

W. W. GILBERT.
STEAM PUMP.

No. 97,389.

Patented Nov. 30, 1869.

Fig. 2.

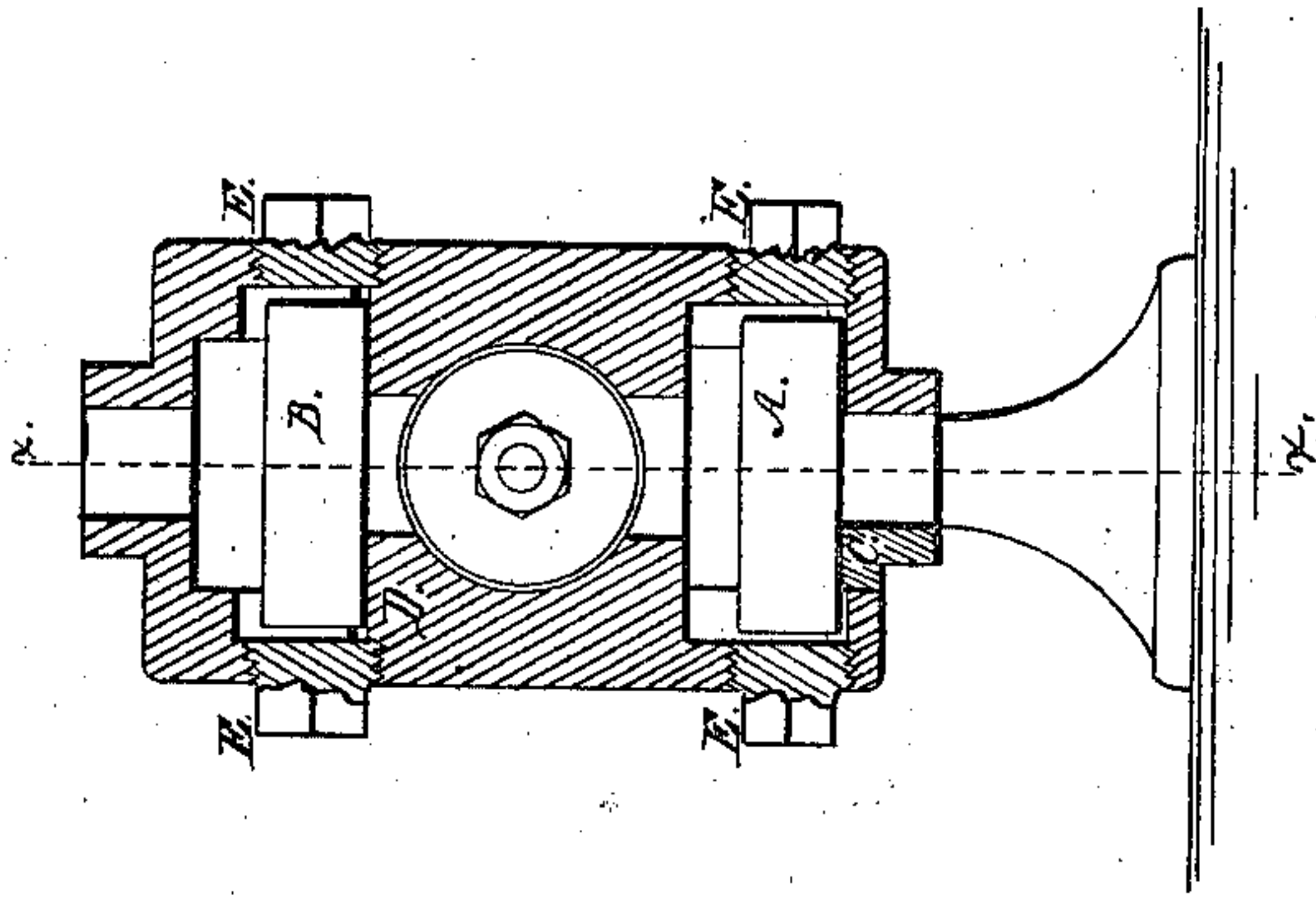
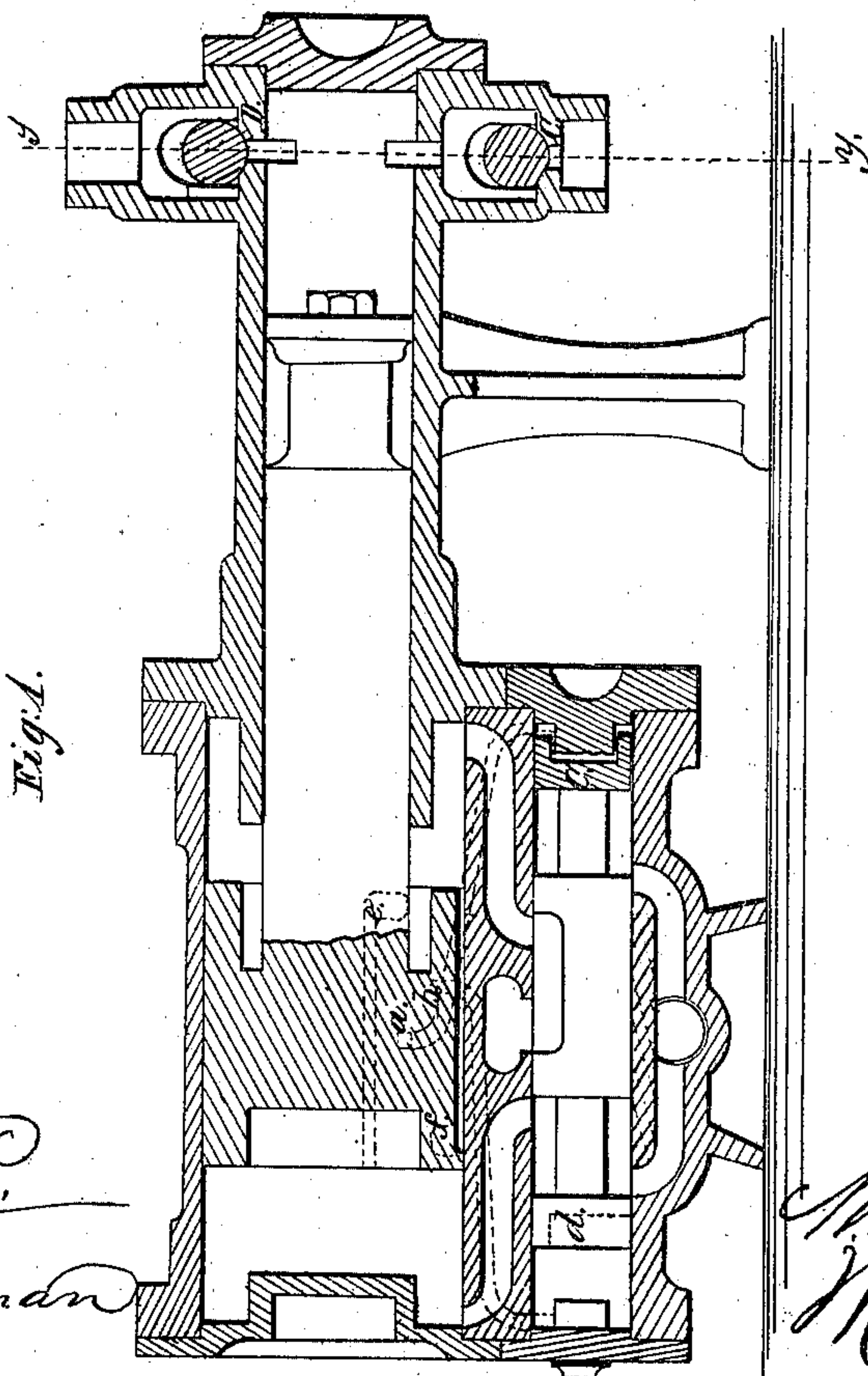


Fig. 1.



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UNITED STATES PATENT OFFICE.

WALTER W. GILBERT, OF NEW YORK, N. Y.

IMPROVEMENT IN STEAM-PUMPS.

Specification forming part of Letters Patent No. 97,389, dated November 30, 1869; antedated November 24, 1869.

To all whom it may concern:

Be it known that I, WALTER W. GILBERT, of New York, in the county of New York and State of New York, have invented a new and useful Improvement in Steam-Pumps; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to improvements in steam-pumps, and has for its object to provide certain improvements in the arrangement of the steam-piston, for cheapening the construction and simplifying the adaptation of the same for use in opening and closing the ports of a steam-actuated piston-valve; also, to provide certain improvements in the construction of the pump-valves.

Figure 1 represents a longitudinal sectional elevation of my improved pump, taken on the line *x x* of Fig. 2; and Fig. 2 represents a transverse section of the same, taken on the line *y y* of Fig. 1.

Similar letters of reference indicate corresponding parts.

In an application for a patent for improvements in steam-pumps heretofore filed by me, and now pending, I have described and shown an application to the steam-piston of a bar or projection from one end, for covering one of the piston-valve ports until near the end of the movement of the steam-piston in one direction.

In practice I find it more difficult and expensive to construct the pistons with these projections than to extend the pistons wholly; and the object of that part of this invention relating to the steam-piston is to provide this construction, coupled with an improved arrangement for exhausting from the valve-cylinder.

To accomplish this, instead of leading the valve-ports from near one end of the steam-cylinder, as in that case above referred to, I arrange them near the center, but lapping by each other, as represented in dotted lines at *a b*, and I make the piston nearly half the length of the cylinder, so that when the piston arrives near to the end of its movement to

the right it will uncover port *a*, admitting steam to the end C of the valve to move it to the left, and when the steam-piston arrives near the end of the opposite movement it similarly uncovers port *b*, admitting steam to the end *d* of the valve.

For exhausting from the valve-cylinder, I have in this case provided the grooves or passages *e f* in the steam-piston, which are opened alternately to the ports *a b*, as follows: When the steam-piston arrives at the end of the movement to the right and the port *a* is opened to the live steam, the end of the passage *f* will coincide with port *b*, and open a free passage from the end *d* of the valve-cylinder to the exhaust side of the steam-piston, and when the reverse movement of the piston takes place the passage *e* is similarly opened to port *f*.

This arrangement of the steam-piston admits of its being fitted up with much less cost, by turning in a lathe, and providing the passages *e f*, saving the more expensive fitting of the said extension, and the space required for it in the cylinder or a stuffing-box in the cylinder-head for it to work through.

My invention in the pump-valves consists in constructing them in the cylindrical form represented at A B, and their concave slotted seats C D, which I find to be a very simple and cheap construction, and an arrangement by which ready access may be had to them through the plugs E at either end.

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

1. An elongated piston arranged relatively to the ports *a b* of the steam-actuated valve, and provided with the exhaust-passages *e f*, also arranged relatively to the said ports *a b*, all substantially as specified.

2. The cylindrical pump-valves A B and concave slotted seats C D, arranged substantially as specified.

The above specification of my invention signed by me this 12th day of April, 1869.

WALTER W. GILBERT.

Witnesses:

FRANK BLOCKLEY,
ALEX. F. ROBERTS.