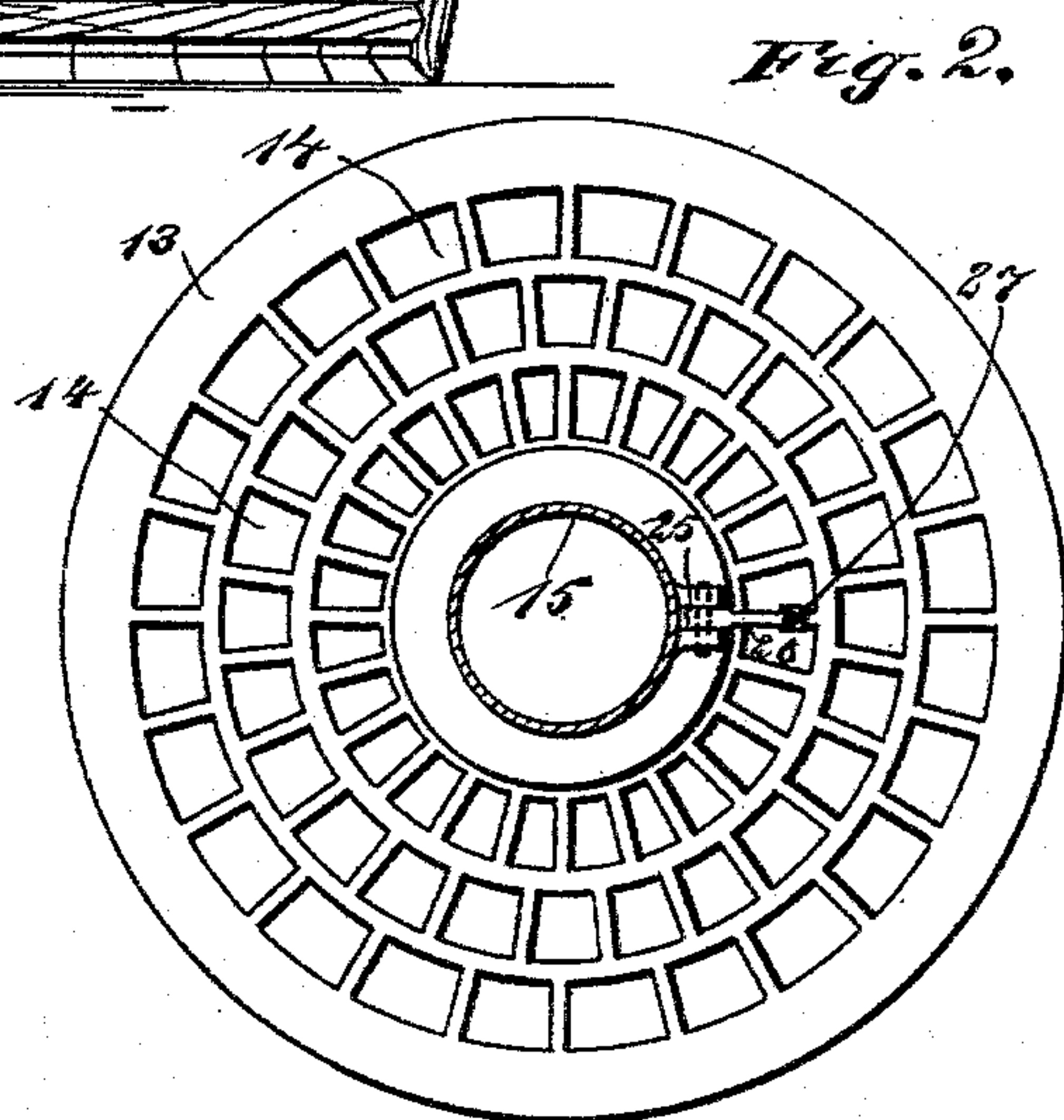
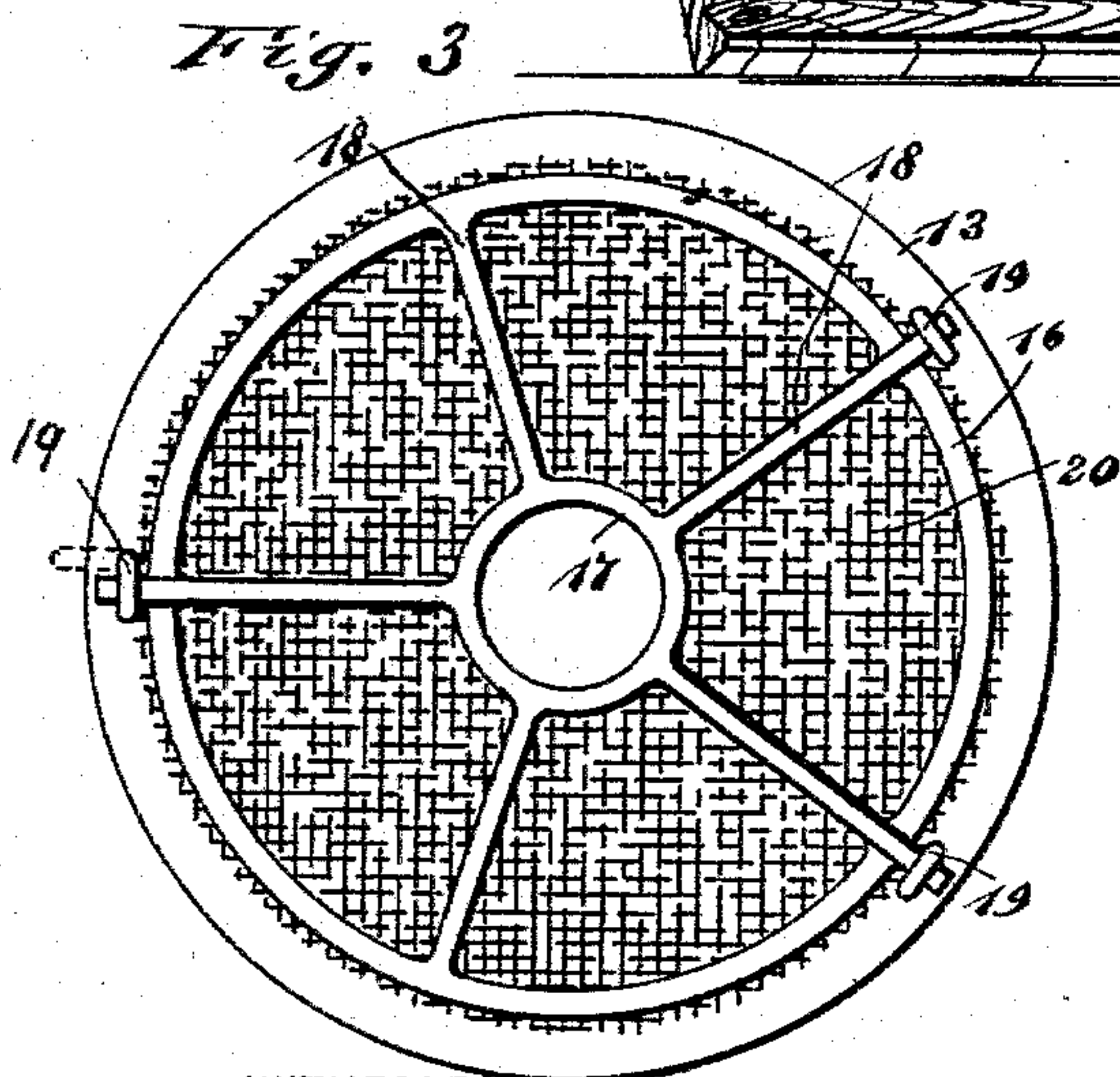
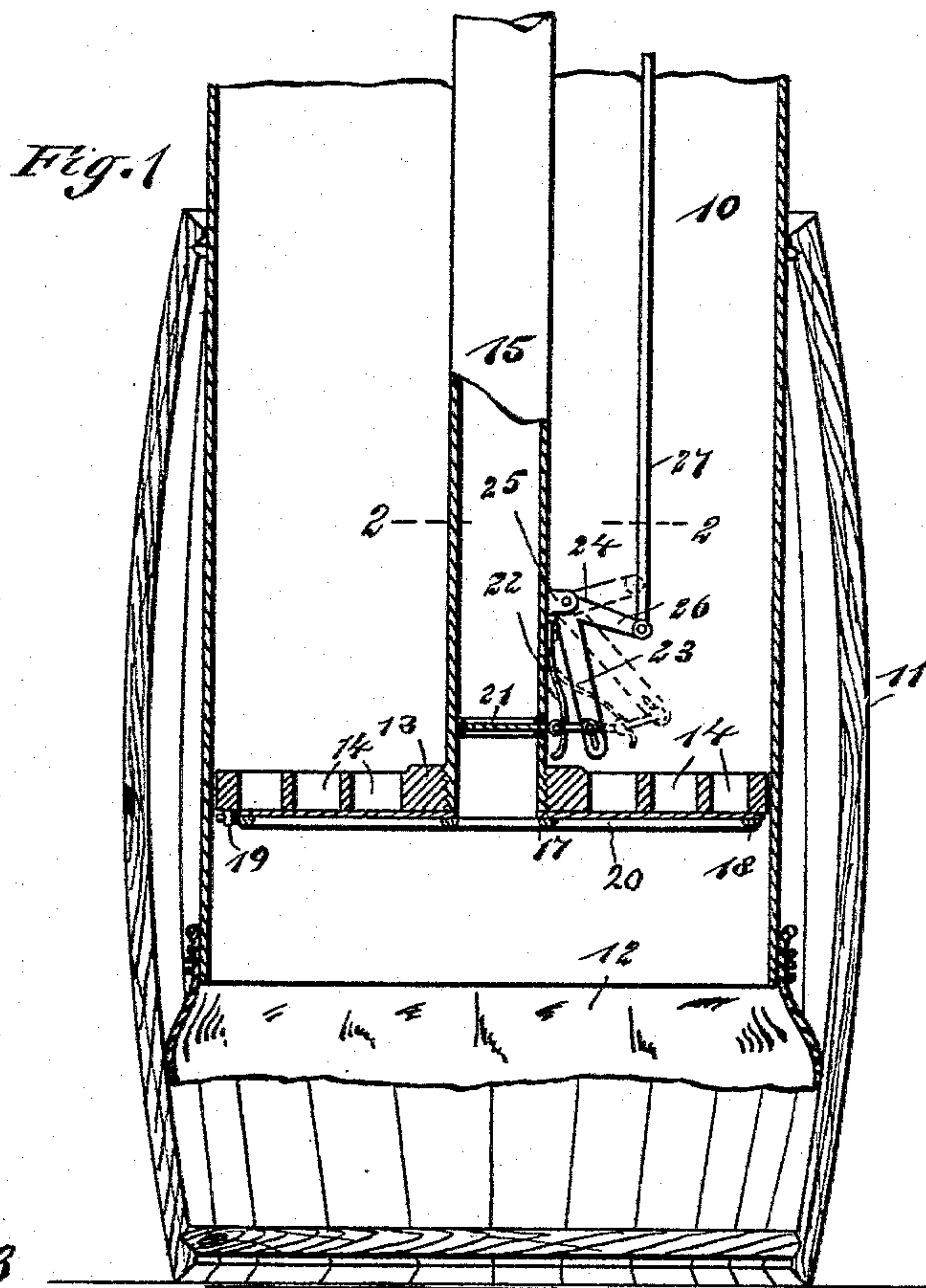


(No Model.)

C. E. DAWSON.
LEAD PACKER.

No. 494,979.

Patented Apr. 4, 1893.



WITNESSES:
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UNITED STATES PATENT OFFICE.

CLARENCE E. DAWSON, OF JOPLIN, MISSOURI.

LEAD-PACKER.

SPECIFICATION forming part of Letters Patent No. 494,979, dated April 4, 1893.

Application filed April 6, 1892. Serial No. 428,004. (No model.)

To all whom it may concern:

Be it known that I, CLARENCE E. DAWSON, of Joplin, in the county of Jasper and State of Missouri, have invented a new and Improved Lead-Packer, of which the following is a full, clear, and exact description.

My invention relates to improvements in a packing machine adapted to pack white lead or similar paint into a barrel. Much of the lead of this character which is packed in barrels is condensed from the fumes and smoke of a lead smelter, and as a result, the lead is mingled with large quantities of air and is very volatile. It is therefore extremely difficult to pack the lead into barrels. It is usually packed by hand, as it is necessary to provide for the escape of air while it is being packed, but the practice is slow and is also fatal to the workmen, who can stand the work but a little while.

The objects of my invention are to reduce the expense of packing, and also avoid the necessity of hand packing, this result being accomplished by producing a machine which will pack the lead solidly into a barrel, will deliver it in quantities desired, and will permit the rapid escape of the air.

To this end my invention consists in certain features of construction and combinations of parts, which will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a broken vertical section showing the application of the machine to a barrel. Fig. 2 is a sectional plan of the packer proper, on the line 2—2 in Fig. 1; and Fig. 3 is an inverted plan of the packer proper.

In connection with the invention, a cylinder 10 is used, the cylinder being open at its ends, and being of a size to fit quite snugly in the barrel 11. The cylinder has at its lower end a flexible diaphragm or packing 12, which is preferably made of fabric, and which hangs down into the barrel. This diaphragm permits the air to escape upward around it, but it obstructs the upward course of the lead or paint and causes the same to be held down in the barrel. A plunger 13, is held to reciprocate vertically in the cylinder 10, and fits

snugly within the cylinder, the plunger having numerous perforations 14 through it to permit the air to escape when it is forced down. The plunger has a central aperture therein through which the lead is fed, and in this aperture is secured the hollow pipe 15, which serves as a piston rod, and which is adapted to connect with the blast-pipe supplying the lead.

On the under side of the plunger is secured a circular frame comprising the exterior ring 16, adapted to fit against the outer portion of the plunger, the interior ring 17 adapted to fit around the central aperture, and the ribs 18 connecting the two rings. Portions of the ribs 18 are prolonged so as to project beyond the ring 16, and these enter staples 19, which are secured to the plunger and which thus hold the frame against the plunger. The circular frame is intended to bind the cloth 20 in place against the bottom of the plunger. The cloth 20 is thick enough to prevent the paint from being forced upward through it, but it permits the air to pass through and escape by way of the perforations 14.

Near the lower end of the pipe 15, is a sliding valve 21, which is held to move in a suitable slide-way, and which is normally pressed into a closed position by a spring 22, one end of which presses against the valve and the other end of which is secured to the outer portion of the pipe. The stem of the valve 21 is pivotally connected with the slotted lower end of the lower arm 23 of a bell crank lever 24, which lever is pivoted to lugs 25 on the pipe 15, and is held to swing vertically, and the upper arm 26 of the bell crank is pivoted to a rod 27, which extends upward through the cylinder 10, and may be secured to any support. In practice, any means may be used for reciprocating the pipe 15 and the plunger 13, and the lead mingled with air is supplied to the pipe by any ordinary method.

The operation of the packer is as follows: The cylinder 10 is inserted in the barrel, the lead supplied to the pipe 15, and the pipe and plunger 13 are worked up and down within the cylinder. At every up stroke the rod 27 is pulled so as to tilt the bell crank 24, and open the valve 21, thus letting in a supply of paint to the lower portion of the barrel, and at every down stroke of the plunger the

valve 21 is closed to prevent the paint from rushing back into the pipe 15, and when the plunger is pushed down, the air will pass upward around the diaphragm 12, and through the cloth 20 and perforations 14, but the lead or paint will be held beneath. The cylinder 10 and plunger are gradually raised and the operation repeated until the barrel is full. By this method the lead may be packed more solidly than by hand, and it is not necessary for a person to be near enough to inhale any escaping fumes. The fumes are all forced back into the blast pipe and cause no flying dust or paint.

15 Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a lead packer the foraminated or open-work compressing-plunger to enter the barrel 20 to be packed, and a vertical, valved feed pipe connected therewith to supply the material to be packed below the plunger and to reciprocate the plunger, substantially as set forth.

2. A lead packer, comprising a perforated 25 plunger adapted to fit within a barrel, a hollow piston rod connected with the plunger and adapted to serve as a feed pipe, and a spring-pressed valve arranged in the piston rod, substantially as described.

30 3. In a lead packer, the foraminated or open-work compressing plunger to enter the barrel to be packed, an air-pervious covering for said plunger to permit the escape of air only through

the plunger in its downward or compressive movement, and a valved feed pipe connected 35 with the plunger to supply the material to be packed therebelow, substantially as set forth.

4. A lead packer, comprising a perforated plunger, a feed pipe connected centrally therewith and serving as a piston rod, a cut-off valve 40 in the feed pipe, a sheet of fabric held to cover the perforations in the plunger, and a clamping frame adapted to bind the fabric to the plunger, substantially as described.

5. The combination of the perforated plunger, the hollow piston rod, the slide valve arranged in the piston rod, the bell crank pivoted on the piston rod and connected with the valve, and the rod pivoted to the bell crank and extending upward therefrom, substan- 50 tially as described.

6. A lead packing apparatus, comprising a tube to enter the barrel and provided around its lower end with a flexible diaphragm, a foraminated or open-work compressing plunger 55 working in the tube and having an air pervious fabric cover, a feed pipe connected with the plunger to feed the lead therebelow and to reciprocate the plunger, and a valve in the lower end of said pipe and provided with 60 means for operating it from above the said tube, substantially as set forth.

CLARENCE E. DAWSON.

Witnesses:

WILLIAM D. SALLEE,

WILLIAM F. GRIFFITH.