

No. 622,787.

G. P. THARP & V. A. PARK.

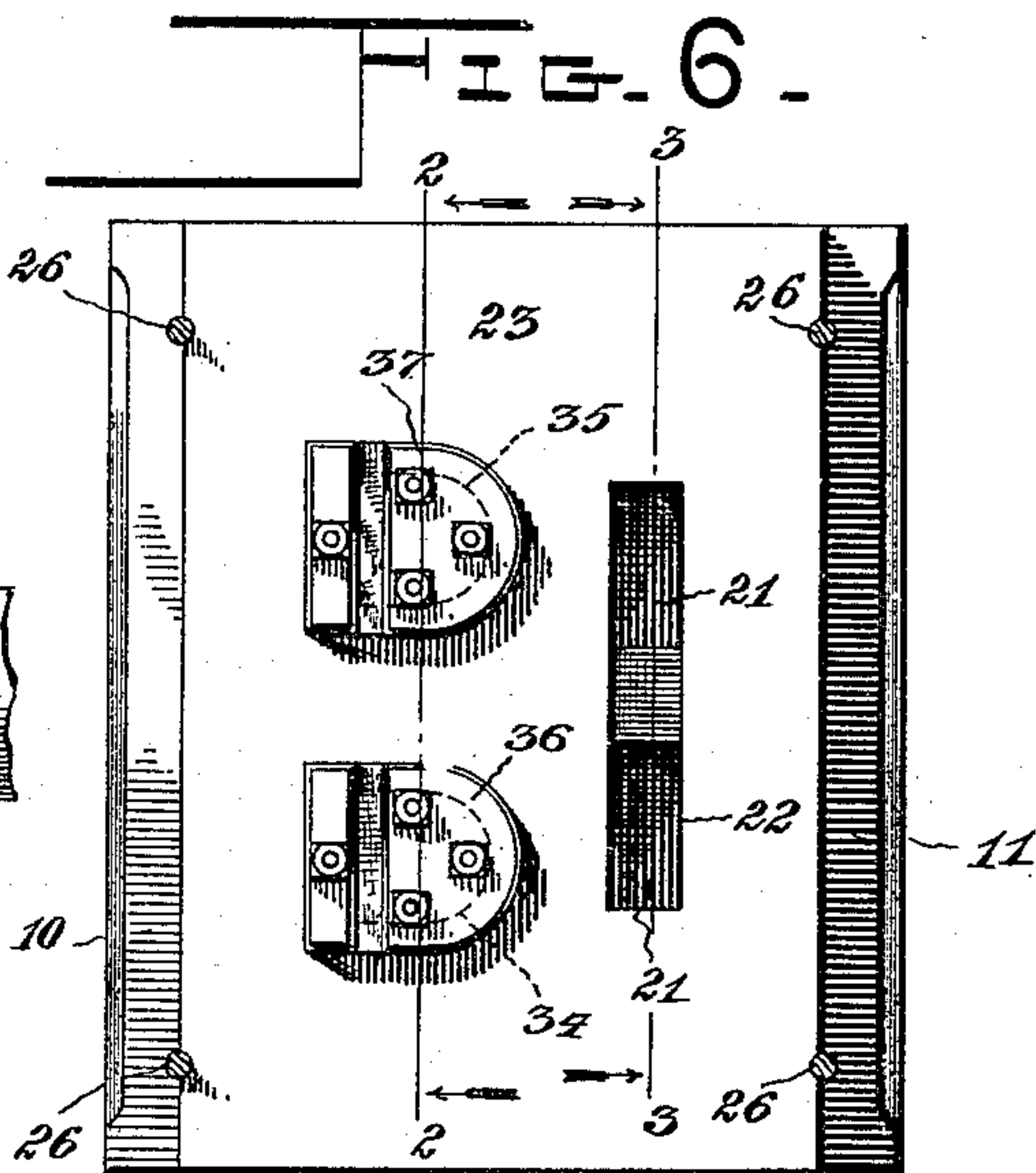
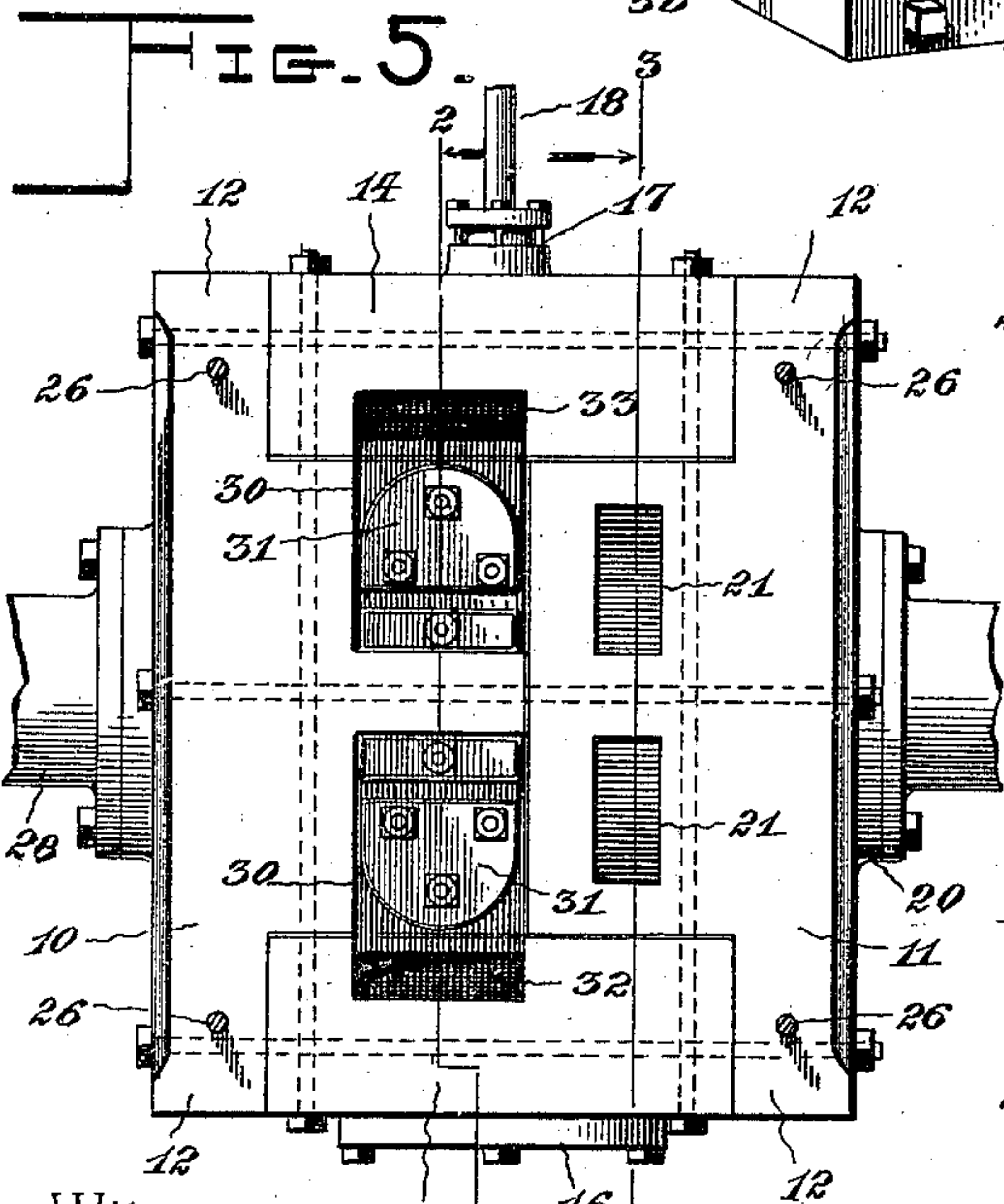
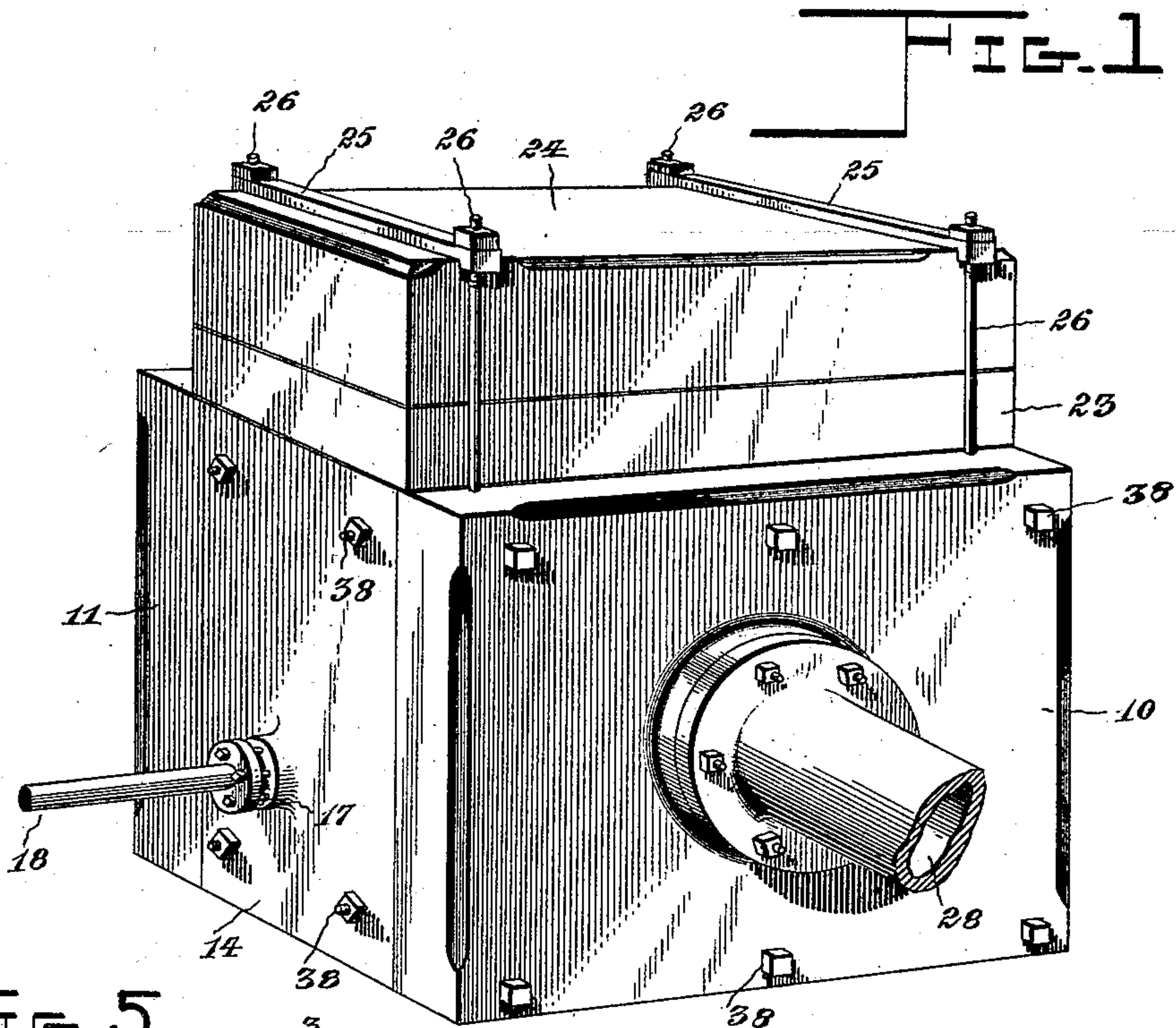
Patented Apr. 11, 1899.

PUMP.

(Application filed Jan. 30, 1899.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses

John F. Deuffermel
O. L. Boyle

By their Attorneys,

George P. Tharp,
Vernon A. Park,

Inventors

Cashnow & Co.

No. 622,787.

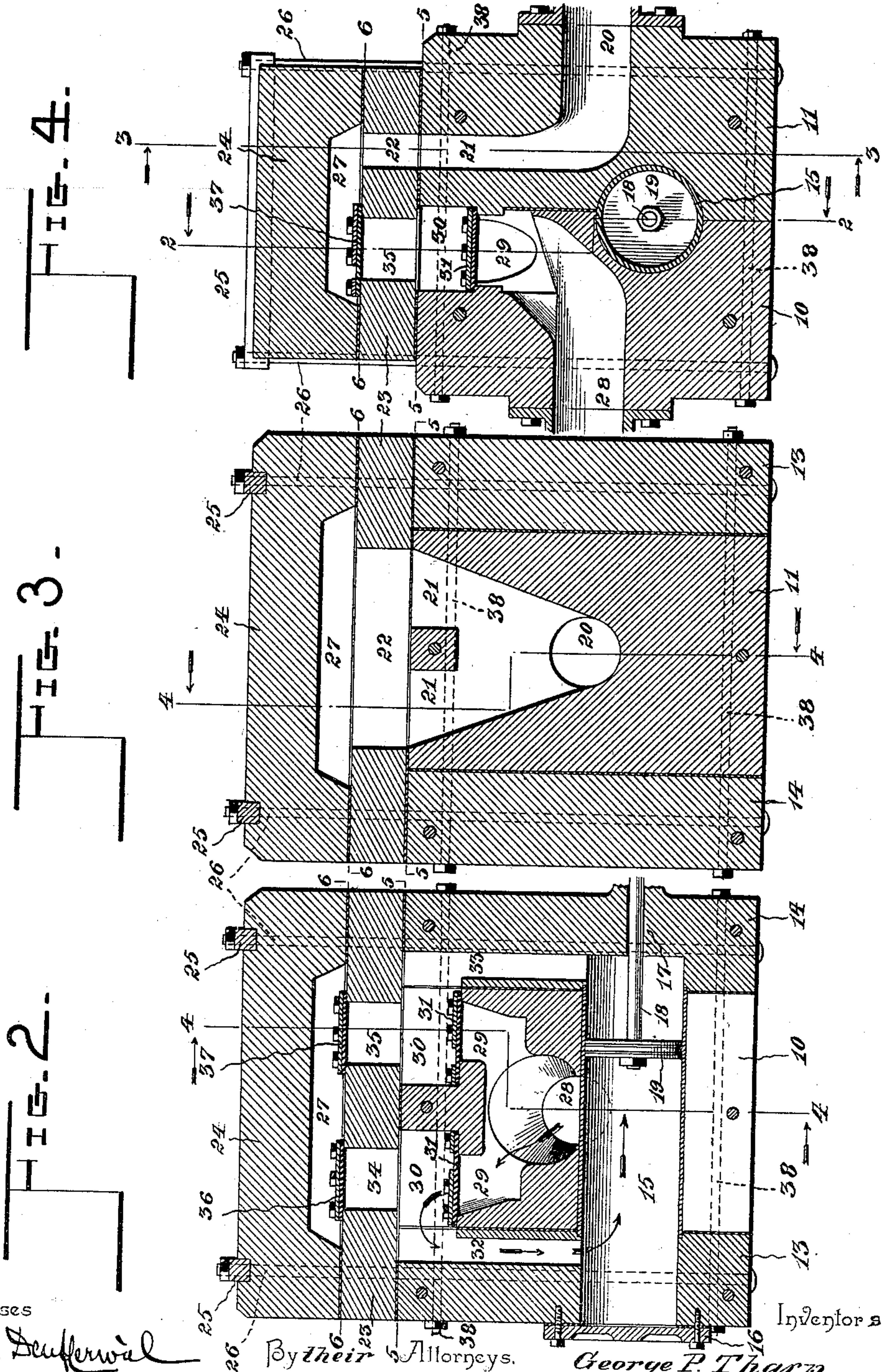
G. P. THARP & V. A. PARK.
PUMP.

Patented Apr. 11, 1899.

(Application filed Jan. 30, 1899.)

(No Model.)

2 Sheets—Sheet 2.



Witnesses
John F. Deufferwal
[Signature]

By their Attorneys.

George P. Tharp,
Vernon A. Park,

Charles H. Snow & Co.

UNITED STATES PATENT OFFICE.

GEORGE P. THARP AND VERNON A. PARK, OF RENDVILLE, OHIO.

PUMP.

SPECIFICATION forming part of Letters Patent No. 622,787, dated April 11, 1899.

Application filed January 30, 1899. Serial No. 703,863. (No model.)

To all whom it may concern:

Be it known that we, GEORGE P. THARP and VERNON A. PARK, citizens of the United States, residing at Rendville, in the county of Perry and State of Ohio, have invented a new and useful Pump, of which the following is a specification.

Our invention relates to pumps, and has for its object to provide a simple, compact, and efficient device having an arrangement of valved ports and channels designed to insure an efficient double action of the mechanism to produce an approximately continuous flow of liquid, the interior passages being readily accessible to facilitate the adjustment and repair of the valves and cleansing of the ports.

Further objects and advantages of this invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings, Figure 1 is a perspective view of a pump constructed in accordance with our invention. Fig. 2 is a longitudinal section of the same, taken in the plane of the inlet and discharge valves. Fig. 3 is a longitudinal section taken in the plane of the outlet-channels. Fig. 4 is a transverse section on the plane indicated by the line 4 4 of Figs. 2 and 3. Fig. 5 is a horizontal section taken in the plane indicated by the line 5 5 of Figs. 2, 3, and 4 to show the inlet-valves in plan. Fig. 6 is a horizontal section taken in the plane indicated by the line 6 6 of Figs. 2, 3, and 4 to show the exhaust-valves in plan.

Similar reference characters indicate corresponding parts in all the figures of the drawings.

The body portion of the pump-casing comprises side members 10 and 11, having terminal flanges 12, between which are inserted end members or blocks 13 and 14, said members being bored longitudinally to form a cylinder 15, closed at one end by a removable head 16 and provided at the other end with a guide-opening 17 for the rod or stem 18 of a piston 19. Formed in the side member 11 is an outlet-port 20, in communication with which are formed upwardly-divergent outlet-channels 21, communicating with the port 22 in a block 23, which is coextensive with the body portion

of the casing and is interposed between said body portion and a covering-block 24, said covering-block being spanned by transverse bars 25, terminally engaged by bolts 26, extending upward from the body portion of the casing and fitted with nuts, whereby the cap and intermediate block are secured to the body portion of the casing. The inner or under side of the cap-block 24 is recessed, as shown at 27, to communicate with the port 22. Also formed in the side member 10 is an inlet-port 28, which is in communication with upwardly-divergent passages 29, formed in said side member 10 and in turn communicating at their upper ends with inlet-valve chambers 30, in which are arranged the inlet-valves 31, which may be of the clack or other analogous variety. Communicating, respectively, with the inlet-valve chambers are cylinder-feed channels 32 and 33, which are formed in the end members 13 and 14 of the pump-casing and extend, respectively, to the ends of the cylinder, whereby when the cylinder-piston is moving in the direction indicated by the arrow in Fig. 2 liquid is drawn into the casing through the inlet-port 28, passes upward through one of the channels 29, unseats the controlling-valve 31, enters the inlet-valve chamber 30, and thence passes downward through the cylinder-feed channel 32 to supply the cylinder in rear of the piston. Also formed in the intermediate block 23 are ports 34 and 35, respectively, fitted with clack or equivalent valves 36 and 37, and hence upon the return movement of the piston in a direction opposite to that indicated by said arrow in Fig. 2 the liquid which has previously been drawn into the cylinder, as above indicated, is forced upward through the said cylinder-feed channel 32 into the inlet-valve channel 30 to unseat the valve 36, thence passes into the recess 27 in the inner surface of the covering-block, and downward through the port 22 and channels 21 into the outlet-port 20. Obviously during said reversing movement of the piston liquid is being inducted through the inlet-port 28, passes upward through the other channel 29 into the communicating valve-chamber 30, thereby unseating the valve 31, and thence downward through the cylinder-feed channel 33, while a repetition of the initial movement of the

piston in the direction of the arrow in Fig. 2 reverses the direction of movement of the liquid by causing it to ascend through the channel 33 into the communicating inlet-valve chamber 30, then unseats the exhaust-valve 37, passes into the recess 27, and escapes downward through the port 22 and channels 21 to the outlet.

The members 10, 11, 13, and 14, constituting the body portion of the casing, are secured in operative relation by lag-screws or bolts 38, and it is obvious that after removing the covering and intermediate blocks 24 and 23 said members may be disconnected by loosening said lag-screws should it be necessary to gain access to the inner channels or passages of the casing.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

Having described our invention, what we claim is—

1. A pump-casing having a body portion composed of separate side and end members, one of the side members having an inlet-port and communicating valved channels, the other side member having an outlet-port and communicating channels, and the end members having passages connecting the channels of the first-named side member with a cylinder, valved passages connecting said passages of the end members with the channels of the other side member, and means for securing said members in operative relation, substantially as specified.

2. A pump having its casing composed of terminally-interlocked side and end members, a covering-block, and an intermediate block interposed between the covering-block and said members, a cylinder formed longitudinally in the members, one of the side members having an inlet-port and communicating valved channels, the end members having passages connecting said channels with opposite ends of the cylinder, the other side member having an outlet-port and communicating channels, the covering-block being provided in its inner side with a recess, and the intermediate block being provided with

valved ports connecting the passages of the end members with said recess of the covering-block, and also with a port connecting the recess of the covering-block with the channels of the second-named side member, substantially as specified.

3. A pump having a casing composed of a body portion comprising side members 10, 11 having terminal flanges, and end members 13, 14 interposed between said terminal flanges of the side members, a recessed covering-block, and an intermediate block interposed between said covering-block and the body portion of the casing, the said side members being provided respectively with inlet and outlet ports, the first-named side member with valved inlet-channels communicating with valve-chambers, and the second-named side member with outlet-channels, the end members with passages for connecting said valve-chambers with opposite ends of a cylinder, the covering-block with a cavity, and the intermediate block with valved ports connecting said valve-chambers with the cavity of the covering-block, and with ports connecting said cavity with the outlet-channels, lag-screws connecting the extremities of the side and end members, transverse bars spanning the covering-block, and bolts extending from the side members of the body portion and engaged with the projecting extremities of said bars, substantially as specified.

4. A pump having a sectional casing comprising a body portion having interlocked side and end members, surmounted by a covering-block, and an intermediate block interposed between the covering-block and the body portion, said parts being provided with inlet and outlet ports, a cylinder, and valved passages connecting the cylinder with said ports, and means for detachably securing the parts in their operative relations, substantially as specified.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

GEORGE P. THARP.
VERNON A. PARK.

Witnesses:

T. M. POTTER,
Z. M. KIRKBRIDE.