

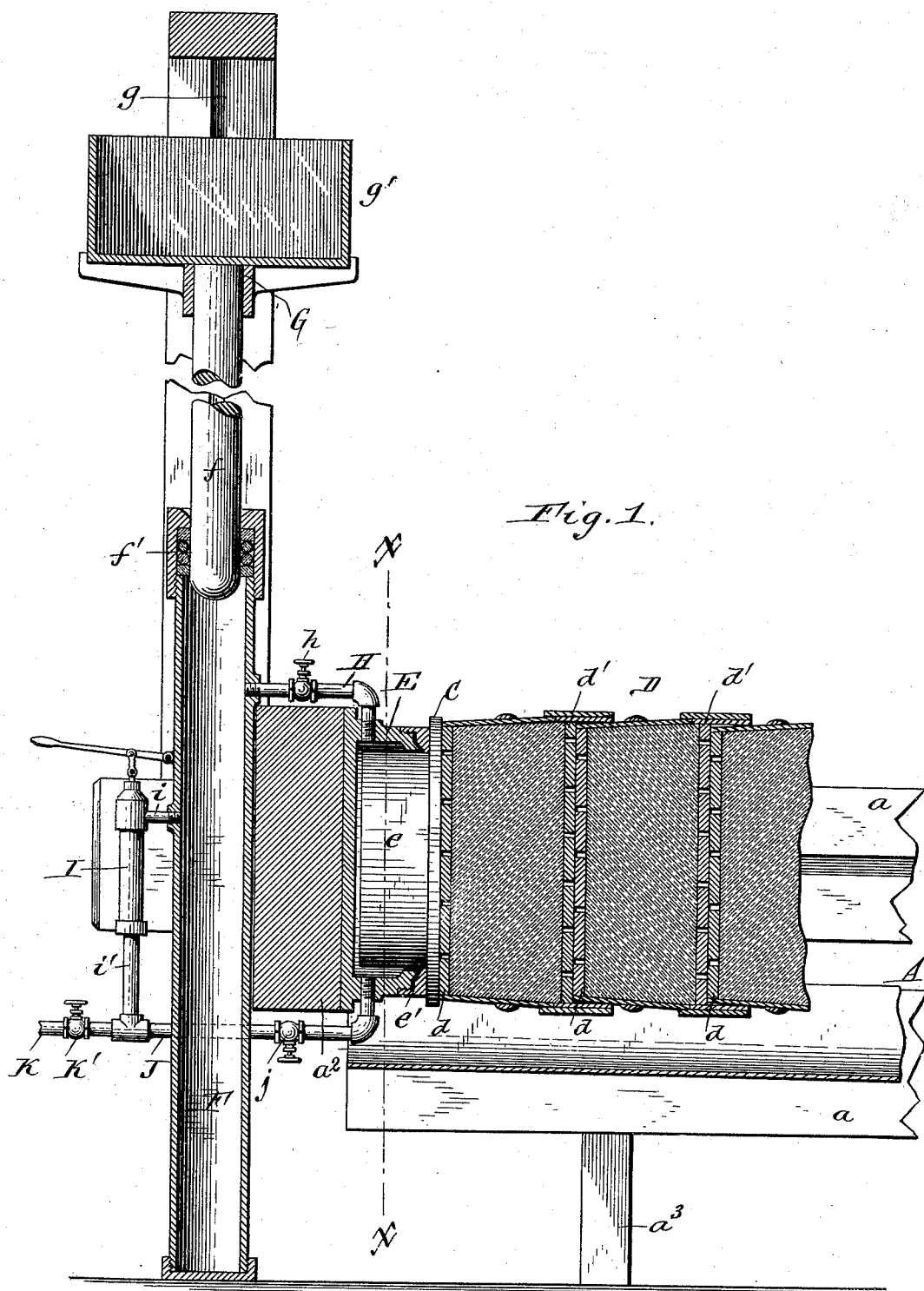
(No Model.)

3 Sheets—Sheet 1.

C. J. LUNDSTROM.
CHEESE PRESS.

No. 505,571.

Patented Sept. 26, 1893.



Emil Neuhart }
Theo. L. Popp } Witnesses. C. J. Lundstrom Inventor.
By Wilhelm Bonnet Attorneys.

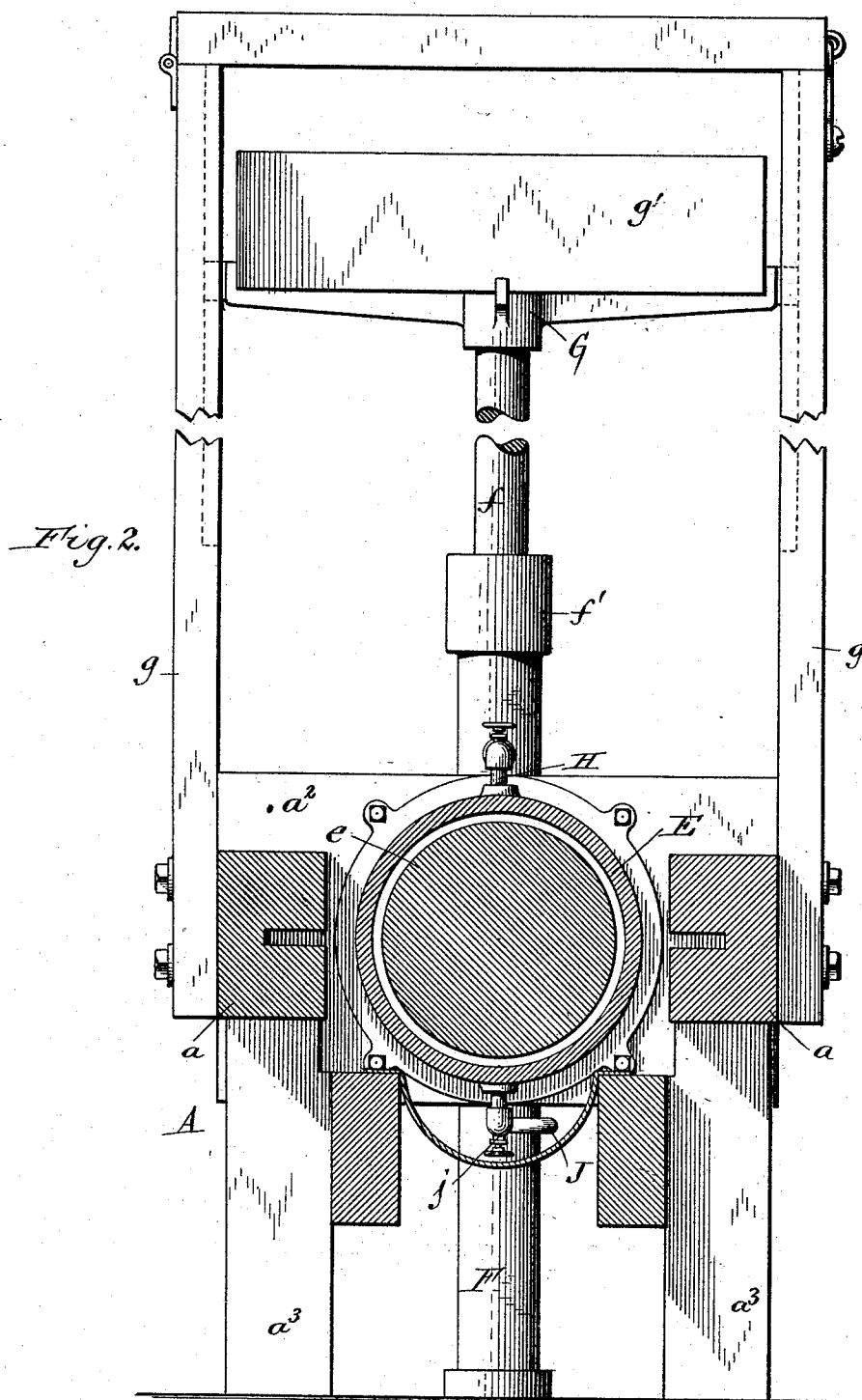
(No Model.)

C. J. LUNDSTROM.
CHEESE PRESS.

3 Sheets—Sheet 2.

No. 505,571.

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Theo. L. Popp. } Witnesses.

C. J. Lundstrom Inventor.
By Wilhelm H. Bonner, Attorneys.

(No Model.)

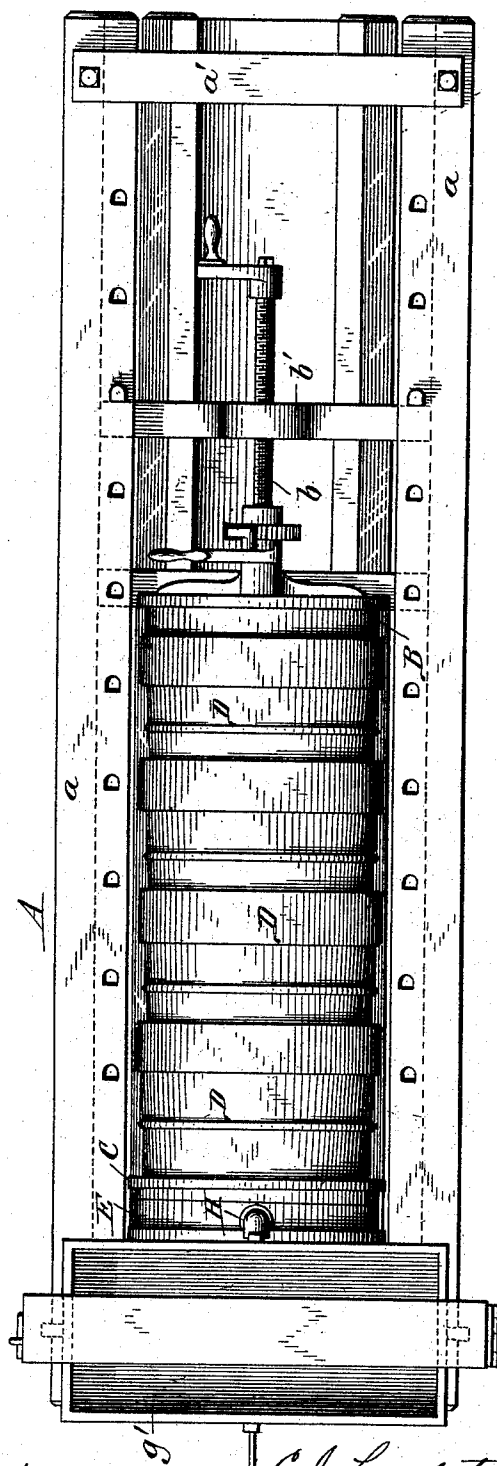
C. J. LUNDSTROM.
CHEESE PRESS.

3 Sheets—Sheet 3.

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Fig. 3.



Witnesses:

Emil Neuhart.

Theo. L. Popp.

C. J. Lundstrom Inventor.

By Wilhelm H. Bonnet
Attorneys.

UNITED STATES PATENT OFFICE.

CARL JOHAN LUNDSTROM, OF LITTLE FALLS, NEW YORK, ASSIGNOR TO
D. H. BURRELL & CO., OF SAME PLACE.

CHEESE-PRESS.

SPECIFICATION forming part of Letters Patent No. 505,571, dated September 26, 1893.

Application filed June 22, 1892. Serial No. 437,642. (No model.)

To all whom it may concern:

Be it known that I, CARL JOHAN LUNDSTROM, a subject of the King of Sweden and Norway, residing at Little Falls, in the county of Herkimer and State of New York, have invented new and useful Improvements in Cheese-Presses, of which the following is a specification.

This invention relates to a cheese press in which a number of cheeses are pressed at one operation and in which the preliminary pressure upon the cheeses is applied by hand, while the final pressure is effected automatically.

The object of my invention is to provide means whereby the final pressure upon the cheeses is produced by hydraulic mechanism.

In the accompanying drawings consisting of three sheets:—Figure 1 is a longitudinal sectional elevation of the rear portion of a cheese press provided with my improvements. Fig. 2 is a vertical transverse sectional elevation thereof, the section being taken in line $x-x$, Fig. 1. Fig. 3 is a top plan view of the press on a reduced scale.

Like letters of reference refer to like parts in the several figures.

A represents the press frame which consists essentially of longitudinal beams a , front and rear cross pieces a' a^2 and supporting legs a^3 .

B represents the head block or follower which moves lengthwise between the beams.

b is the horizontal pressure screw whereby the follower is operated and which is arranged in a cross bar b' secured with its ends to the longitudinal beams.

C represents the movable foot block arranged between the rear portions of the longitudinal beams.

D represents a series of cheese hoops of any suitable construction which are placed between the head and foot blocks in the usual manner, each hoop being provided with a perforated bottom d and a perforated cover or follower d' and bearing with its bottom against the follower of the next hoop, so that the hoops telescope one into the other.

E represents a hydraulic cylinder which is secured to the front side of the rear cross

piece, and e is a ram or piston arranged in this cylinder. The ram moves horizontally through a stuffing box e' in the front end of the hydraulic cylinder and carries the foot block C at its front end.

F represents an upright water chamber arranged in rear of the rear cross piece and resting with its lower closed end upon the floor.

f represents a vertically movable plunger arranged in the water chamber and passing through a stuffing box f' in the upper end of the chamber. The upper end of the plunger is provided with a cross head G which is guided in two grooved uprights g secured to opposite sides of the press-frame.

g' represents a box which rests upon the cross head and is filled with weights which assist in depressing the plunger into the water chamber and which permit the pressure to be regulated.

H represents a pipe whereby the water passes under pressure from the water chamber to the hydraulic cylinder and which is provided with a valve h .

I represents a pump whereby water is forced into the water chamber for raising the plunger. This pump has its delivery pipe i connected with the water chamber and is provided at its lower end with a receiving pipe i' . The latter is connected with the hydraulic cylinder by a branch pipe J having a valve j .

k represents a supply pipe which is connected with the receiving pipe i' of the pump and through which the latter is supplied with water. This supply pipe is provided with a valve k' .

In the normal position of the parts, the plunger rests upon the bottom of the water chamber and the ram is drawn into the cylinder. The valves h and j of the pressure and branch pipes H, J, are closed and water is pumped through the supply pipe k into the water chamber until the plunger is raised to its highest position, as represented in Fig. 1, when the valve k' of the supply pipe is closed. The cheese hoops containing the cheeses are next placed between the head and foot blocks and the screw b is turned by hand so as to move

the head block rearwardly, whereby pressure is applied to each of the cheeses and air and whey are expelled therefrom. When the initial pressure upon the cheeses by hand has been applied, the valve *h* of the pressure pipe H is opened. The pressure under which the water is kept in the water chamber by the weighted plunger is now applied to the ram, the plunger descends and forces the water from the chamber F into the cylinder E and the water in the latter presses the ram outwardly and applies the final automatic pressure to the cheeses. After the cheeses have been pressed, the valve *h* of the pressure pipe H is closed and the valve *j* of the branch pipe J is opened. The water is now pumped from the cylinder through the branch pipe back into the water chamber, whereby the plunger is raised to its former elevated position. The valve *j* is then closed preparatory to pressing another lot of cheese. The same water is used repeatedly in the water chamber and hydraulic cylinder, only the first charge of water and so much as may be necessary to compensate for the leakage being taken through the supply pipe *k*.

Instead of returning the water from the cylinder into the water chamber by means of the pump, additional pressure may be applied to the cheeses by turning the screw *b* in the proper direction to move the ram back into the cylinder, thereby forcing the water from

the cylinder through the pressure pipe into the water chamber and raising the plunger.

I claim as my invention—

1. In a cheese press, the combination with the stationary press frame, the movable head block and the mechanism whereby the head block is pressed against the cheese, of a movable foot block, a hydraulic cylinder and piston which latter carries the foot block and an upright water chamber which communicates with said cylinder and whereby pressure is applied to the piston and foot block, substantially as set forth.

2. The combination with the stationary press frame, the movable head block and the pressure screw whereby the head block is moved, of a movable foot block, a hydraulic cylinder provided with a ram carrying the foot block an upright water chamber provided with a vertically moving plunger, a pipe connecting the water chamber with the hydraulic cylinder and provided with a valve, a pump having its delivery pipe connected with the water chamber, and a pipe connecting the pump with the hydraulic cylinder and provided with a valve, substantially as set forth.

Witness my hand this 18th day of June, 1892.

CARL JOHAN LUNDSTROM.

Witnesses:

GEO. B. WHITE,
W. C. FITCH.