

(No Model.)

A. W. ARMSTRONG.
PUMP.

No. 585,901.

Patented July 6, 1897.

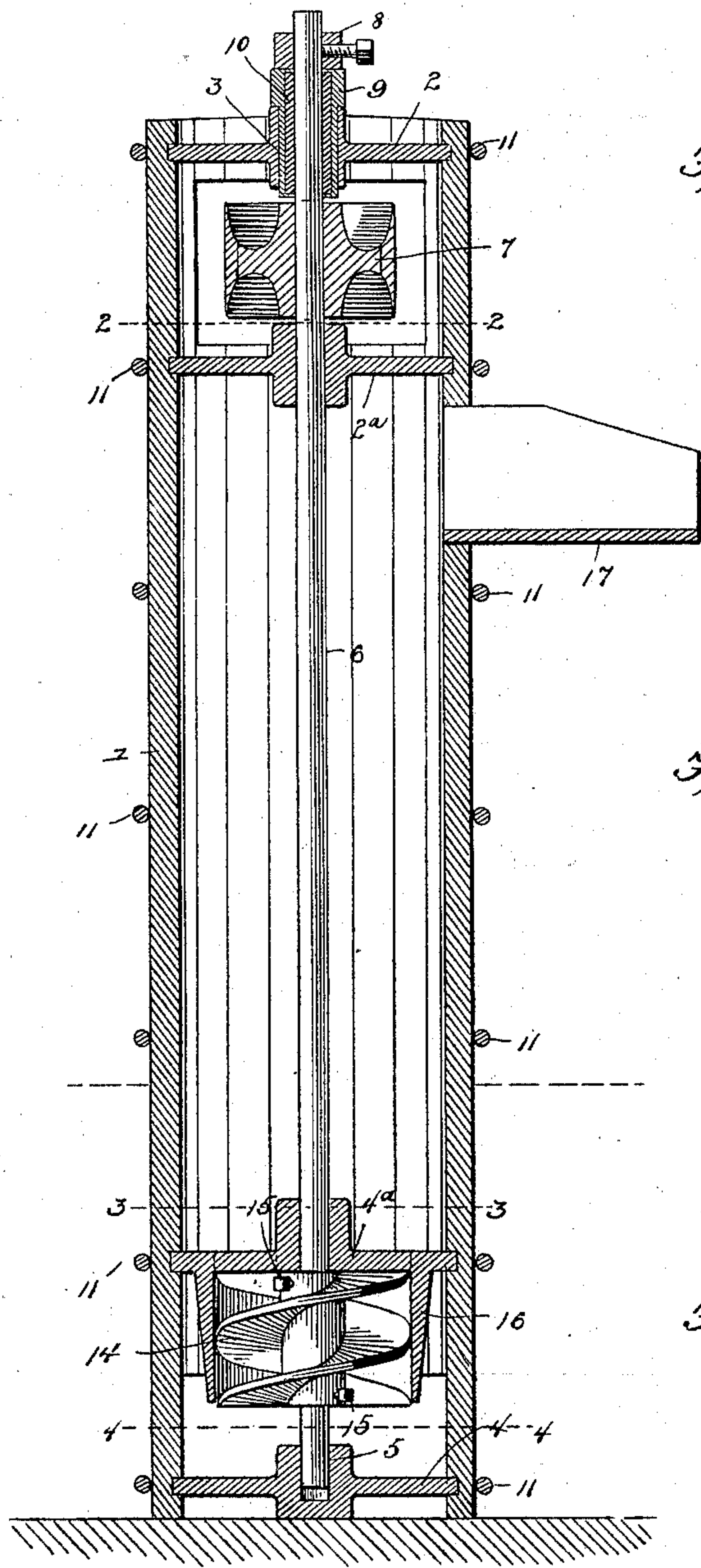


Fig. 1.

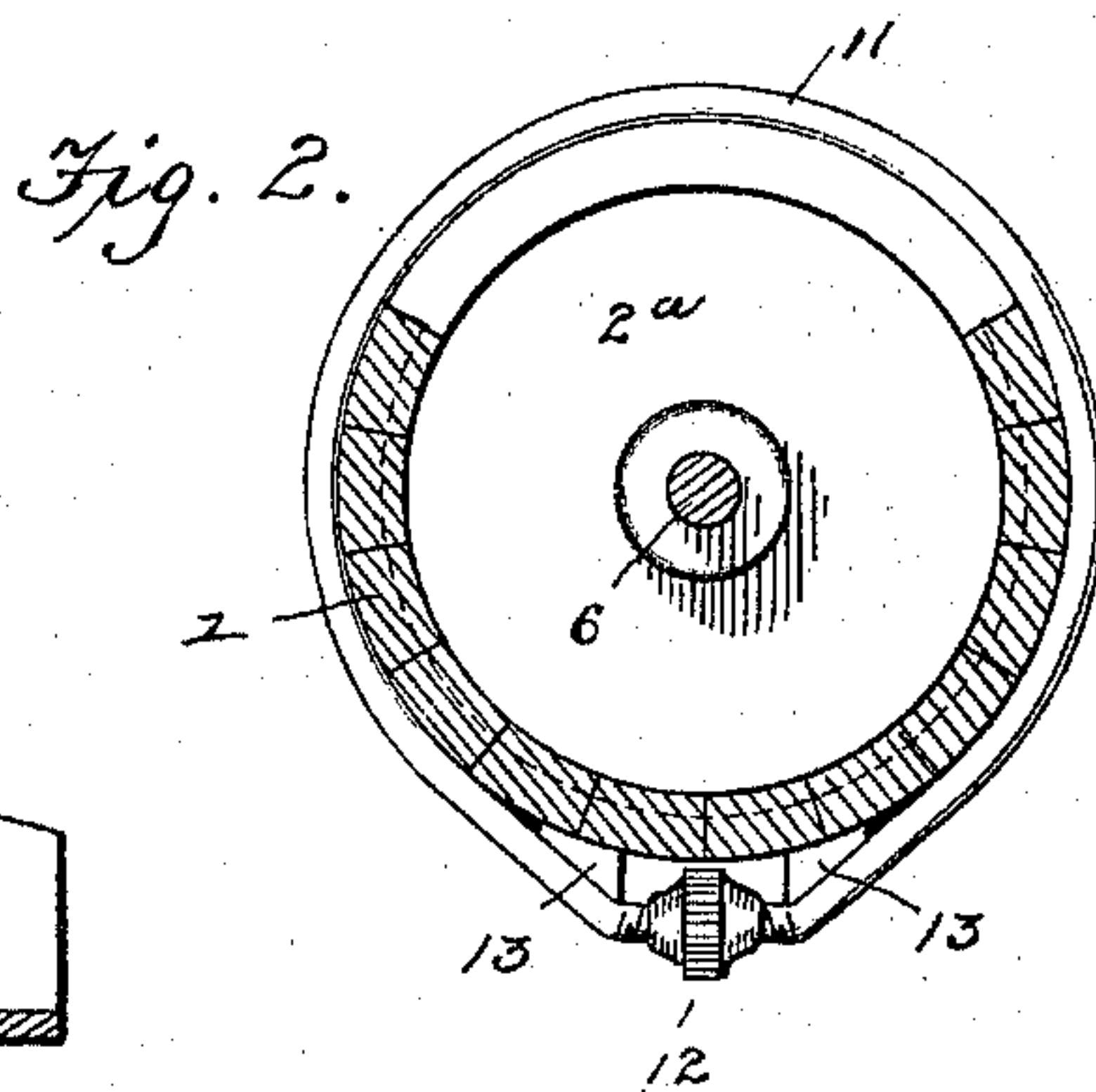


Fig. 3.

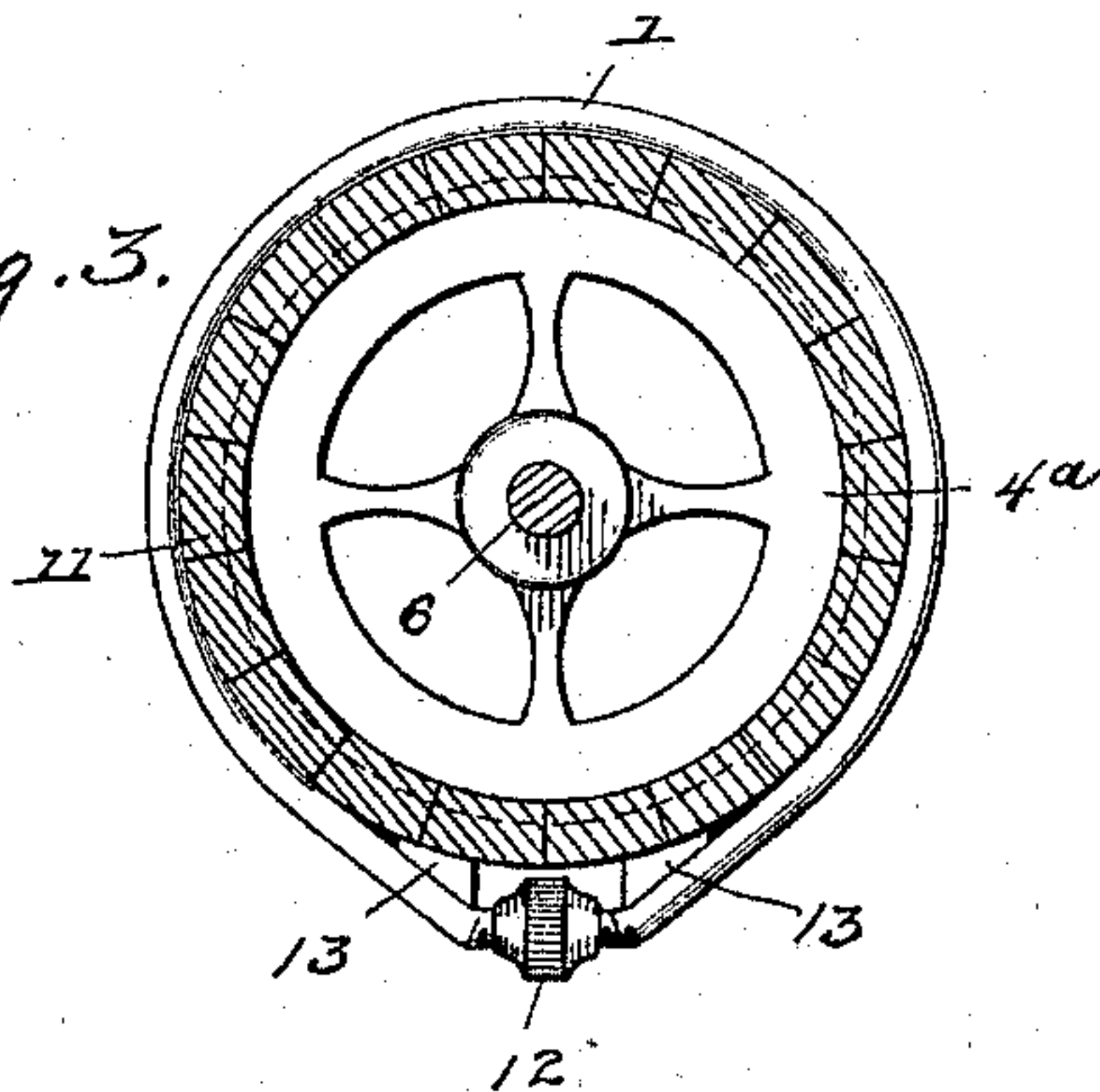
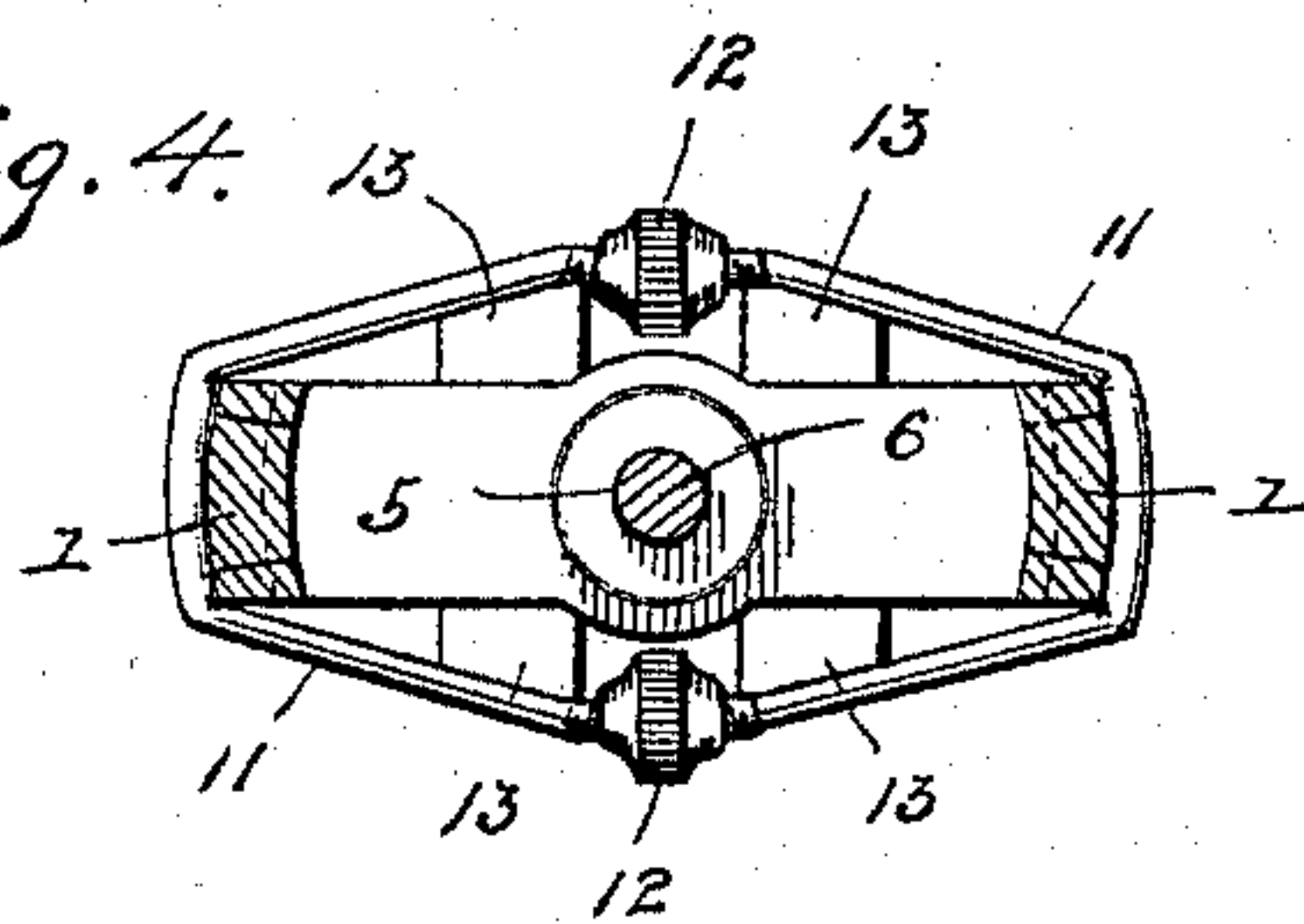


Fig. 4.



Witnesses

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PUMP.

SPECIFICATION forming part of Letters Patent No. 585,901, dated July 6, 1897.

Application filed August 24, 1896. Serial No. 603,740. (No model.)

To all whom it may concern:

Be it known that I, ALBERT WM. ARMSTRONG, a citizen of the United States, residing at Columbus, in the county of Platte and State of Nebraska, have invented a new and useful Pump, of which the following is a specification.

My invention relates to pumps, and has for its object to provide a simple and efficient construction of rotary pump employing a spiral lifting-blade, the parts of the device being so constructed as to be readily assembled.

Further objects and advantages of this invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings, Figure 1 is a vertical section of a pump constructed in accordance with my invention. Fig. 2 is a transverse horizontal section on the line 2 2 of Fig. 1. Fig. 3 is a similar view on the line 3 3 of Fig. 1. Fig. 4 is a similar view on the line 4 4 of Fig. 1.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

The pump barrel or cylinder is constructed of a plurality of staves 1, into which are chimed the peripheries of spiders located, respectively, near the upper and lower ends of the barrel. The uppermost spider 2 is provided with a central bearing 3 and the lowermost spider 4 is provided with an alined socket 5 for the reception of the operating-shaft 6, said uppermost spider being duplicated, as at 2^a, at a short distance below the upper end of the barrel to form an interval in which is arranged a pulley 7, through which motion is communicated from a belt (not shown) to the driving-shaft. A collar 8 is adjustably fitted upon the driving-shaft above the bearing in the uppermost spider 2, and a removable bearing-sleeve 9 is fitted in the bore of said spider and is cored to receive Babbitt or other soft metal bushing 10. This sleeve may be readily removed to replace the bushing when the latter becomes worn.

The staves of which the pump-barrel is composed are grooved, as above described, to

receive the peripheries of the spiders, and are held in the proper relative positions by means of hoops 11, preferably consisting of cross-sectionally-round rods provided with terminal right and left threads engaged by adjusting-nuts 12. The hoops are spaced at their extremities from the outer surface of the barrel by means of blocks 13 to provide a sufficient interval for adjusting the tension-nut 12.

Arranged above the spider 4 is a spider 4^a, through the central bearing in which the shaft 6 extends, and fixed to the shaft below the plane of the spider 4^a is a spiral lifting-blade 14, secured at the desired vertical adjustment by means of set-screws 15, and depending from the spider around the blade is a cylindrical shell 16, in which the blade fits snugly. This shell is open at its upper and lower ends to provide for the elevation by the blade of the water from the space below the spider 4^a to the interior of the barrel above the same. The barrel is provided contiguous to the plane of the spider 2^a with an outlet-spout 17.

A pump constructed as above described is adapted to elevate liquid through a distance of at least ten feet, and by duplicating the spiral blade and the cylinder in which it operates this distance may be increased to any desired extent.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having described my invention, what I claim is—

1. A pump having a barrel composed of detachable staves, spiders chimed into the inner surfaces of the staves and provided with central bearings, means for holding the staves in engagement with the peripheries of the spiders, an operating-shaft mounted in the bearings in the spiders, and a spiral lifting-blade carried by the shaft, substantially as specified.

2. A pump having a barrel constructed of separable staves, spiders having their peripheries chimed into the inner surfaces of the staves and provided with central bearings,

hoops encircling the staves contiguous to and
between the planes of the spiders and pro-
vided with tension-adjusting devices, an op-
erating-shaft mounted in the bearings in said
5 spiders, and a spiral lifting-blade carried by
the shaft, substantially as specified.

In testimony that I claim the foregoing as

my own I have hereto affixed my signature in
the presence of two witnesses.

ALBERT WM. ARMSTRONG.

Witnesses:

WILLIAM BECKER,
CHAS. SEGERKE.