

(No Model.)

C. S. EDMONDS.
FEED REGULATOR.

No. 494,984.

Patented Apr. 4, 1893.

Fig 1.

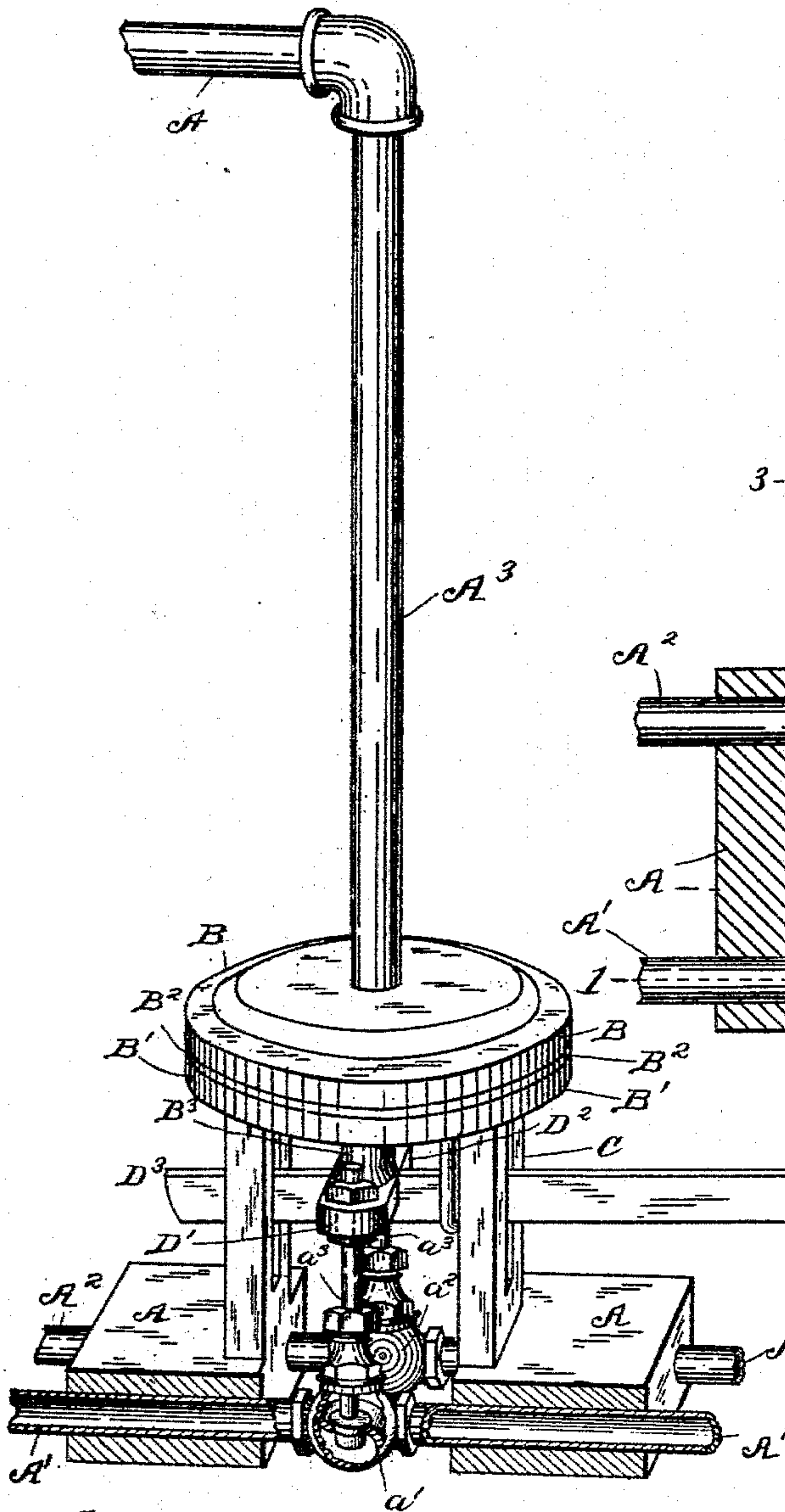


Fig 2.

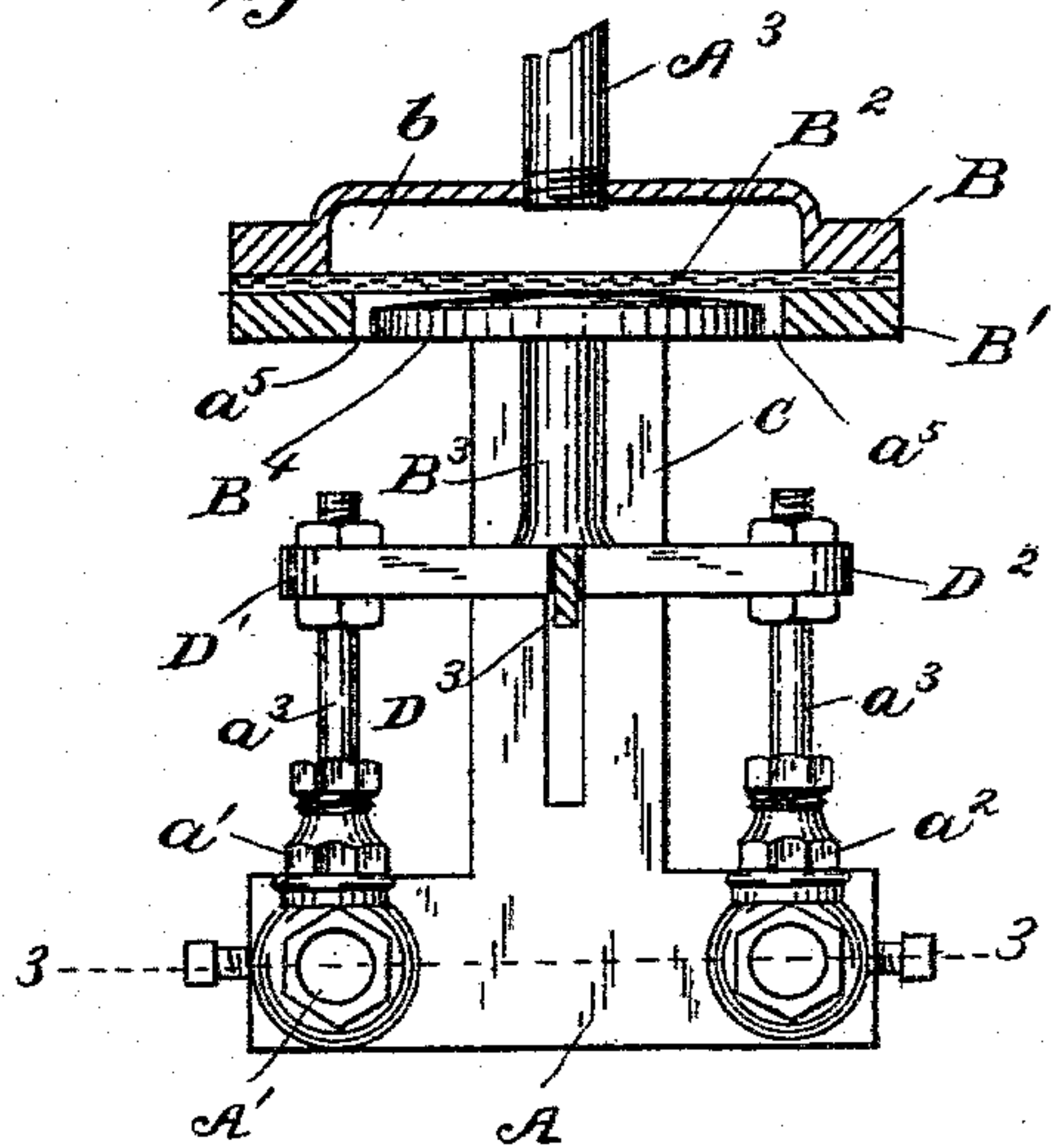
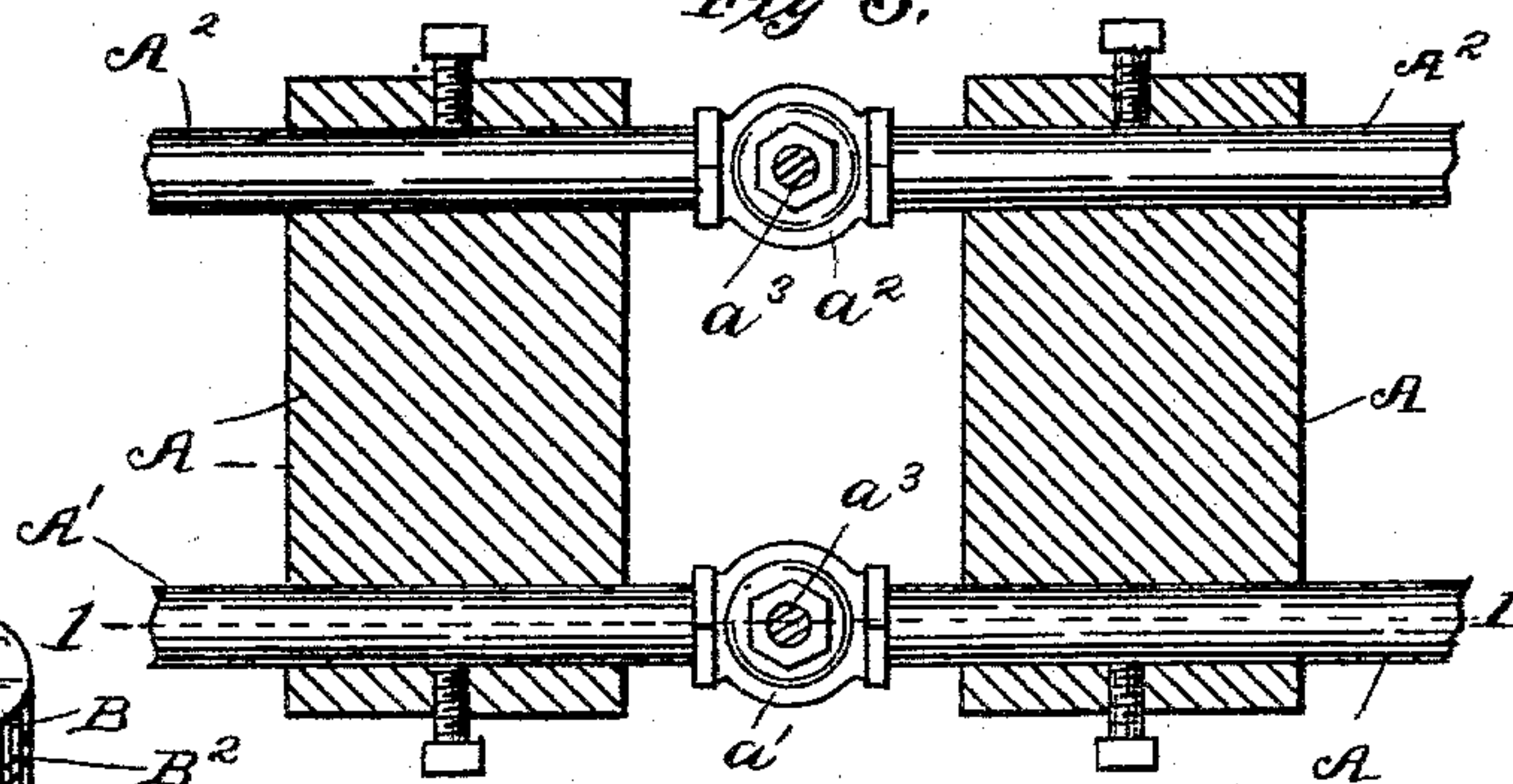


Fig 3.



Attest:
Walter E. Allen.
Walter Allen

Inventor:
Charles S. Edmonds.
By Knight Bros.
Attorneys.

UNITED STATES PATENT OFFICE.

CHARLES S. EDMONDS, OF COLLEVILLE, ASSIGNOR OF ONE-HALF TO D. W. ROBERTSON AND LOUIS SENDKER, OF BRADFORD, PENNSYLVANIA.

FEED-REGULATOR.

SPECIFICATION forming part of Letters Patent No. 494,984, dated April 4, 1893.

Application filed August 22, 1891. Serial No. 403,491. (No model.)

To all whom it may concern:

Be it known that I, CHARLES S. EDMONDS, a citizen of the United States, residing at Colleville, in the county of McKean and State of Pennsylvania, have invented certain new and useful Improvements in Feed-Regulators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertain to make and use the same.

My invention relates to automatic feed regulators and especially to those used in connection with oil stoves, furnaces, and the like.

The invention consists in the peculiar construction of the regulator whereby the pressure of steam in the boiler regulates the flow of both oil and steam to the fire box as hereinafter described and claimed.

The object of the invention is to provide a device that will be both easy to construct and inexpensive.

In the drawings Figure 1 is a perspective view of my improved automatic feed regulator; the lower portion being shown in section on the line 1—1 Fig. 3. Fig. 2 is an end elevation of the same; the upper portion being shown in section. Fig. 3 is a horizontal section of the bases on the line 3—3 Fig. 2.

Referring to the drawings, A represents the bases of the device which may be made of any suitable material of convenient form. A', A², are pipes passing through said bases and connected to the boiler and oil reservoir respectively. The standards C, C, are secured firmly to the bases or may be cast integral therewith and support the two disks B and B' the former of which is hollowed out forming a chamber *b*, the latter being a flat disk with a circular hole *a*⁵ as shown in Fig. 2. Between these disks is stretched the diaphragm B². In the top of disk B is an opening into which fits the pipe A³ said pipe being connected to the boiler at one of the water gages.

Passing up through hole *a*⁵ in disk B' and contacting with the under side of the diaphragm is the piston B³ having the head B⁴. This piston is provided, on its lower end, with the two laterally projecting arms D', D², to which are rigidly secured the valve stems *a*³ *a*³

which operate the valves *a*', *a*², in the steam and oil pipes respectively. These valves are located between the bases and at equal distances from the median longitudinal center of the piston B³.

Pivoted to one of the standards and contacting with the lower end of the piston is the arm D³, upon the lever end of which is suspended an iron counterbalance weight D⁴, which may be shifted to give any predetermined amount of steam, said amount being determined from the steam gage.

The operation of the device is as follows: The weight on lever D³ is adjusted so as to raise the piston B³ and open valves *a*' and *a*², the head of the piston contacting with the diaphragm. Oil and steam pass through the valves *a*', and *a*² and steam also enters chamber *b* through pipe A³ and impinges upon the top of the diaphragm. If the pressure in the boiler increases sufficiently to overcome the weighted lever D³, the diaphragm is depressed by the force of steam entering chamber *b*, the piston forced downward carrying with it the stems *a*³ thus closing valves *a*' and *a*² and cutting off the flow of steam and oil through them.

What I claim as new is—

1. An automatic feed regulator comprising the base, the pipe passed through said base, having a valve provided with a valve-stem, the standards secured to the base, the lower disk having an opening and supported on the standards, the diaphragm located over the lower disk, the upper disk having a chamber and located on the lower disk over the diaphragm, the pipe connected with the upper disk, the lever having a counterbalance weight on one arm, and the piston supported on the other arm of the lever, having a lateral arm connected with the valve-stem and provided with a head occupying the opening in the lower disk and bearing against the diaphragm, substantially as described.

2. An automatic feed regulator comprising the bases, the pipes passed through said bases, having valves provided with valve-stems, the standards secured to the bases, the lower disk having an opening and supported on the standards, the diaphragm located over the

lower disk, the upper disk having a chamber
and located on the lower disk over the dia-
phragm, the pipe connected with the upper
disk, the lever having a counterbalance weight
5 on one arm, and the piston, supported on the
other arm of the lever, having lateral arms
connected with the valve-stems and provided
with a head occupying the opening in the lower

disk and bearing against the diaphragm; sub-
stantially as described. 10

In testimony whereof I affix my signature in
presence of two witnesses.

CHARLES S. EDMONDS.

Witnesses:

S. A. BURT,

REED F. HOWLAND.