(No Model.) 2 Sheets—Sheet 1.

A. J. BURNS.

MACHINE FOR LACQUERING CANS.

No. 570,538. Patented Nov. 3, 1896.

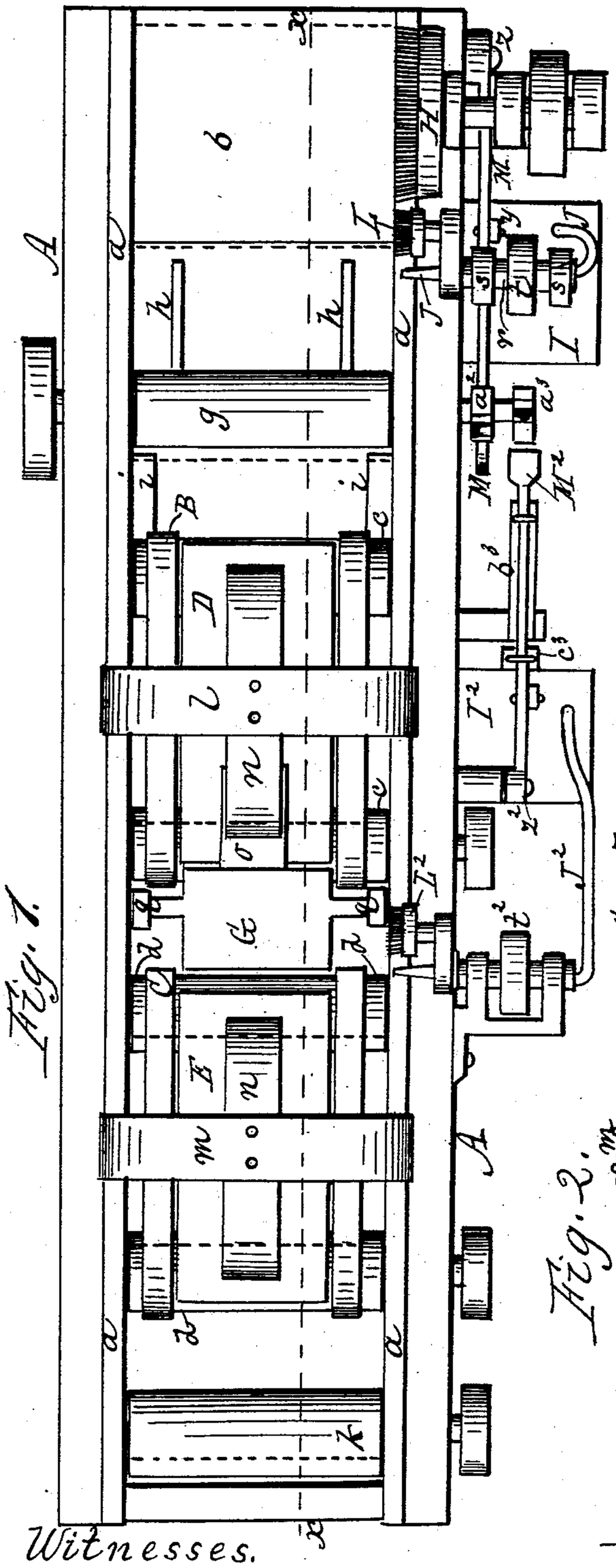

Fig. 1.

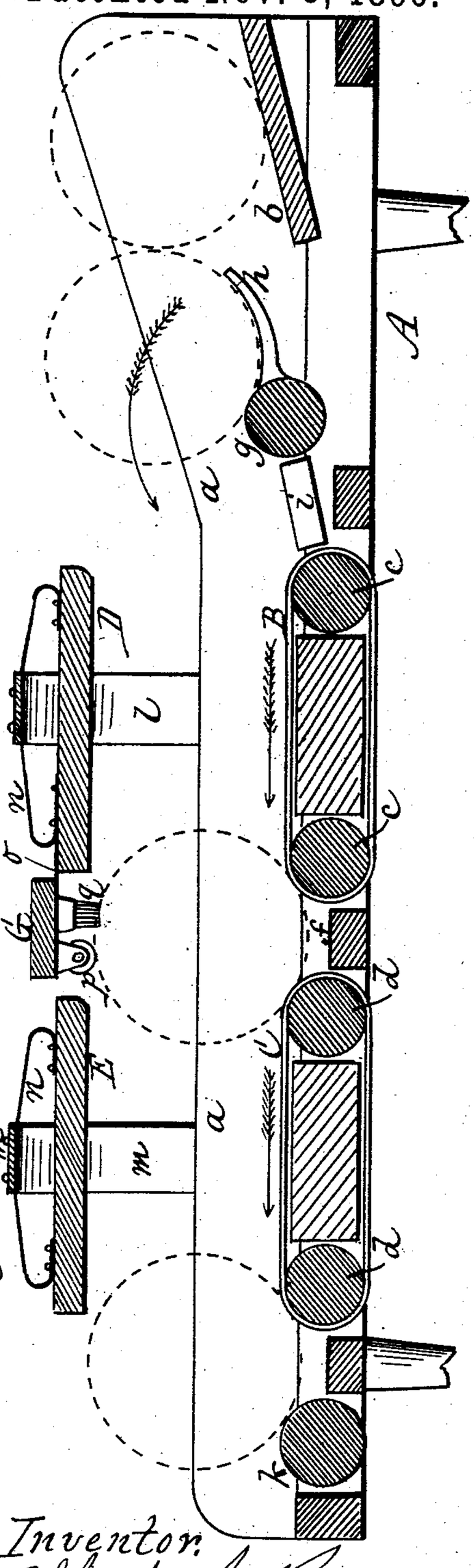

Fig. 2.

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(No Model.) 2 Sheets—Sheet 2.

A. J. BURNS.

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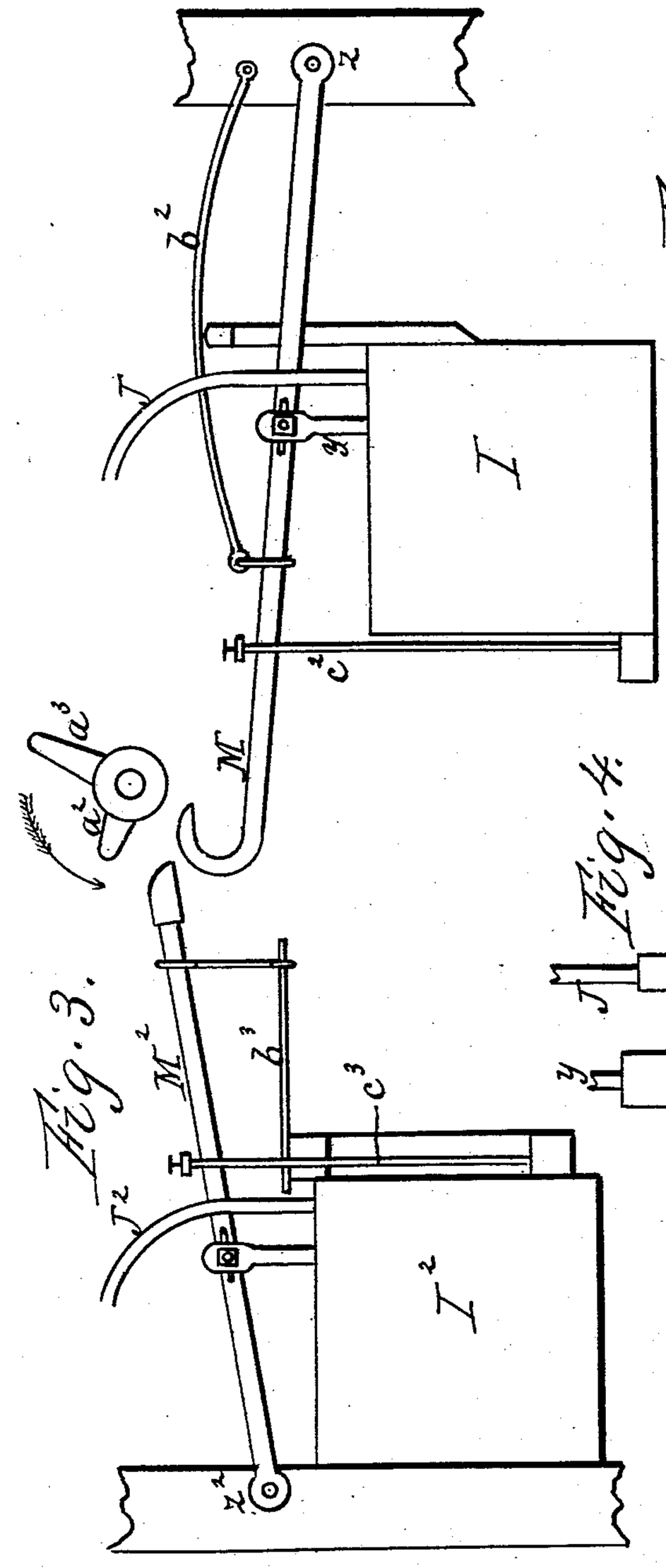


Fig. 3.

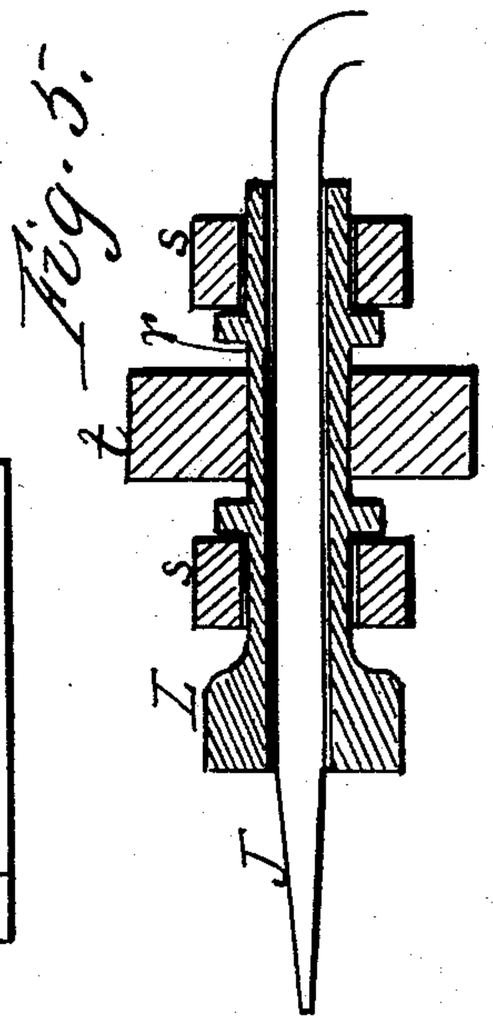
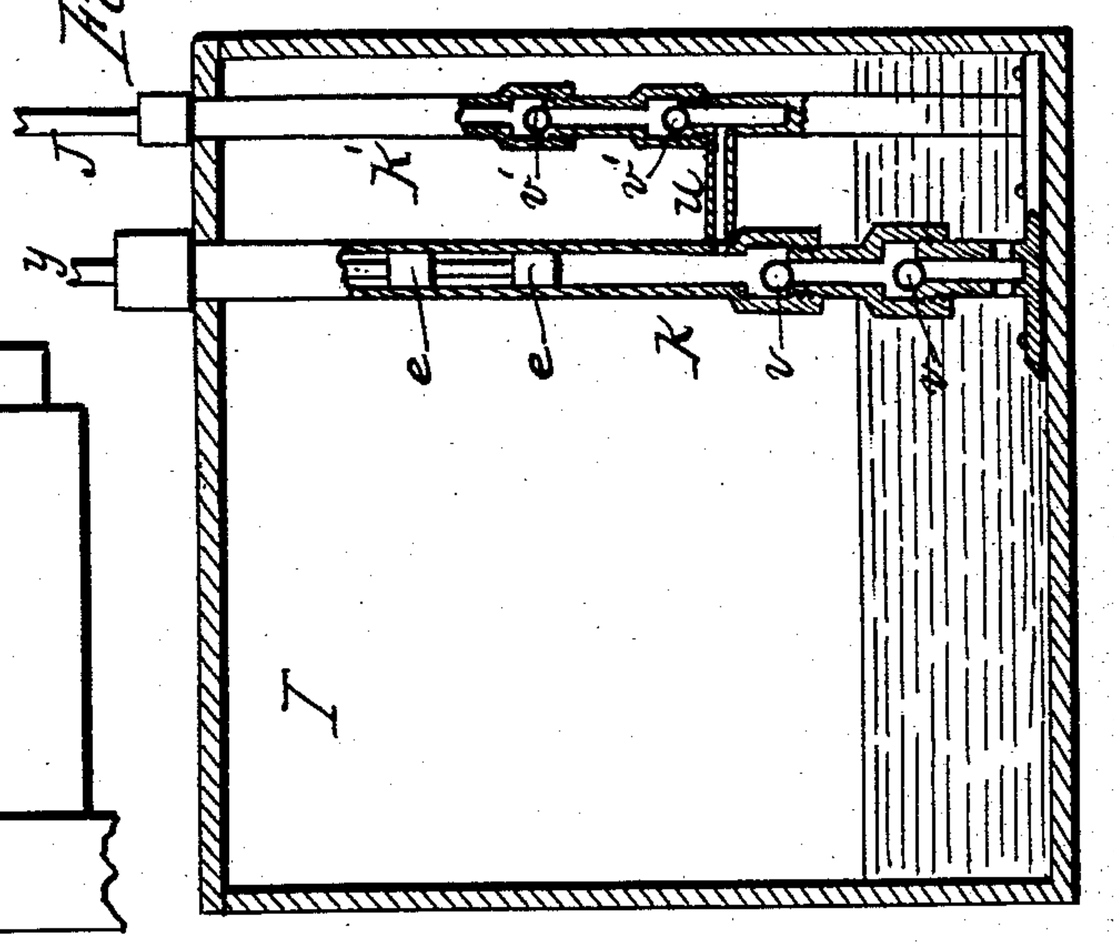


Fig. 4.



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F. B. Hutchinson
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Inventor:
Albert J. Burns,
per R. F. Osgood,
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UNITED STATES PATENT OFFICE.

ALBERT J. BURNS, OF FAIRPORT, NEW YORK.

MACHINE FOR LACQUERING CANS.

SPECIFICATION forming part of Letters Patent No. 570,538, dated November 3, 1896.

Application filed February 1, 1896. Serial No. 577,715. (No model.)

To all whom it may concern:

Be it known that I, ALBERT J. BURNS, of Fairport, in the county of Monroe and State of New York, have invented a certain new and useful Improvement in Machines for Lacquering Cans; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the drawings accompanying this application.

Fruit-cans are cleaned and lacquered at the ends preparatory to being labeled.

The object of my improvement is to do the work by machinery; and the invention consists in the combination and arrangement of parts hereinafter described and claimed.

In the drawings, Figure 1 is a plan view of the machine. Fig. 2 is a longitudinal vertical section of the same in line *x x* of Fig. 1. Fig. 3 is a diagram showing in elevation the two tanks for holding the cleansing fluid and lacquer and the lever attachments and cams for operating the pumps. Fig. 4 is an enlarged vertical section of one of the tanks and the pump located therein. Fig. 5 is an enlarged longitudinal section through one of the brush-shafts, showing the ejector-pipe therein.

A indicates a frame provided with raised side pieces *a a*, between which the cans pass from an inclined chute *b*, on which they are placed. B and C are two endless belts or aprons passing, respectively, around rollers *c c* and *d d*, and receiving constant forward motion in the direction of the arrows in Fig. 2. The contiguous ends of these two belts are separated by a space *f* sufficient to allow a can to sink therein to a limited extent, as indicated by dotted lines, Fig. 2, said can then receiving rotary motion by the joint action of both belts. *g* is a rotating roller at the entrance end of the machine, located intermediately between the lower end of the inclined chute *b* and the outer roller *c*, and raised somewhat above the level of the latter. The roller *g* is provided with curved arms *h h*, which as the roller rotates reach under and pick up the can which has rolled down the inclined chute, and throw said can forward onto the end of the belt B. The can is prevented from sinking between the rollers by guide-pieces *i i* on opposite sides of the machine.

k is a rotating roller at the discharge end of the machine, between which and the end of the belt C the can is held after it has been lacquered.

l and *m* are two standards rising from the frame of the machine and spanning the same over the two belts B C. Preferably, and as shown, these standards consist of metallic straps.

D and E are two pressure-plates attached to the standards by springs *n n*, which allow the plates to spring up and down and also to rock in either direction. They extend nearly the length of the belts, and are located above the same at such a distance that the can receives contact on one side by the belt and on the other by the pressure-plate, thereby attaining its rotary motion. The friction-plate yields as the can passes under it and also adjusts itself to position to preserve contact with the can by reason of its attachment to the freely-acting spring. When the can reaches the middle position between the belts, the friction-plate releases its hold and the can then rotates independently a sufficient length of time for the lacquer to be applied and brushed over the end. The next succeeding can that enters pushes the can between the belts forward, when it is carried over the next belt to the discharge end, displacing the can that already rests there. The entrance of the cans is timed by the revolving roller *g*, which picks them up one at a time and throws them over at every revolution of the roller *g*.

G is a brush-block attached to the inner end of the pressure-plate D by means of a spring *o*, which allows it freedom of movement up and down. To the under side of the brush-block is attached one or more friction-rollers *p*, which rest on top of the can. The block is provided with a brush *q*, which bears on top of the can at the extreme end and wipes any surplus lacquer that has spread to the top of the can. The friction-wheel regulates the position of the block so that the brush bears properly on the can; also applies pressure on the can so that it will revolve.

H is a rotating brush at the entrance end of the machine, whose purpose is simply to brush the end of the can and clear it of dirt preparatory to being lacquered.

I is a tank containing gasolene or other

cleansing fluid for cleaning the end of the can preparatory to its being lacquered. In this tank is located a small force-pump K for forcing the fluid in jets through an ejecting-pipe J against the ends of the cans as they come in succession in line with the ejector. After each ejection the small amount of liquid is spread on the end of the can by a rotary brush L. This brush sweeping over the end of the can spreads the liquid in a thin body and thoroughly cleans the end of the can. The brush-shaft *r* is hollow and rests in bearings *s s*, and is driven by a pulley or wheel *t*, Fig. 5.

The ejector-pipe J simply passes through the hollow shaft. The pump located in the tank consists of two barrels K and K′, with a connecting-tube *u*. The ejector-pipe J is connected with the barrel K′. Each of these two barrels has two check-valves *v v* and *v′ v′*, the same being more effective in use than a single valve in each barrel, as they prevent any leakage or back passage of the liquid. The barrel K has also a piston with double heads *e e*, the space between them being filled with oil, which lubricates the piston. The piston-rod *y* of the pump is attached to a lever M, Fig. 3, pivoted at one end at *z*, the opposite end extending forward and being acted upon by a cam a^2 on the shaft of the roller *g*. At every revolution of the roller the pump-lever is forced down by the cam, thereby ejecting the fluid, and the lever is drawn back again by a spring b^2. The lever is gaged in its upward movement by a stirrup c^2, through the top of which passes an adjusting-screw, by which means the throw may be of greater or less length.

The apparatus for ejecting and spreading the lacquer is of similar construction to that described. It consists of a tank I^2, for holding the lacquer, a force-pump similar to K K′, an ejecting-pipe J^2, a rotating brush L^2, driven by a pulley or wheel t^2, a pump-lever M^2, pivoted at z^2, its opposite end extending back and operated on by a cam a^3, a reacting spring b^3, and a gage-stirrup c^3. The ejector-pipe coming opposite the end of the can resting between the ends of the two belts, the liquid is ejected and brushed in, and at the same time the surplus liquid is taken off by the brush *q*, as before described.

In the drawings the ejecting and brushing devices are shown attached to only one side of the machine. They are to be used in the same manner on the other side, and are the duplicates of those shown and described. In such case only one set of tanks is required.

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

1. In a lacquering-machine, the combination of a frame, two pairs of endless belts located therein, two spring presser-plates above the belts, the belts and presser-plates arranged to feed the cans forward and rotate the same, a tank for containing liquid located below the belts, a force-pump in the tank, an ejecting-pipe leading from the pump to a point opposite which the cans pass, and adapted to eject the liquid against the end of the cans, a revolving brush adapted to brush the end of the cans where the liquid is ejected, and mechanism adapted to intermittently operate the pump coincidently with the movement of the cans, as herein shown and described.

2. In a machine for lacquering cans, the combination of a frame, two sets of endless belts located therein, and two spring-presser plates above the belts and in coincidence therewith, the belts and presser-plates being adapted to feed the cans forward and the two sets of each being located at such a distance apart that the cans when resting in the space between the sets receive only rotary and not longitudinal motion, as and for the purpose specified.

3. In a machine for lacquering cans, the combination of a frame, two sets of endless belts located therein, two spring-presser plates above the belts and in coincidence therewith, the two sets of belts and plates being separated by an intervening space that allows a can to fall therein and free from the presser-plates, and a brush-block and brush attached to one of the presser-plates and adapted to bear upon the end of the can while the same is between the two sets of belts, as herein shown and described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

ALBERT J. BURNS.

Witnesses:
R. F. OSGOOD,
F. B. HUTCHINSON.