

No. 677,796.

Patented July 2, 1901.

C. F. PRESLAR.  
PACKING DEVICE FOR TUBULAR WELLS.

(Application filed Aug. 13, 1900.)

(No Model.)

Fig. 1.

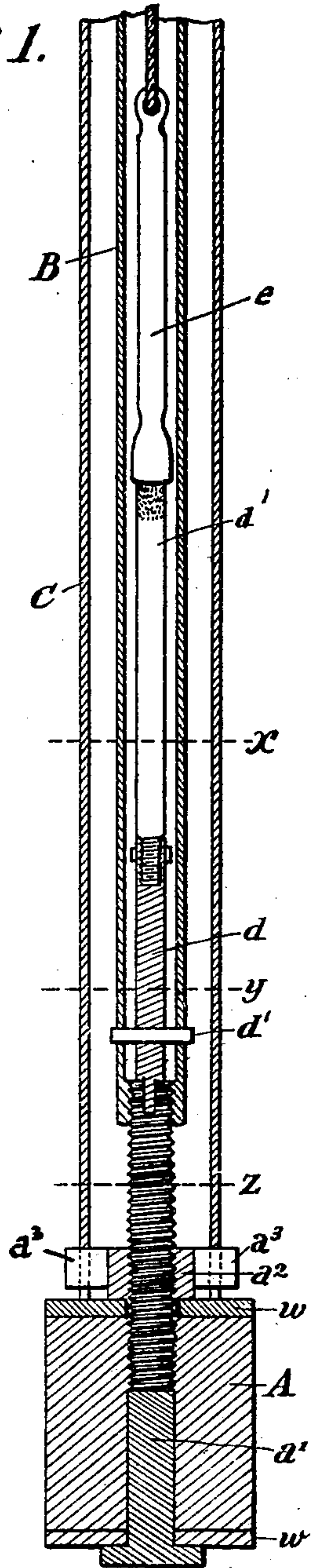


Fig. 2.

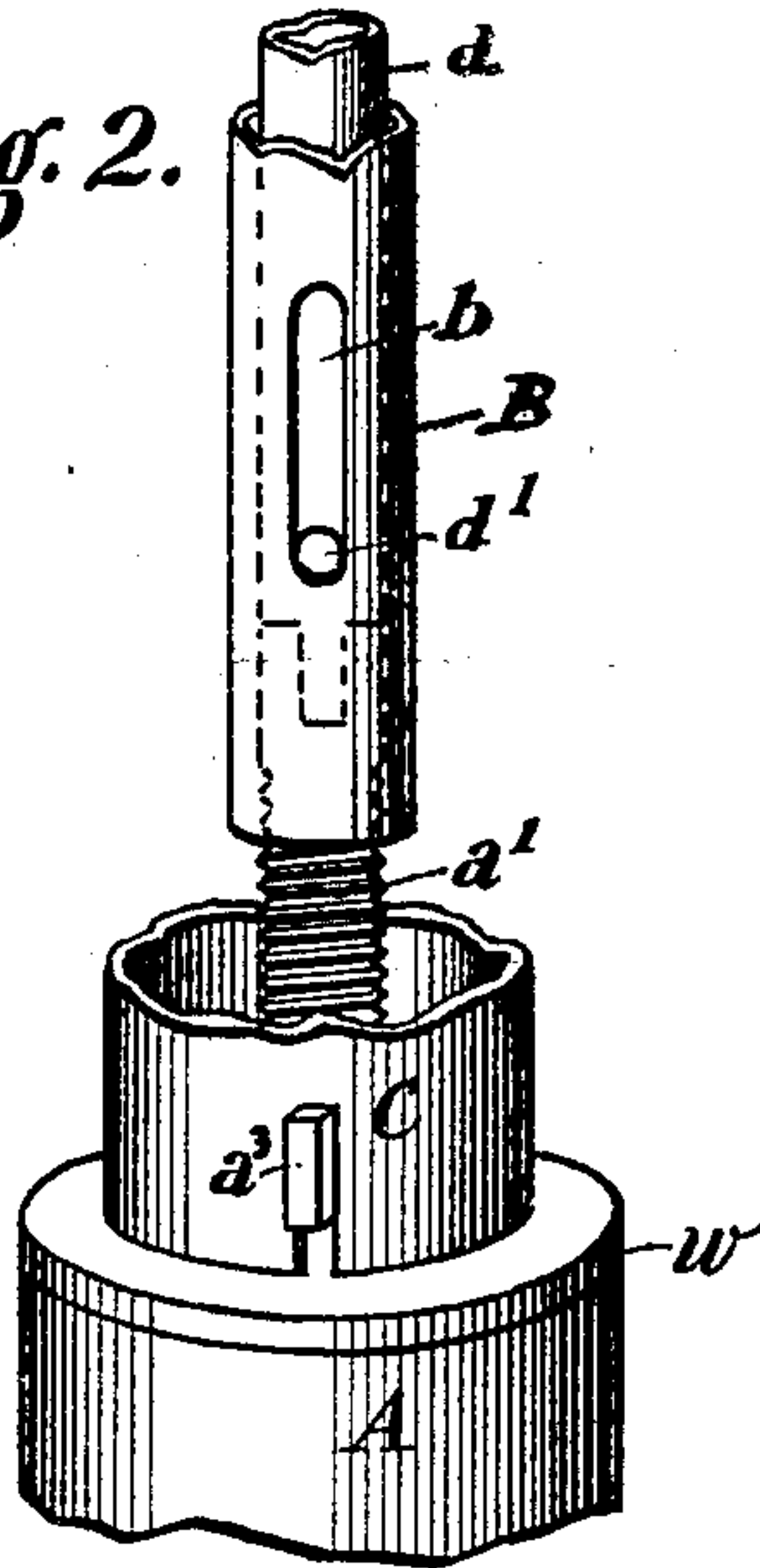


Fig. 6.

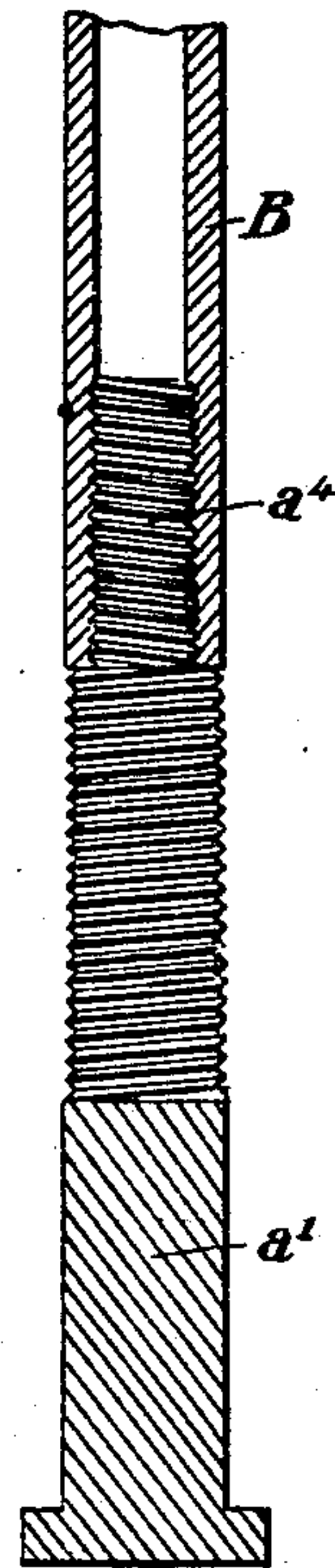


Fig. 3.

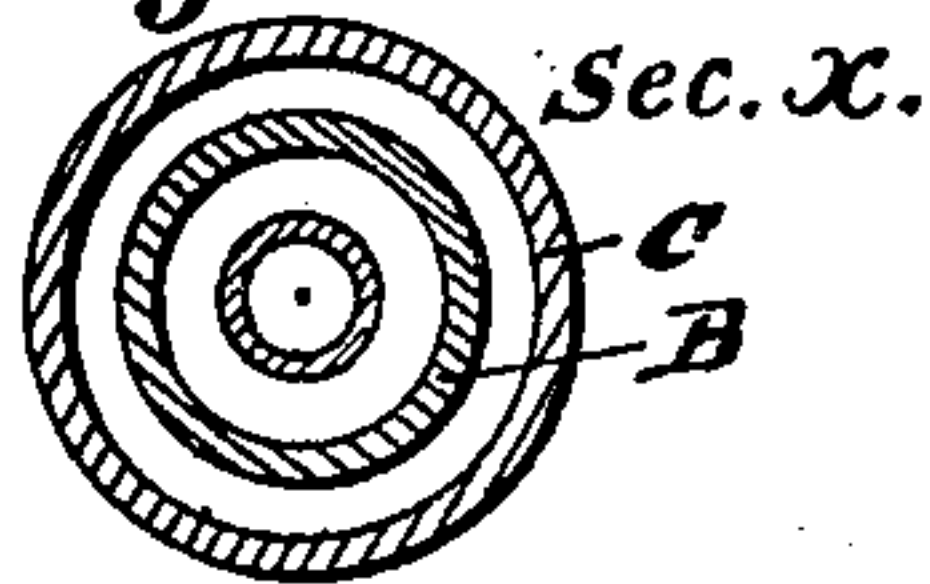


Fig. 4.

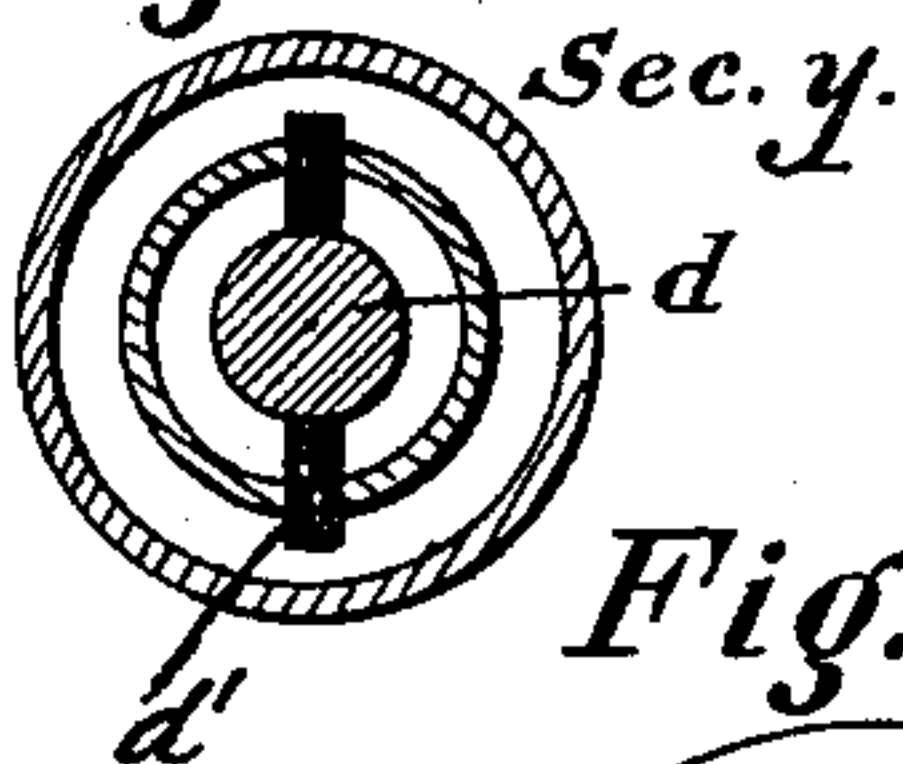
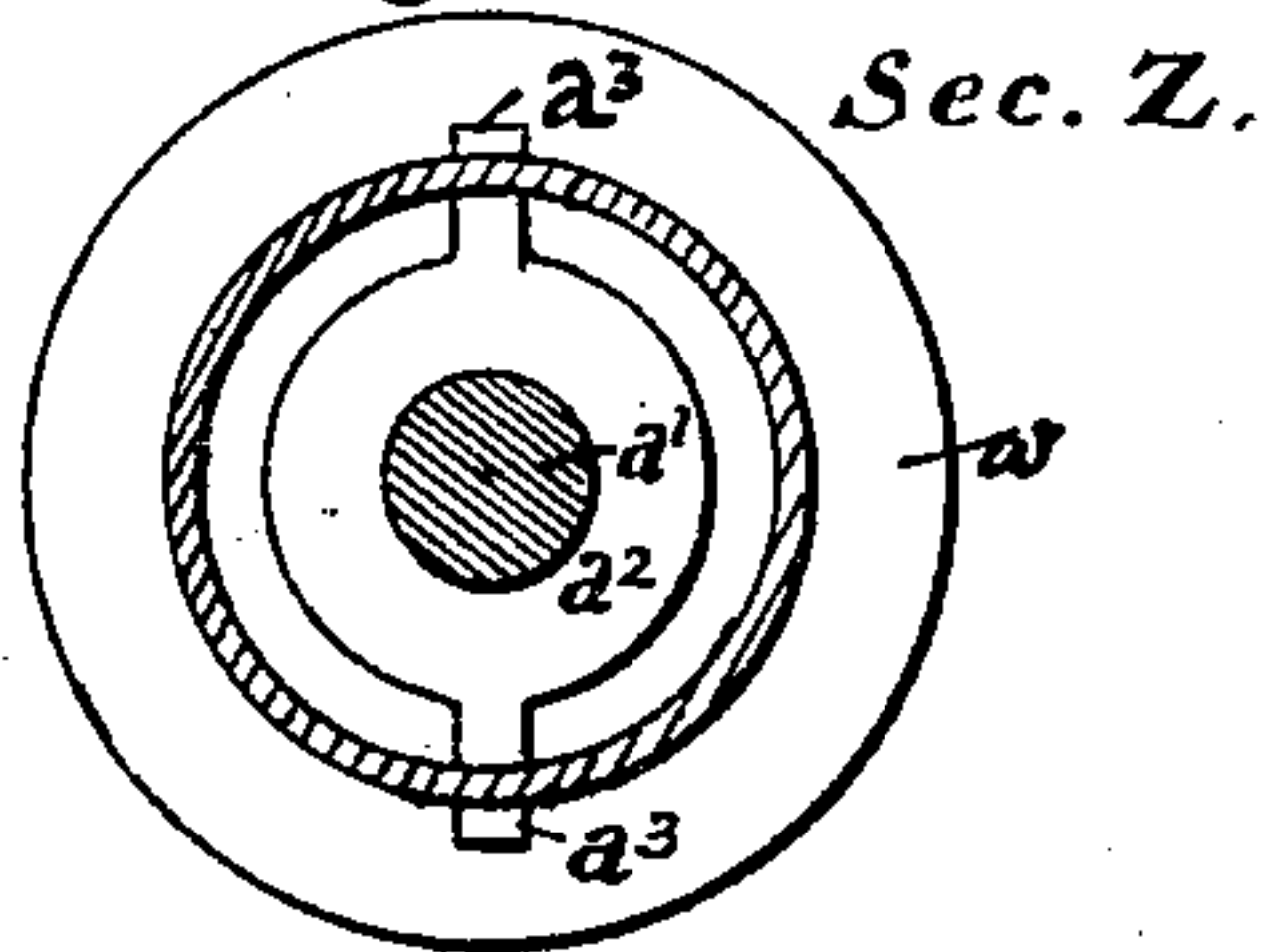


Fig. 5.



Witnesses.

Walter A. Knight.  
Chas. Robert Jones

Inventor.

Charles F. Preslar  
by L. M. Hreca  
att'y.



# UNITED STATES PATENT OFFICE.

CHARLES F. PRESLAR, OF CINCINNATI, OHIO.

## PACKING DEVICE FOR TUBULAR WELLS.

SPECIFICATION forming part of Letters Patent No. 677,796, dated July 2, 1901.

Application filed August 13, 1900. Serial No. 26,785. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES F. PRESLAR, a citizen of the United States, residing at Cincinnati, Hamilton county, Ohio, have invented new and useful Improvements in Packing Devices for Tubular Wells, of which the following is a specification.

My invention relates to tubular-well apparatus, its object being to form a seal, either temporarily or permanently, in such well-holes beneath the surface to shut off lower or higher levels. For example, in sinking a shaft a vein of water, gas, or oil may be encountered which might be satisfactory if uncontaminated or unmixed with other products, but which in going still deeper is contaminated or interfered with by products of still lower veins. My invention in such a case can be used to seat a "plug" at a point below the first vein and above the second, which may be used by itself, either permanently or temporarily, as a "false bottom" for the shaft or made the basis of a further seal, of cement or concrete, formed upon the same and allowed to harden in place. Other uses will readily suggest themselves, according to local conditions.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 is a general elevation, axially sectioned, of the apparatus complete; Fig. 2, a detail perspective of a portion, showing the constructive relations of the compression-nut and its means of rotation; Figs. 3, 4, and 5, cross-sections at  $x y z$  of the main view, Fig. 1; and Fig. 6, a detail of a modified construction.

Referring now to the drawings, the apparatus consists generally of an expansible plug or "seal" A, combined with means for radially expanding the plug and for lowering and holding the plug in place and releasing it when in position or reengaging and withdrawing it when desirable to remove it. Taking these in order, the plug or seal A is a cylinder, of rubber or other suitable compressible material, axially perforated and provided with a central bolt  $a'$ , threaded for a portion of its length, extending through the plug and provided with a lower head to retain the plug. A compression-nut  $a^2$ , formed with opposite radially-projecting wings  $a^3$  or other means

of operation, is threaded on the bolt-stem, by the action of which the plug may be longitudinally compressed, and thereby radially-expanded. Washers  $w$  may be provided at one or both ends of the plugs.

The device for lowering and holding the plug in place consists of a tube B, having internal threads at its lower end engaging the upper end of the threaded bolt  $a'$ . Outside of the tube B is a larger tube C, provided with opposite slots at the lower end to fit over and engage the opposite radial wings  $a^3$  of the compression-nut. It will be seen that by rotating the tube C the compression-nut  $a^2$  will be rotated on its stem, provided, however, that the stem is held against rotation, and this is accomplished by the following construction: The upper end of the bolt  $a'$  is recessed across the top diametrically, and into this cross-recess is fitted the correspondingly-reduced end of a short plunger  $d$ , (as a screw-driver engages the head of a common wood-screw.) Somewhat above—say about mid-length of the plunger  $d$ —a tongue or dog  $d'$  is passed diametrically through the same, projecting at both ends through opposite vertical slots  $b$  of the tube B. Once in position and engaged as above described the plunger  $d$  serves to lock the tube B and bolt  $a'$  against interrotation, tending to loosen their screw-threaded connection. By this means when it is desired to expand the plug A the inner tube B is rigidly held against rotation, thereby holding the bolt  $a'$  while the outer tube C is rotated, thereby turning the compression-nut  $a^2$  down upon the bolt  $a'$  and compressing the plug longitudinally and expanding it radially.

To withdraw the plunger  $d$ , I provide a tube  $e$ , having a bell-shaped mouth, which is let down by a rope within the inner tube B, forcibly over the upper end of the plunger  $d$  (or its extension  $d'$ ) and engages by friction. The plunger  $d$  is lifted to disengage the bolt  $a'$ . The tube B is then turned to release the bolt  $a'$ , and the tubes B C and plunger  $d$  may then be all drawn out together.

The slots  $b$  allow the plunger  $d$  to be drawn up a short distance in the tube B and dropped upon the bolt  $a'$  to loosen the parts in case of rusting, &c., to facilitate detaching the same.



Although the plug will rarely need to be detached and taken out when once in place, yet it will be seen that by reversing the operation described the operating parts may be reattached and the plug loosened and removed.

In the modification shown in Fig. 6 I dispense with the plunger  $d$  and all its immediate connections and attach the tube B directly to the bolt  $a'$  by a left-hand-screw connection  $a^4$  in opposition to the right-hand-screw connection of the nut  $a^2$ . This connection is effected by turning off the end of the bolt  $a'$  to a reduced diameter and providing it with left-hand threads, so that the end of the tube B may seat against a shoulder of the bolt  $a'$ .

I have herein shown the plug A as expanded merely by compression longitudinally, but the expansion may be effected by cones seated on the bolt and pressed inward in opposite directions by the action of the nut and the lower head of the bolt. This being a well-known variant in such plugs I have not thought it necessary to illustrate the same.

I claim as my invention and desire to secure by Letters Patent of the United States—

1. In combination with an expansible plug provided with an axial bolt and a compres-

sion-nut thereon, an inner tube detachably engaging and suspending the plug by connection with its axial bolt, and an outer tube having a rotative and detachable engagement with the compression-nut, substantially as set forth.

2. In apparatus of the character indicated, in combination with the expansible plug, its axial bolt and a rotatable compression-nut on said bolt and having side wings, and the operating-tube having slots adapting it to fit over and detachably engage the wings of the compression-nut.

3. The combination of the expansible plug and its means of longitudinal compression and radial expansion, the inner tube having a screw connection with the bolt, and the plunger seating in the cross-slot of the bolt and in the opposite vertical slots of the tube, substantially as set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

CHARLES F. PRESLAR.

Witnesses:

L. M. HOSEA,

WALTER A. KNIGHT.