(No Model.) 3 Sheets—Sheet 1.

# J. C. WINTERS.

## CAN CAPPING MACHINE.

No. 256,090. Patented Apr. 4, 1882.

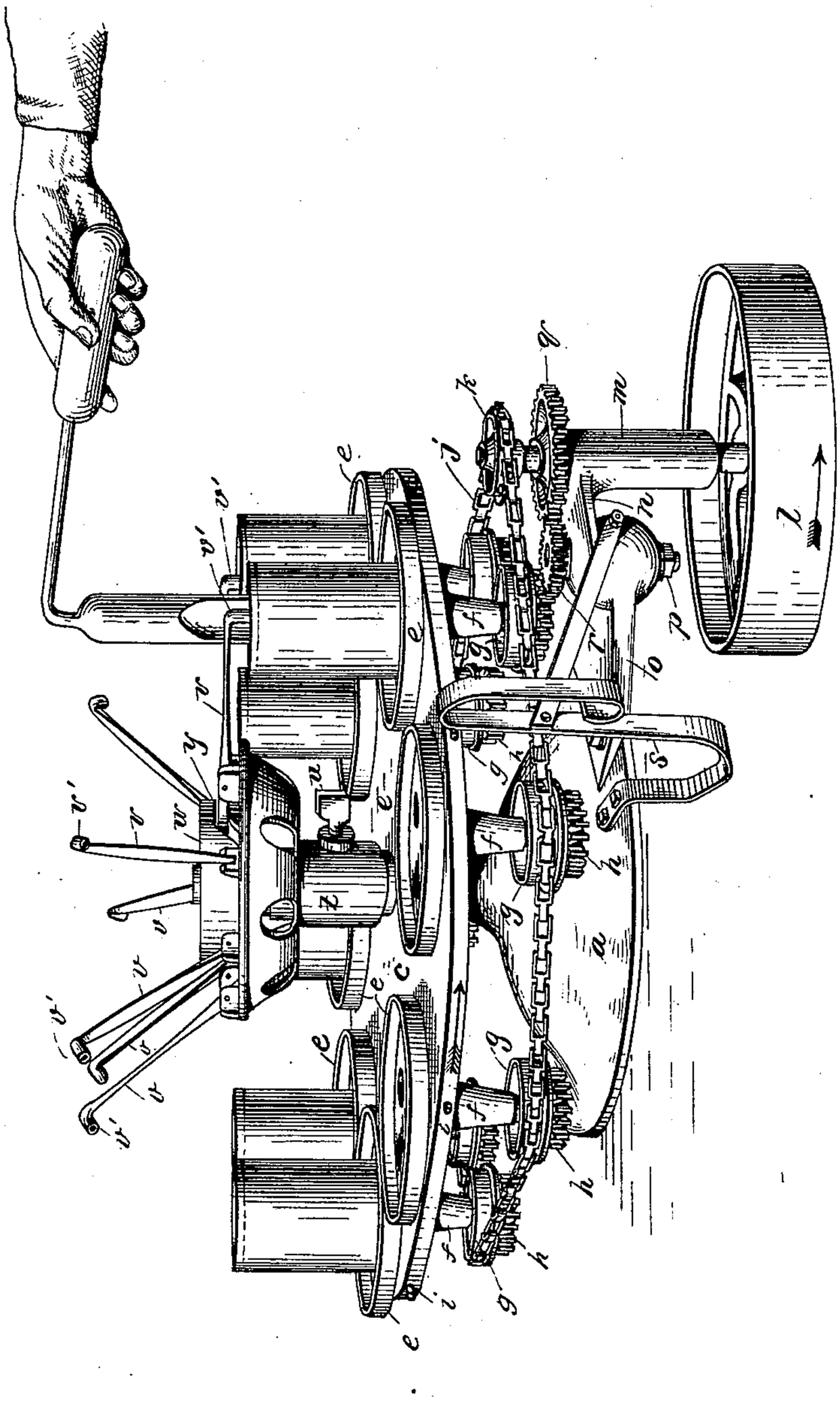

Fig. 1.

WITNESSES

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(No Model.) 3 Sheets—Sheet 2.

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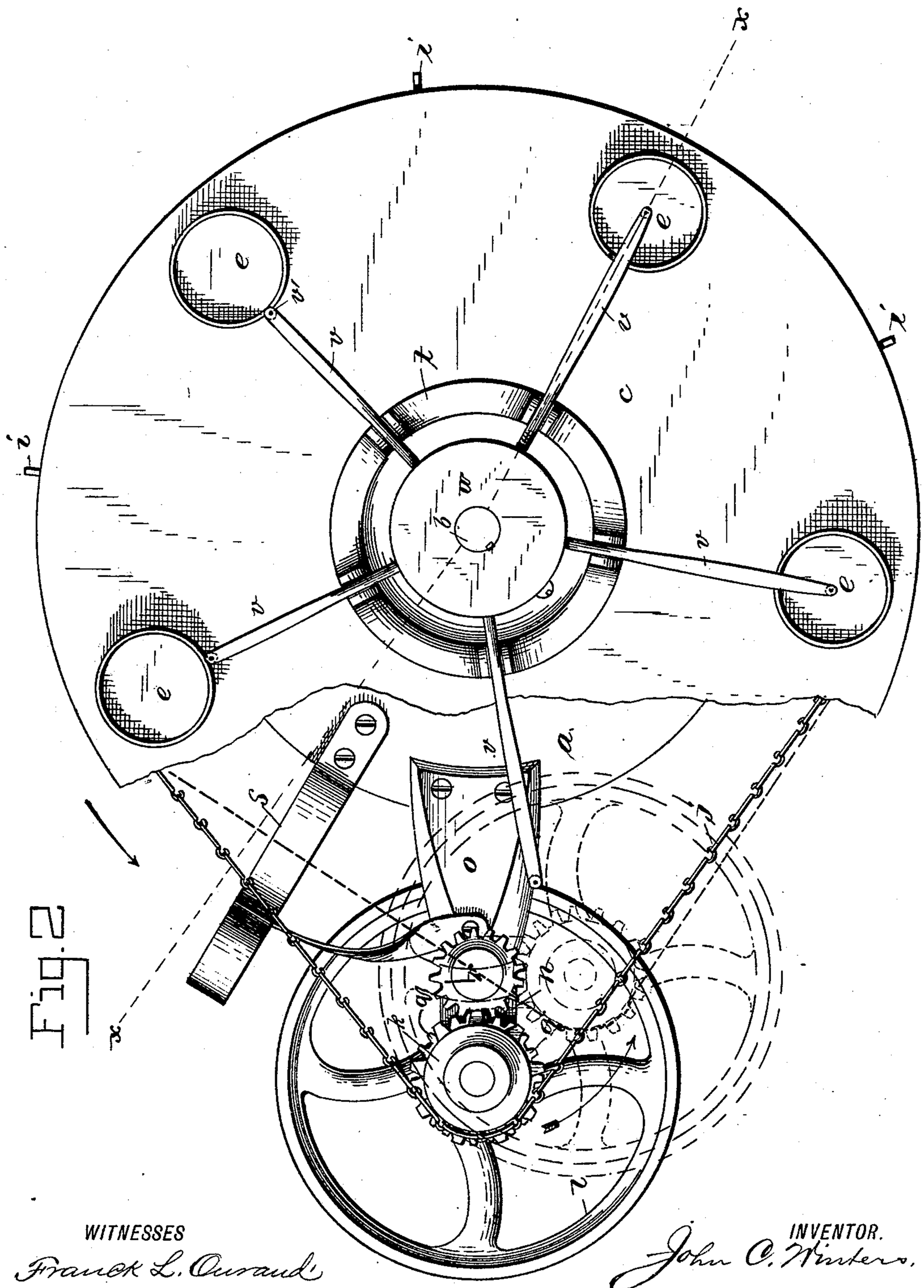


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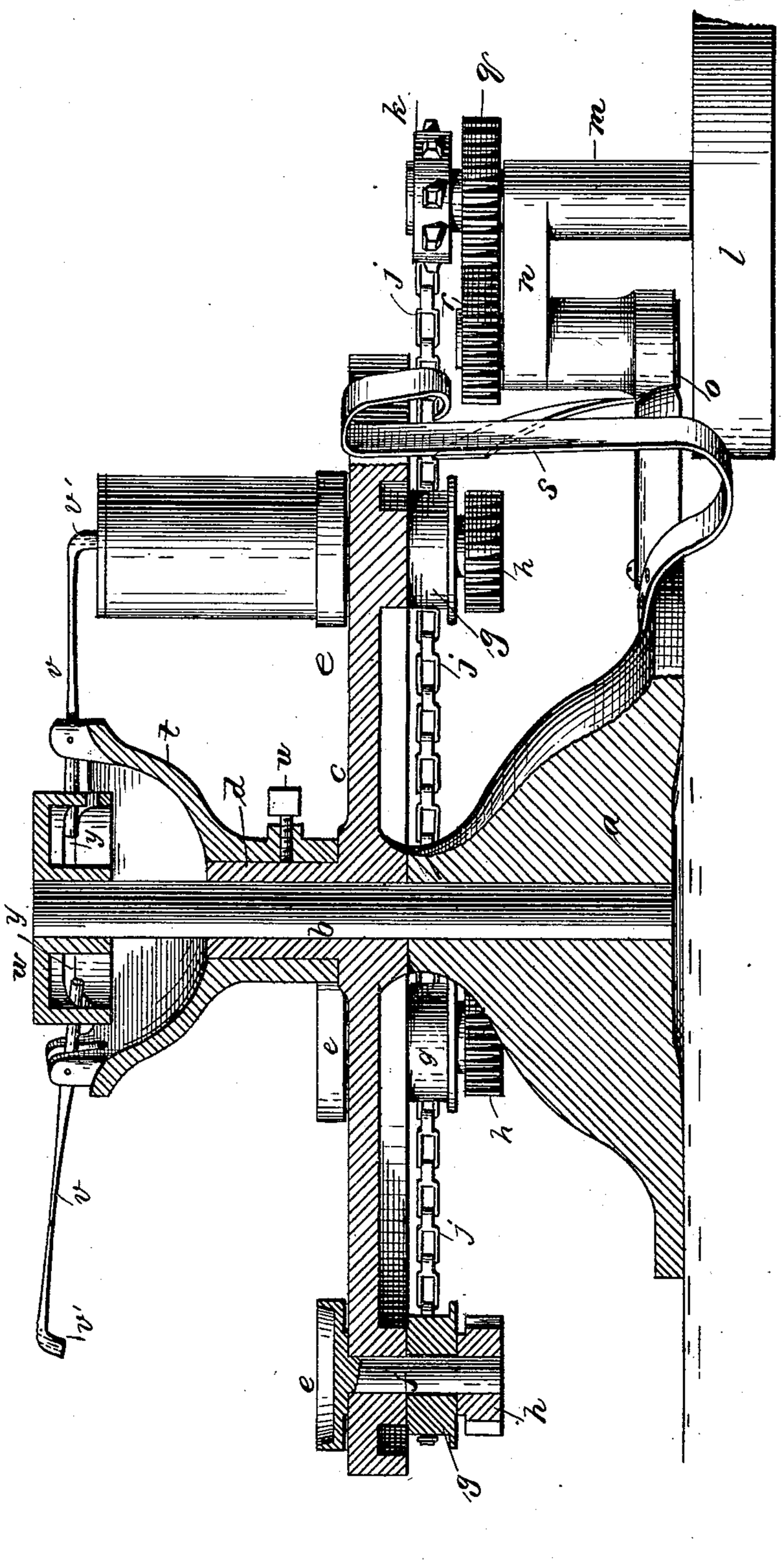

Fig. 3.

Fig. 5.

Fig. 4

WITNESSES

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# UNITED STATES PATENT OFFICE.

JOHN C. WINTERS, OF MOUNT MORRIS, NEW YORK.

## CAN-CAPPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 256,090, dated April 4, 1882.

Application filed February 2, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN C. WINTERS, a citizen of the United States, residing at Mount Morris, in the county of Livingston and State of New York, have invented certain new and useful Improvements in Can-Capping Machines; 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention is in the nature of improvements in that class of can-capping machines in which a revolving table supports a number of independently and intermittently rotated can-holding cups while the caps of the cans are being soldered to the can-heads.

The improvements consist, first, in the means for revolving the table and the can-holders or cups therein, these means comprising an endless chain encircling a driving wheel and pulleys disposed around the table loosely on the spindles of the can-holders, said driving-wheel positively moving the endless chain to thereby impart a positive continuous rotation to the table, and the said wheel being adjustable to serve as a belt-tightener for said endless chain, the said driving-wheel having on its shaft a pinion meshing with an idle-pinion, which in turn engages a pinion on the spindle of the can-holders to revolve said can-holders when each in turn has been stopped before such idle-pinion, such stoppage being effected automatically by a spring-catch engaging one of a number of pins projecting from the table.

The improvements consist, second, in automatically-operated hold-downs or stems to hold the caps upon the cans in the can-holders while such caps are being soldered to the cans.

The improvements consist, third, in the details of construction, arrangement, and combination hereinafter specifically set forth and claimed.

In the accompanying drawings, in the several figures of which like parts are similarly designated, Figure 1 is a perspective view of a machine embodying my improvements. Fig. 2 is a top plan view of a similar machine, part of the table being broken away. Fig. 3 is a transverse vertical section on the line *x x* of Fig. 2, looking in the direction of the arrow. Figs. 4 and 5 are sectional views of a cast and sheet metal false bottom, respectively, for the can-holders.

The letter *a* designates a pedestal or base of suitable construction and provided with a spindle, *b*. The table *c*, made with a hub, *d*, is arranged to revolve upon the spindle *b*. A number of cups, *e*, for holding cans are arranged around and supported by the table *c*, so as to be capable of rotation in said table. As each cup is a duplicate of the others, a description of one will suffice for all. The cup *e* has a vertical central spindle, *f*, whereby it is secured in the table *c*, and loosely arranged upon this spindle, below the table, is a flanged pulley, *g*, beneath which and supporting the same is fixed to the spindle a pinion, *h*. Any suitable number of these cups or can-holders may be arranged in the table *c*. Stops *i*, equal in number to the number of can-holders, are arranged upon the table in any convenient location. I have shown such stops arranged upon the rim of the table.

The means I prefer to employ to revolve the table *c* is an endless chain-band, *j*, supported by the pulleys *g*, and positively driven from the sprocket-wheel *k* on the shaft of the driving-pulley *l*. The pulleys *g* being loose on the spindles of the can-holders, and the chain passing over them under tension, the spindles of the can-holders will not be revolved, but the table will be carried around or caused to revolve continuously with the movement of the chain. The shaft of the driving-pulley *l* is supported loosely in a sleeve, *m*, which depends from an arm, *n*. This arm *n* is supported upon a bracket, *o*, extending outwardly from the pedestal *a*, a bolt and clamp-nut or other equivalent friction device, *p*, being used to connect the arm and bracket. The sleeve *m* is thus hinged to the bracket *o*, and its friction-connection therewith serves as a pivot upon which the sleeve carrying the driving-pulley and sprocket-wheel may be turned in the arc of a circle to increase or diminish the tension upon the driving-chain. This device thus becomes a belt-tightener to take up the slack of the chain and to admit of the use of a shorter

chain occasioned by the removal of a broken or other link of the chain.

*q* is a pinion fast on the driving-pulley shaft, and *r* is an idler-pinion on the bolt connecting the arm *n* and bracket *o*, these two pinions being always in gear, the pinion *r* having a stationary axis and the pinion *q* movable about it, but always in mesh therewith by reason of said pinion *q* being adjustable with the swinging sleeve *l*.

*s* is a spring-catch supported, say, by the base *a*, and adapted to automatically engage the stops *i*.

*t* is a head adjustably secured to the hub *d* of the table *c*, as by a set-screw, *u*, so as to revolve with said table. This head has pivoted within it a number of stems or cap hold-downs, *v*. These hold-downs have perforated outer ends or heads *v'*, and said hold-downs are of such length beyond their pivotal point as that their perforated heads will, when down, register with the vent-holes in the cans being capped, the perforation in said heads serving to permit the escape of vapor generated in the can by the heat of the soldering-iron. These hold-downs also extend inwardly from their pivots, and are positively operated to hold a can-cap while being soldered, and to release the can after the cap is soldered thereon by means of a stationary cam, *w*, adjustably supported upon the spindle *b* above the head *t*. The head *t* and cam *w* are adjustable in order to adapt the hold-downs or cap-stems to cans of different heights, the two being adjusted the same distance at the same time, so as to always preserve relatively the same proximity. The stems are held down so as to hold the cap while it is being soldered by the inner ends of the hold-downs entering a cam-slot, *y*, in the cam *w*. (See Fig. 1.)

The can-holders are provided with any suitable removable device—as, for instance, the cast or struck-up sheet metal false bottom—made with one or more cavities to adapt them to receive cans of different diameter. (See details, Figs. 4 and 5.)

The operation of my machine is as follows: The driving-pulley *l* is provided with suitable power-connections, so that when set in motion the sprocket-wheel *k* will be revolved, whereby the chain will be set in motion, and it in turn cause the table *c* to revolve. The can-holders having been supplied with cans whose caps are to be soldered on, the revolution of the table brings one of such can-holders in line with the idler-pinion, when, one of the stops *i* having come in contact with the catch *s*, the rotation of the table will be thereby stopped, the pinion *h* of that particular can-holder will be engaged by the idler *r*, and said can-holder will be thereby revolved. At the same time the cam-slot *y* will have depressed the hold-down *v* over the cap of the can in this particular can-holder, and the soldering-iron being applied, the can will be revolved under it and the solder spread around the cap to hold it in place. During this time the travel of the endless chain will be uninterrupted; but instead of its turning the table it will either slip on the pulleys *g* or said pulleys be revolved on their spindles *f*. So soon as the cap is soldered, for which purpose a given time may be allotted in the timing of the operation of the machine, the catch *s* may be automatically or manually withdrawn from the stop *i*, when the table immediately begins to revolve again, bringing the succeeding can-holder into position before the idler and the next stop against the catch, when the table again ceases to revolve, as before. The slot *y* of the cam *w* is long enough to hold at least two of the cap-stems *v* down upon the caps of as many cans, thus giving the solder on one cap time to set, while another cap is being soldered, before said first stem is raised. In the rotation of the stem or hold-down carrying head this first-named stem is carried out of the slot *y* and under the lower edge of the cam *w*, whereby said stem is raised from the cap and the can left free to be removed from the machine.

I have shown in full lines the chain driving-wheel as adjusted to take up the slack of the chain—that is to say, it is at its most remote point with respect to the chain. This chain passes about the pulleys and its driving-wheel somewhat in the figure of an oval, and the adjusting-arm describes an arc of a circle within it. The circumference of the chain is fixed with relation to all the pulleys and variable with relation to its driving-wheel. Hence if the chain be short the driving-wheel will be within a short radius of the chain, and as the chain expands the wheel will be shifted to a longer radius and held in all of its positions either frictionally, by a set-screw, or otherwise. When the wheel has been shifted to the longest radius of the chain and slack occurs it will be necessary to shorten the chain by taking out one or more links. The dotted lines in Fig. 3 show the wheel adjusted to a short chain or radius. This form of belt-tightener is applicable to other than chain bands or belts and in other than can-capping machines.

What I claim is—

1. A table provided with a hub and a spindle upon which it is supported, can-holders arranged upon spindles in said table, loose pulleys upon said last-named spindles, a driving-wheel, and an endless chain driven therefrom and inclosing the loose pulleys, combined substantially as shown and described, whereby a positive rotation is imparted to said table without affecting the can-holders.

2. A table provided with a hub and a spindle upon which it is supported, can-holders and their spindles, having their bearings in said table, and loose pulleys and fast gears upon such last-named spindles, combined with an endless chain band on said pulleys, a driving-wheel for said chain to rotate the table, and gearing to successively engage the pinions of the can-holder spindles to rotate said can-holders as they are brought into mesh with such gearing, substantially as described.

3. A table provided with a hub and a spindle upon which it is supported, can-holders and their spindles, having bearings in said table, and loose pulleys and fast pinions on said last-named spindles, combined with an endless chain band on said pulleys, a driving-wheel to move said chain positively to rotate the table, a stopping device to arrest the rotation of the table as each can-holder is brought to a given point, and gearing driven from the shaft of the driving-wheel to engage the pinion of and thus rotate the can-holder at the point of stoppage of the table, substantially as described.

4. A can-capping-machine table, a spindle upon which it is rotatable, can-holders and their spindles, having bearings in said table, loose pulleys on said can-holder spindles, and an endless band supported on said pulleys to rotate the said table, combined with a driving-wheel for said band, and a pivoted support for such wheel, movable to adjust the band-driving wheel in the arc of a circle to take up the slack of the band, substantially as shown and described.

5. A can-capping-machine table, a spindle upon which it is rotatable, can-holders and their spindles, having bearings in said table, loose pulleys and fast pinions on said can-holder spindles, a driving-band supported on said pulleys, and a driving-wheel for said band, combined with a support for such driving-wheel, a pivot for such support, and gearing on the said support to transmit motion from the driving-wheel to the fast pinions on the can-holder spindles to rotate said can-holders, whereby said driving-wheel can be so moved as to serve as a belt-tightener for the driving-band without interfering with the rotation of the table or the can-holders, substantially as shown and described.

6. A can-capping-machine table and means to rotate the same, and independently-rotated can-holders therein, combined with pivoted can-cap hold-downs fast upon and revolving with said table, and a stationary cam engaging the ends of all of said hold-downs simultaneously to positively operate the same to hold and release the cans at given intervals, substantially as described.

7. A can-capping-machine table provided with a hub, can-holders in the table, and means to rotate the table and can-holders, combined with a head fast to but rotating with said hub, levers or arms pivoted in said head, and a stationary cam automatically acting in succession upon each of said levers to positively raise and lower said levers at given intervals, substantially as and for the purpose described.

8. A can-capping-machine table, can-holders thereon, means to rotate and stop said table, and connected means to independently and intermittently rotate the can-holders, combined with a head fast to but rotating with said table, can-cap hold-downs pivoted in said head and arranged to register with the can-holders, and a stationary cam in constant engagement with all of said hold-downs to automatically and positively depress and hold said hold-downs over cans being operated upon, and similarly to raise and retain in elevation said hold-downs after the soldering of the cans, substantially as described.

9. A can-capping-machine table having a hub and a spindle upon which it is rotated, and can-holders in said table, combined with can-cap hold-downs, a head in which all of said hold-downs are pivoted, means to adjustably secure said head upon the table-hub, and a cam adjustable on the table-spindle for raising and depressing such hold-downs, whereby the machine is adapted for operation upon cans of different heights, substantially as described.

10. The combination of a can-capping-machine table, loose pulleys thereon, a driving-band sustained by said pulleys to rotate the table, a driving-wheel for said band, and a pivoted support for such driving-wheel movable to take up slack in said band, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN C. WINTERS.

Witnesses:
E. C. SEYMOUR,
NORMAN SEYMOUR.