

(No Model.)

C. P. HOFFMAN.
APPARATUS FOR PACKING STUFFING BOXES.

No. 532,556.

Patented Jan. 15, 1895.

Fig. 1,

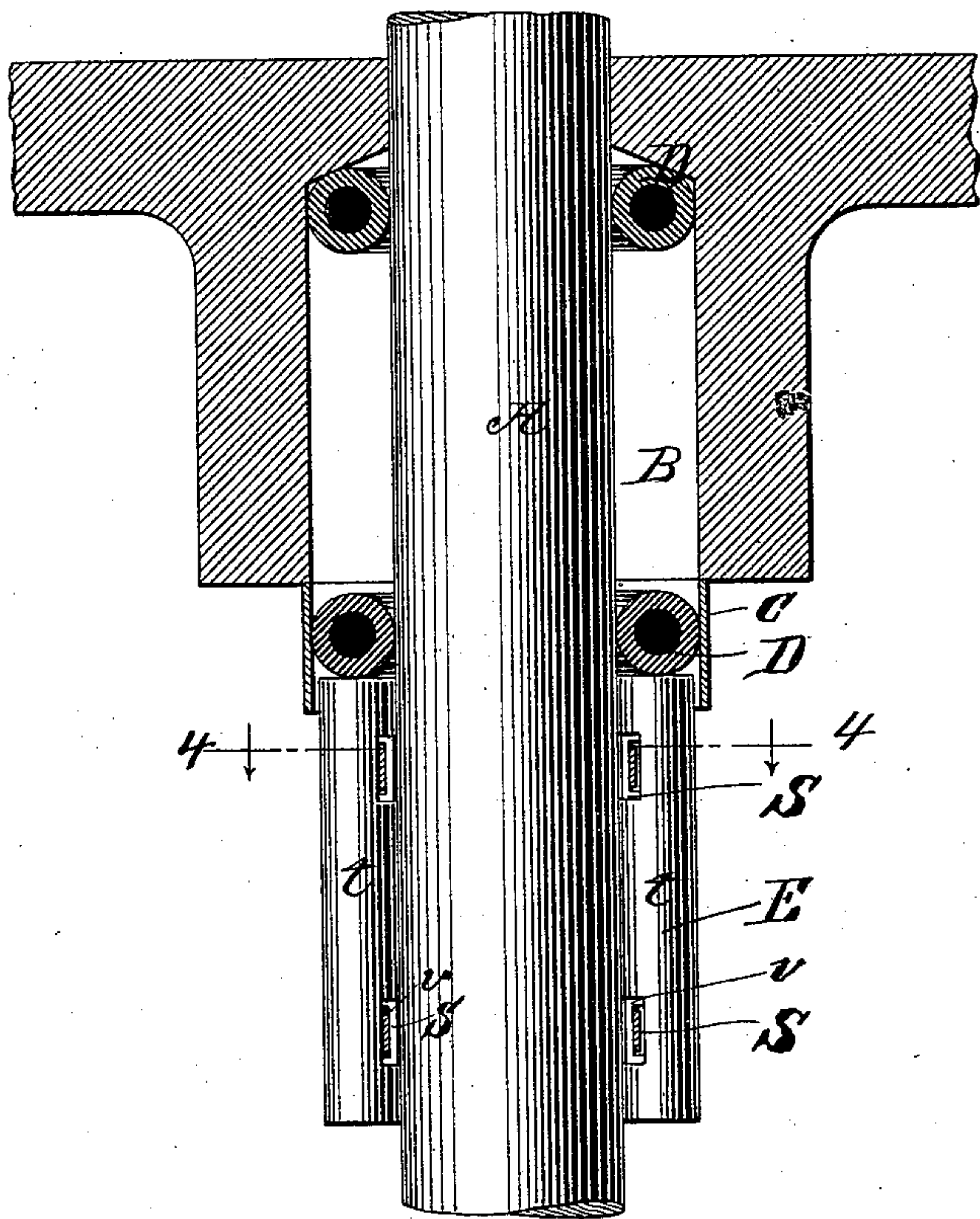


Fig. 4

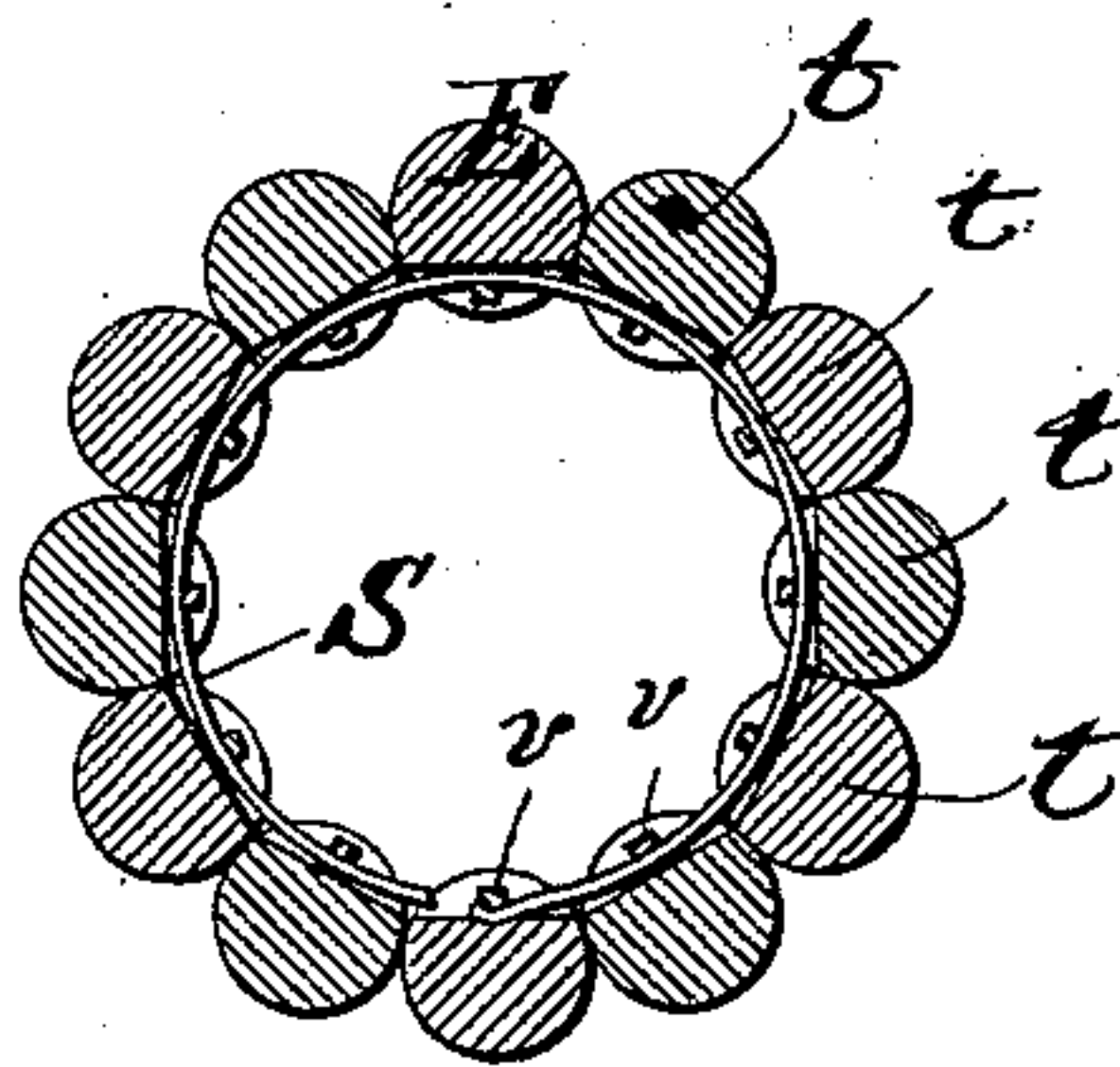


Fig. 5

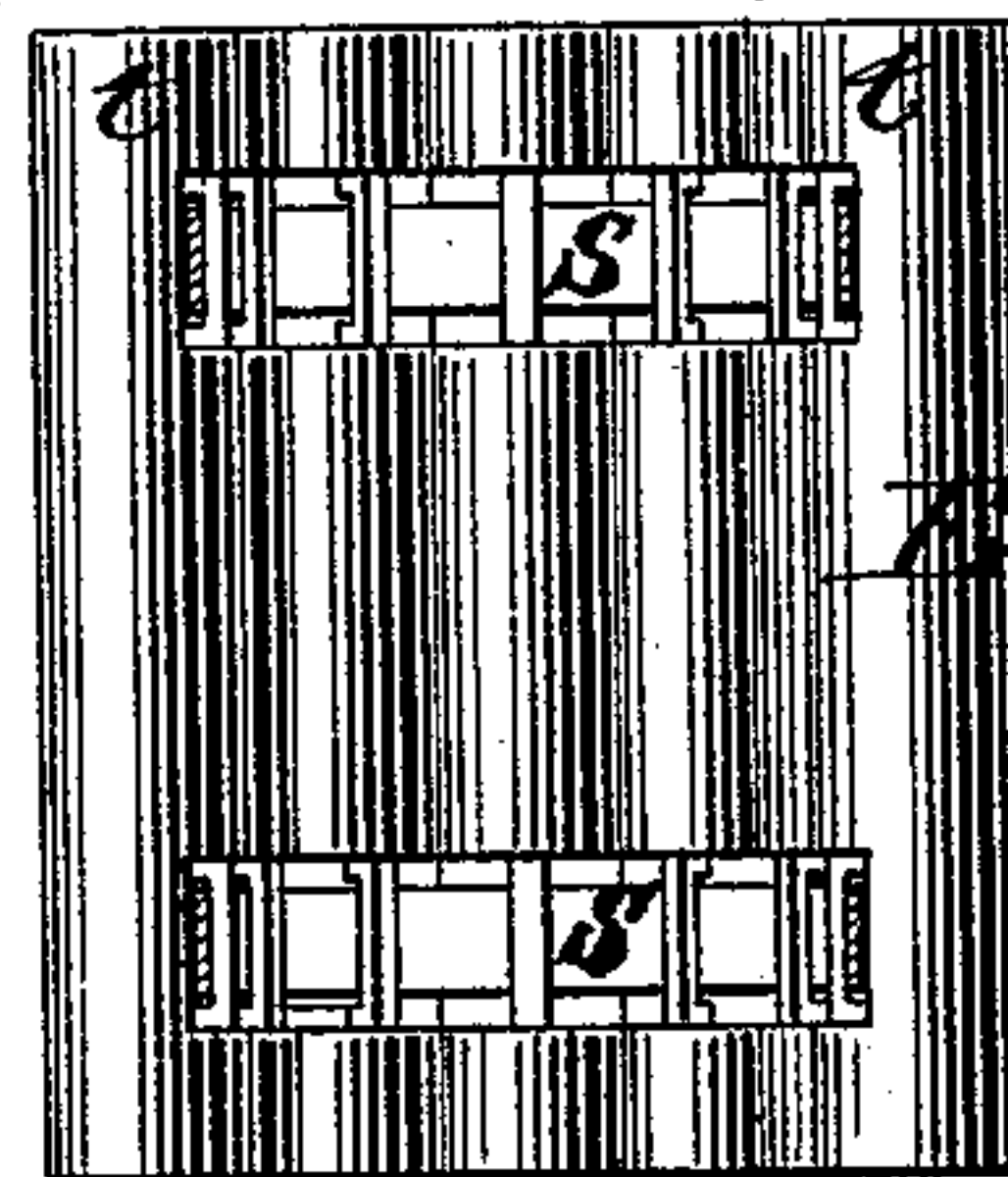


Fig. 3

Fig. 2

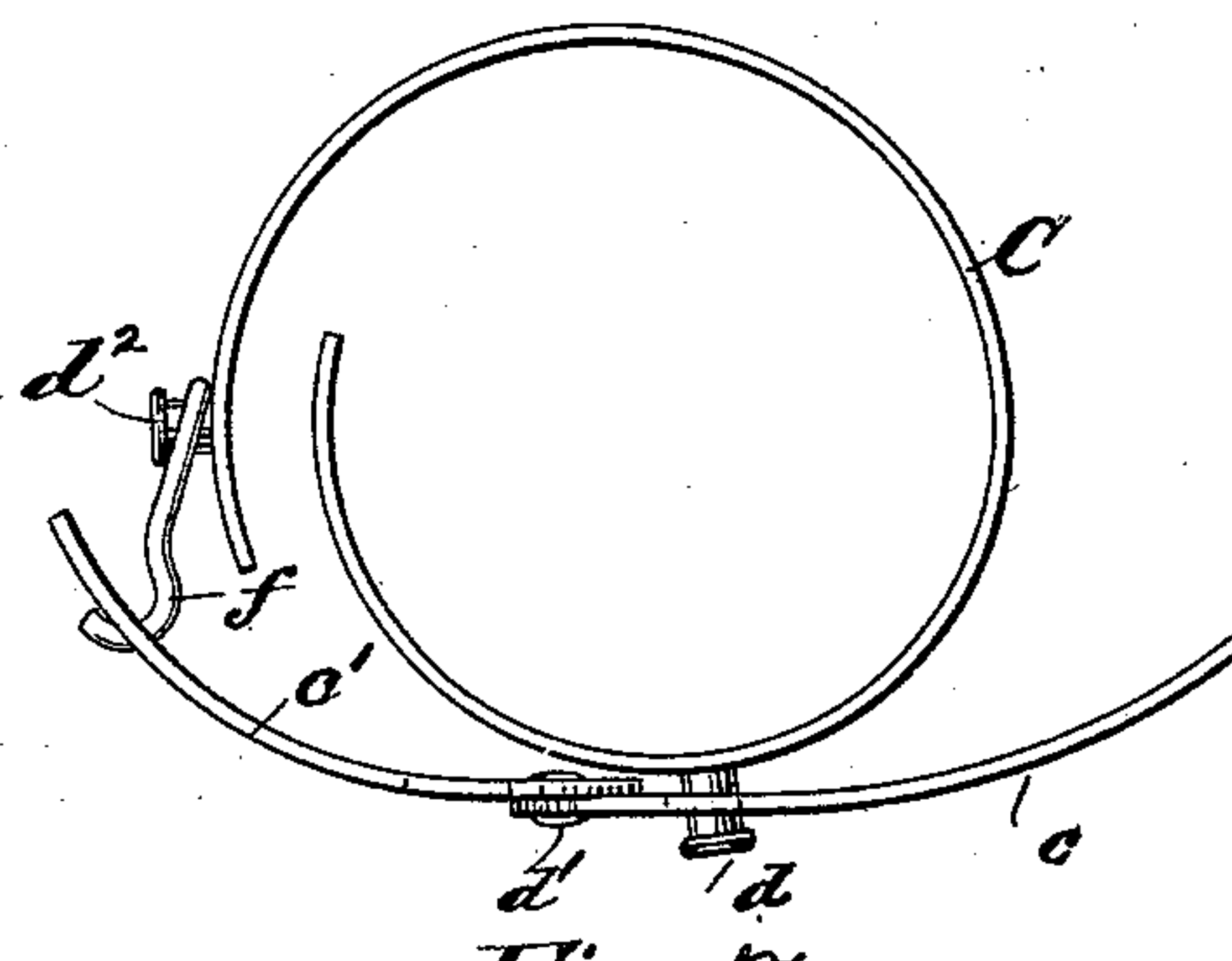
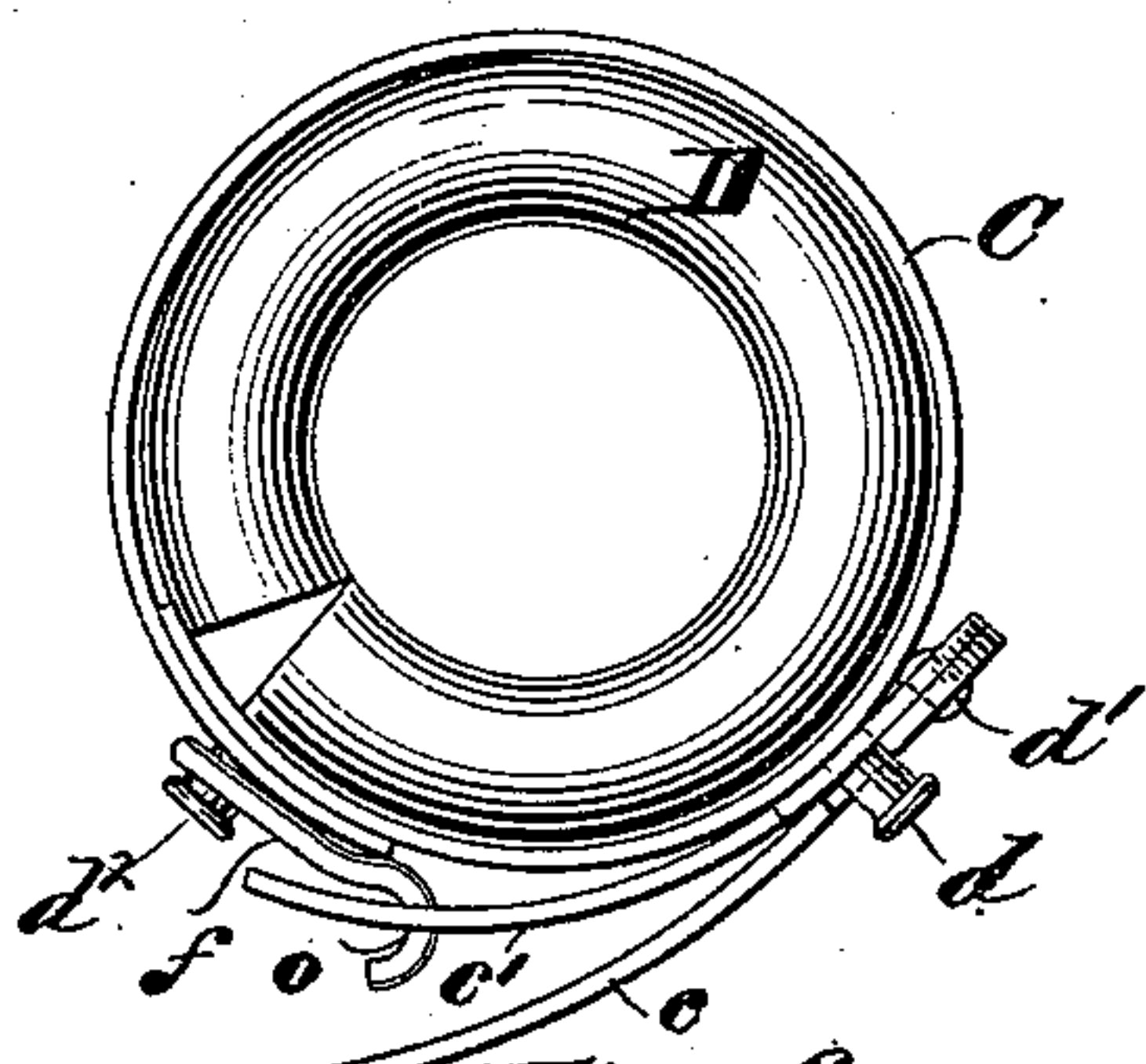
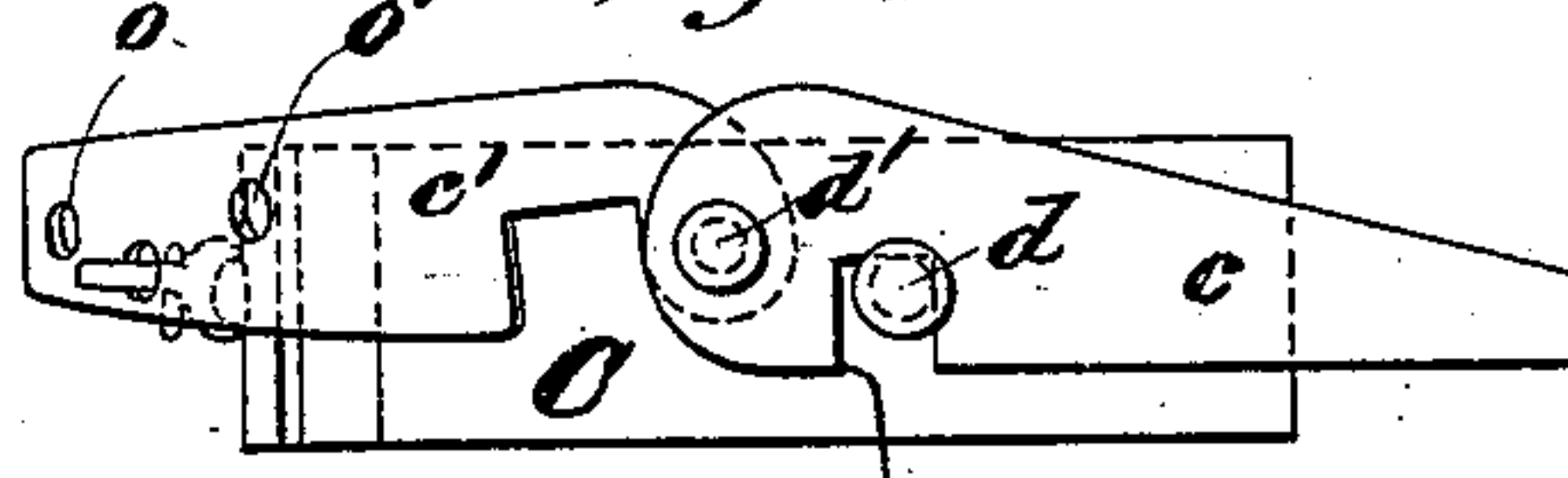


Fig. 6



Fig. 7



Witnesses
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UNITED STATES PATENT OFFICE.

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APPARATUS FOR PACKING STUFFING-BOXES.

SPECIFICATION forming part of Letters Patent No. 532,556, dated January 15, 1895.

Application filed July 16, 1894. Serial No. 517,660. (No model.)

To all whom it may concern:

Be it known that I, CHARLES P. HOFFMAN, a citizen of the United States, and a resident of the village of New Brighton, Richmond county, State of New York, have invented certain new and useful Improvements in Apparatus for Packing Stuffing-Boxes, of which the following is a specification.

My invention relates to an apparatus for packing all classes of piston rods, and particularly for packing that class of piston rods, which are hot and cannot readily be handled, and which are to be packed with layers of ring packing of all kinds.

In the ordinary system of packing piston and other similar rods, the space to be packed is arranged to be filled and stuffed with a variety of packing, as may be found convenient. The packing is usually bent into a ring and placed around the rod to be packed, cut off at a length sufficient to fill the space to be packed, and then poked with the fingers into the space to be packed, by a suitable packing stick or rod.

I have discovered that when a spring band is provided, of sufficient dimensions to hold the packing rigidly in place around the piston rod at the mouth of the orifice to be packed, and then an adjustable packer is provided, of such dimensions as to readily pass up and inside of the band and the stuffing box, that by driving the lower end of the packer with a slight stroke of a hammer or other implement or by pushing it up by the gland, the packing may be readily and easily placed in position and driven home into the space to be packed without the hands of the operator coming in contact with the hot parts of the machinery, and without twisting or disarrangement of the layer of packing itself.

The invention will be best understood by reference to the accompanying sheet of drawings forming a part of this specification, in which—

Figure 1 is a vertical section of the space to be packed, showing the piston rod in elevation and the band and packer in cross section. Fig. 2 is a plan view of the band when closed, with a piece of packing of the proper length, bent and put in place. Fig. 3 is a plan view of the band when open. Fig. 4 is a sectional view of the packer on the line 4—4 of Fig. 1;

Fig. 5, a vertical section of the packer; and Figs. 6 and 7 detail views of the device for closing the band.

Similar letters refer to similar parts throughout the several views.

In the drawings A represents a piston; B, the stuffing box to be packed; C, the band; D D, pieces of packing cut to the proper length, and of any suitable character, and E the packer.

The band C is composed of a thin piece or strip of steel, bent as shown in Figs. 2 and 3. It may be closed and held closed by any convenient form of spring clamp without reference to its particular construction, provided it is capable of being adjusted to fit around any desired size of rod, or to take in any desired size of packing. In the particular device shown in the drawings, *c* is a lever, containing a cut *e*, fitting over a stud *d* on one end of the band C. This lever is connected with a flat link of steel *e'* at one end by a pivot *d'*. The link contains any convenient number of holes *o o'*. The other end of *e'* is attached by a hook *f* to a stud *d²* on the other end of the band C. When the band is open, the levers take the position shown in Figs. 3 and 7. When the band is closed the lever *c* is caused to rotate downward on the stud *d*. This pulls the link *e'* forward, and draws the parts of the band together, and on turning up the end of the lever *c* to the position shown in Fig. 6, the band is held tightly closed. The diameter of the band, when closed, varies according to which hole *o o'*, &c., the extremity of the hook *f* is caused to engage with.

The packer P consists of a series of cylindrical or flattened rods *t t* of convenient length and diameter. Each rod is provided with a flat staple *v* at top and bottom, through which pass two circular spring pieces S S, (Figs. 4 and 5) which hold the whole together. The rods are held in position by the staples on the spring pieces S S, and the packer is thus so arranged as to encircle a piston rod of any desired size by removing or inserting one or more of the rods *t t*, as may be necessary. In each case the tension of the springs S S will be such that the rods composing the pusher will be firmly held together in the manner shown in Fig. 4. The spring is slightly turned in at one end to prevent the removal of the

rods *tt*, but at the other end it is flat, as shown in Fig. 4, so that the rods *t t* can readily be slipped on and off, upon their staples. In practice, if desired, a single spring placed in the center can be substituted for the two shown in the view. By distending the packer it can be made to pass over and encircle any size of piston rod.

The operation is as follows: When it is desired to pack the space B with packing, the band C is set so as to be of the proper diameter when closed, by shifting the hook *f* into the proper one of the holes *o o'*, so as to permit the interior diameter of the band when closed to be substantially the same as that of the space to be packed. A piece of packing is then cut and bent so as to go into the band. The ends of the packing are preferably placed at the points where the two ends of the band come together, so as to permit ready removal. It is then placed around the piston rod, the band opened, passed around the rod and packing, and the latter closed and slid up upon the rod to the mouth of the orifice to be packed. The disposition shown in Fig. 2 is the result. The band and the packing then surround the piston rod, as shown in Fig. 1, and the diameter of the packer is then so regulated that the ends of the rods *t t* will just enter snugly within the band, as shown in Fig. 1. The band is then firmly held in the hand, and a slight upward pressure brought to bear upon the lower extremity of the rods *t t*, either by shoving up the gland, or otherwise, which will force the packing out of the band into the space to be packed and as far up into the same as may be necessary. As soon as one piece of packing is pushed home in this way, the packer is slipped down, the band removed and a new piece inserted, and the operation repeated in the same manner. This is repeated from time to time until the whole space is packed. In this way perfect control of the packing and perfect regularity in packing is assured.

I claim as my invention—

1. The combination substantially as hereinbefore described of an adjustable band arranged to be passed around a piston rod and held firmly around the piston rod at the mouth or the orifice of the space to be packed, with an adjustable packing device arranged to fit around any size of piston, pressing equally upon all parts of the packing, which, on being forced into the band, pushes out the packing into the space to be packed.

2. The combination substantially as hereinbefore described of a rigid band containing rings or layers of packing held at the orifice of the space to be packed with an adjustable packing device, adapted to fit around different sizes of rods, whereby the layers are ejected into the space to be packed.

3. The combination substantially as herein set forth, with the band containing the layers of packing, of an adjustable packing device, adapted to fit around different sizes of rods, substantially as described and for the purposes set forth.

4. The combination, with a ring packing, of a spring band arranged to open and shut, and to be adjusted to fit any size of piston rod, and on being closed, to hold the packing horizontally around the piston rod and means for closing the band after adjustment substantially as described.

5. The combination of the spring band C, of the link *c*, provided with the openings *o o*, and the hook *f* and the lever *c*, turning on the stud *d*, for closing the same.

6. A packer composed of a series of removable rods *t t*, each provided at top and bottom with the staples *v* and the springs *SS* passing through the staples, whereby the same can be adjusted to any size of piston rod.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 3d day of July, 1894.

CHARLES P. HOFFMAN.

Witnesses:

C. H. LUDINGTON, Jr.,

WILLARD PARKER BUTLER.