

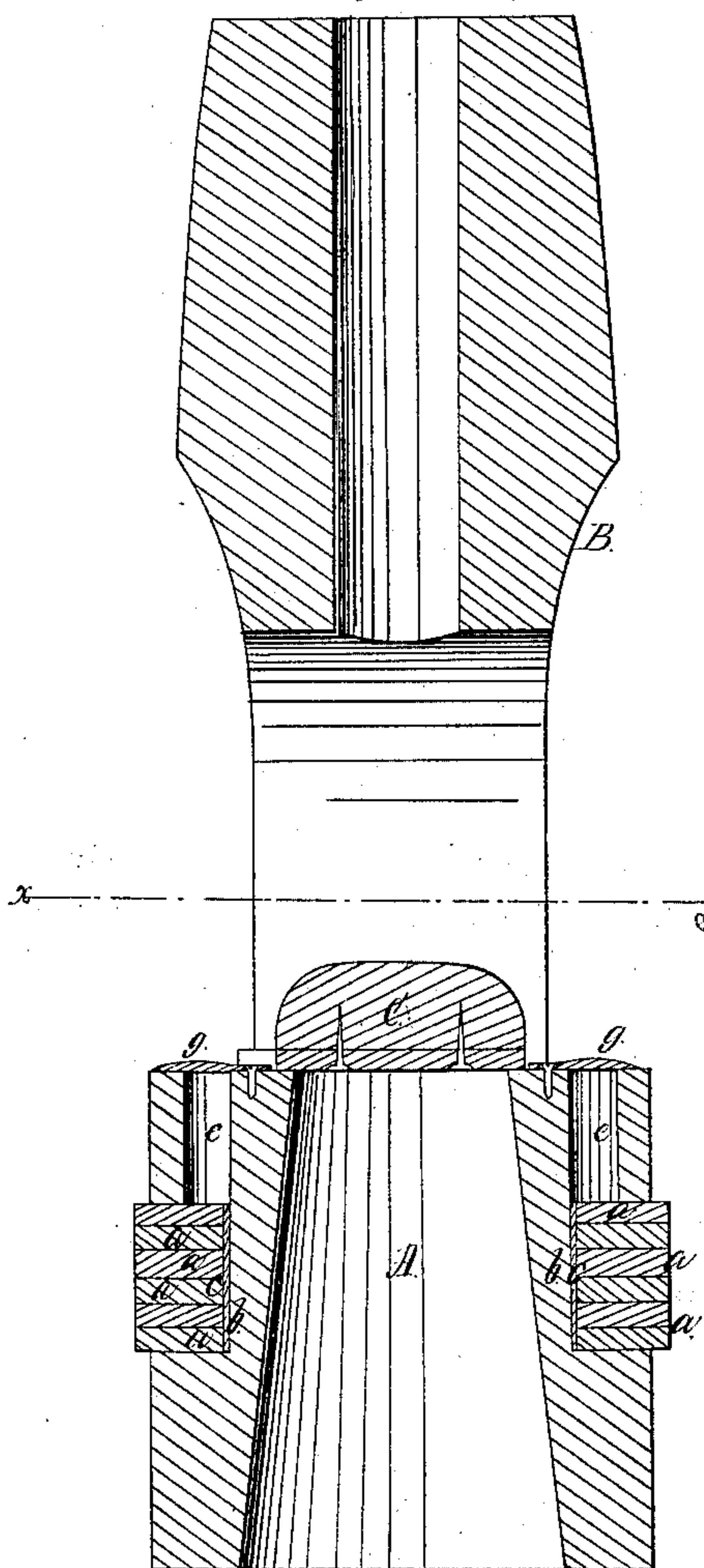
*M. J. Althouse*

*Pump Packing.*

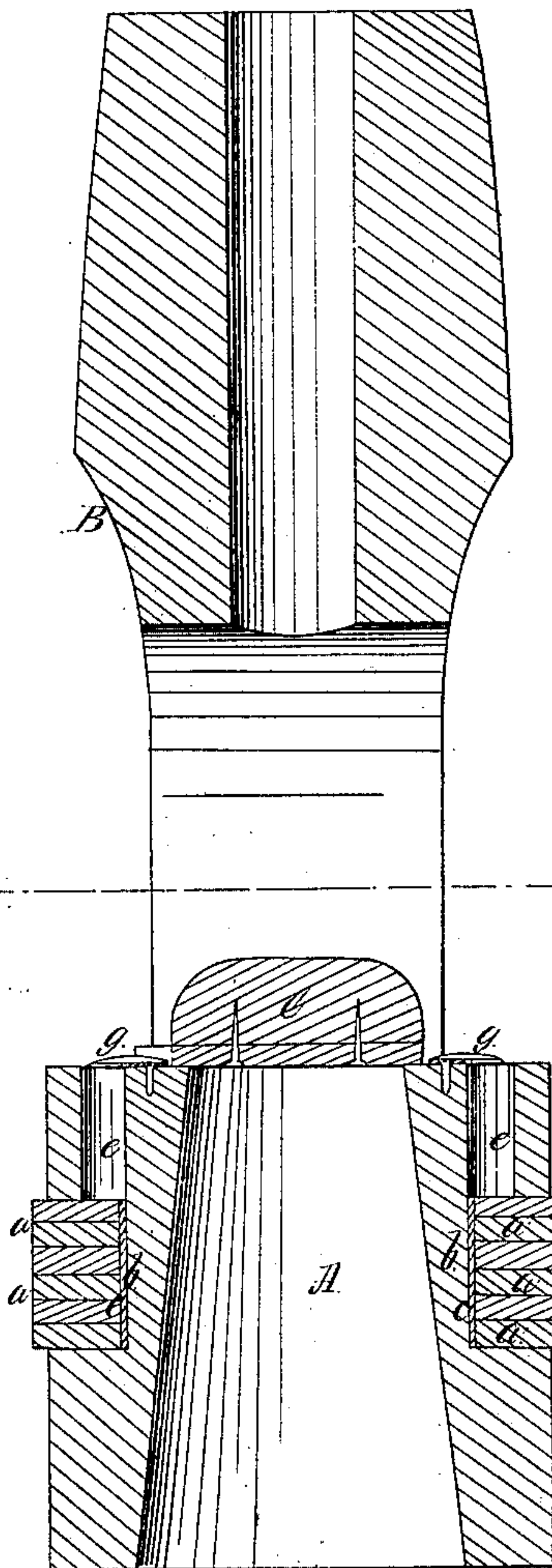
*N<sup>o</sup> 59536.*

*Patented Nov 13, 1866.*

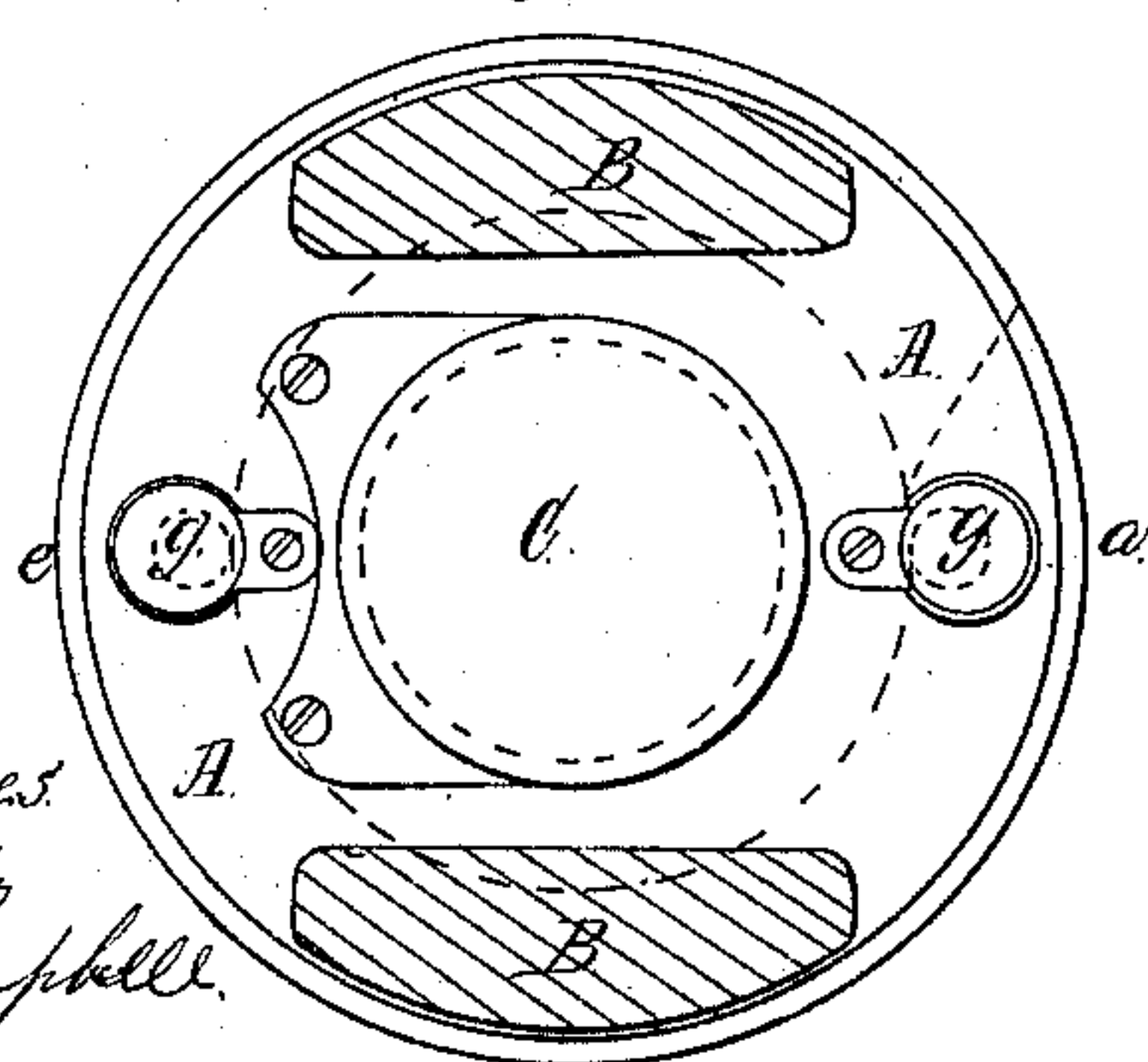
*Fig. 1.*



*Fig. 2.*

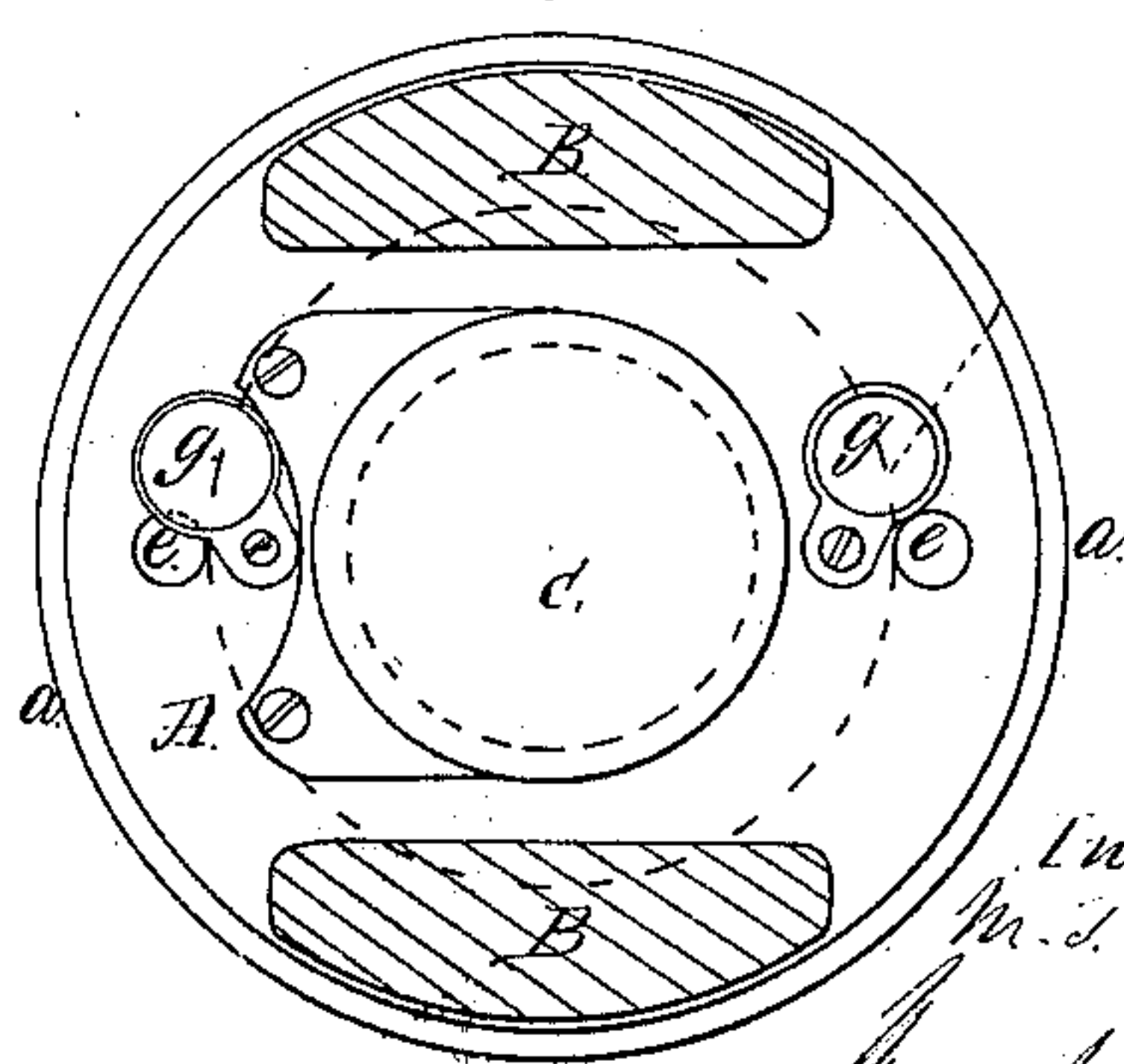


*Fig. 3.*



*Witnesses*  
*E. W. Schuyler*  
*R. D. Campbell*

*Fig. 4.*



*Inventor*  
*M. J. Althouse*  
*Wm. H. H. H. H. H.*



# UNITED STATES PATENT OFFICE.

M. J. ALTHOUSE, OF WAUPUN, WISCONSIN.

## IMPROVEMENT IN PUMPS.

Specification forming part of Letters Patent No. 59,536, dated November 13, 1866.

*To all whom it may concern:*

Be it known that I, M. J. ALTHOUSE, of Waupun, in the county of Fond du Lac and State of Wisconsin, have invented a new and useful Improvement in Pump-Buckets; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a vertical central section through the center of a pump-bucket having my improvement applied to it. Fig. 2 is a similar view of the bucket having its expansible packing exposed to the action of the water. Fig. 3 is a horizontal section of Fig. 1, taken at the point indicated by red line *x x*. Fig. 4 is a horizontal section of Fig. 2, taken at the point indicated by the red line thereon.

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

This invention relates to an improvement on an expansible-packing wooden pump-bucket which was described in my application for a patent February 24, 1866, in which I employed expansible packing-rings of leather, which were confined in an annular recess formed in the cylindrical body of the bucket, and forcibly expanded by the action of the column of water above the bucket during the ascent of the same. The water is caused to act upon the packing through vertical passages, which conduct the water within a chamber containing a spring that presses the packing outward with more or less force, as described in said application for Letters Patent.

I have found that the spring above mentioned will answer every purpose for keeping the packing in close contact with the bore of the pump without the assistance of the pressure of a column of water; but when the circumference of the leather wears away, after some length of time, it is then necessary to take advantage of the said pressure of water to act in concert with the spring, for pressing out the packing during the ascent of the bucket.

The object of my invention is to employ suitable valves or plugs, in conjunction with water-passages leading to a chamber in the body of the bucket, for receiving the packing, for the purpose of closing said passages and opening them at pleasure, or as circumstances may require, as will be hereinafter described.

To enable others skilled in the art to understand my invention, I will describe its construction and operation.

In the accompanying drawings I represent my invention applied to a wooden pump-bucket of a well-known form, A being the cylindrical body of the bucket, and B the tapering arched stem of the bucket, to the upper end of which the pump-rod should be attached. The stem B is arched to receive upon the top of the cylinder A the valve C, which is constructed, in the usual manner, to open upward and then close and prevent the descent of the water which has been lifted.

An annular recess is made in the cylinder A, within which is fitted snugly a number of expansible packing-rings, *a a*, which are made of leather split obliquely, and arranged within the annular recess *b*, so that their peripheries shall project beyond the circumference of the cylinder A and form a packing therefor.

Within the chamber *b* is a spring, *c*, so constructed that it will press the packing-rings *a a* outward against the bore of the pump with greater or less force.

There are two vertical apertures leading from the top of the cylinder A into the recess *b*, for the purpose of admitting the column of water above the bucket during its ascent to forcibly expand the packing-rings.

When the packing-rings are first applied within a pump the spring *c* will answer every purpose, for a short time, to keep the said rings expanded; but when the rings become worn considerably, it is desired to employ the pressure of the column of water during the ascent of the plunger or bucket to expand the rings, the spring *c* only serving in this case to keep the space *b* within them open to receive the water through apertures *e e*, and also to press very gently upon said rings.

To provide for opening or closing, or partially opening or closing, the apertures *e e*, I employ two valves, *g g*, which are applied over said apertures on top of the portion A, which valves may be made as shown in the drawings, or in any other suitable manner.

When it is not desired to allow water to press upon and expand the packing-rings, the valves are made to close the apertures *e e*, as shown in Figs. 1 and 3; but when the packing-rings become worn, so that the spring *c* is too weak to

press them out with the required force, then the valves *g g* are opened, so as to allow the water to act in concert with the spring *c*.

If desirable, the valves *g g* may be only partially opened, and the pressure upon the packing-rings thus regulated according to the power required to force them outward.

By my invention I am not only enabled to cut off and let on the water at pleasure, but I can regulate the pressure of the water upon the packing-rings as circumstances may require.

Having thus described my invention, what

I claim as new, and desire to secure by Letters Patent, is—

1. Providing the apertures *e e*, leading to chamber *b*, containing an expansible packing, with valves *g g*, substantially as described.

2. The combination of means for regulating the inflow of water through apertures *e e* with the spring *c* and expansible rings *a a*, substantially as and for the purposes described.

M. J. ALTHOUSE.

Witnesses:

A. NUDD,

H. A. RACE.