(No Model.)

J. R. MAXWELL.

PUMP.

No. 299,487. Patented May 27, 1884.

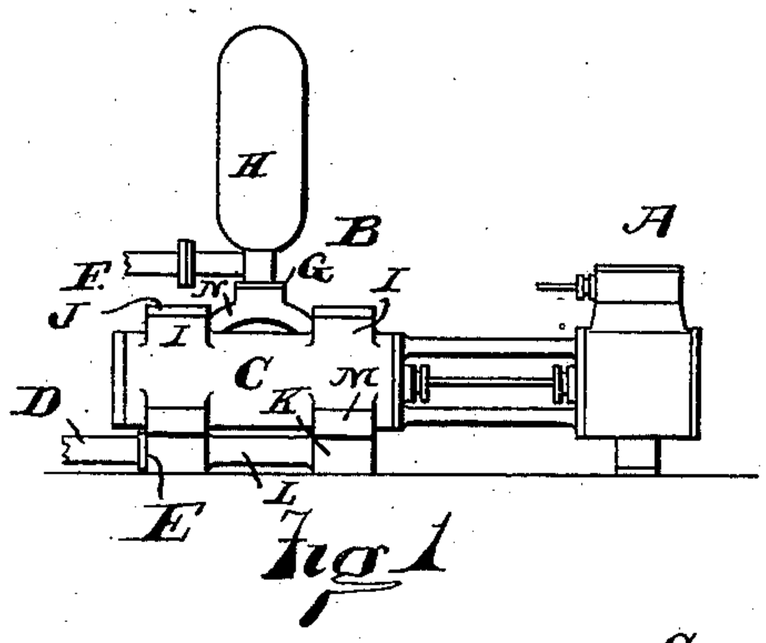

Fig 1

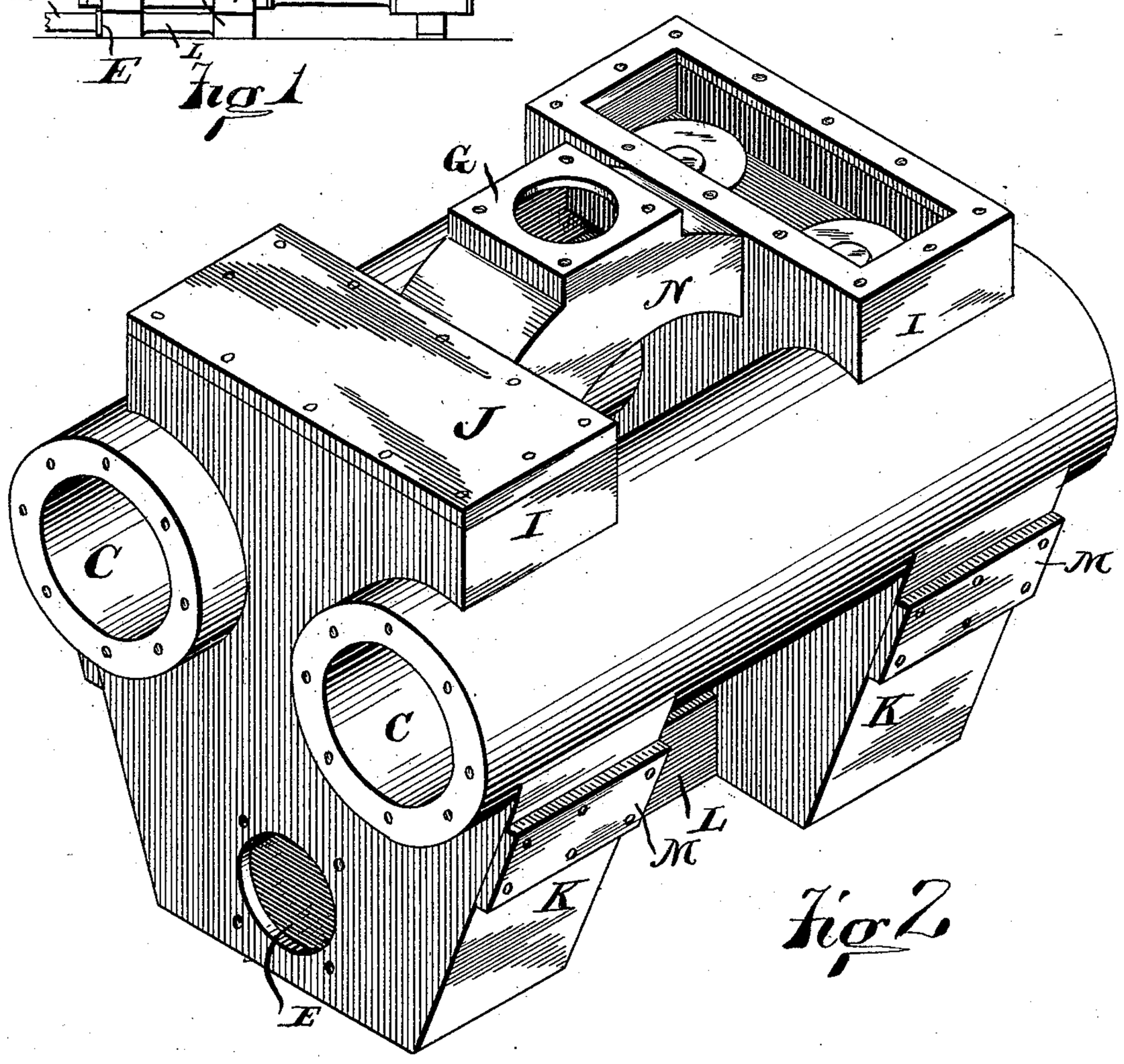

Fig 2.

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JAMES R. MAXWELL, OF CINCINNATI, ASSIGNOR TO THE GORDON & MAXWELL COMPANY, OF HAMILTON, OHIO.

PUMP.

SPECIFICATION forming part of Letters Patent No. 299,487, dated May 27, 1884.

Application filed September 15, 1883. (No model.)

To all whom it may concern:

Be it known that I, JAMES R. MAXWELL, of Cincinnati, Hamilton county, Ohio, have invented certain new and useful Improvements in Duplex Pumps, of which the following is a specification.

This invention pertains to that character of pump in which two cylinders are arranged side by side parallel and fitted with mutual valve-chambers and suction and discharge pipes, the two pumps working alternately. Such pumps are usually operated by a pair of steam-cylinders—one in the line of the axis of each pump—and the whole arrangement is termed a "duplex pumping-engine." This invention relates particularly to the relative arrangement of the pump-cylinders, the valve-chambers, and the water-ways.

In the accompanying drawings, Figure 1 is the side elevation of a steam pumping-engine embodying my present improvement; and Fig. 2 is a perspective view of the pump-cylinders, &c.

In the drawings, A represents the steam end of a duplex pumping-engine; B, the water end of the same; C, the pump-cylinders; D, the suction-pipe; E, the juncture of the suction-pipe to the pump; F, the discharge-pipe; G, the juncture of the discharge-pipe to the pump; H, the air-chamber; I, the discharge-valve boxes, one being arranged near each end of the pair of cylinders, cast with and joining the cylinders; J, the covers of the discharge-valve boxes; K, the suction-valve boxes, arranged below the cylinders and disposed in the same vertical plane with the discharge-valve boxes; L, a trunk-pipe joining the two suction-valve boxes and placing them in free communication; M, the covers over openings in the suction-valve boxes, and N a trunk-pipe joining the two discharge-valve boxes, placing them in free communication with each other and carrying the juncture G of the discharge-pipe, which is usually branched from an air-chamber, as shown in Fig. 1.

The two pump-cylinders, the valve-boxes, and the two trunk-pipes are all cast in one piece.

The discharge-valve boxes I reach across from one cylinder to the other. They are cast with the cylinders, and each valve-box is common to both cylinders. These discharge-valve boxes being cast with the two cylinders secures forever in the two cylinders the integrity of original relative position, there being no joints to sag or become shifted in reseating.

The trunk-pipe N is a conduit placing the two discharge-valve boxes in free communication. This trunk-pipe is cast integrally with the two discharge-valve boxes and the two cylinders. If this trunk-pipe were flanged at its ends and joined to the two discharge-valve boxes by gaskets and bolted joints, there would be no yielding elements which would enable the gasket-joint to be drawn together, as might be the case were the two discharge-valve boxes adjustable upon the cylinders. Were the trunk-pipe separable and joined to the top of the discharge-valve boxes, as is common practice, the discharge-valve would have to be gotten at through an increased depth, due to the presence of the superposed trunk-pipe, and the covers of the discharge-valves would have to be on the trunk-pipe.

The juncture G of the discharge-pipe is located upon the integrally-cast trunk-pipe at a point between the two integrally-cast discharge-valve boxes, and this juncture hence does not interfere with the free manipulation of the covers for the discharge-valve boxes.

I claim as my invention—

In a duplex pump, the combination of two parallel pump cylinders or barrels, a pair of discharge-valve boxes disposed across the ends of the cylinders or barrels and cast integrally therewith, and a trunk-pipe placing the two discharge-valve boxes in free communication disposed centrally over the two cylinders or barrels, cast integrally with the two cylinders or barrels and the two discharge-valve boxes, and provided with a juncture-seat for a discharge-pipe or air-chamber, substantially as set forth.

JAMES R. MAXWELL.

Witnesses:
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