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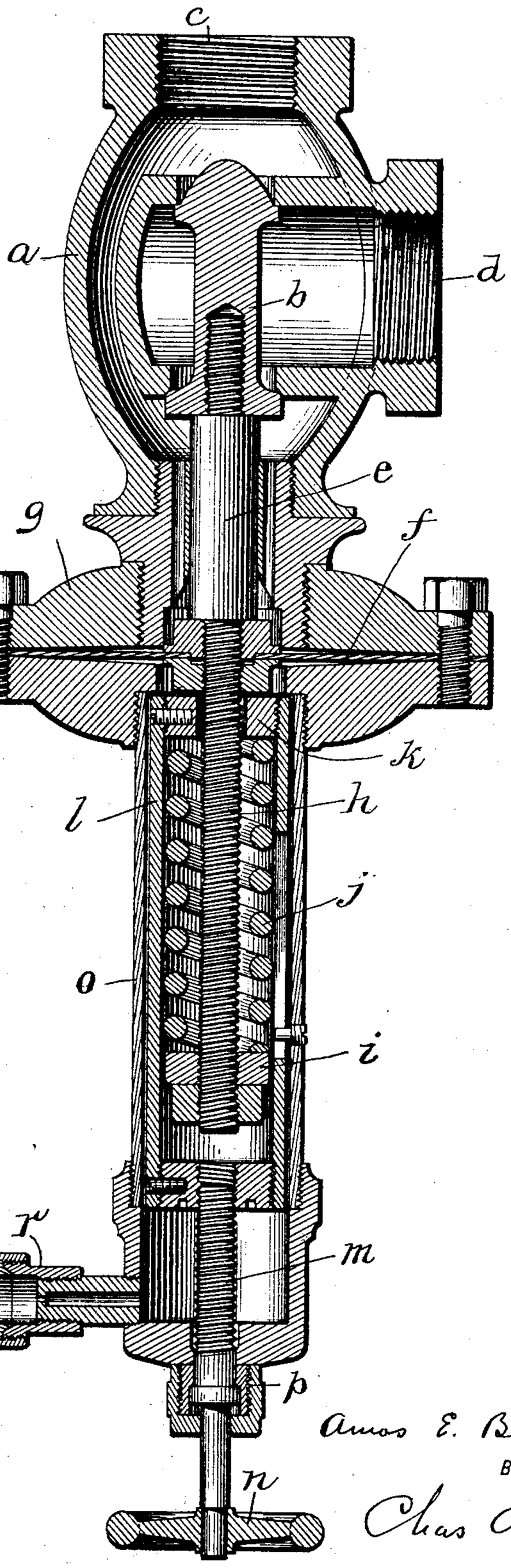
A. E. BURROWS.

STEAM CONTROLLING DEVICE.

APPLICATION FILED APR. 16, 1904.

NO MODEL.



WITNESSES:

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No. 771,417. Patented October 4, 1904.

UNITED STATES PATENT OFFICE.

AMOS E. BURROWS, OF YORK, PENNSYLVANIA, ASSIGNOR TO BURROWS MANUFACTURING COMPANY, OF YORK, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

STEAM-CONTROLLING DEVICE.

SPECIFICATION forming part of Letters Patent No. 771,417, dated October 4, 1904.

Application filed April 16, 1904. Serial No. 203,443. (No model.)

To all whom it may concern:

Be it known that I, AMOS E. BURROWS, a citizen of the United States, and a resident of the city and county of York, State of Pennsylvania, have invented certain new and useful Improvements in Steam-Controlling Devices, of which the following is a specification.

My invention relates to improvements in steam-controlling devices; and the object of my invention is to furnish a simple, compact, and efficient means for automatically controlling the operation of a boiler feed-pump.

My invention is adapted more particularly for use in connection with a means for automatically closing off the water-supply pipe which leads water from a pump to a steam-boiler when the water-level in the boiler reaches a predetermined height and in which the continued action of the pump after the closing off of the water-supply pipe might cause serious trouble.

My invention is shown in central longitudinal section in the accompanying drawing.

a is a casing furnished with a balanced valve *b* and with a steam-inlet *c* on one side of the valve and with a steam-outlet *d* on the other side of the valve. The steam-inlet *c* is connected to the boiler, which is not shown. The outlet *d* leads steam to the pump, also not shown.

e is a stem connected at one end to valve *b* and at the other end to a diaphragm *f*, which is carried by and inclosed in a case *g*, which is secured to and forms a continuation of the valve-casing *a*. The top of the diaphragm is in connection with the steam in casing *a*.

h is a threaded rod, carried by and projecting down from the diaphragm, which carries a nut or stop *i*, which forms a bearing for one end of a spring *j*, the other end of which bears against a stop *k*, which is carried by the upper end of a frame *l*, the lower end of which is engaged by a screw *m*, a projection of which is furnished with an operating-handle *n*.

o is a case carried by the diaphragm-casing *g*, which incloses the frame *l* and connected parts. The lower end of this case causes a stuffing-box *p* to make a tight joint around the projection or stem of screw *m*.

r is a pipe entering the case *o*. This pipe is connected with the pipe (not shown) which conducts water from the pump to the boiler. The water from pipe *r* enters case *o*, passes up this case, and bears against the bottom of diaphragm *f*, against the top of which the steam-pressure bears, as previously described. So long as the flow of water through pipe *r* is unobstructed the valve *b* will be open and steam will pass to and actuate the pump. When the flow of water through pipe *r* is stopped by any automatic or other suitable apparatus or means, the flow of water from the pump ceases and the pressure of the water in pipe *r* and below the diaphragm increases, lifting the diaphragm and closing valve *b* and shutting off the flow of steam therethrough. As soon as the pipe *r* is again unobstructed the pressure under diaphragm is reduced and the valve *b* is opened, permitting a flow of steam to the pump. The spring *j* is adjusted by turning the handle *n*, which through screw *m* raises or lowers the frame to loosen or tighten the spring.

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

In a steam-controlling device, in combination, a casing, a valve within said casing, a steam-inlet and a steam-outlet, one upon one side of said valve and the other upon the other side, a diaphragm carrying said valve, one side of said diaphragm being in connection with the steam, a case below and open to said diaphragm, a water-pipe connecting with said case, a stem carried by said diaphragm, a frame carried by said case, a spring one end of which bears against said frame and the other against a projection carried by said stem, a screw passing through said case and engaging said frame, and means whereby said screw may be turned to raise or lower said frame to adjust the tension of said spring.

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Witnesses:
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