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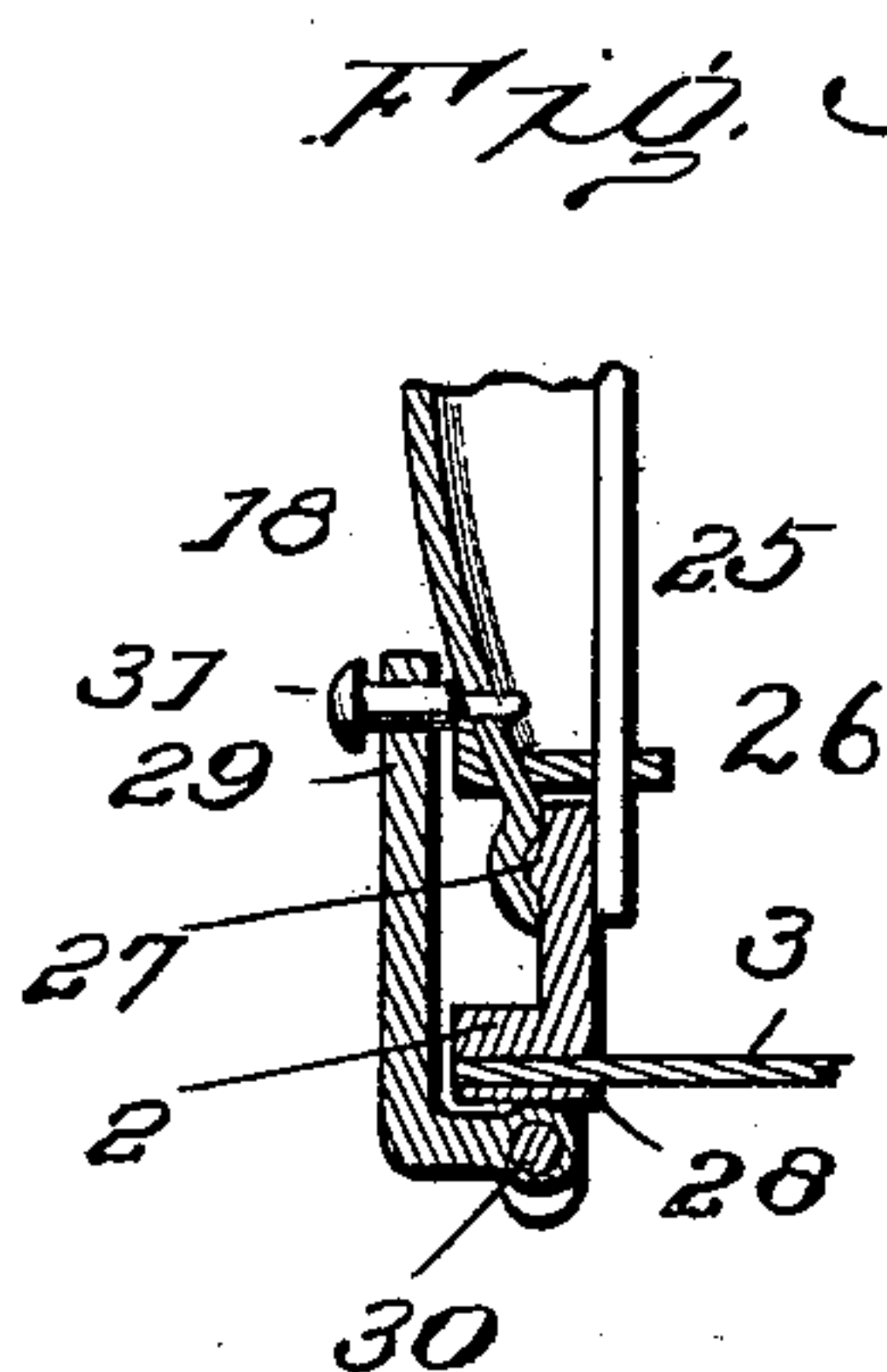
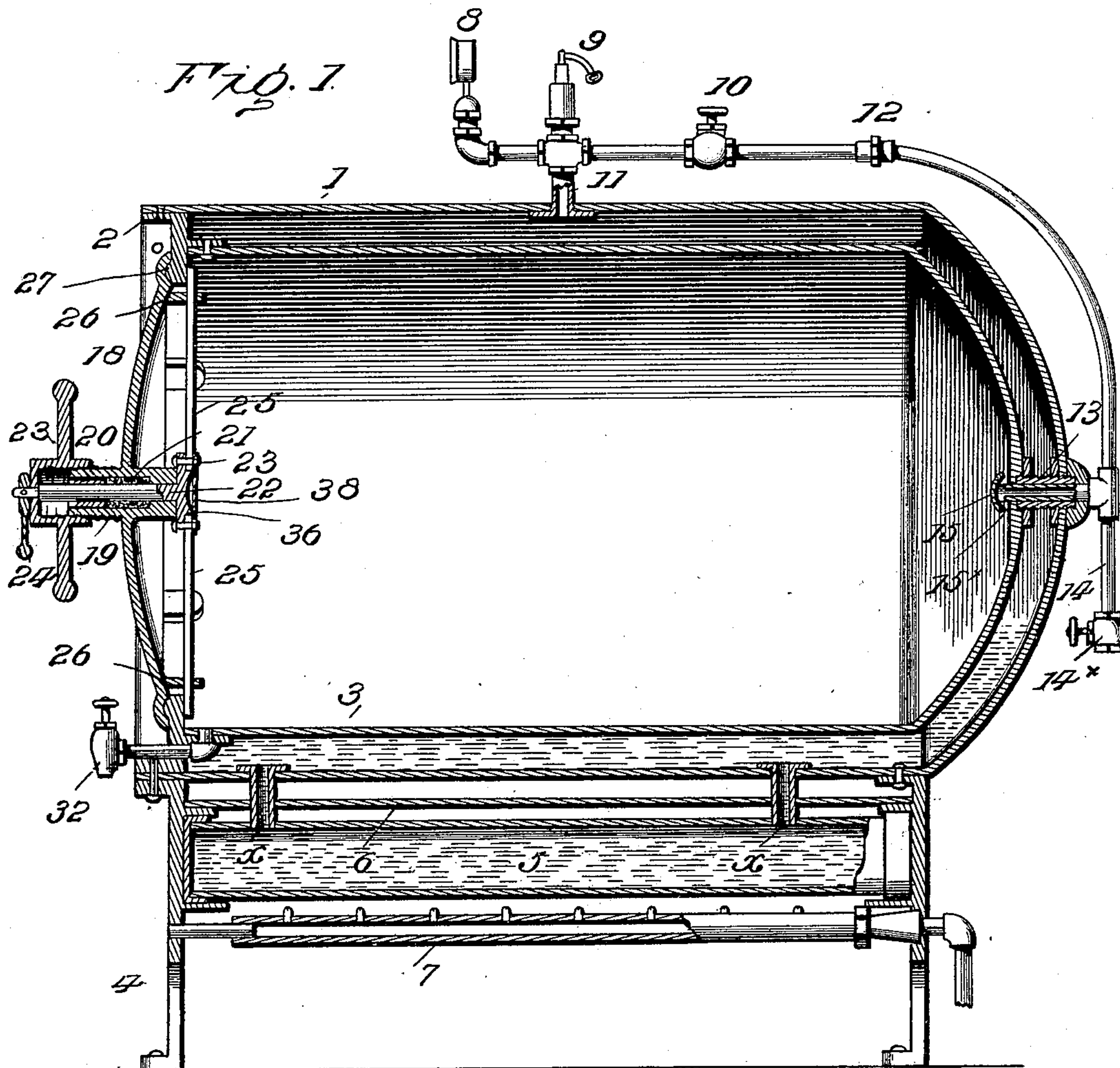
Patented Apr. 29, 1902.

G. W. KELLOGG.
STERILIZING APPARATUS.

(Application filed Apr. 18, 1901.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses

For mine
A. H. Waters.

Inventor

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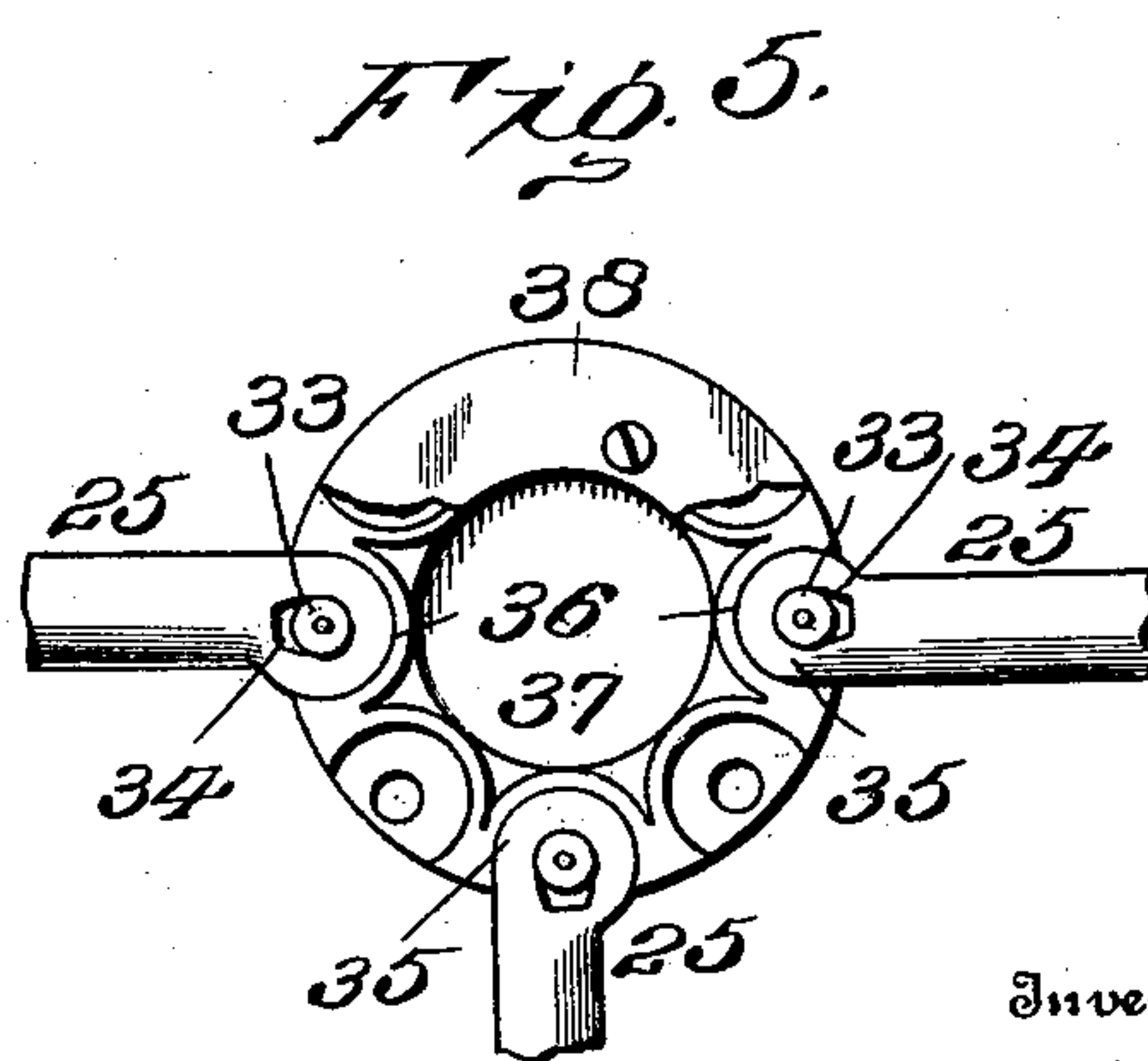
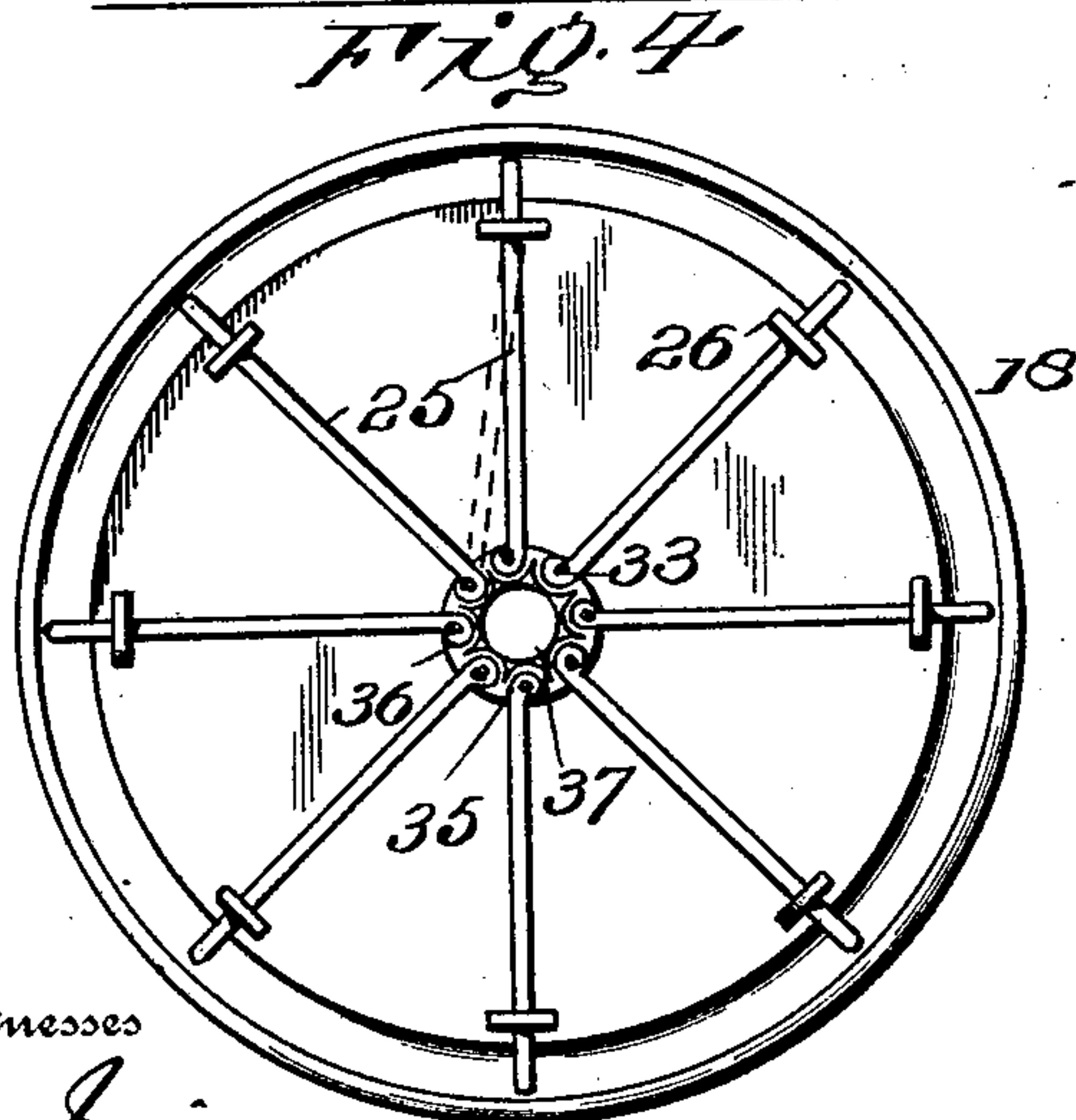
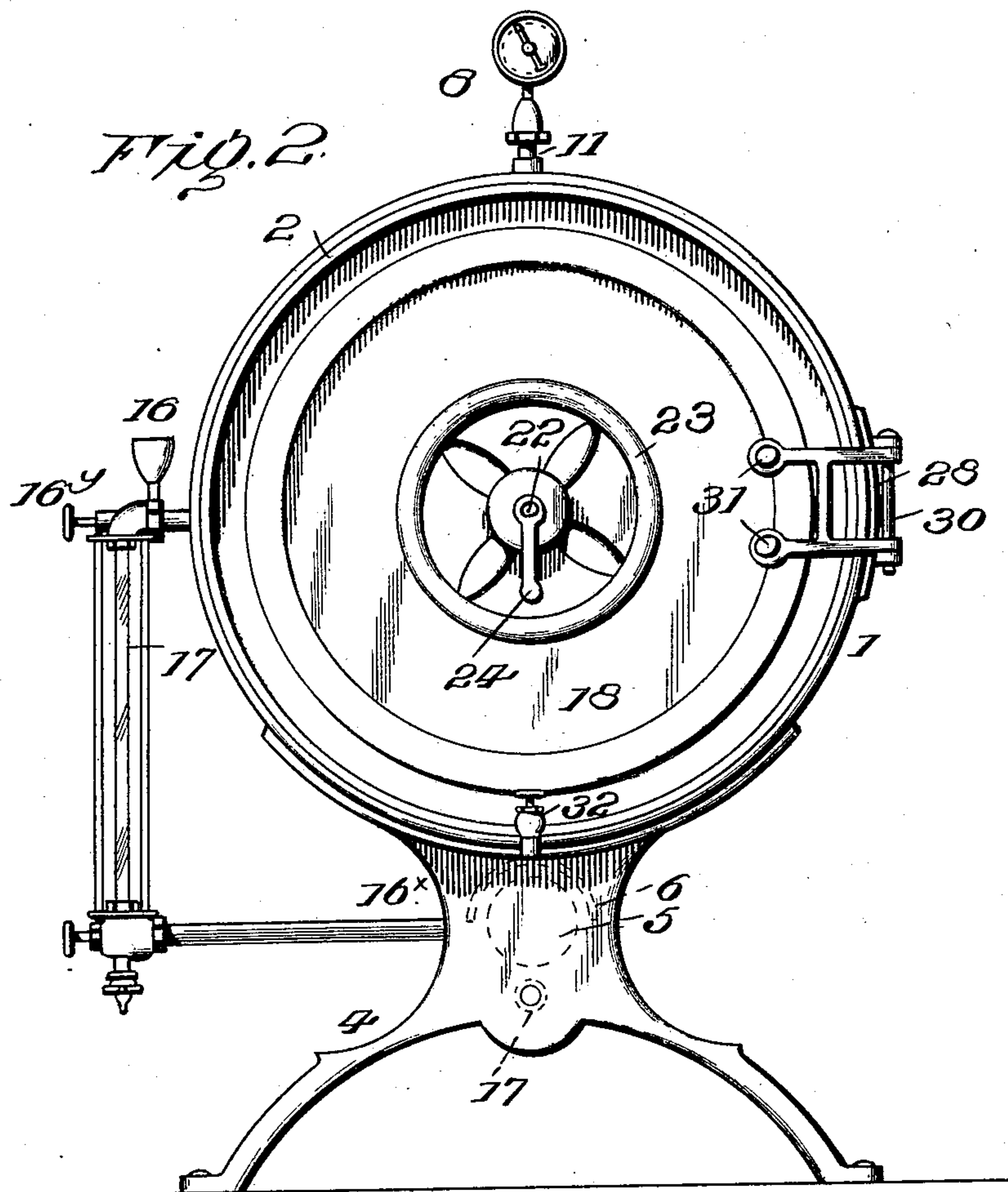
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Witnesses

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UNITED STATES PATENT OFFICE.

GEORGE W. KELLOGG, OF HARTFORD, CONNECTICUT.

STERILIZING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 698,711, dated April 29, 1902.

Application filed April 18, 1901. Serial No. 56,470. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. KELLOGG, a resident of Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Sterilizing Apparatus; 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 pertains to make and use the same.

My present invention has for its object to provide an apparatus by means of which surgical dressings, bandages, and other articles may be sterilized and any germs or bacilli destroyed by subjecting them to the action of steam and heat.

The invention consists in the construction herein described and pointed out.

In the accompanying drawings, Figure 1 is a longitudinal section of a sterilizer constructed in accordance with my invention. Fig. 2 is a front elevation. Fig. 3 is a section of the door-hinge. Fig. 4 is an elevation of the inside of the door, showing the locking device. Fig. 5 is a partial elevation, on an enlarged scale, of the locking device, a covering-plate being partly broken away.

Similar reference characters in the several figures indicate similar parts.

The sterilizing-chamber is inclosed by a double wall comprising two shells 1 and 3 of unequal diameters, preferably cylindrical, as shown in the present instance, and connected at their front ends by a flanged ring 2, the flanges of the ring being fixed to the respective shells in any approved manner. The opposite ends of the cylinders are closed by concavo-convex heads, and each shell is made seamless of spun or drawn metal, such as copper or brass. The heads are connected by a bushing 13.

4 denotes legs or frames which support the sterilizing-chamber and also a water-tube or water-holder 5. They also support a water-holder cover or hood 6 and a gas-burner 7. The holder 5, which is made of copper, brass, galvanized iron, or any suitable material, communicates with the steam or water space between the shells by means of tubes x .

A lamp-burner, steam-coil, electric heater, or any suitable source of heat may be employed. The hood serves to delay the ascending products of combustion and heated air in

contact with the water-heating holder or boiler 5, and in case of heating by combustion it protects the surface of the outer shell of the sterilizer and in any case prevents its discoloration. The burner being placed outside of and at a distance from the sterilizer cannot injure either the sterilizer or its contents though they be or become dry, and the hood also adds to the safety of the apparatus in this particular.

8 denotes a steam-gage to indicate pressure and temperature, and 9 is a safety-valve.

10 is a steam-admission valve or cock, and 11 is a branch or extension of the steam-admission pipe 12, whereby steam is supplied from the steam-space between the two shells inclosing the sterilizing-chamber, said steam being generated by the burner 7.

14 is a waste or drip pipe communicating with the steam-admission conduit and controlled by a cock or valve 14^x. The water of condensation from pipe or conduit 12 collects in pipe 14 above the closed cock and may be drawn off at will, and steam may also be discharged from the steam-space about the steam-chamber through said pipe 14. The pipe 14 is connected by a suitable coupling with the lower end of pipe 12 and in a straight line therewith, the connection being immediately adjacent the bushing, forming an inlet to the sterilizing-chamber. Water of condensation in pipe 12 is carried by gravity in a straight line into pipe 14, and steam is diverted immediately into chamber 3. The pipe 14 when the cock 14^x is closed constitutes a trap to hold water of condensation.

15 denotes a deflector adapted to turn steam admitted from pipe 12 and issuing from the branch 15^x through a suitable port or ports in said branch and against the heated wall of the inner shell, whereby loss of temperature in the pipe 12 may be compensated before steam comes in contact with the materials to be sterilized.

16 is a funnel, and 16^x a pipe for admitting water into the holder 5, and 16^y is a cock controlling the admission.

17 is a glass gage forming part of the admission-pipe.

32 is a faucet for drawing off the liquid contents of the steam-chamber.

The sterilizing-chamber is closed by a door 18, having on its front a tubular boss 19, con-

stituting the exterior wall of a stuffing-box, which boss is exteriorly threaded to receive a hand-wheel 23. This door has, excepting for the boss 19 and the door-hinge, a continuously-smooth surface well adapted to be kept clean. One important purpose of spinning or drawing the shells composing the body of the sterilizer integrally is to provide surfaces that can be easily cleaned.

10 A stuffing-box is denoted by 20.

21 is a tubular boss on the inside of the door, which boss receives a spindle 22, which extends through the wheel-hub, as shown, and is provided with a lever 24, whereby the spindle can be partially rotated to move locking-levers 25 endwise. As best shown in Fig. 5, the levers 25 are loosely held by pins 33, passed through oblong apertures 34 in the offset-arm ends 35, held loosely in seats 36, formed in a spindle-head 37. A cover which holds the arms from slipping from the pins is denoted by 38.

26 denotes lugs on the door, which receive loosely the outer ends of the levers 25. These levers when thrust outwardly by the rotation of spindle 22 engage behind the ring 2, whereupon the hand-wheel 23 may be screwed upon the boss 19 to force the spindle and the proximate ends of the levers 25 inwardly with the effect to clamp the door upon a suitable head or projection 27 on an inward extension of the ring 2 and form a steam-tight joint.

The door is hinged to the outer shell 1 by means of a bracket 28, (see Figs. 2 and 3,) having lugs to receive a pintle 30. This pintle, turning loosely in the lugs, is also loosely connected by a link or frame 29 with headed studs 31, the link having room to play on the studs, as indicated in Fig. 3, whereby the door may be closed by a movement in exact line with the axis of the ring and chamber and a steam-tight closure effected.

In operation water is supplied to the boiler or water-holder and to the space between the walls of the sterilizer until it reaches any suitable or desired level, (indicated by the gage 17.) The cock 10 being closed and cock 14^x open and the articles to be sterilized packed in the sterilizing-chamber and the door closed and locked steam-tight, steam is generated by the heat of the burner applied, primarily, to the water-holder 5 and, secondarily, to the outer shell 1. When a pressure of about ten pounds and a corresponding temperature of 240° Fahrenheit are indicated, the cock 10 is opened and steam admitted to the sterilizing-chamber. The cock 14^x is closed when steam begins to escape at that point. The temperature of the sterilizing-chamber containing steam is held for about thirty minutes at the temperature of 240° Fahrenheit. The cock 10 is then closed and cocks 14^x and 32 opened, whereupon steam and water are discharged, and the articles under treatment are dried by the heat of the chamber.

I am aware that it is not new to form the heads of shells inclosing a sterilizing-cham-

ber and other like articles integrally. My improvement relates to the means of connecting such shells in a simple and symmetric manner to obviate unequal expansion and to provide for the more convenient assemblage of the parts and for their ready disassemblage for repairs or other purposes. As the bushing connects the shells in their central line the heat and consequent expansion due to the initial admission of steam is equally distributed. The central connection also provides for the equal distribution of strains, whether due to heat expansion or other causes.

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

1. In an apparatus for sterilizing, a sterilizing-chamber having walls inclosing a steam and water chamber, a water-holder communicating with the latter chamber, tubes whereby said chamber and holder communicate, a heater for heating water in the holder and generating steam.

2. In an apparatus for sterilizing, a sterilizing-chamber surrounded by a steam-chamber, a conduit whereby the latter chamber may communicate with the former, and a cock for opening and closing the conduit, means whereby said conduit may be put in communication with the atmosphere, and a deflecting-cap situated over the outlet of the conduit into the sterilizing-chamber.

3. In a sterilizing apparatus, a sterilizing-chamber inclosed by a shell, an outer shell surrounding said chamber and providing a steam-jacket therefor, and a bent flanged ring 2 closing the space between the shells and extended inwardly beyond the inner shell to provide for the attachment of a door by parts bearing on opposite sides of said inward extension and within the inner shell, said ring having its outer part bent parallel with and contiguous the outer shell and having its flange parallel with and contiguous the inner shell and both shells fixed to the ring.

4. In a sterilizing apparatus, a sterilizing-chamber inclosed by a shell, an outer shell surrounding said chamber and providing a steam-jacket therefor, and a bent flanged ring 2 closing the space between the shells and extended inwardly beyond the inner shell to provide for the attachment of a door by parts bearing on opposite sides of said inward extension and within the inner shell, said ring having its outer part bent parallel with and contiguous the outer shell and having its flange parallel with and contiguous the inner shell and both shells fixed to the ring, said extension having a suitable circular projection to engage the door near its periphery.

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

GEORGE W. KELLOGG.

Witnesses:

C. E. TALBOT,

W. L. WAKEFIELD.