

(No Model.)

R. E. STRAIT.
TUBULAR WELL.

No. 255,092.

Patented Mar. 14, 1882.

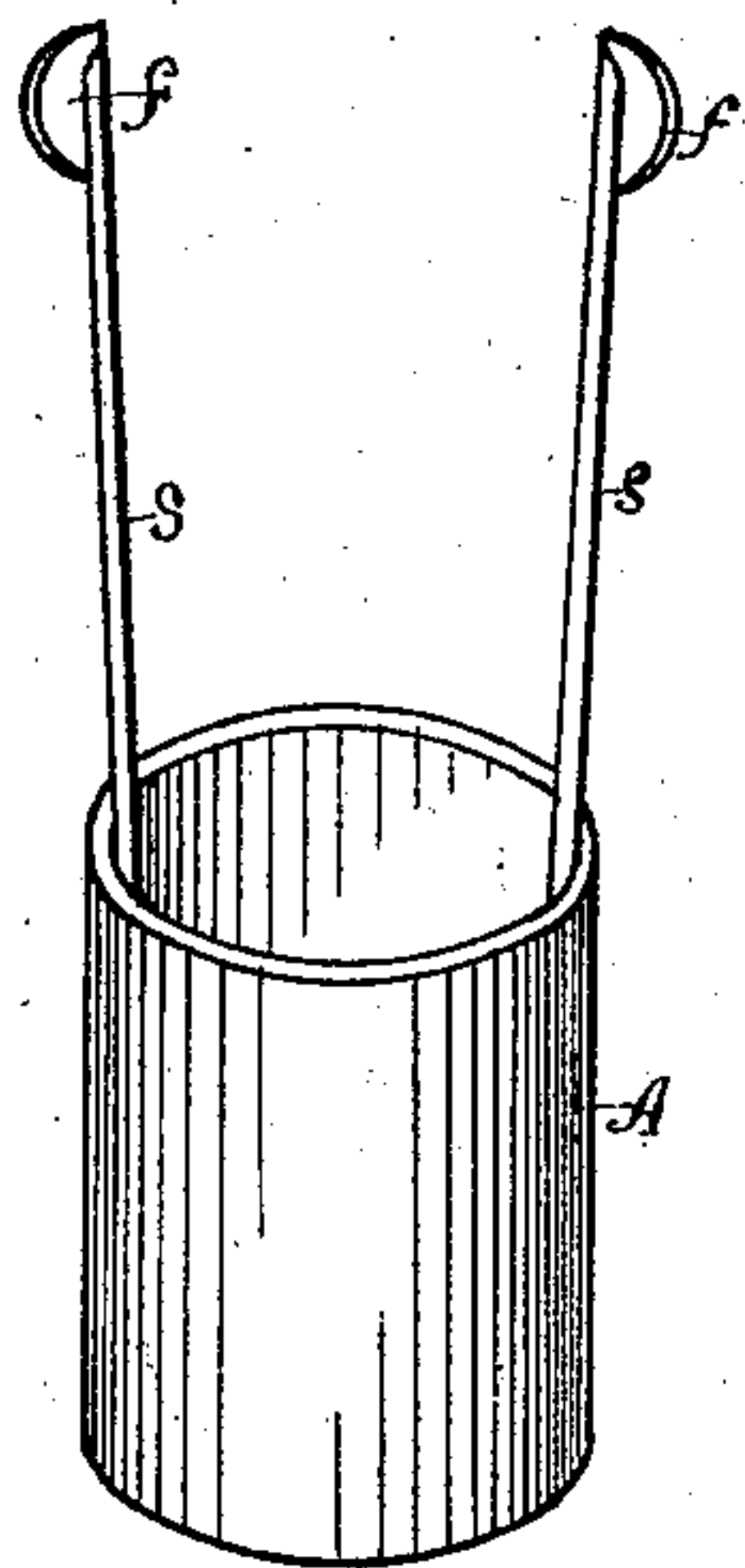


Fig. 2

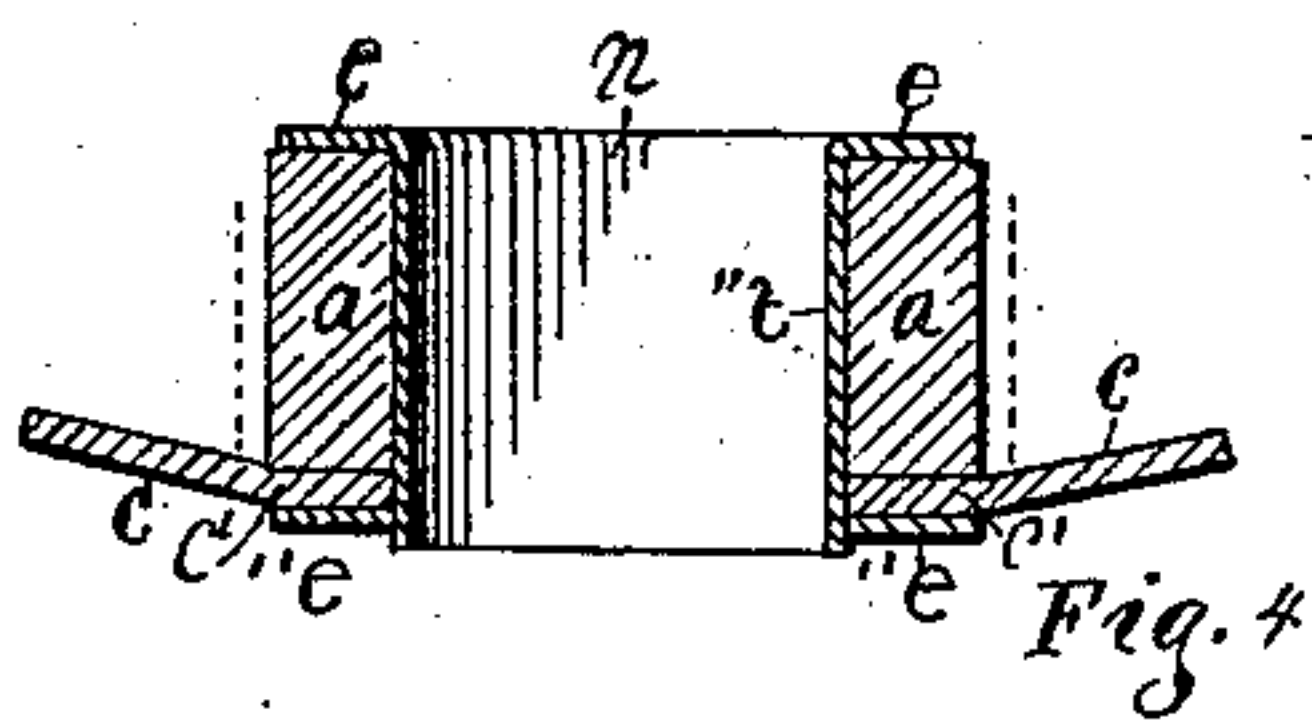


Fig. 4

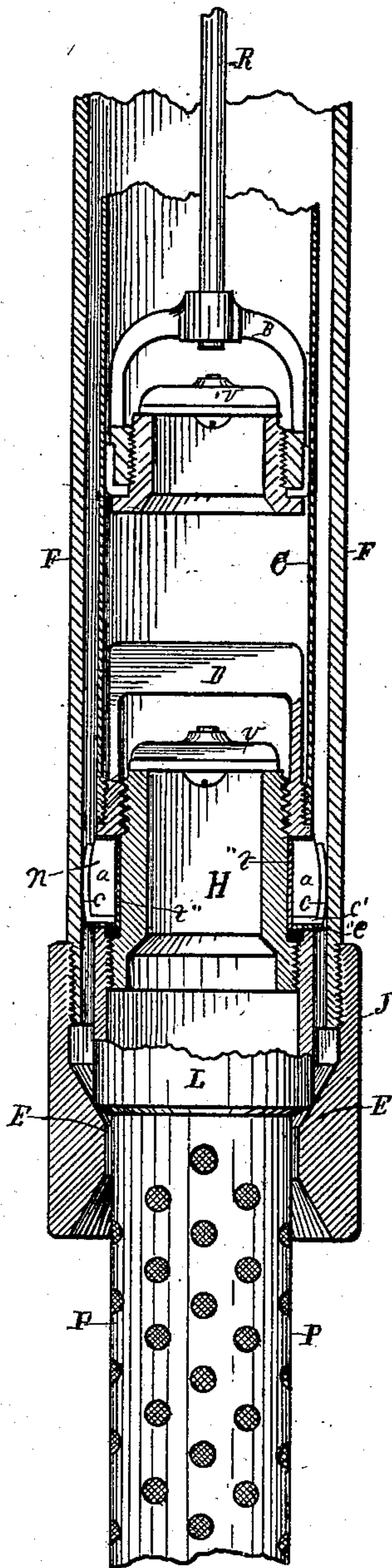


Fig. 1

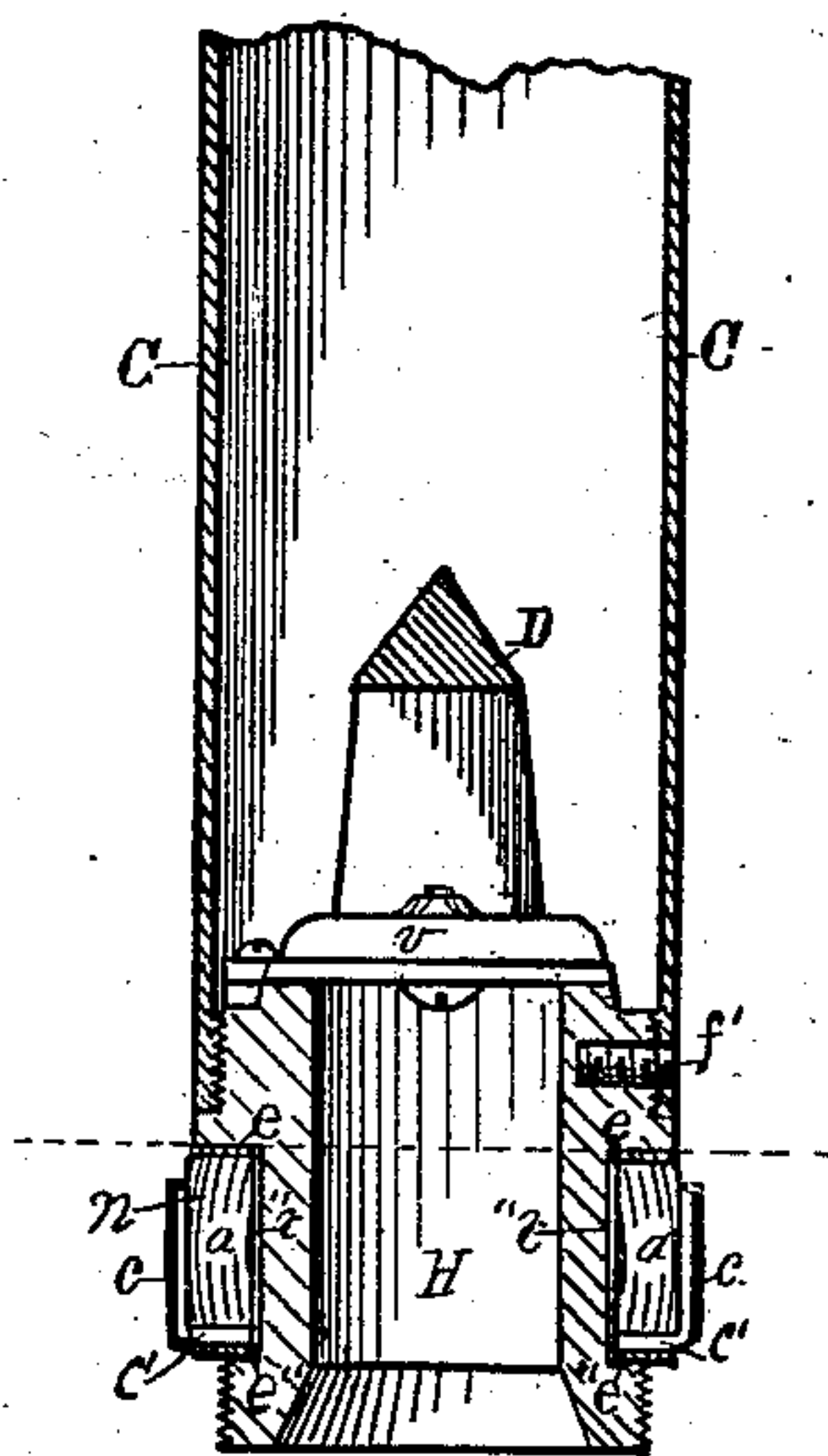


Fig. 3

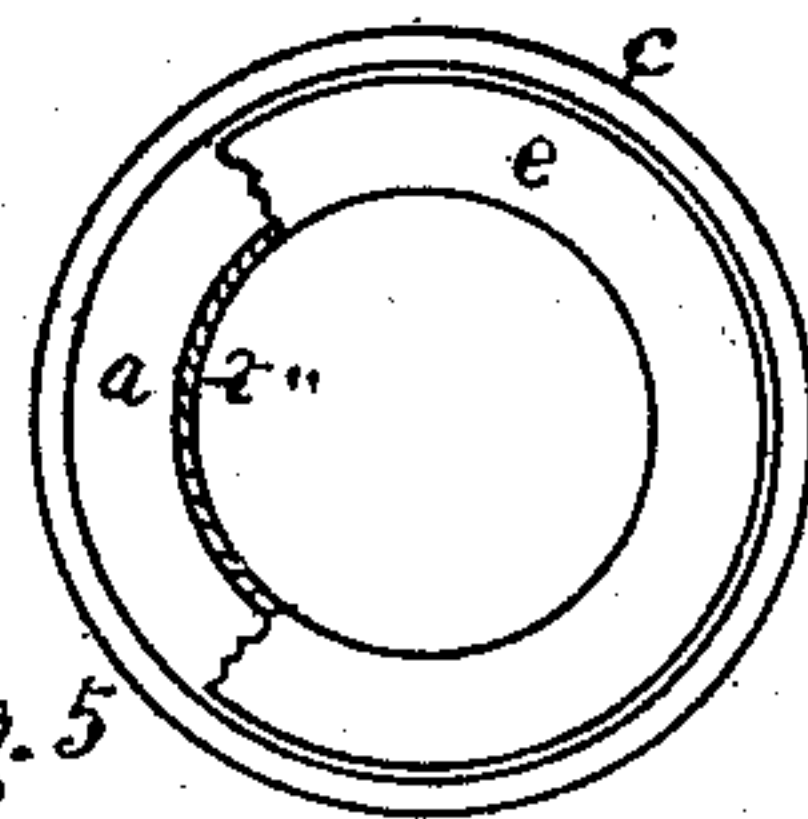


Fig. 5

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RANSOM E. STRAIT, OF GALESBURG, MICHIGAN.

TUBULAR WELL.

SPECIFICATION forming part of Letters Patent No. 255,092, dated March 14, 1882.

Application filed May 12, 1881. (No model.)

To all whom it may concern:

Be it known that I, RANSOM E. STRAIT, a citizen of the United States, residing at Galesburg, county of Kalamazoo, State of Michigan, have invented a new and useful Improvement in Tubular Wells, of which the following is a specification.

My invention relates to locking brass cylinders and their valve-seats in the pipe of tubular wells.

It has for its object certain improvements in the construction of a packing used for locking a valve-joint in a well-pipe, whereby said packing will be more effectual in producing the desired result, and less liable to wear out or become ruined with age. A further object is to so construct the leader or battering-cap on the lower end of the well-pipe that all danger of losing the valve-joint and its cylinder and lower connections is obviated.

A construction effecting the above-specified objects is thoroughly described in the following detailed description.

In the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate like parts, Figure 1 is a vertical section of a tubular-well pipe and brass plunger-cylinder with valve-joints; Fig. 2, a clamp device attached to a pipe for operating the packing-lock; Fig. 3, an equivalent variation in the construction shown in Fig. 1; Fig. 4, a vertical section of the packing-lock; and Fig. 5 an end view of same, looking from a point above the dotted line in Fig. 3.

F is the main well-pipe, and C the valve-joint cylinder, preferably brass, with its plunger R and valve v' . v is a valve located on a seat of the joint H. D is a bail or handle, described in the operation.

Around the body of the valve-joint H, I form a recess or channel in which the packing lock n is located. This device n consists of a metal collar, t' , preferably copper, with flange e integral therewith. Under flange e and around collar t' , I locate a band of thick rubber, a , or like elastic material. Around this band is located a band of leather, c , having a flange or rim, c' , under the lower edge of band a . Beneath this rim c' , I locate a metal washer, e'' , which surrounds the lower end of the collar t' , and is movable thereon.

In Fig. 4 the leather collar or band c , with its rim, c' , is shown before it has been located in pipe F, in which latter location it is cramped up around band a , as in Figs. 1 and 3. When joint H shown in Fig. 3 is used the metal bands are made with a slit in one side, and are sprung into place, n , over the end of the joint, the rubber and leather bands also being sprung over into place. The variation shown in Fig. 1 allows all the bands and collars to be made whole, as they can be readily passed over the valve-joint before the threaded shell of bail D is connected therewith. The other feature of my invention consists in forming the leader-cap J with the rib E, around its inner surface a little removed from the end, said rib being tapered either way from its highest ridge to prevent sand from lodging in its ascent or descent when sand-pumping before the valve-joint and cylinder are located in pipe F. The purpose of rib E is to intercept the shoulder of pipe L, or whatever pipe may be there connected, thus obviating all danger of losing the cylinder C and valve joint.

In the operation, after the packing-lock, constructed as seen in Fig. 4, has been placed in its recess, n , Fig. 1, and the threaded base-rim of bail D and cylinder C have been screwed together and onto valve-joint H and locked thus by a screw, f' , Fig. 3, pipe L is then screwed nearly on the valve-joint and the whole located in pipe F by means of a hook device grappling bail D, in the usual manner. When at the location in the well-pipe desired, the cylinder C, with its connections, is revolved by means of the hook grappling the bail D, which screws pipe L entirely on, when its upper edges engage the washer e'' , forcing it upward, which bulges band a and forces the collar c rigidly against pipe F, Fig. 1, effecting so secure a lock that no other mechanism is necessary to prevent the cylinder C and joint H from vertical displacement. The collar t' , located between the rubber band a and joint H, prevents said rubber from sticking to said joint and also the connections above. The washer e'' serves the same purpose for the lower edge, and it being movable on collar t' , effects the results previously set forth. Rim c' of the leather collar c holds said collar in position, and there being no like rim on the upper edge of said

collar, it readily bulges out when acted upon.

Pipe L, with filter P, is used when the cylinder *c'* with its joint H, is located in the bottom of the well-pipe F, in which case the lower point of filter P embeds itself in the earth and the sand packs around it, holding it from turning when it is screwed on joint H. When the cylinder and valves are located at an elevated point above the bottom of the well pipe A takes the place of pipe P, when the blades *f f* of the clamp engage the pipe F in the usual manner, preventing the pipe A from turning; but this clamp device does not in any way assist the packing *n* to hold the cylinder and joint vertically rigid in pipe F.

Locking a valve-joint in a well-pipe by means of a packing surrounding the joint and engaging the pipe is not new with me; neither am I the first to use a battering-cap on the lower end of the well-pipe; but, so far as I am aware, my improvement to prevent the accidental loss of the joint and cylinder is new.

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

1. The herein-described tubular-well packing-lock, consisting of the combination of the valve-joint having the packing-lock recess, with said packing device composed of the metal collar with the upper rim integral therewith, the thick rubber band or equivalent, the outer

band, with its integral rim, under the lower edge of the rubber band, and the metallic washer movably located on the lower end of the metal collar, all constructed and adapted to operate substantially as set forth.

2. A leader or battering cap to a tubular-well pipe, having the rib on its inner surface, substantially as set forth, for the purpose specified.

3. The herein-described packing for locking valve-joints with the outer pipe of tubular wells, consisting of the metal collar with upper rim, the rubber band, the outer band, with its integral rim, under the lower edge of the rubber band, and the metal washer on the lower end of the metal collar, all in combination, substantially as described and shown.

4. A plunger-cylinder and connection which is designed for location at given points in the main well-pipe, in combination with the outer well-pipe, provided at its lower end with a battering or leader cap or joint having the internal rib, substantially as set forth, whereby all danger of losing said cylinder and connections is obviated.

RANSOM E. STRAIT.

Witnesses:

A. SYDNEY HAYS,
WM. ALLEN.