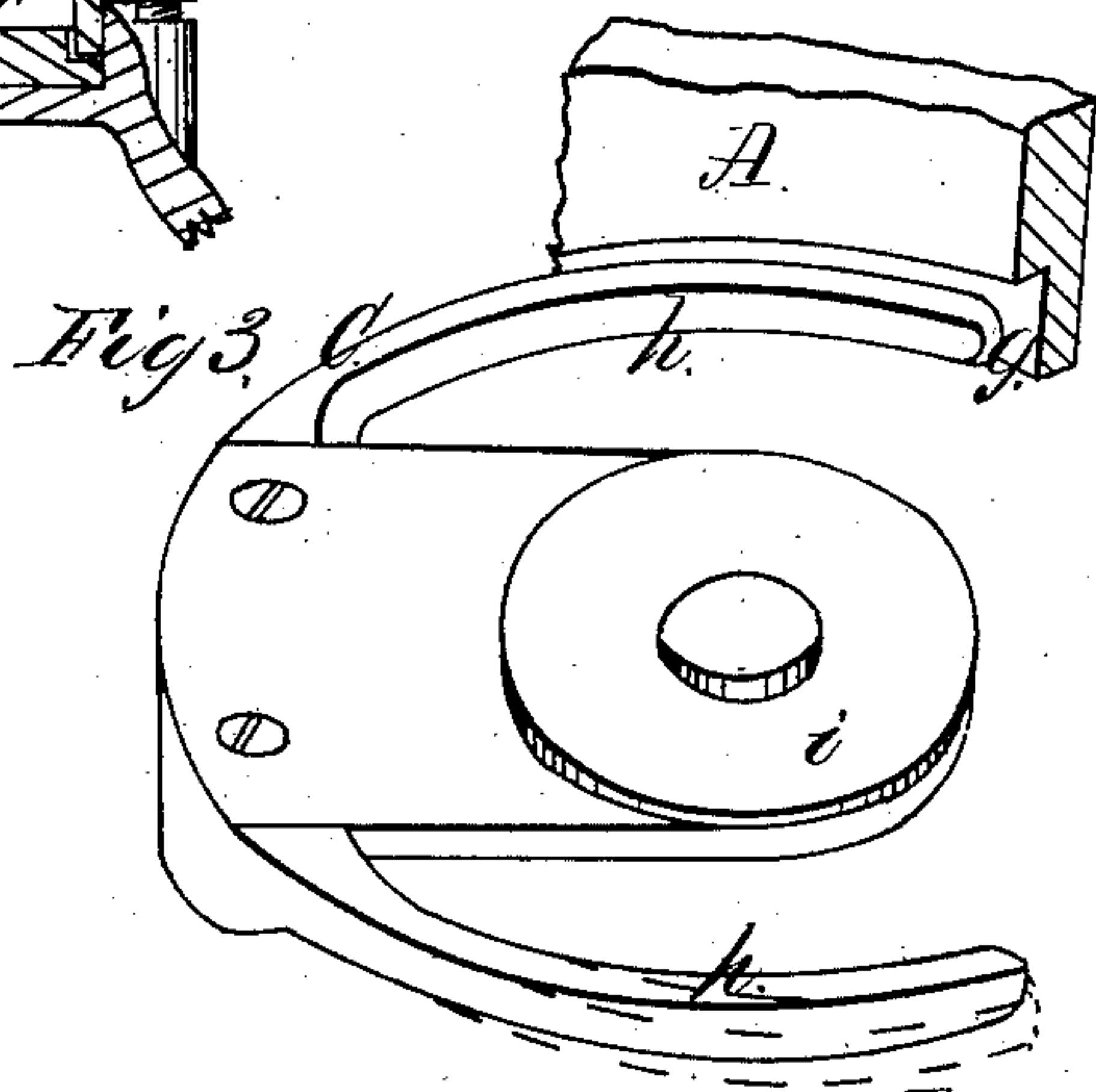
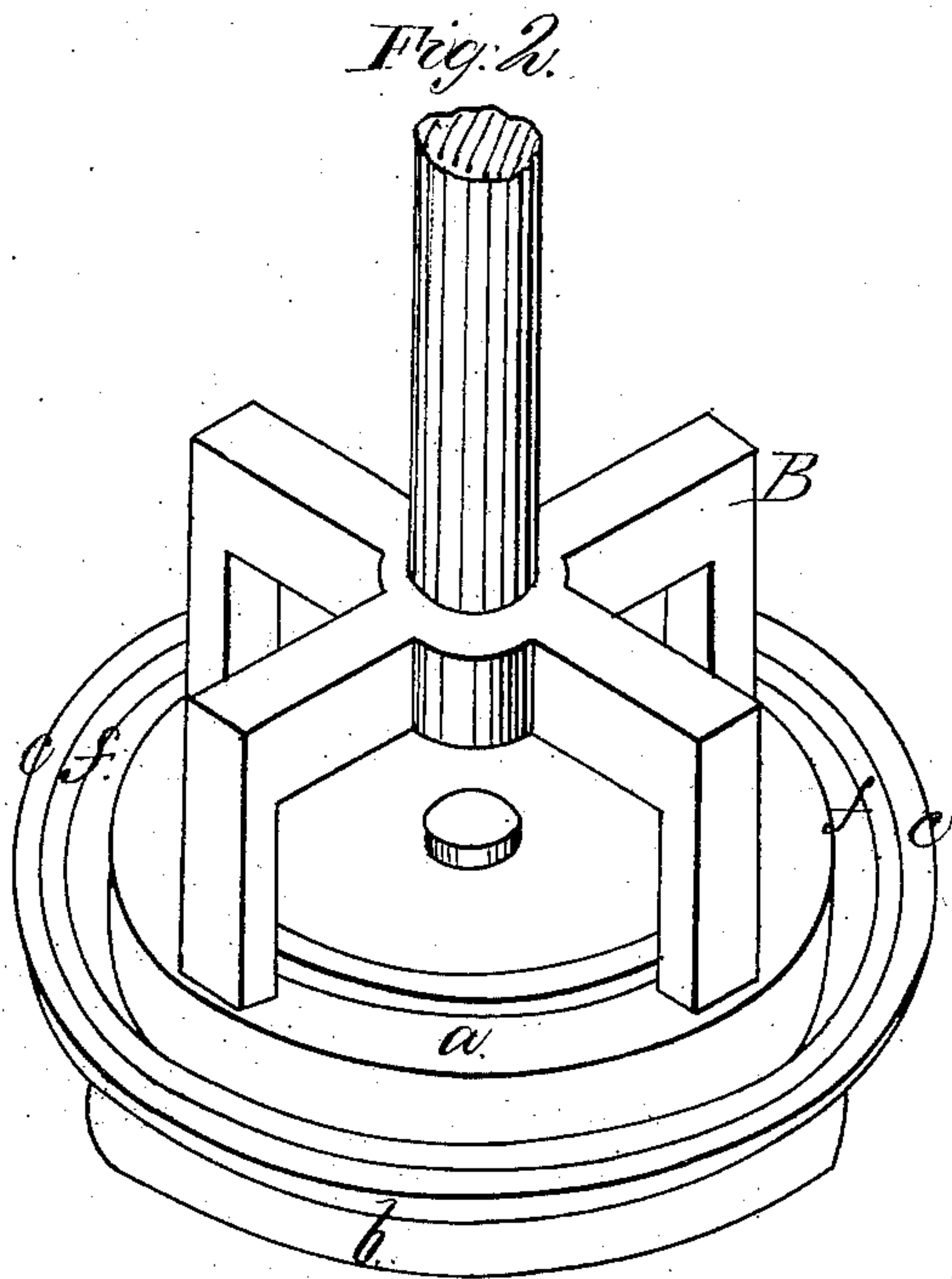
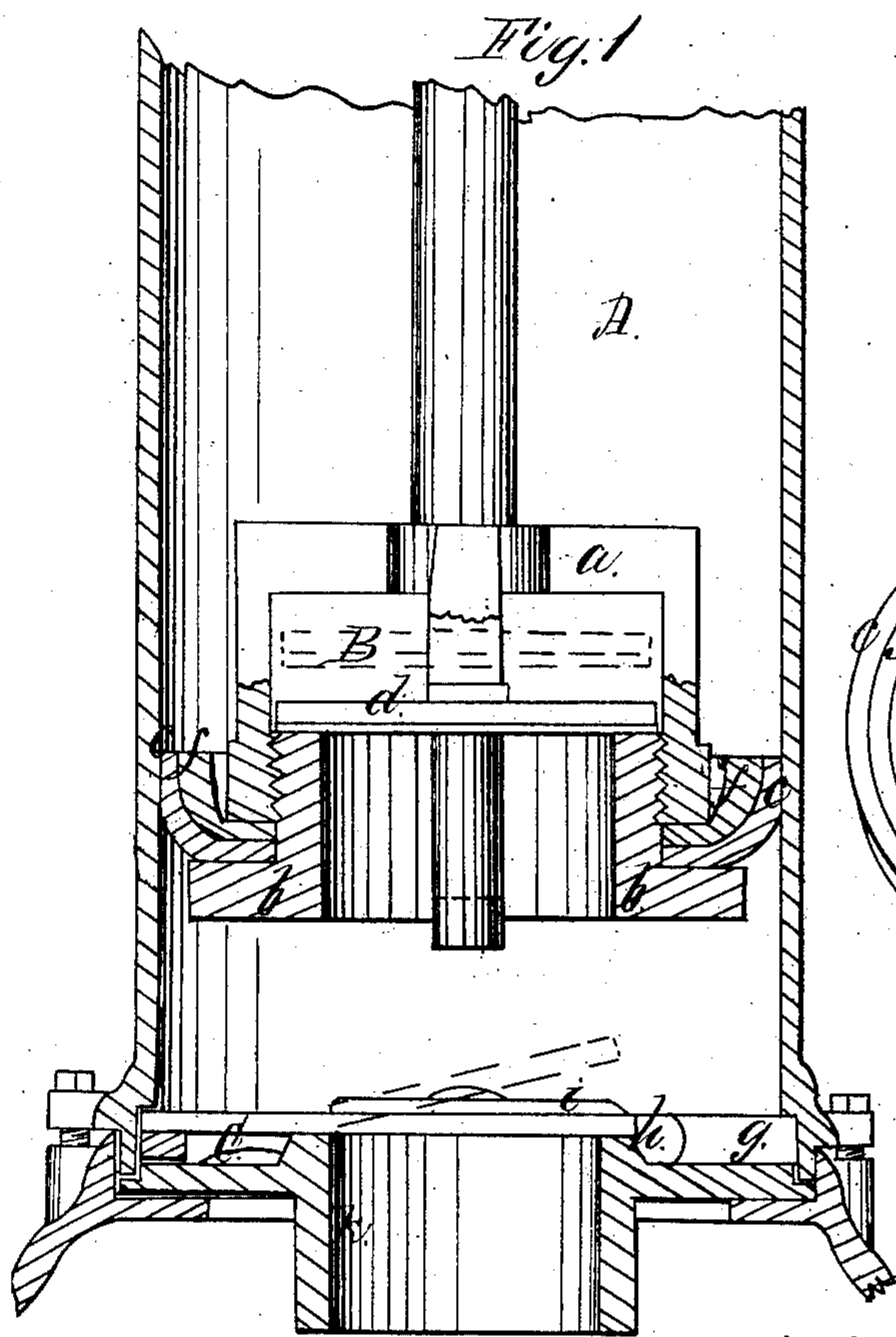


H. Comstock

Pump Packing

Nº 61,319,

Patented Jan. 22, 1867.



Witnesses:
Jay Heyatt.
John Carey.

Inventor
H. Comstock.
by J. Fraser & Co.
Attys

United States Patent Office.

H. COMSTOCK, OF SENECA FALLS, NEW YORK.

Letters Patent No. 61,319, dated January 22, 1867.

IMPROVEMENT IN PUMPS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, H. COMSTOCK, of Seneca Falls, in the county of Seneca, and State of New York, have invented a new and useful Improvement in Pumps; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

Figure 1 is a central vertical section of the lower portion of a pump, provided with my improvements.

Figure 2, a perspective view of the piston or plunger, detached.

Figure 3, a similar view of the expanding valve-yoke, and the groove of the cylinder in which it fits.

Like letters of reference indicate corresponding parts in all the figures.

My improvement is especially adapted to use in those cases where the well is formed by driving tubing into the earth by positive force, though it is also adapted to use in connection with ordinary wells and cisterns. In wells formed by driving tubing, sand and dirt are constantly raised, and soon cut and wear away the leather packing-cup of the piston in such a manner as to make it leak, and therefore the piston requires constant repacking. My invention consists, first, in the combination of a rubber cup or flange, situated within the leather cup or packing around the piston, for the purpose of constantly pressing said leather packing outward against the sides of the cylinder; and second, in the combination of a groove in the lower end of the cylinder with an expanding valve-yoke, to hold the lower valve in place at all times.

As represented in the drawings, A is an ordinary pump cylinder, and B the piston or plunger that moves therein. The piston is preferably composed of two parts, *a b*, screwing together to clamp the packing-cup *c* in place, and having a valve, *d*, substantially as shown. The leather packing-cup *c* is of ordinary form, but instead of being placed alone between the parts *a b*, as usual, it has a cup or flange, *f*, of rubber, of similar form, accompanying it, and situated on the inside, so as not to receive wear. The advantage of this arrangement is, that while the leather receives all the wear, the rubber, by its elasticity, holds the leather constantly out against the sides of the cylinder, and thus compensates for all loss. As rubber is not affected by water, and as the expanding pressure is required to be only slight, the spring thus produced is much more effective than metallic springs, which are very unequal in their action, and are, besides, expensive and constantly becoming disarranged. If at any time, from long use, the rubber cup loses its elasticity, it can be inverted or turned over, and thus double the wear attained. This India-rubber cup or flange is free from compression, and acts constantly, by its elasticity, to give a comparatively gentle but sufficient pressure to the leather or equivalent packing outside of it, and continues thus to act automatically till the leather is worn out at its upper edge. It requires no adjustment nor other manipulation after being once inserted, till the leather is worn away and requires renewal. It is, therefore, to be entirely distinguished from a mere compressed disk of India rubber, which only acts by forced expansion, and requires to be frequently readjusted by further compression as the packing wears away. Also, the leather or other packing only is required to be renewed in my invention, while the compressed disk, once used, becomes permanently flattened, and must be replaced with each new packing. In wells formed by driving tubing, this device is of great value in compensating for the wear of the leather occasioned by the grit that is constantly raised. The bottom of the cylinder A is provided with a horizontal groove, *g*, (figs. 1 and 3,) of suitable extent, into which springs from the bottom a yoke, C, having arms, *h h*, and provided with a valve, *i*, of any suitable form, which shuts down upon the seat *k*. This arrangement of the lower valve is such that while it is easily inserted in or removed from the pump, it is always held in place, which is accomplished by the employment of the groove. Were it not for this, the suction of the pump would displace the yoke, so that the valve would not strike properly over the port; but as it is the yoke cannot escape either upward or downward.

I do not claim broadly the yoke, but only the groove in combination with it.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of the rubber cup or flange *f* with the leather packing *c*, operating substantially in the manner and for the purpose specified.
2. The groove *g* in the bottom of the cylinder, in combination with the valve-yoke C, operating substantially as and for the purpose set forth.

In testimony whereof I have hereunto signed my name in the presence of two subscribing witnesses.

H. COMSTOCK.

Witnesses:

WM. C. STORRS,

JAY HYATT.