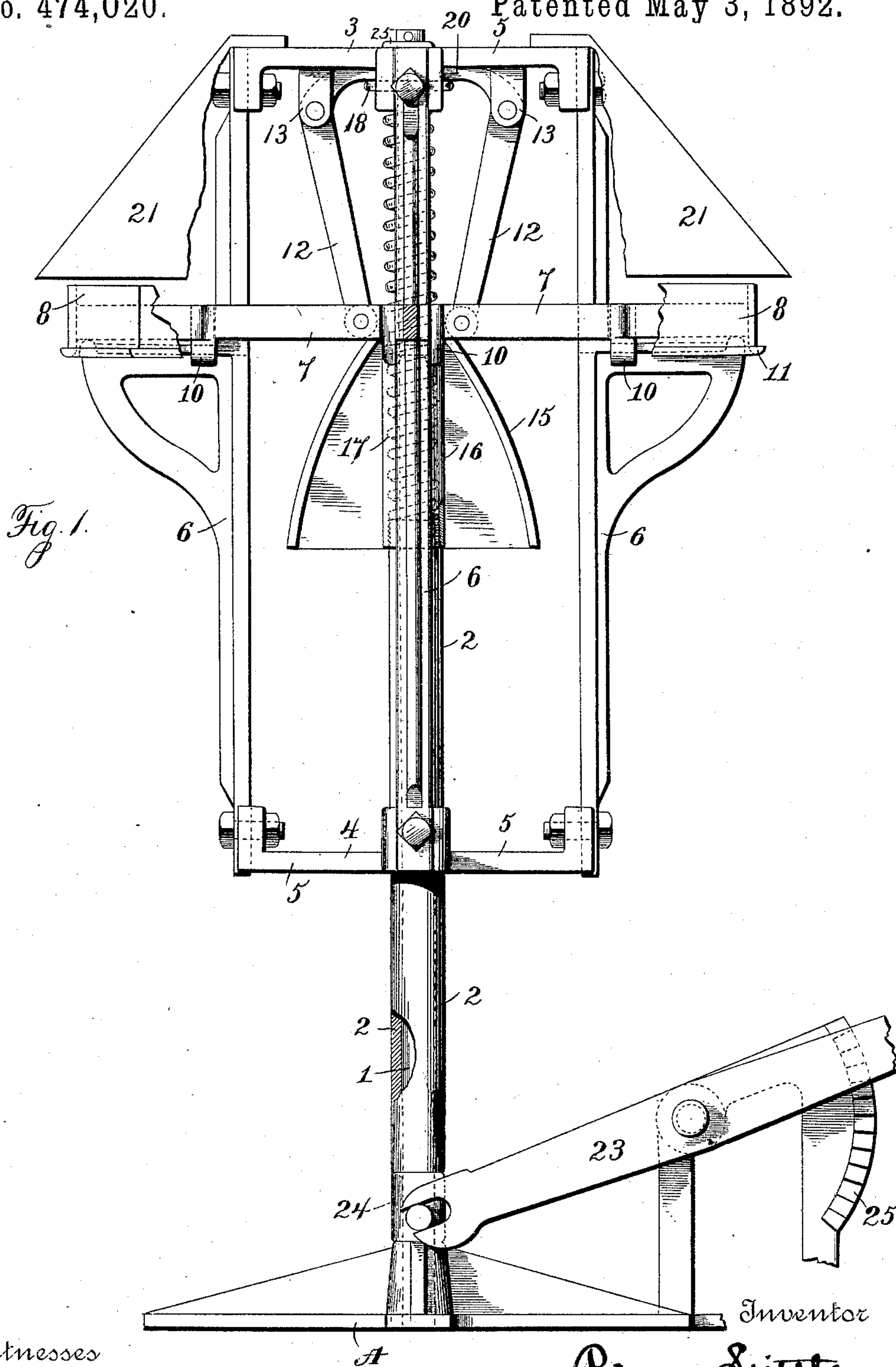


3 Sheets—Sheet 1.

No. 474,020.

Patented May 3, 1892.



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(No Model.)

3 Sheets—Sheet 2.

P. LITTLE.
BARREL EXPANDER.

No. 474,020.

Patented May 3, 1892.

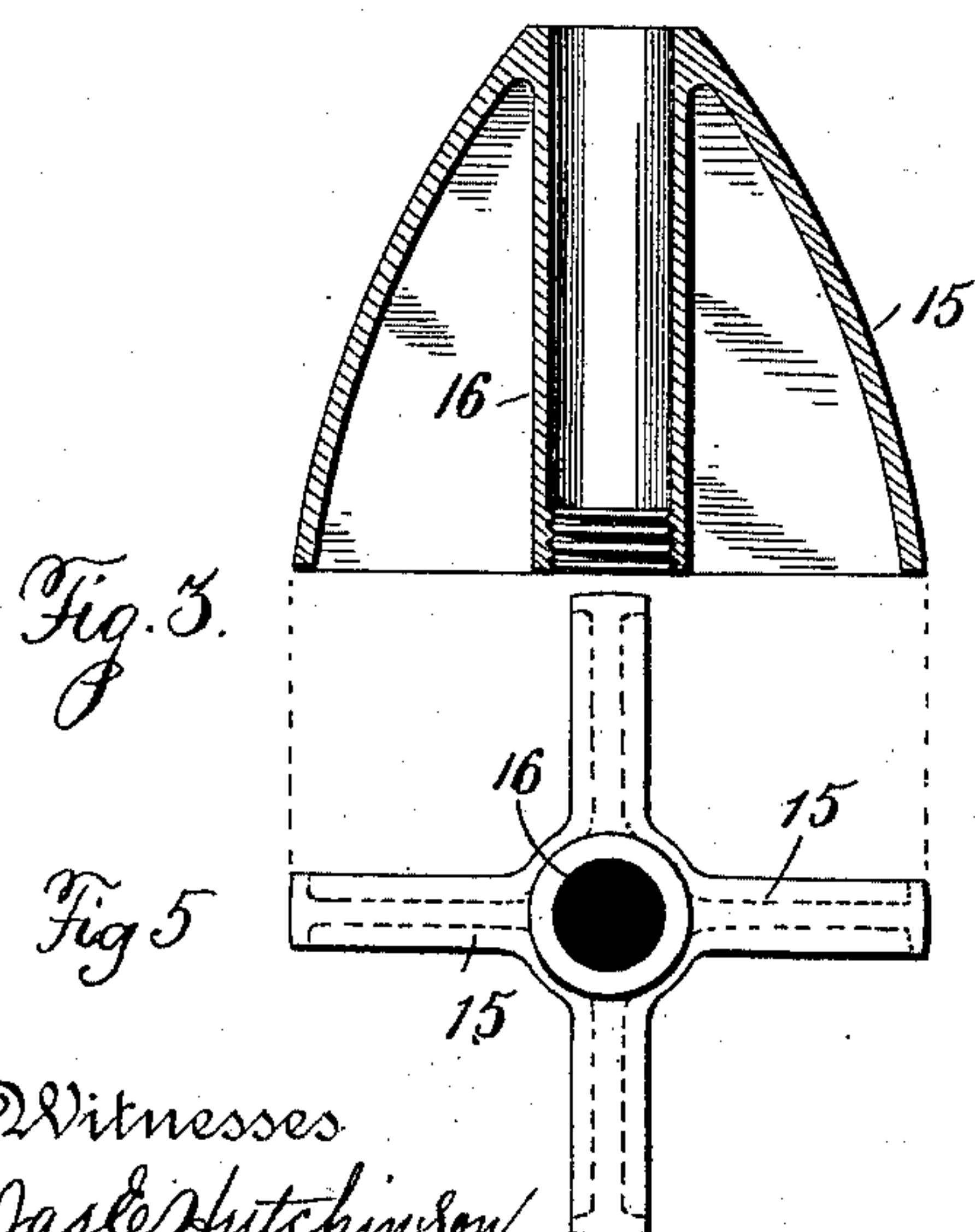
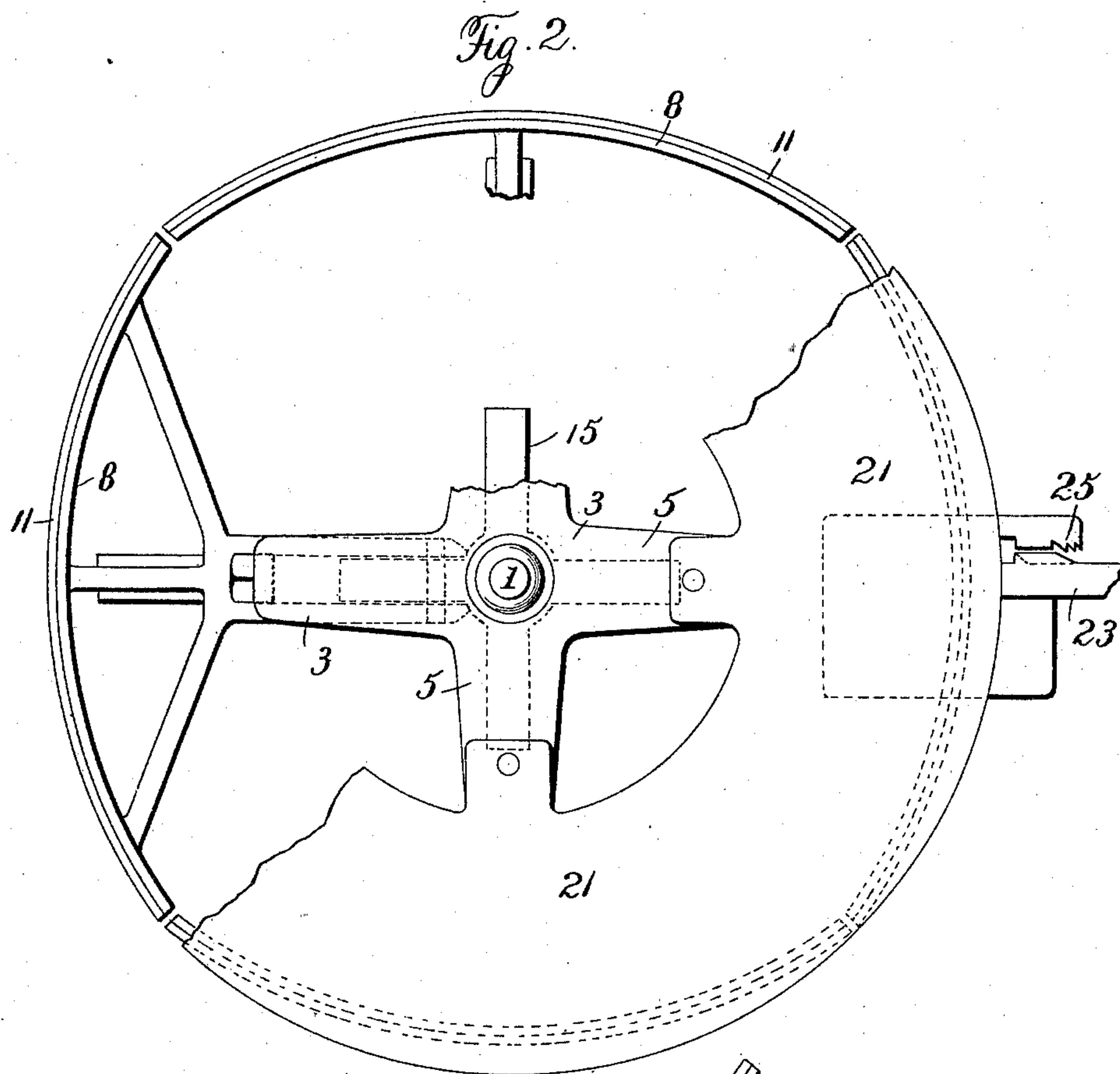


Fig 5

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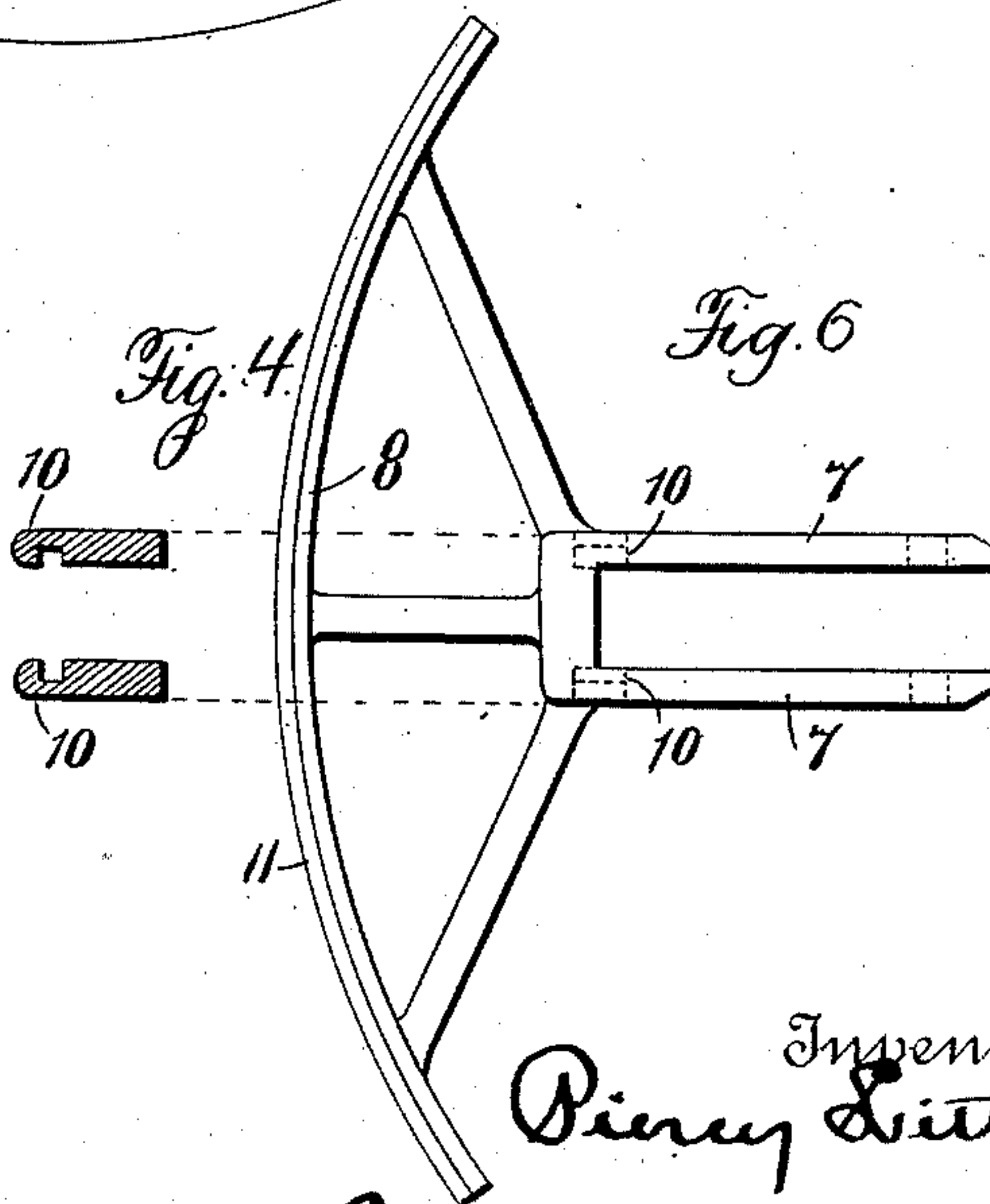


Fig. 6

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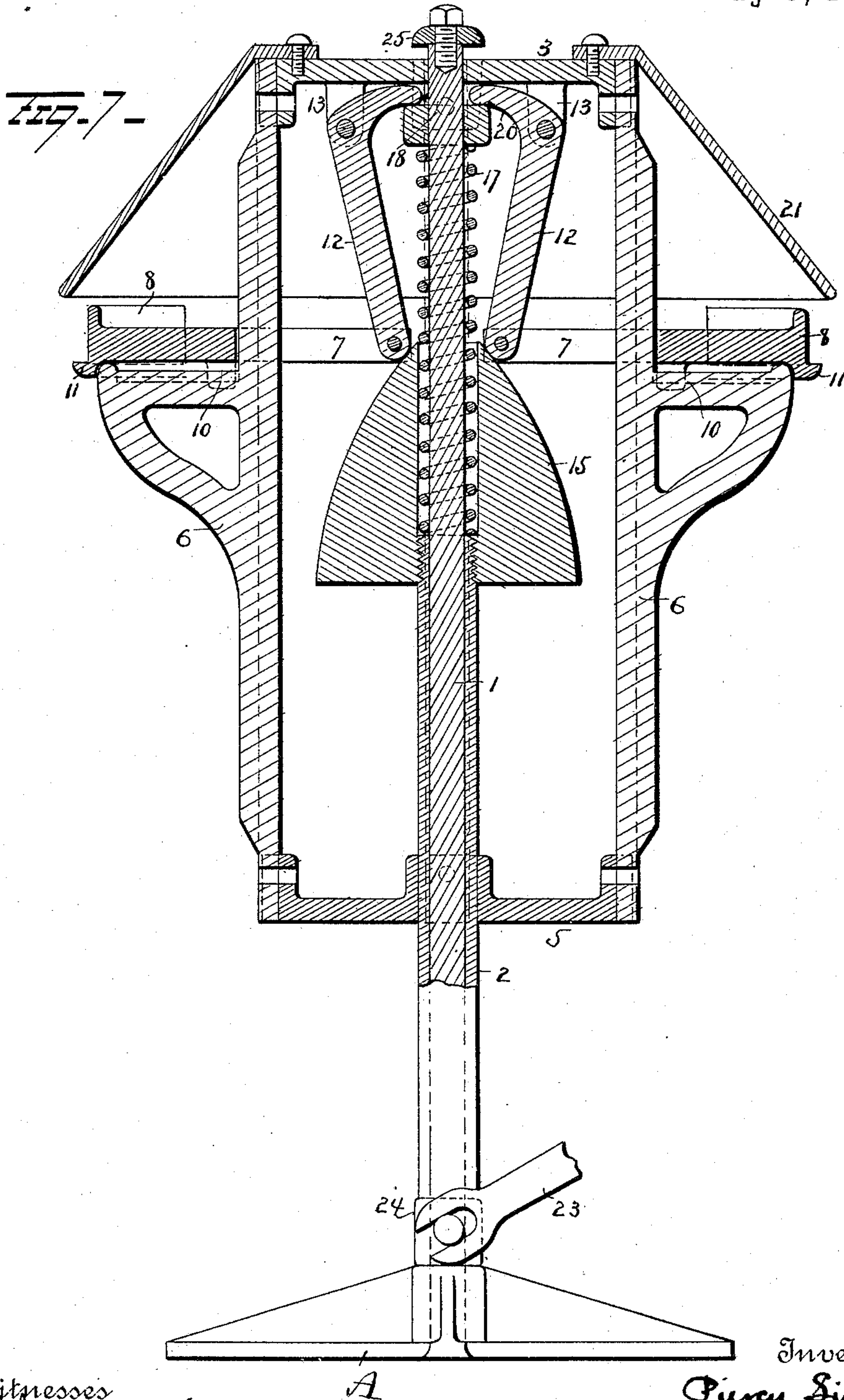
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3 Sheets—Sheet 3.

P. LITTLE.
BARREL EXPANDER.

No. 474,020.

Patented May 3, 1892.



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UNITED STATES PATENT OFFICE.

PIERCY LITTLE, OF MOUNT VERNON, NEW YORK.

BARREL-EXPANDER.

SPECIFICATION forming part of Letters Patent No. 474,020, dated May 3, 1892.

Application filed June 8, 1891. Serial No. 395,547. (No model.)

To all whom it may concern:

Be it known that I, PIERCY LITTLE, of Mount Vernon, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Barrel-Expanders; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in barrel-expanders, the object being to provide a machine for forming the bilge in a woven barrel, or a barrel in which the staves are woven together.

It consists in an expansible body, in combination with other features of novelty hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in side elevation, partly in section. Fig. 2 is a plan view, parts being broken away. Figs. 3, 4, 5, and 6 are views of details, and Fig. 7 is a vertical sectional view of the entire machine.

A represents the base upon which the machine is supported, and 1 is a rod extending upwardly from the base, to which it is secured. A sleeve 2, preferably composed of steam or gas piping, is loosely mounted on this rod 1, it being free to turn or slide thereon. A pair of castings 3 and 4 are loosely mounted, respectively, on the rod and sleeve, the upper one being prevented from slipping off by a button 25. The object of loosely mounting these castings is to admit of their being raised and lowered and turned when the barrel is in place thereon. These castings have several arms 5 5, preferably four in number, and to their outer ends the brackets 6 6 are firmly bolted.

Several expanders 7 7, in number corresponding with the brackets, are arranged to slide in and out thereon. These expanders consist of arms, to the outer ends of which curved rims 8 8 are secured. These rims 8 8 are so curved that when expanded to their fullest extent or approximately to their utmost their outline is substantially circular in form for the purpose of conforming to the circular shape of the barrel, and also to impinge alike as nearly as possible at all points where the expanders engage the interior of the bar-

rel. The upper edges of the brackets are straight and provided with lateral track-flanges. The arms of the expanders are provided with claws 10 10, which embrace these flanges, in order to guide the arms in their movement thereon. The outer edges of the rims are provided with a ledge 11 to receive a hoop, which is to be secured inside of the barrel at the bilge after the barrel has been properly expanded at this point.

The expanders are moved outward and inward by the following mechanism. A set of levers 12 12 are pivoted to hanger-plates 13 13, depending from the upper casting 3. The lower ends of these levers are pivotally connected with the inner ends of the arms of the expanders. A cone-shaped cam 15 is secured onto the upper end of the sleeve 2 in position, so that its cam edges bear on the lower ends of the levers to force them outward when the cam is raised; also means is provided for drawing the expanders inward when the cam is lowered. To this end the cam has a hollow center 16, and a stiff spiral spring 17 is dropped in between this center and the rod 1, the spring resting at its lower end on the upper end of the sleeve 2. Mounted on the rod 1 and resting on the upper end of the spring 17 is a disk 18. The several levers 12 12 terminate at their upper ends in inwardly-projecting arms 20 20, adapted to take over the edge of the disk 18, where they are normally held upward as far as possible by the tension of the spiral spring, to the end that the expanders are drawn inward as fast as the cone-cam is depressed. Secured to the upper casting 3, preferably, is a cone-shaped hood 21, over which the barrel fabric is placed, the hood guiding it over the expanders, as the edges of the hood protrude beyond the expanders when in their normally-inward positions.

Before explaining the operation it is proper to add that this machine is particularly adapted for use with open-work barrels in which the staves are parallel-edged and woven together into a barrel fabric. After the fabric is cut in proper lengths it is rolled into a cylinder and the ends are secured together. The cylinder thus formed is then lowered over the cone-shaped apron until its lower end rests on a platform, (not shown,) so that its center is about opposite the expanders. A

foot-lever 23, having loose connection at one end with a sliding collar 24, is then depressed. This raises the sleeve 2 with the cone-cam 15, compressing the spring 17 from its lower end, and the cam forces the lower ends of the levers 12 12 outward, thus sliding the expanders outward, the arms on the upper ends of these levers meanwhile forcing the disk 18 downward to compress the spring 17 from the upper end. In this manner the expanders are forced outward as far as necessary to give the proper form to the barrel, the hoop held on the ledge 11 being also expanded and held tight against the inside of the barrel. When the desired form is attained, the foot-lever 23 is locked by its engagement with one of the ratchet-teeth 25, and the parts are thus held until the hoop at the bilge is nailed fast. It is needless to say that the barrel can be turned at will on the collar 24 as a bearing in order to facilitate the nailing process. When the bilge-hoop has been nailed in place, the foot-lever is disengaged from the tooth which holds it down and it is permitted to rise by the expansible action of the spiral spring, which throws all the parts back to their normal adjustments.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the expanders and levers pivotally connected to the expanders, of a cam for forcing the ends of these levers connected with the expanders outward and means for forcing the levers normally inward, substantially as set forth.

2. The combination, with a stationary rod and frame loosely mounted thereon, of expanders arranged to slide outwardly on the frame and a loosely-mounted sleeve having cams thereon adapted to operate in connection with the expanders for forcing them outward, substantially as set forth.

3. The combination, with a stationary rod and a frame connected therewith, of expanders, levers connected with the latter, cams for operating to force the expanders outward, and a spring for returning them to their normal positions, substantially as set forth.

4. The combination, with a suitable frame and expanders, of a cone-shaped hood located over the expanders in position to guide the article being operated upon over the expanders, substantially as set forth.

5. The combination, with a stationary rod, a frame loosely mounted thereon, a sleeve loosely mounted on the rod, and means for sliding said sleeve, of a set of expanders, levers connected with the expanders, a spring interposed between one arm of each lever and the sleeve, and a cam for operating against the levers, whereby the expanders are forced outward, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

PIEROY LITTLE.

Witnesses:

CHAS. H. BROWN,
RICHARD B. CASSEBIER.