

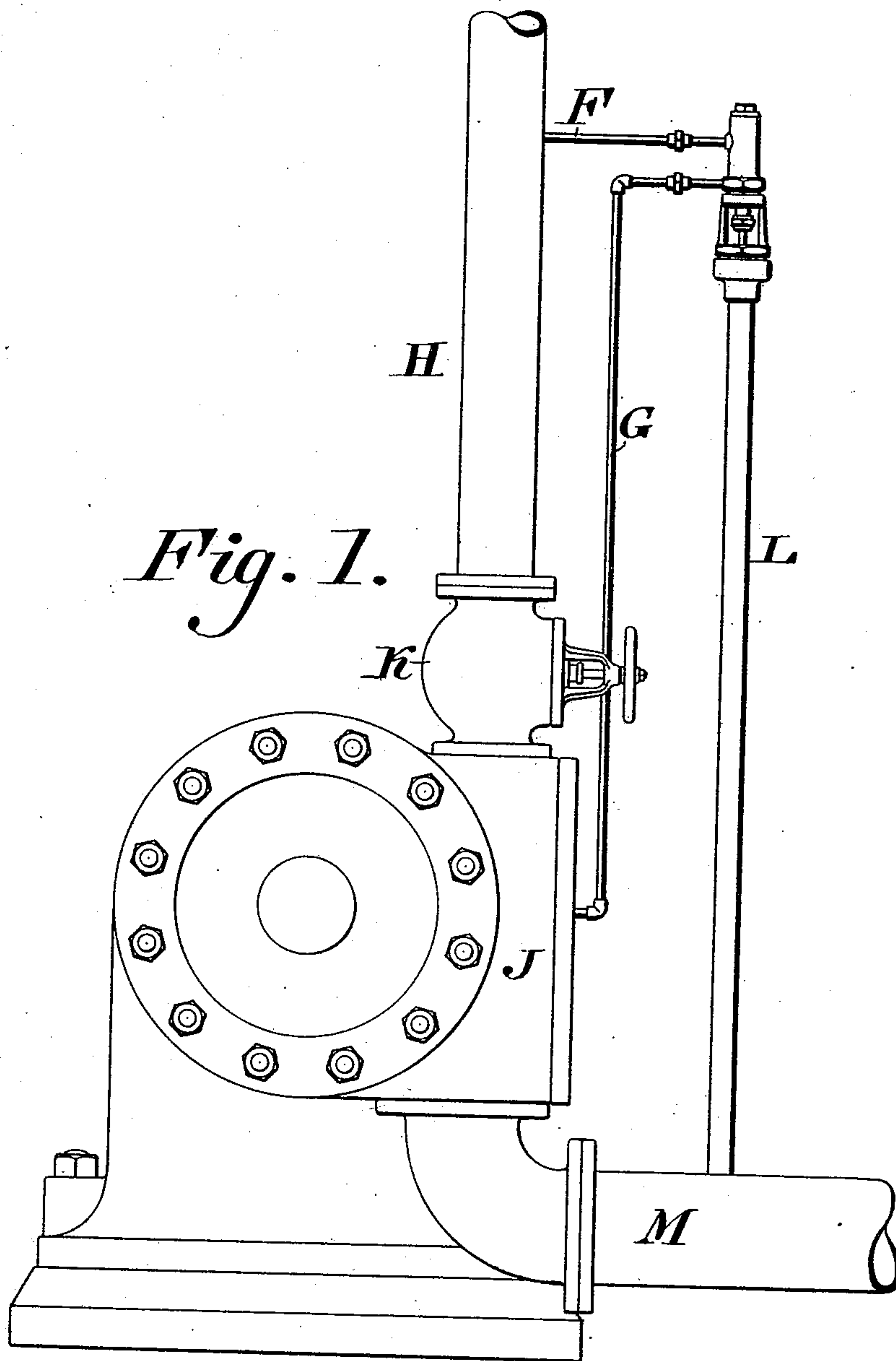
(No Model.)

2 Sheets—Sheet 1.

T. M. EYNON.
VACUUM BREAKER.

No. 513,903.

Patented Jan. 30, 1894.



WITNESSES:

Wm. C. Wiederheim.
A. P. Jennings.

INVENTOR
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BY *Wm. C. Wiederheim*
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(No Model.)

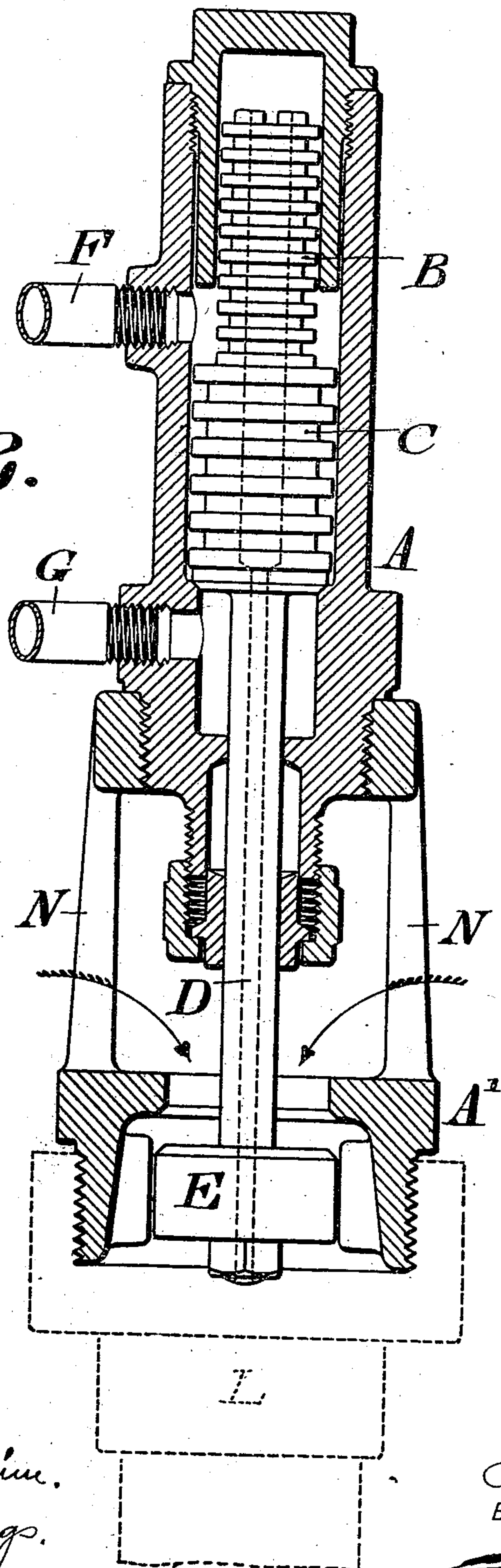
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Fig. 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

THOMAS M. EYNON, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE
EYNON-EVANS MANUFACTURING COMPANY, OF PENNSYLVANIA.

VACUUM-BREAKER.

SPECIFICATION forming part of Letters Patent No. 513,903, dated January 30, 1894.

Application filed April 24, 1893. Serial No. 471,545. (No model.)

To all whom it may concern:

Be it known that I, THOMAS M. EYNON, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Vacuum-Breakers, which improvement is fully set forth in the following specification and accompanying drawings.

My invention consists of a vacuum breaker constructed to admit air into an exhaust pipe when an engine is stationary, and to close the communication with the atmosphere when the engine is started, as will be hereinafter set forth.

Figure 1 represents a side elevation of a vacuum breaker embodying my invention. Fig. 2 represents a vertical section of a portion thereof on an enlarged scale.

Similar letters of reference indicate corresponding parts in the two figures.

Referring to the drawings:—A designates a shell having therein the water-packed pistons B and C, which are connected by means of the rod D with the valve E.

F and G designate pipes which lead respectively from the main steam pipe H and the steam chest J, to the shell A. Between the pipe H and chest J is a throttle valve K.

Connected with a portion of the frame A' around the seat of the valve E, is a pipe L, whose lower end is connected with the exhaust pipe M, which leads from the chest J.

It will be noticed that the valve E opens to the atmosphere, owing to the arms or skeleton connection N between the shell A and frame A'.

The operation is as follows: When the engine is stationary, the steam in the pipe H enters through pipe F and presses on the small area on the upper end of the piston C, thus lowering and opening the valve E, and allowing air to pass into the exhaust pipe M. On starting the engine, the throttle valve K is opened, admitting steam into the chest J, the same passing through the pipe G, and acting upon the greater area of the lower end of the piston C, so as to raise the valve E, and thus close the communication of the atmos-

phere with the exhaust pipe M. When the engine is suddenly stopped by closing the throttle valve K, the engine cylinder becomes an air pump, with a tendency to draw back through the pipe M, water from the condenser, but before this happens, the pressure is taken off from the steam chest J, and therefore from the lower end of the piston C. The constant pressure in pipe F, acting on the top of the piston C, lowers and opens the valve E, by which means air is allowed to pass into the exhaust pipe M, thus destroying vacuum in the latter.

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

1. A vacuum breaker consisting of a shell with a piston therein, pipes leading into said shell on opposite ends of said piston, a frame with pipes connected therewith, arms secured to said shell and frame, a valve connected with said piston and having a seat on said frame, said parts being combined substantially as described.

2. A shell containing a piston, and having steam pipes connected with the same at opposite ends of said piston, in combination with a valve which is connected with said piston, and with a pipe attached to said valve seat, and to the exhaust pipe, said valve when open being adapted to admit air to said exhaust pipe, substantially as described.

3. A shell with a piston, pipes leading into said shell above said piston, a valve connected with said piston, a skeleton frame forming a seat for said valve, a steam chest with a main steam pipe, and an intervening throttle valve, said piston pipes leading respectively from said steam chest and main pipe on opposite sides of said throttle valve, and a pipe leading from said skeleton frame to the exhaust pipe of said steam chest, said parts being combined substantially as described.

THOMAS M. EYNON.

Witnesses:

JOHN A. WIEDERSHEIM,
R. H. GRAESER.