

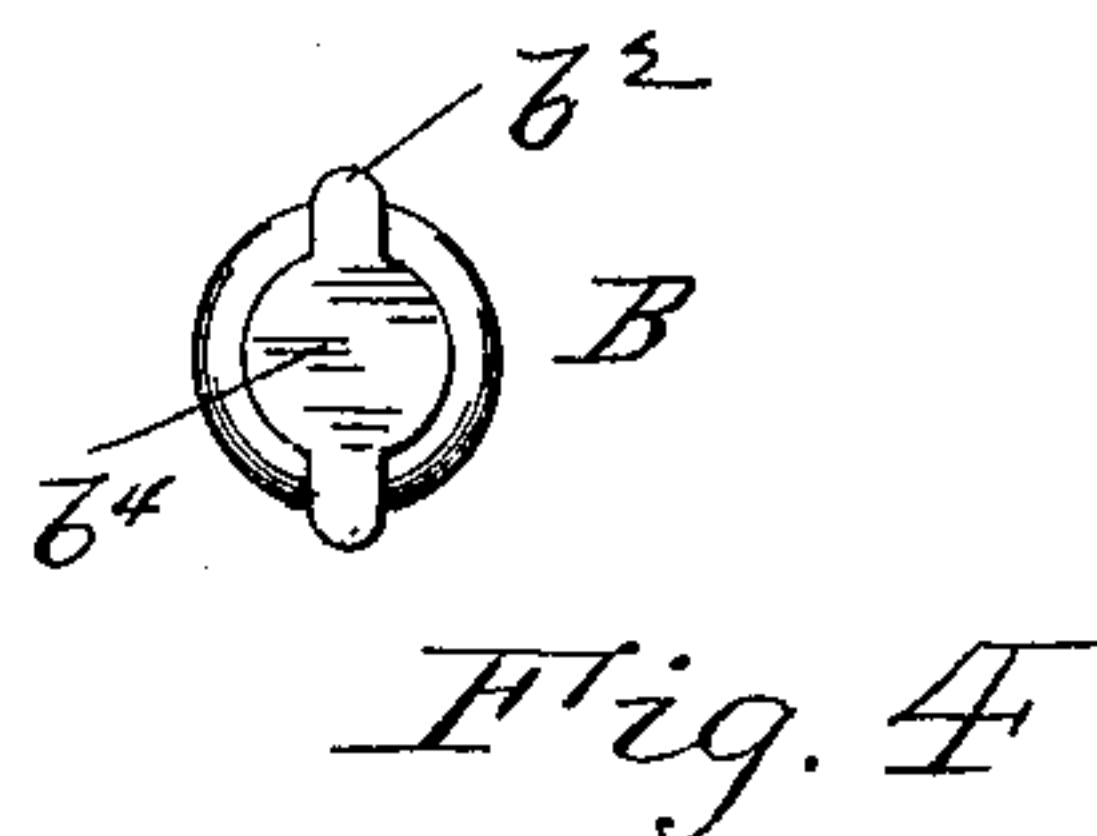
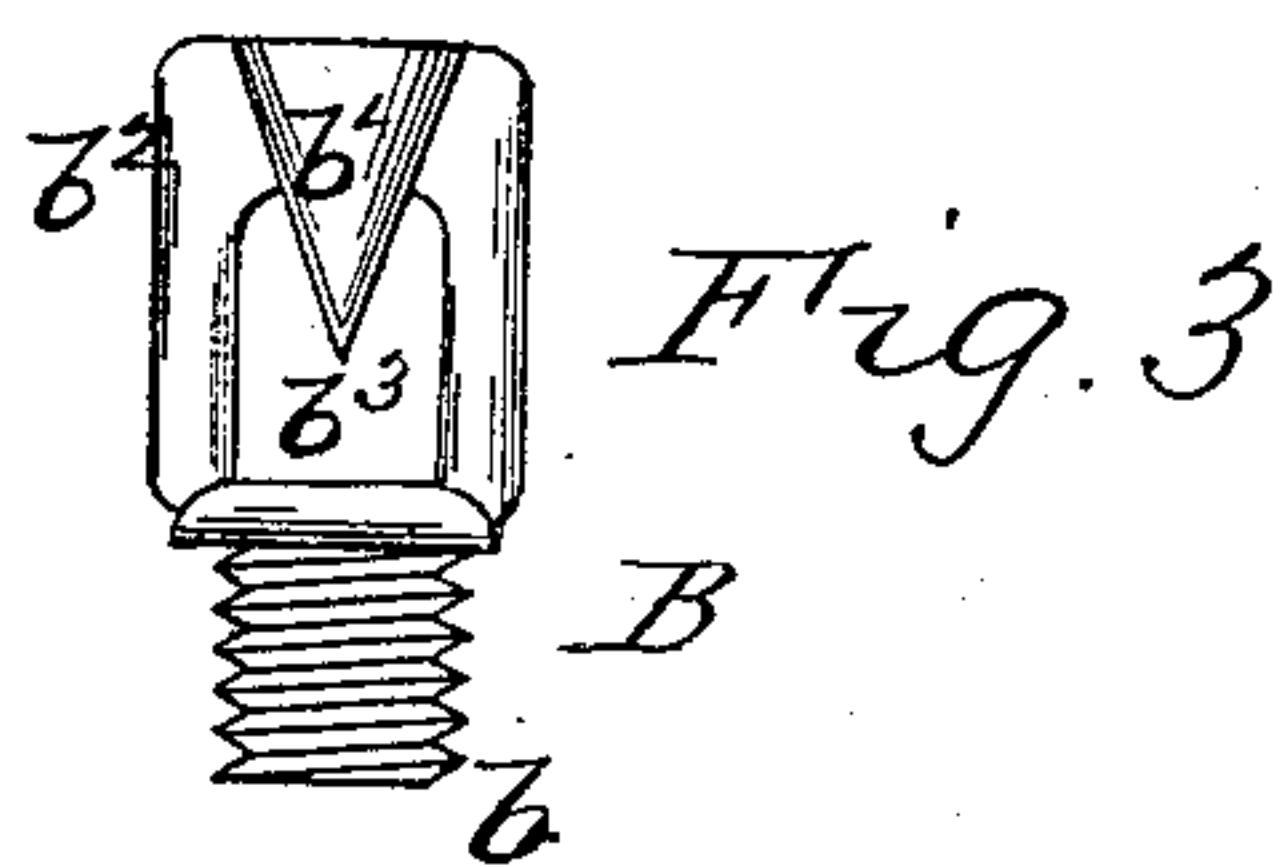
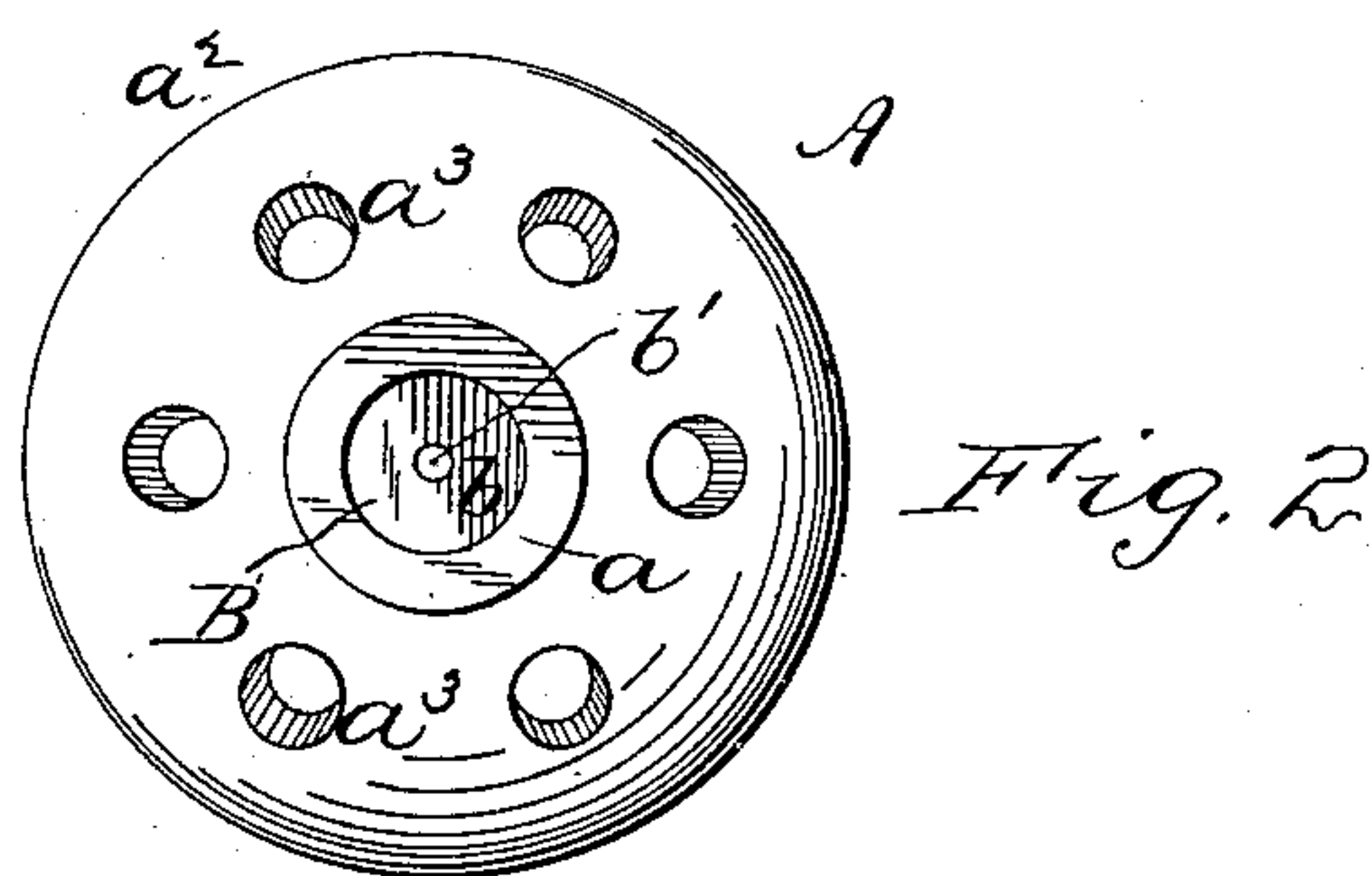
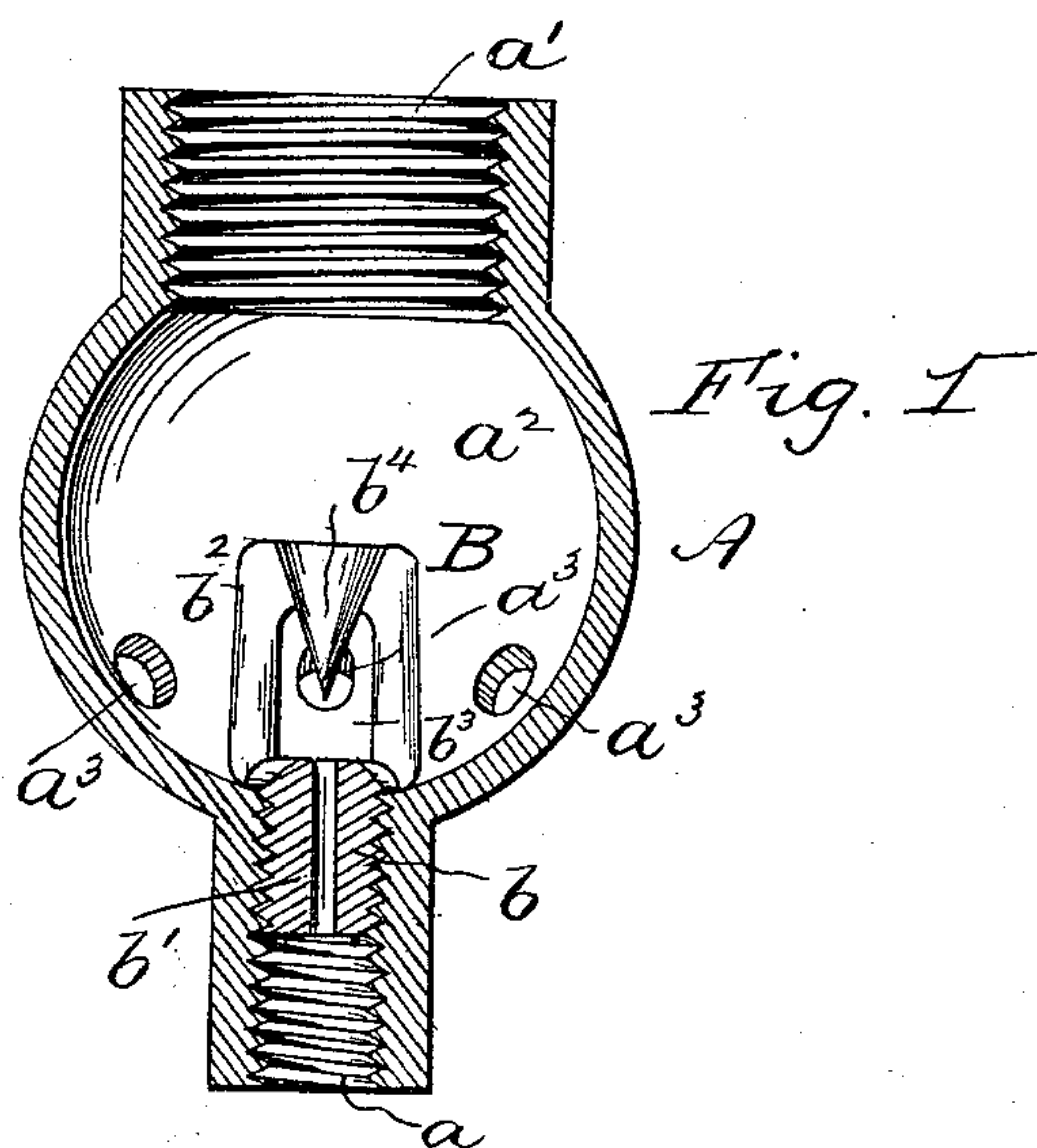
(No Model.)

J. L. CHAPMAN.

GAS MIXER.

No. 329,717.

Patented Nov. 3, 1885.



WITNESSES:  
H. Conrad Brock  
George W. Selzer

INVENTOR  
Joseph L. Chapman  
by  
Allen H. Langewer  
his  
ATTORNEY

# UNITED STATES PATENT OFFICE.

JOSEPH L. CHAPMAN, OF HADDONFIELD, NEW JERSEY.

## GAS-MIXER.

SPECIFICATION forming part of Letters Patent No. 329,717, dated November 3, 1885.

Application filed July 13, 1885. Serial No. 171,460. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH L. CHAPMAN, of Haddonfield, in the county of Camden and State of New Jersey, have invented a new and valuable Improvement in Gas-Mixers; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 is a vertical cross-section of a mixing-chamber embodying my improvements. Fig. 2 is an inverted plan. Fig. 3 is an elevation of the deflector or spreader, and Fig. 4 is a plan of the same.

My invention has relation to mixing-chambers for gas-burners for furnaces or other fixtures, or to the chambers of such burners, wherein the natural or other gas and air are commingled; and it has for its object to provide an inexpensive and simple form of mixing-chamber, wherein the gas and air are thoroughly commingled before escaping or passing to the burner.

My invention accordingly consists of the combination, construction, and arrangement of parts, as hereinafter described and claimed.

In the drawings, A represents the mixing-chamber, having, preferably, a globular-shaped body,  $a^2$ , provided with lateral or side openings,  $a^3$ , for the ingress of air, a bottom opening,  $a$ , into which screws the gas-supply pipe, and an upper large outlet-opening,  $a'$ , which connects with the burner. The air-inlet openings  $a^3$  are preferably located near the bottom of chamber  $a^2$ , as shown, and into the top of the inlet-opening  $a$  screws or is otherwise fastened a gas deflector or spreader, B. This deflector consists of a screw or threaded nipple,  $b$ , and upright frame  $b^2$ , having a central opening,  $b^3$ , into which projects an inverted cone,  $b^4$ , depending from the top edge of the upper cross-bar of frame  $b^2$ , as shown. The said frame and cone are supported by said nipple and removable therewith. The base of cone  $b^4$  is located above the plane of the openings

$a^3$ , as indicated. In the screw-nipple  $b$  is a central opening or channel,  $b'$ , to form a communication from opening  $a$  to chamber  $a^2$  for the passage of the gas into said chamber. The bore of opening  $b'$  is of a much smaller diameter than that of inlet  $a$  to admit of the gas escaping under pressure into the chamber  $a^2$ . As the gas escapes from pipe or bore  $b'$  and impinges against cone  $b^4$ , the latter deflects or spreads the gas toward the walls of chamber  $a^2$ , or into the paths of the air-currents, finding their ingress into chamber  $a^2$  through the openings  $a^3$ , whereby such air and gas currents intermix to thoroughly commingle the same before escaping through outlet  $a'$  to the burner.

I am aware that it is not new to introduce gas through a central inlet into a mixing-chamber, air being introduced into the same around said inlet; also, that it is not new to make the nipple of a gas-inlet detachable; also, that it is not new to employ a cone for regulating the supply of air to a mixing-chamber. I do not claim any of these constructions.

What I do claim, and desire to secure by Letters Patent, is—

1. A mixing-chamber, A, having a series of air-inlets,  $a^3$ , in combination with a gas-inlet nipple,  $b$ , a raised frame,  $b^2$ , and an inverted cone,  $b^4$ , extending down from the upper part of said frame, and arranged centrally over said nipple, so as to spread the gas and cause a more intimate mixture of it with the air, substantially as set forth.

2. The detachable gas-inlet nipple  $b$  and the frame  $b^2$ , and cone  $b^4$ , supported on said nipple and removable therewith, in combination with the mixing-chamber A, having the air-inlets  $a^3$ , substantially as set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

JOSEPH L. CHAPMAN.

Witnesses:

JAMES P. PETIT,

GEORGE W. SELTZER.