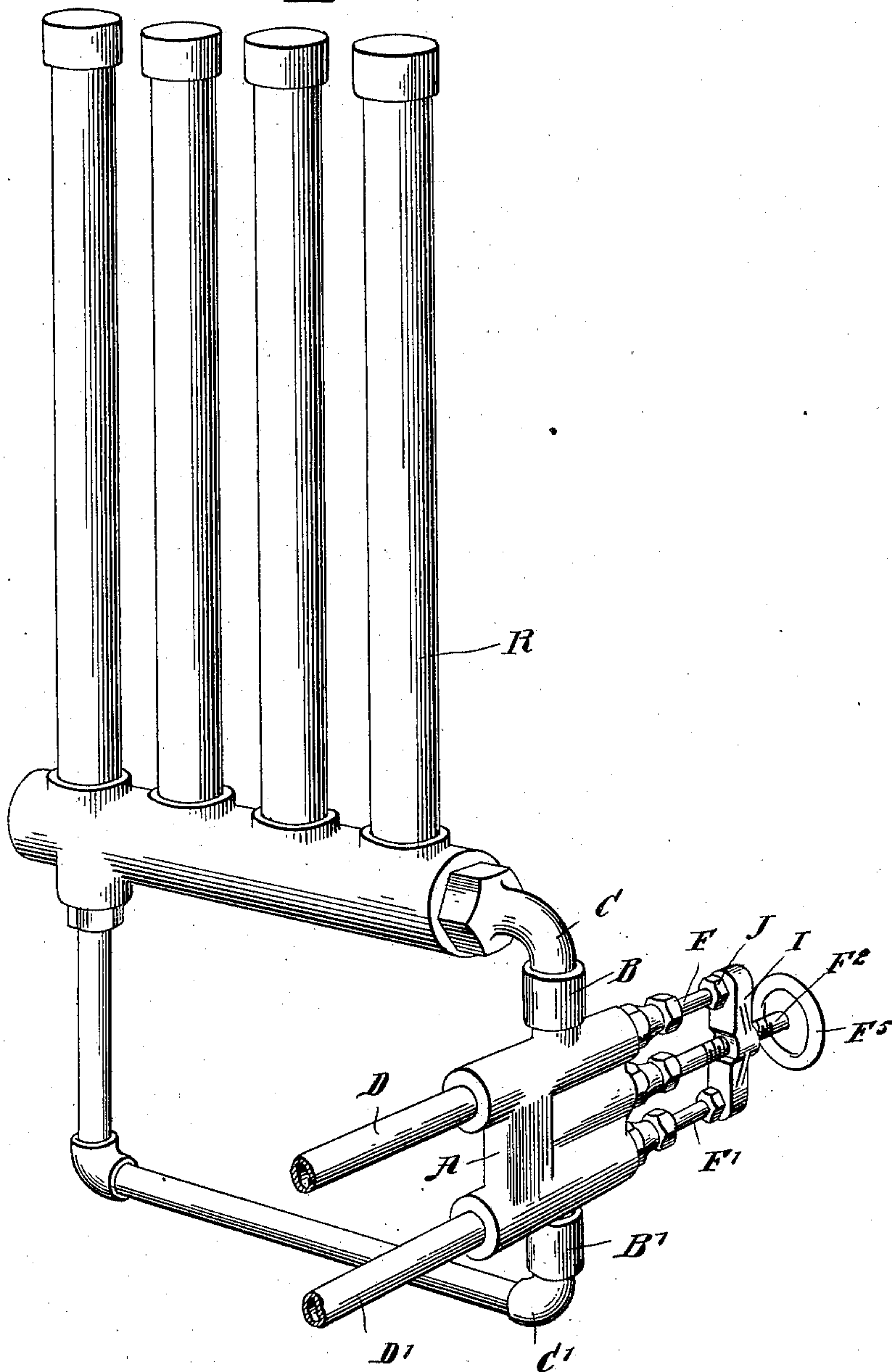
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Fig. 2.



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UNITED STATES PATENT OFFICE.

TIMOTHY S. MARTIN, OF BUTTE, MONTANA.

VALVE.

SPECIFICATION forming part of Letters Patent No. 686,098, dated November 5, 1901.

Application filed February 12, 1901. Serial No. 47,011. (No model.)

To all whom it may concern:

Be it known that I, TIMOTHY S. MARTIN, a citizen of the United States, and a resident of Butte, in the county of Silverbow and State of Montana, have invented a new and Improved Valve, of which the following is a full, clear, and exact description.

My invention relates to valves controlling several passages at the same time—as, for instance, in radiators.

The object of my invention is to provide an improved valve of this class which will be readily adjusted, which will be positive in its movement, and in which the fluid-passage will be but little obstructed.

The invention will be fully described hereinafter and the feature of novelty pointed out in the appended claims.

Reference is to be had to the accompanying drawings, in which—

Figure 1 is a central sectional elevation of my improved valve. Fig. 2 shows the said valve in connection with a radiator.

The casing A has two chambers A' A², from which project nipples A³ A⁴ for the reception of unions B B', connecting with pipes C C' in permanent communication with the radiator R, as shown in Fig. 2. The casing, further, has chambers A⁵ A⁶, communicating with steam-pipes D D', connected with the boiler, one pipe supplying steam, while the other is the return-pipe. Between the chambers A' and A⁵ is located a valve-seat A⁷, and between the chambers A² and A⁶ is arranged a valve-seat A⁸. On these seats are adapted to rest valves E E', respectively, opening toward the radiator and having stems F F' passing through heads G G' and stuffing-boxes H H'. Each stem is rigidly yet adjustably connected with a cross-bar I—for instance, by means of nuts J engaging said cross-bar on both sides and screwing on the stems F F'. It will be understood that the stems pass through the cross-bar loosely and that each valve E E' may be adjusted separately, so that in case it should be necessary to regrind one of the valves or its seat the other valve may be left undisturbed.

The casing A has, further, a central chamber A⁹, having a valve-seat A⁰, to which lead channels A^x A^y from the chambers A⁵ A⁶, re-

spectively. The said seat is adapted for engagement by a valve E², having a stem F² passing through a head G² and a stuffing-box H². The stems F F' simply slide in the corresponding heads G G'; but the stem F² screws into the head G², the threaded portion being indicated at F³. The stem F² has another screw portion F⁴, threaded in the opposite direction and of greater pitch, said portion F⁴ in practice having a pitch double that of the portion F³. This screw portion F⁴ engages the correspondingly-threaded central bore of the cross-bar I. The outer end of the stem F² carries an operating-wheel F⁵.

The drawings show the central valve E² closed and the other valves E E' open, so that steam may pass from the boiler to the radiator and back to the boiler, as indicated by the arrows. If now the wheel F⁵ is turned so as to cause the stem F² to screw outward in its head G², the valve E² will be lifted off the seat A⁰, opening a direct communication from the steam-inlet pipe D' to the steam-outlet pipe D through chamber A⁶, channel A^y, valve-seat A⁰, chamber A⁹, channel A^x, and chamber A⁵. As the stem F² moves outward it carries the cross-bar I with it. If the pitch of the two opposite screw-threads F³ F⁴ were the same, the inward movement given to the cross-bar I by the rotating stem would exactly equal the outward movement given to it in consequence of the bodily outward movement of the stem, and as a result the cross-bar I would remain stationary. In order to obtain an inward movement of the cross-bar and of the valves E E', connected therewith, the pitch of the screw-thread F⁴ has therefore been made greater than that of the screw-thread F³ and preferably just double, so that the resulting inward movement of the valves E E' will be equal in extent to the outward movement of the valve E². Notwithstanding its longitudinal motion the stem F² always has a solid bearing or purchase on the thread of the head G², so that the movement of the valves is positive. As before stated, each of the valves E E' can be adjusted independently, thereby facilitating repairs. It will be understood that when the central valve E² is opened the other valves are closed, and vice versa.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of the casing having
5 four ports arranged in pairs, a valve controlling the connection between the ports of one pair, another valve controlling the connection
10 between the ports of the other pair, a connecting member for said valves, whereby they are compelled to move in unison, a third valve
controlling the connection between a port of
one pair and a port of the other pair, said
15 valve having a stem screwing into a stationary part and into the said connecting member, the two screw-threads being of opposite
direction and of different pitch.

2. The combination of the casing having
four ports arranged in pairs, a valve controlling the connection between the ports of one

pair, another valve controlling the connection 20
between the ports of the other pair, a connecting member for said valves, whereby they are compelled to move in unison, a third valve
controlling the connection between a port of
one pair and a port of the other pair, said 25
valve having a stem screwing into a stationary part and into the said connecting member, the two screw-threads being of opposite
direction, and the screw-thread at the connecting member being about twice the pitch 30
of the screw-thread at the stationary part.

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

TIMOTHY S. MARTIN.

Witnesses:

JAMES W. FORBIS,
J. A. POORE.