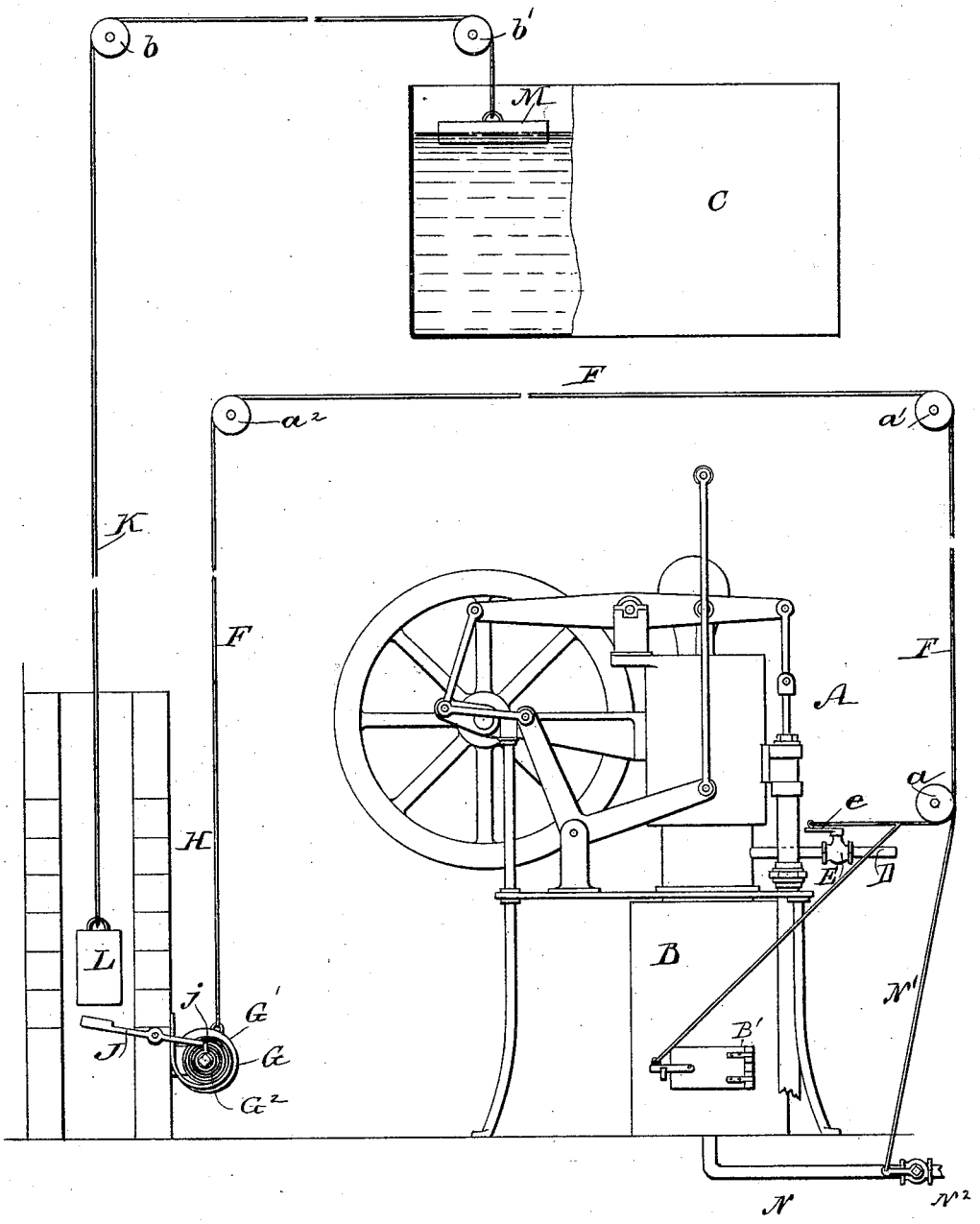
(No Model.)

B. J. ROBERTS.

AUTOMATIC STOP FOR ENGINES.

No. 343,397. Patented June 8, 1886.



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BENJAMIN J. ROBERTS, OF NEW YORK, N. Y.

AUTOMATIC STOP FOR ENGINES.

SPECIFICATION forming part of Letters Patent No. 343,397, dated June 8, 1886.

Application filed March 15, 1886. Serial No. 195,273. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN J. ROBERTS, of the city, county, and State of New York, have invented a new and Improved Automatic Stop for Engines, of which the following is a full, clear, and exact description.

My invention relates to a contrivance for automatically stopping pumping-engines, and is designed for use more particularly in connection with hot-air engines in common use for elevating water to tanks situated in the upper stories of buildings.

The invention consists of the construction, arrangement, and combination of parts, all as hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which the figure illustrates the application of my invention to a water-tank and an Ericsson hot-air pumping-engine.

A represents a hot-air pumping-engine of the Ericsson type, placed in the lower part or basement of a building and over the furnace B, and C represents an elevated water-tank, to which water is to be pumped by the engine A, through suitable pipes. (Not shown.)

In the engine A is fitted an escape-pipe, D, which is provided with a cock or valve, E, the valve-stem of which is provided with a lever, *e*. Connected to the outer end of this lever *e* is the small cord or wire F, which passes from the lever *e* over the pulleys *a a' a²*, thence down to the wheel G' on the shaft G, to which wheel the cord or wire F is attached. The shaft G is journaled in suitable bearings attached to the casing H and has the coiled spring G^2 applied to it for turning the shaft for winding up the cord or wire F for opening the cock E or other device for stopping the engine. The shaft G is adapted to be turned by a crank for winding up the spring, and when the spring is wound up the shaft is locked to retain the tension upon the spring by the pivoted trip-lever J engaging with the projection *j* on the shaft.

In the casing H is the weight L, attached to the cord or wire K, which reaches to the upper story of the building, passes over the pulleys *b b'*, and is attached at its upper end to the float M in the water-tank C. The float M is heavier than the weight L, and the cord K is of such length that when the float M is at the bottom of the tank C, the weight L will be elevated in the casing H, thus indicating in the basement that the tank is empty. As the tank C fills with water, the float M will be elevated, and the weight L correspondingly lowered in the casing G. I utilize this downward movement of the weight L to open the cock E, which is accomplished by causing it to trip the lever J and disengage it from the projection *j*, which will permit the spring G^2 to turn the shaft G and wheel G', and cause the latter to wind up the cord or wire F and open the cock E, and allow the escape of hot-air from the engine A, and cause it to stop.

In some cases, instead of attaching the cord F to the cock E, I shall attach it to the furnace-door B' and cause the action of the spring G' to open said door and thus cause the engine to stop. In other cases I shall lead a separate wire from the wire F to the door B', so that the spring will act to open the cock E and also the door B', and in other cases where gas is used for fuel, I shall attach the wire F either directly or by a separate wire, N', to the cock N^2 in the gas-pipe N, so the spring G will act to cut off the supply of gas to the furnace and stop the engine. By thus automatically stopping the engine by the rising of the water in the tank C, there is no danger of overflowing the tank and the necessity for constantly watching the engine when in operation is obviated.

By placing the escape-pipe D in the engine-cylinder, so the escape of hot air is directly from the cylinder when the engine ceases to operate, there is no danger of burning the packing no matter how hot the air or the fire in the furnace.

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

1. The combination, with an engine and a tank to which water is supplied by said engine, of a spring-actuated wheel, a cord attached to said wheel and extending to the engine and connected with a cock or other device, a float in the tank, and a cord having one end attached to said float and provided with a weight on its other end adapted to release the spring-actuated wheel, substantially as herein shown and described.

2. The combination, with the engine A, pro-

vided with the pipe D, having cock E, and the elevated tank C, of the spring-actuated wheel G G², provided with the stop *j*, the lever J, adapted to engage the said stop, the cord F, attached to the wheel and to the cock, the float M in the tank, the cord K, secured to the float, and the weight L on the end of the cord and adapted to engage the lever J, substantially as herein shown and described.

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Witnesses:
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