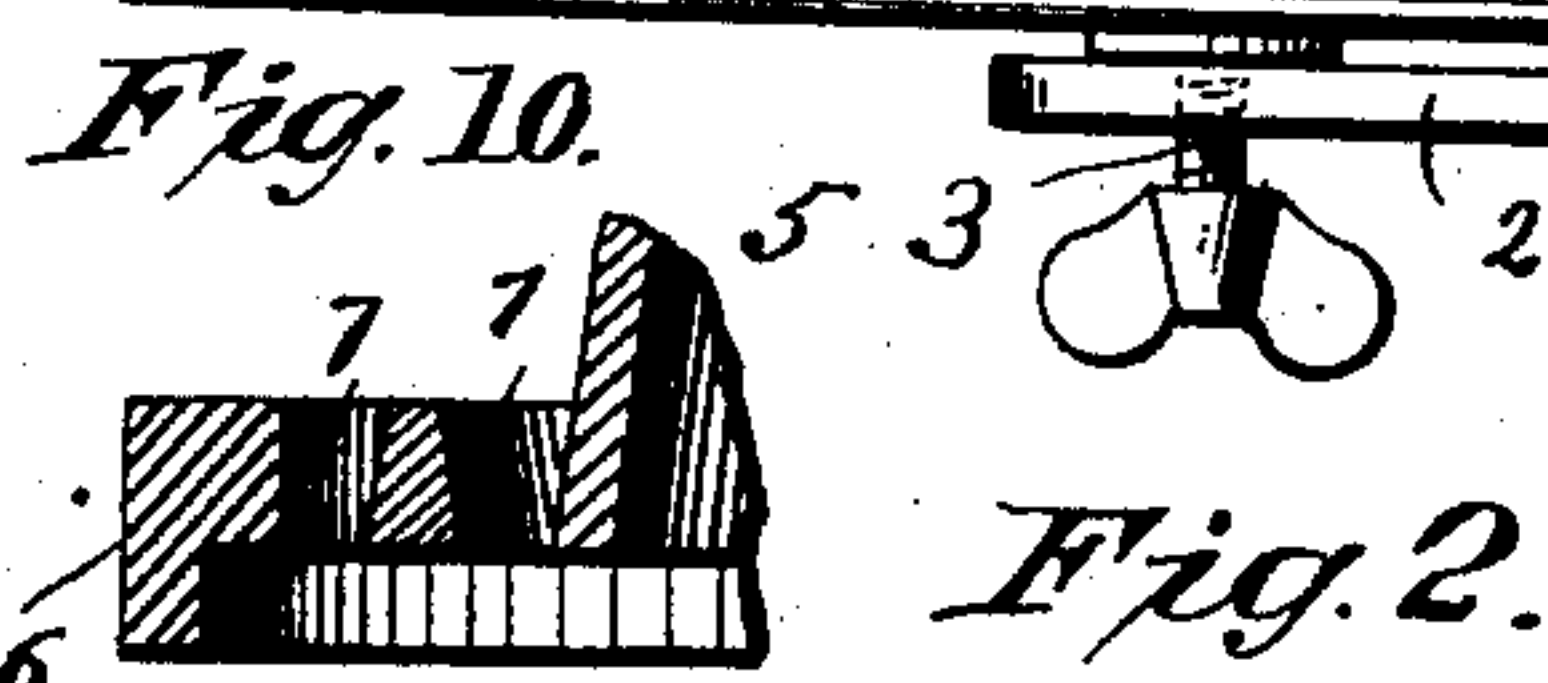
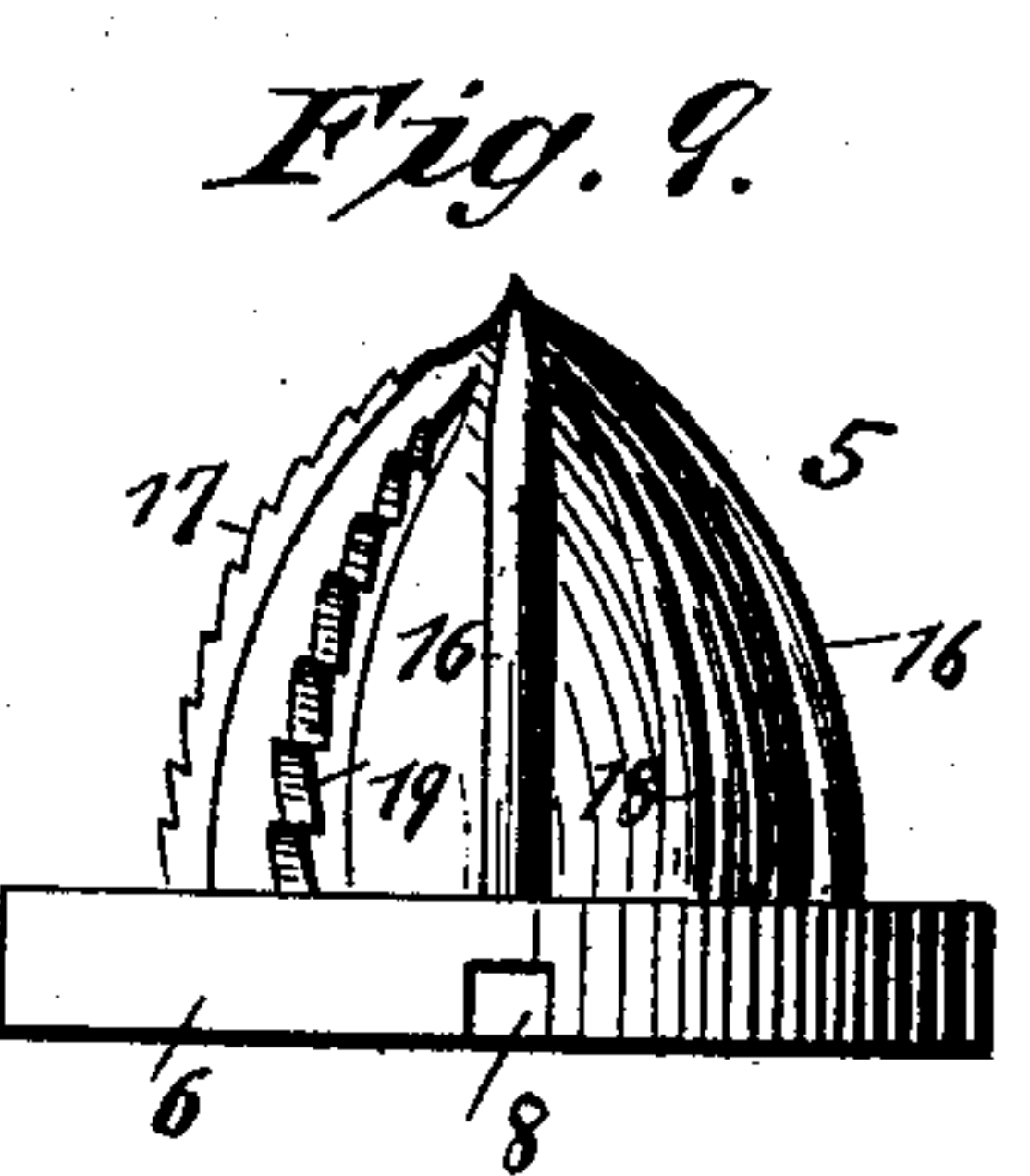
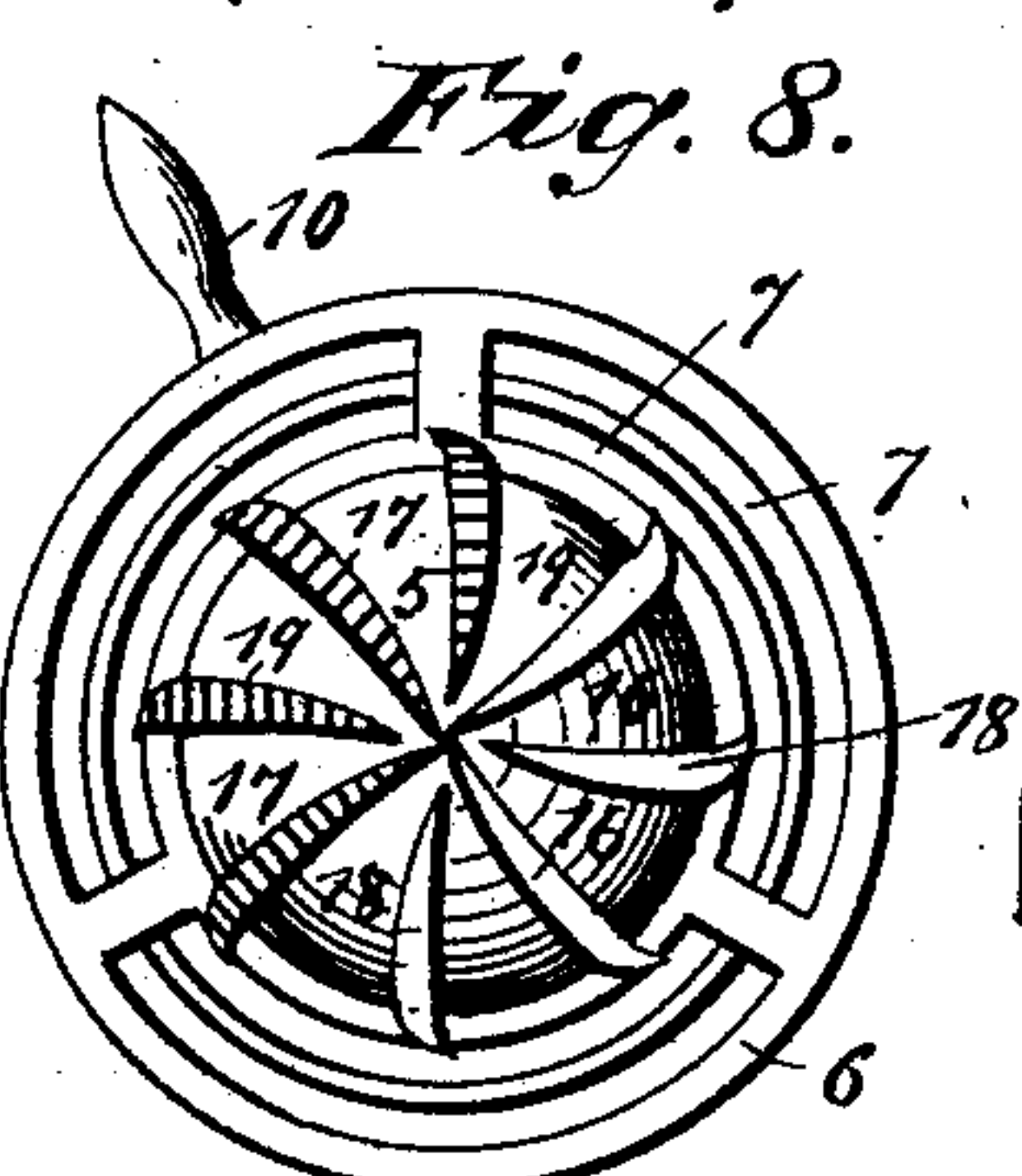
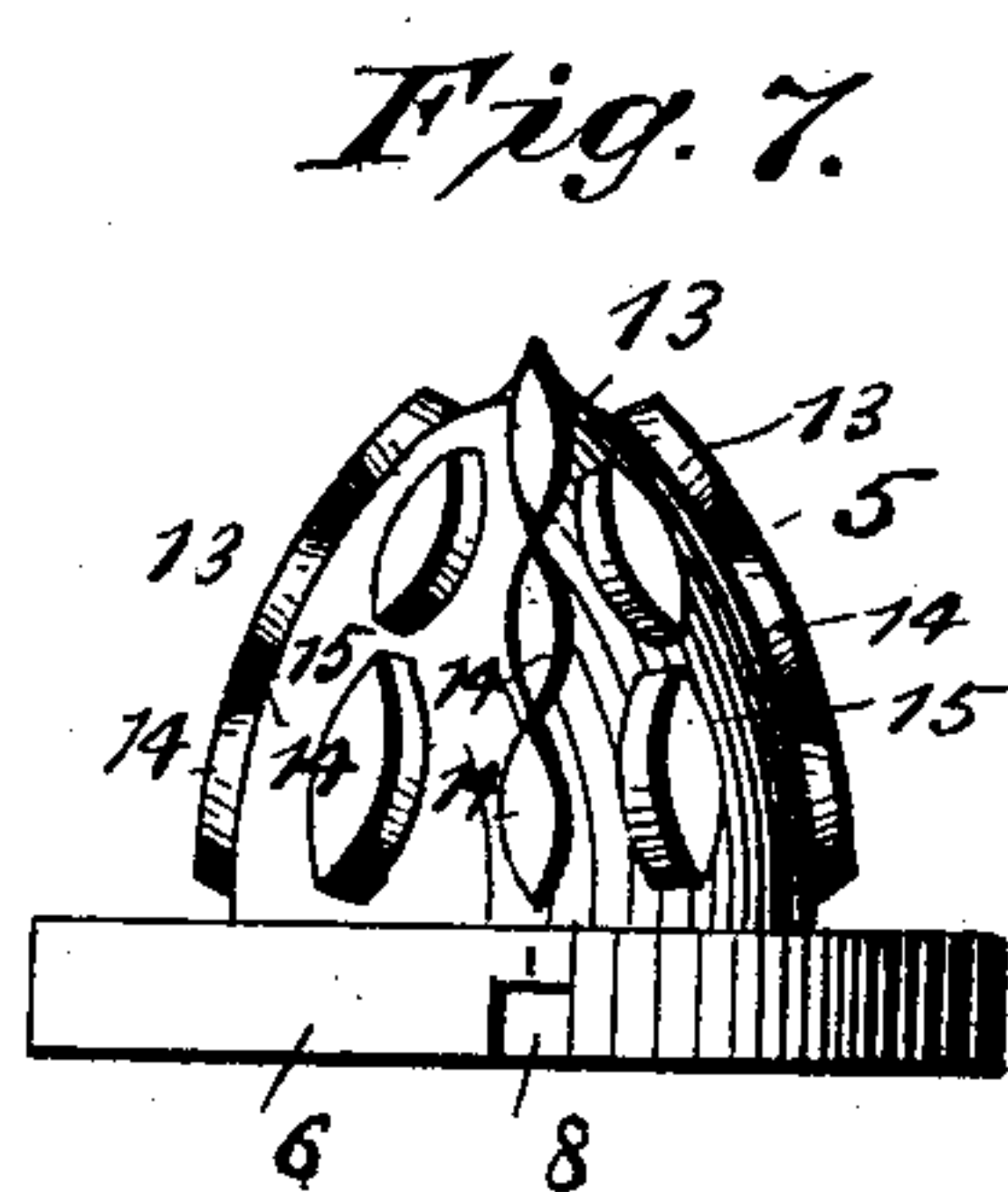
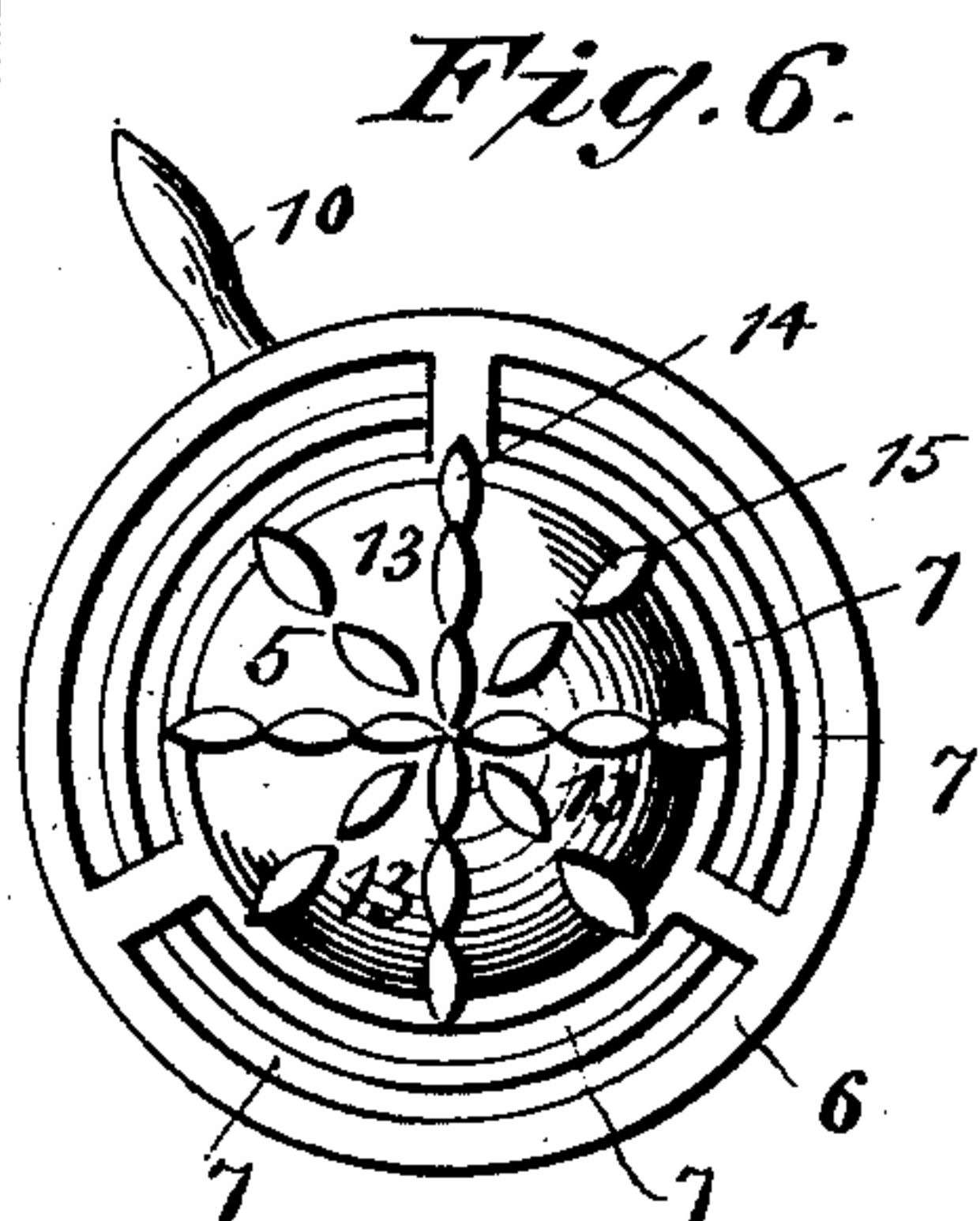
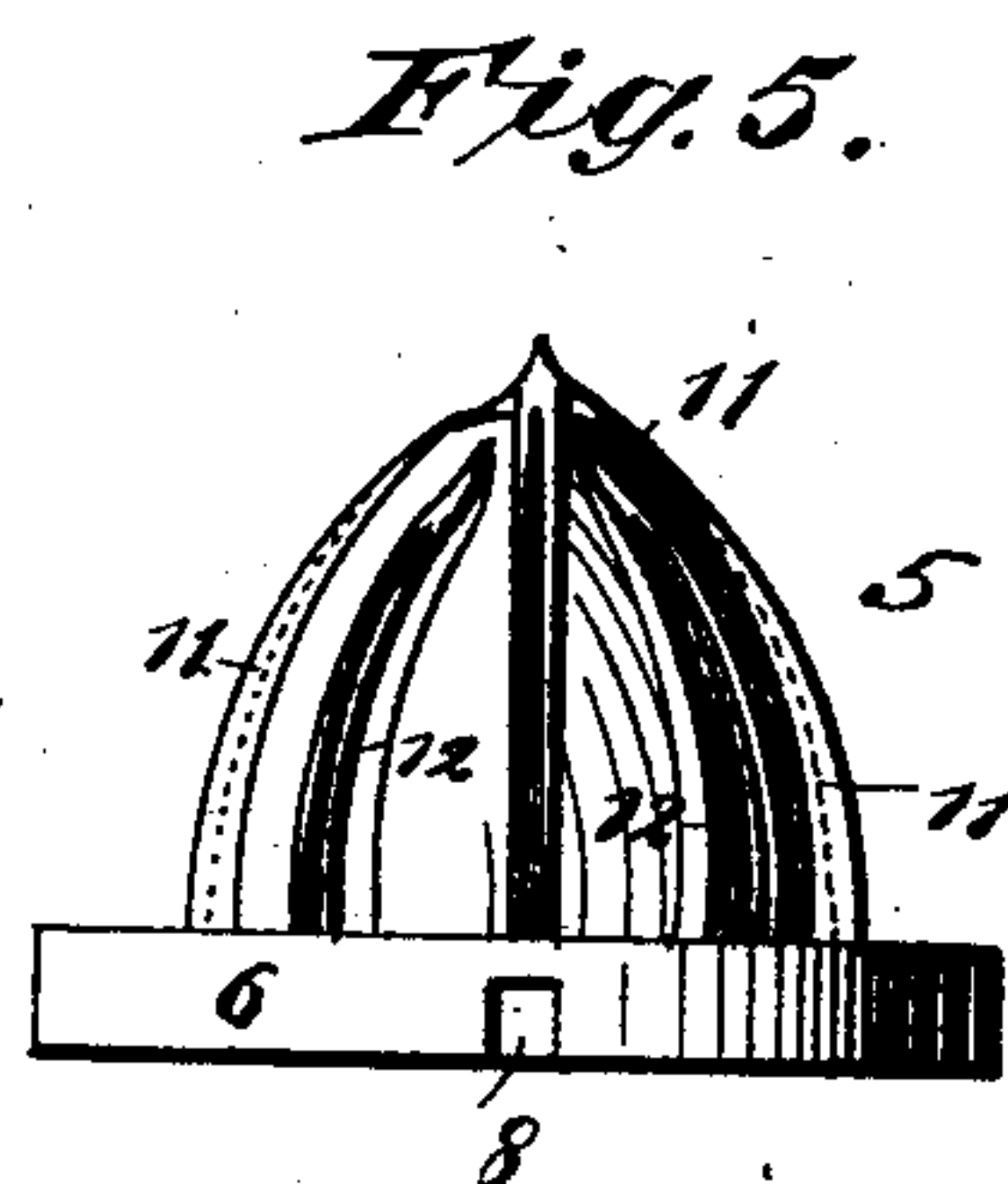
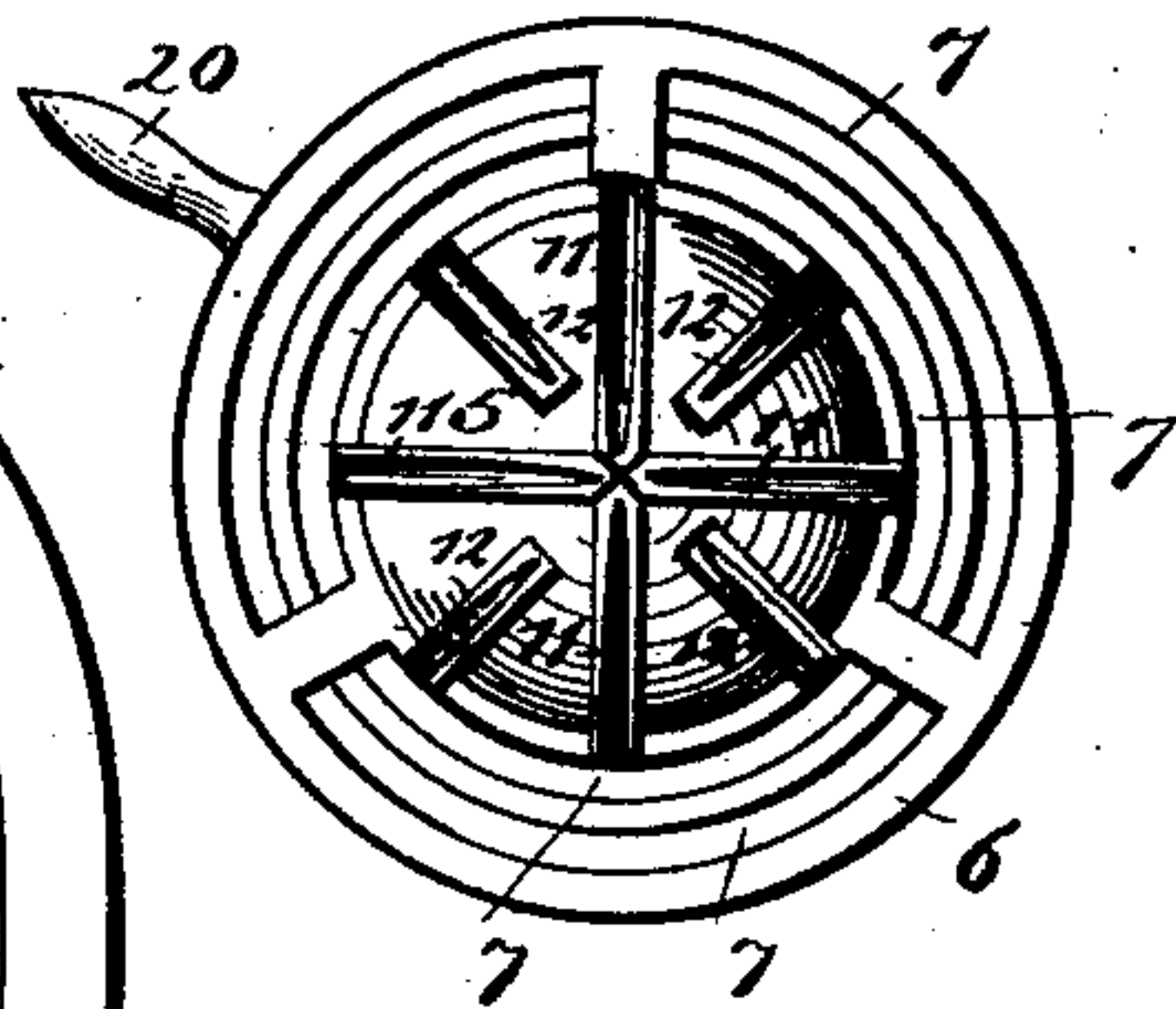
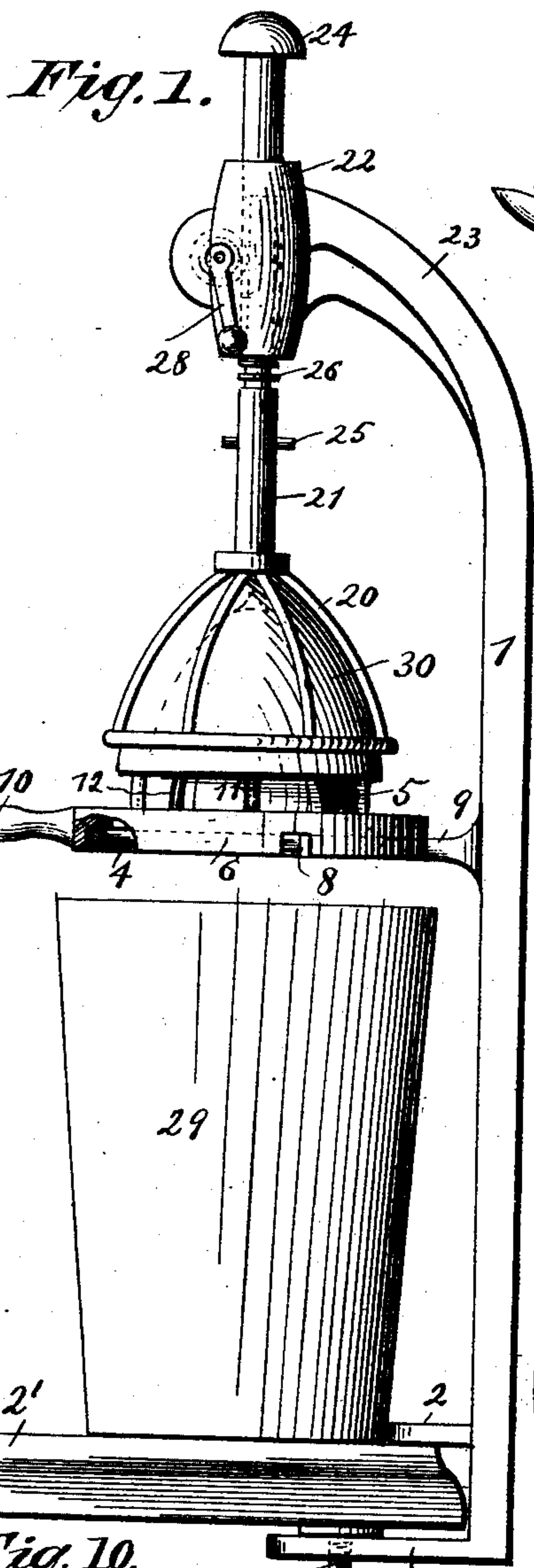


(No Model.)

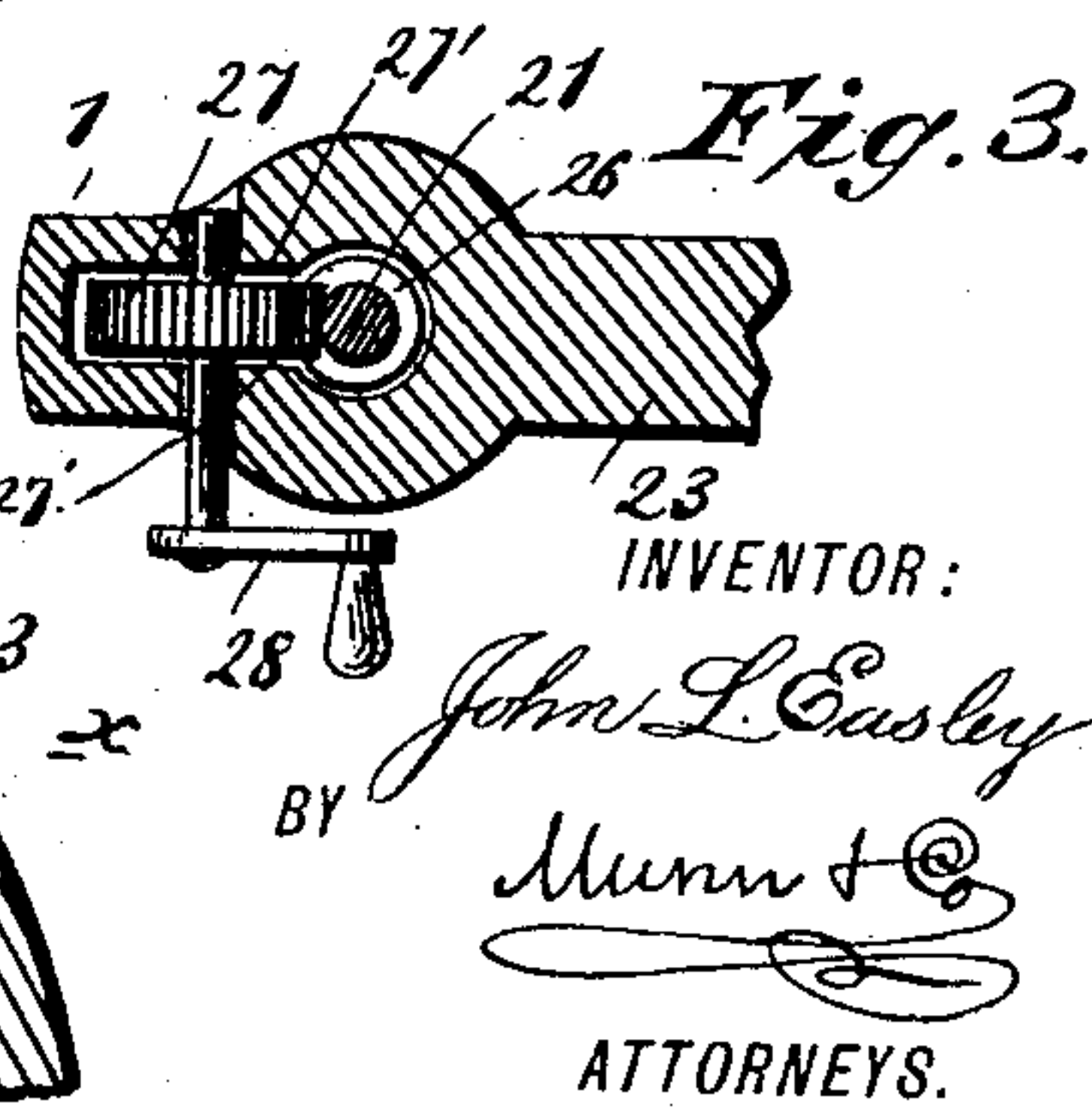
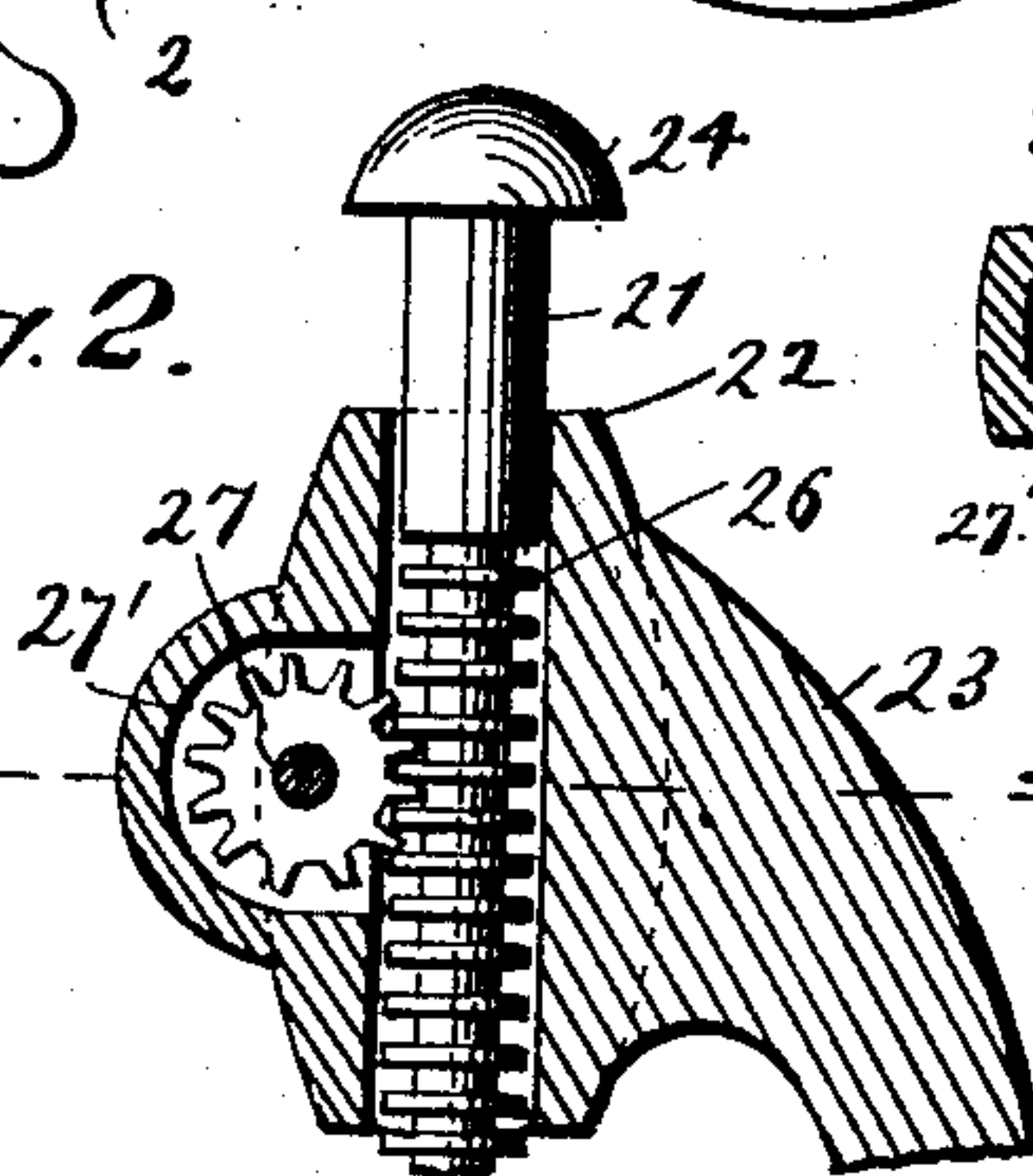
J. L. EASLEY.  
LEMON JUICE EXTRACTOR.

No. 410,789.

Patented Sept. 10, 1889.



*Fig. 2.*



WITNESSES:

*Phil. Dietrich.*  
*E. M. Clark.*

INVENTOR:

*John L. Easley*  
BY *Munn & Co.*  
ATTORNEYS.



# UNITED STATES PATENT OFFICE.

JOHN L. EASLEY, OF NEW YORK, N. Y.

## LEMON-JUICE EXTRACTOR.

SPECIFICATION forming part of Letters Patent No. 410,789, dated September 10, 1889.

Application filed December 10, 1888. Serial No. 293,082. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN L. EASLEY, of the city, county, and State of New York, have invented a new and Improved Lemon-Juice Extractor, of which the following is a full, clear, and exact description.

This invention relates to lemon-juice extractors comprising a cone with an abrading-surface, a frame for supporting the cone, and an operating-holder mounted on the frame, for holding and turning a half of a lemon on the cone to break the pulp and extract the juice.

This invention has for its object to provide an apparatus of the above character by means of which the pulp of the lemon may be more effectively broken and torn apart and the juice extracted, and by means of which also the lemon-skin may be readily lifted up from the cone after the juice has been extracted.

The invention consists in an apparatus for this purpose and in details of construction thereof, as 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 illustrates the invention in position for use. Fig. 2 is a detail of the upper portion thereof in vertical section. Fig. 3 is a horizontal section on the line *xx* of Fig. 2. Figs. 4 and 5 are plan and side views of one form of abrading-cone. Figs. 6 and 7 are plan and side views of another form of abrading-cone. Figs. 8 and 9 are plan and side views of still another form of abrading-cone, and Fig. 10 is a detail in vertical section of the rim of the abrading-cone.

1 indicates a standard, which may have a base or be provided at its lower end, as here shown, with the arms 2 and set-screw 3, by means of which it may be secured to the edge of a table 2' or other support. Projecting laterally from the standard 1 at a suitable height to permit a tumbler to be placed beneath it is a bracket 4, in the shape of a ring, on which the portable lemon-abrading cone is to rest.

5 indicates the portable abrading-cone, constructed with abrading projections, as hereinafter set forth, and preferably formed at its base with a circular flange or rim 6, adapted to rest on the ring 4 or on the top of a tum-

bler, the ring 4 being equal in circumference to the edge of an ordinary glass or tumbler. The rim 6 is formed with concentric slots 7, tapering downward, so as to form a narrow passage at their bottom, as shown in Fig. 10, whereby the juice from the lemon will be permitted to escape, and the pulp and seeds torn from the lemon by turning it on the cone will be collected and retained on the rim 6. The rim 6 is provided with one or more notches 8, whereby it can set over the arm 9 of bracket-ring 4, and with a handle 10, by means of which it can be lifted and placed on the ring 4 or the top of a tumbler.

In Figs. 4, 5, 6, 7, 8, and 9 I have shown in plan and side views several modifications of cones with abrading-surfaces. In Figs. 4 and 5 is shown one form of cone having an abrading-surface consisting of the grooved double-edged strips 11, extending from top to bottom of the cone, and a series of similarly-shaped strips 12, extending from the base of the cone and terminating short of the top of the cone. In Figs. 6 and 7 is shown another form of cone having an abrading-surface consisting of projections 13, extending from the top to the base of the cone and formed of a number of connected flat projections 14, essentially of elliptical shape in relief, and a series of projections 15, composed of flat projections 14, disconnected and extending from the base of the cone and terminating short of the top. In Figs. 8 and 9 is shown still another modification of the cone, with an abrading-surface formed of concave knife-edge strips 16 and serrated edge strips 17, extending from the top to the base of the cone, and a series of concave knife-edge strips 18 and serrated edge strips 19, extending from the base of the cone and terminating short of its top.

To hold and turn a portion of a lemon on a cone 5, I provide a suitable inverted-cup-shaped holder consisting, preferably, of a wire frame 20, mounted on the lower end of a rod or shaft 21, extending vertically through a sleeve 22 on the upper curved end 23 of the standard 1. The rod or shaft 21 is formed with a head 24 at its upper end, a cross-pin 25 adjacent to its lower end to serve as a stop to limit the height to which the rod 21 can be raised, and an annular rack 26, with which a



pinion 27, located in a recess 27' in the standard 1, engages. The shaft of the pinion 27 is provided with a crank-handle 28, by means of which the pinion 27 may be rotated. With this construction the rotation of the pinion 27 causes the rod 21 to be raised or lowered, and also permits the rod 21 to be rotated by turning the head 24 with the fingers or by any suitable power mechanism applied thereto to turn rod 21 and the frame 20 without affecting the pinion 27.

The mechanism consisting of the vertically-movable and rotary shaft, with a circular rack, pinion meshing therewith, and having a crank-handle, possesses the advantage over a screw-shaft in this class of devices in that the rotation of the shaft and its lemon-holder, containing a piece of lemon, may be continued after the shaft has been fully lowered, thereby permitting the lemon to be rotated on the abrading-cone as long as desired and the pulp to be effectively and thoroughly disintegrated. At the same time, also, the pressure of the lemon on the abrading-cone may be governed by the crank-handle 28 operating the pinion and circular rack to raise or lower the shaft 21 while rotating.

By means of the rotary shaft 21, with annular rack 26, and pinion 27, with crank-handle 28, the frame 20, with a piece of lemon therein, may be quickly lowered toward the cone by operating the crank-handle 28, and as the shaft 21 is rotated with one hand to turn the lemon on the cone the lemon may be pressed against the same by bearing down on the crank-handle 28 with the other hand. After the juice has been extracted the frame 20 may be quickly raised by means of the crank-handle 28.

In operating the apparatus a portion 30 of a lemon is pushed into the wire frame 20, which has been raised by drawing up the rod 21, and owing to the flexibility of the wire frame the piece of lemon 30 will be held therein. The frame 20 is then lowered, the portion of lemon therein pressed onto the cone 5, and the rod 21 turned by means of the fingers or any suitable power mechanism applied thereto, thereby turning the lemon on the cone 5, and by the abrading action of the projections on the cone disintegrating the pulp. The juice flows down

on the cone between its abrading projections and escapes through passages 7 into the tumbler 29 beneath, the pulp and seeds being retained on the rim 6. The pulp and seeds will first collect on the inner concentric slots 7, and when the latter become clogged up, so as to prevent the juice from passing through them, it flows over the collected pulp and passes through the outer concentric slots 7. The frame 20 is then raised by turning the crank-handle 28, and the lemon-skin may then be removed and thrown away. The cone 5 may be also lifted off of the ring 4 by the handle 10, and the pulp and seeds on the rim 6 removed.

It will thus be seen that by means of this invention lemon-juice may be effectively extracted.

I am aware that a corkscrew-machine consisting of a frame adapted to be secured to a support, a rotary shaft formed with a circular rack mounted and vertically movable in the frame and having a crank-handle at one end and a corkscrew at the other, and a lever pivoted on the frame and engaging the rotary shaft to lift it in the frame is old, and to such construction I lay no claim.

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

As a new article of manufacture, a lemon-juice extractor consisting of a standard with a bracket extending laterally from the standard to support an abrading-cone, and a sleeve at the upper end of the standard with a pinion and crank-handle, the pinion projecting into the bore of the sleeve, a rotary shaft mounted in the sleeve, vertically movable therein, and formed with a circular rack meshing with the pinion, and a lemon-holder mounted on the lower end of the rotary shaft, which may be raised and lowered by means of the circular rack and pinion and rotated with the rotary shaft to disintegrate the pulp of a lemon and extract the juice, substantially as shown and described.

JOHN L. EASLEY.

Witnesses:

E. W. CADY,  
C. SEDGWICK.