

(No Model.)

G. ROTH.

MACHINE FOR LIQUIDIZING CONDENSED MILK.

No. 383,915.

Patented June 5, 1888.

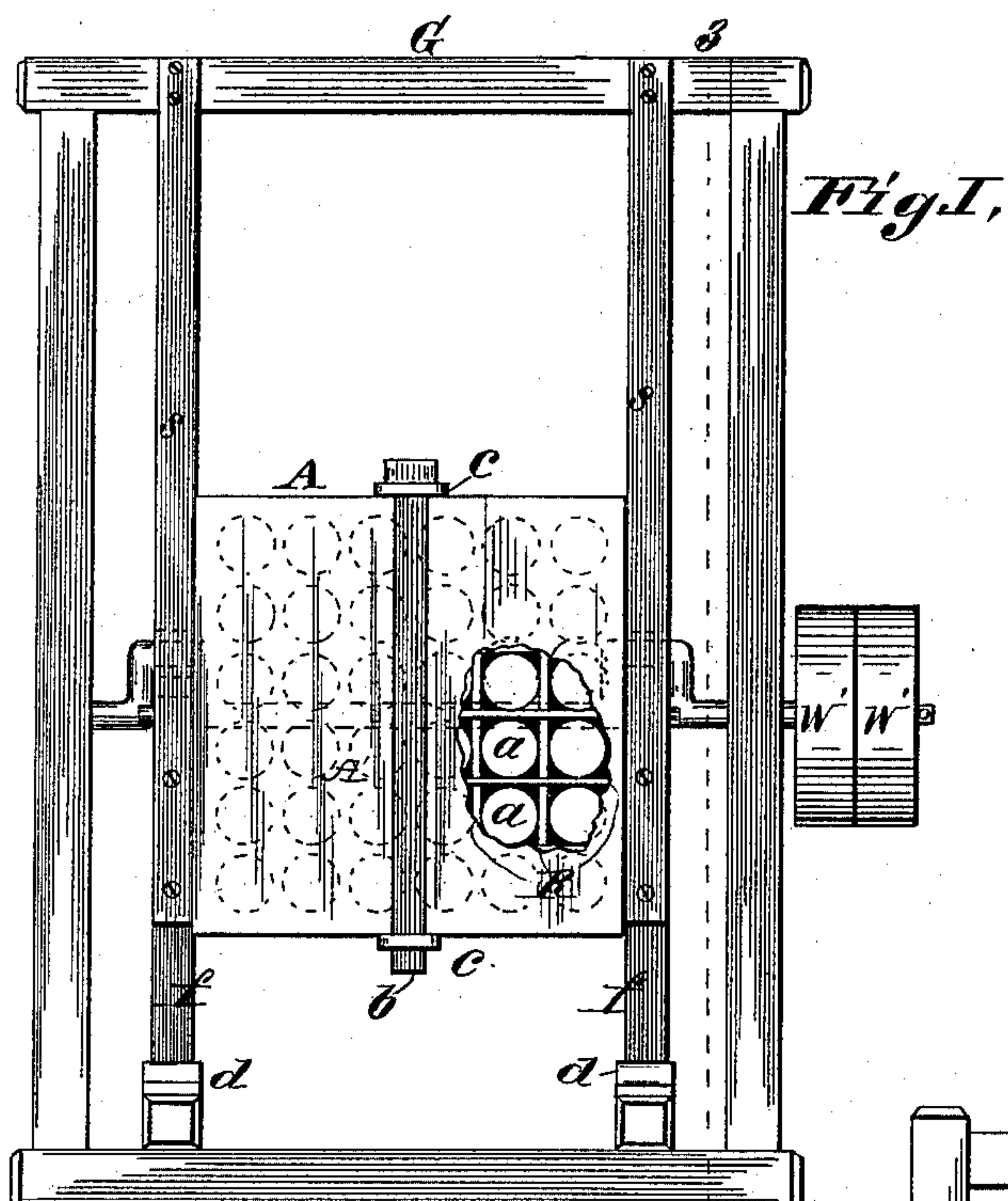


Fig. 2.

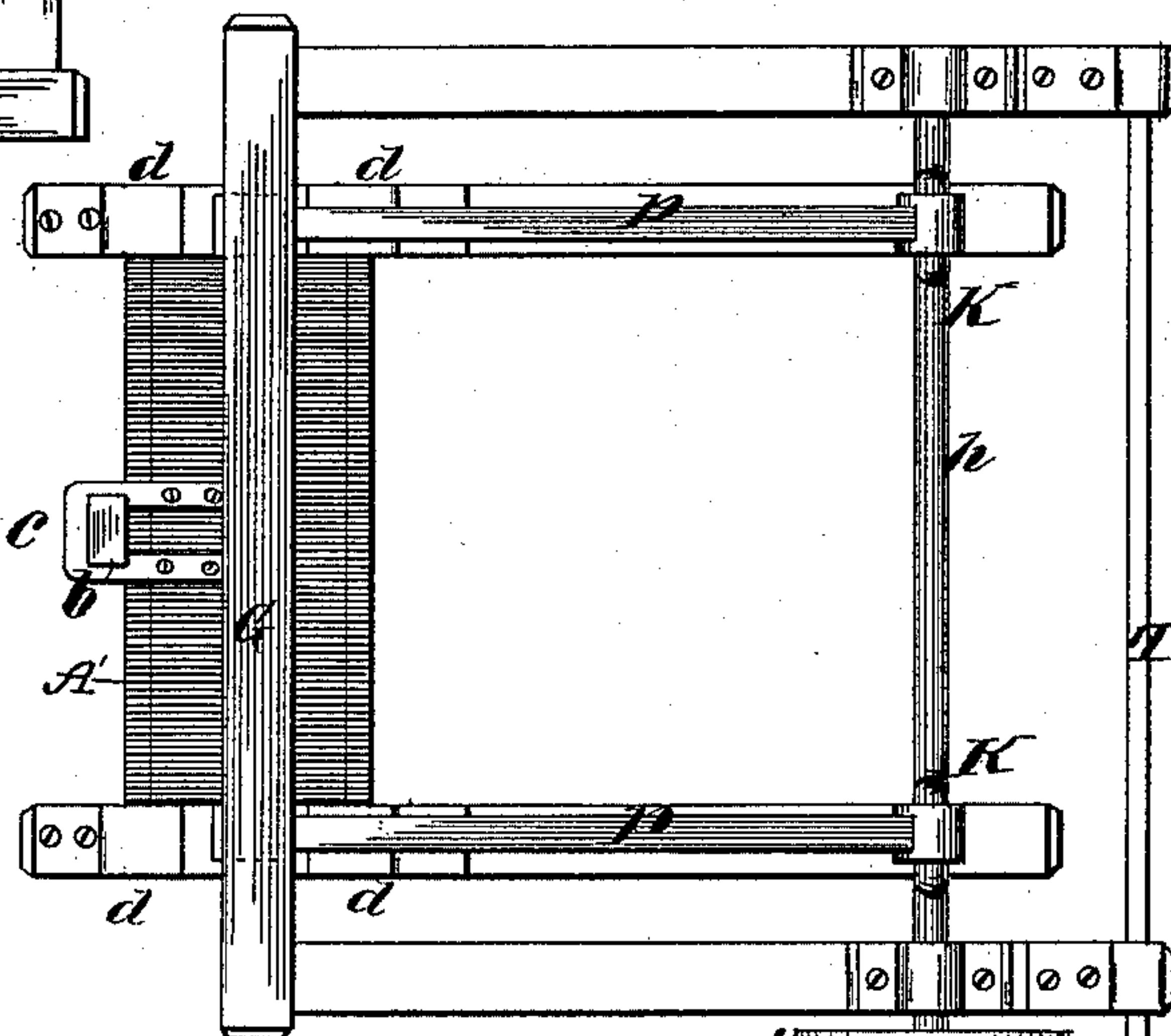
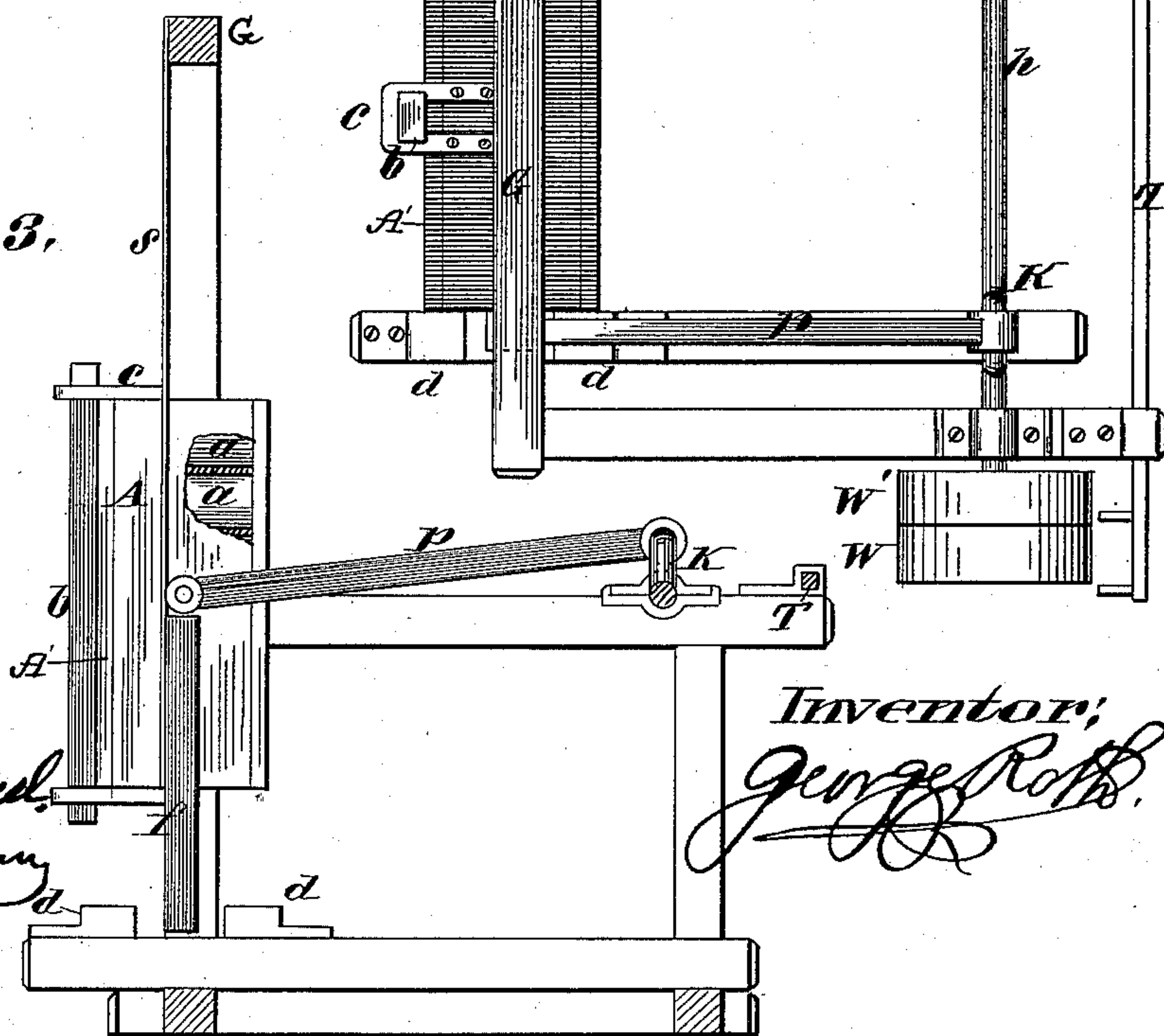


Fig. 3.



Attest:  
Louis Appel.  
Jos. Hermann

Inventor:  
George Roth.



# UNITED STATES PATENT OFFICE.

GEORGE ROTH, OF HIGHLAND, ILLINOIS.

## MACHINE FOR LIQUIDIZING CONDENSED MILK.

SPECIFICATION forming part of Letters Patent No. 383,915, dated June 5, 1888.

Application filed May 23, 1887. Serial No. 239,133. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE ROTH, a citizen of the United States, and residing at the town of Highland, in the county of Madison, in the State of Illinois, have invented a new and useful Improvement in Machines for Liquidizing Condensed Milk that has Become Clotted or Jellied in Hermetically-Sealed Cans, of which the following is a specification.

My invention relates to a machine for treating clotted or jellied condensed milk in hermetically-sealed cans; and it consists in the combination and arrangement of parts which will be more fully described hereinafter, and set forth in the claim. I attain this object by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is an end view of the machine, showing a part of the lid of the box cut away, whereby the ends of the cans are exposed to view. Fig. 2 is a plan or top view of the machine. Fig. 3 is a vertical section drawn on the line 3 3 in Fig. 1, and has a part of the side of the box cut away to show the side of the cans in the box.

A is a strong box provided with a lid, A', which is held in place by a bar, b, which is wedge-shaped and engages at its upper and lower ends horseshoe stops or clamps c, which are made fast to the upper and lower sides of the box A. This wedge-shaped bar serves to hold the lid permanently to the box.

R is a common rack made and adapted to hold the cans a a a, and fits tightly between the lid and the opposite side of the box, so that the cans cannot jam against the lid and side of the box when the machine is in motion. This box is made fast to a foot-piece, f, on each side, so that it cannot turn. These foot-pieces are made fast to long springs, which are two in number and which pass up on both sides of the box A and are attached at the top to a cross-beam, G, of the frame-work. These springs are designated by the letters s s and serve to suspend the box A from the frame-work, and, being elastic, will allow the pitmen p p to draw the pieces f beyond the vertical line drawn from the place of contact of the spring to the beam G to stops or shoulders d d on the side of the frame-work. These stops d d are placed upon the sill of the frame-work

and serve to resist the onward movement of the pieces f in either direction. The lower ends of the pieces f are made to strike against the stops d as they are moved back and forth by the pitmen p and the cranks k, and thus suddenly stop the motion of the frame A in each direction.

The pitmen p p are journaled on the sides of the box at about the center at one end and at the other to cranks k on shaft h. This shaft has two cranks, k, one for each pitman, and is journaled in the frame-work of the machine. It is supplied with two pulleys—one tight and one loose. The tight pulley propels the shaft and the loose one carries the band when the machine is at rest. T is an ordinary slide adapted to shift the band from the loose pulley to the tight pulley. The tight pulley is designated by the letter W and the loose one by the letter W'. Now, when the cans filled with condensed milk to be treated are placed in the rack R, and it is placed in the box so that the cans will have one of their ends toward the shaft h, and the lid A' is put on, and the wedge shaped bar b is driven into the clamps c c, thus clamping the lid on tightly, and the band is shifted onto the tight pulley, the machine begins to operate, and the cans a a are jerked endwise with the box until the feet f come in contact with the shoulders d d, when, by the giving of the springs s s, the box is jerked down on one side and up on the other, which imparts a like motion to the cans and the milk in the cans. This operation is repeated at each stroke of the pitmen, which causes, by a succession of this vibratory and rocking motion imparted by the cranks and stops, the clotted and jellied particles to break to pieces quickly before much friction is caused in the can, and consequently the clotted and jellied milk is liquidized before it is heated by friction and before it is churned. Unskimmed milk is taken, and while being condensed it is raised to a temperature of not over 240° Fahrenheit. When this condensed milk is canned, it has a temperature of over 50° to 60° Fahrenheit. After the milk has been left standing a greater or less length of time, the milk becomes jellied, and is comparatively unsalable on this account. No injurious effect has been produced or taken place on account of the jel-

lying of the milk further than that the milk has lost its fluid property. After this jellied milk has been subjected to a shaking motion, as above described, the milk becomes fluid  
5 again and will never again jelly under any circumstances. From a jellied state the milk again becomes fluid, as in the first instance, and that without any perceptible change having taken place either in the nature or quality  
10 of the milk.

It will be understood that the only kind of milk treated by this machine is condensed milk which has been canned and then has become jellied.

Now, what I claim as new, and for which I 15 ask Letters Patent of the United States, is—

The combination of a suitable frame-work, G, springs which are suspended therefrom and which have rigid pieces secured to their lower ends, the partitioned box A, which is secured 20 to the springs, suitable stops upon the frame-work, the pitmen, and the operating crank-shaft, substantially as specified.

GEORGE ROTH.

Witnesses:

LOUIS APPEL,  
JOS. C. AMMANN.