J. S. ROGERS.

Drying-Apparatus.

No. 169,194. Patented Oct. 26, 1875.

Fig. 1.

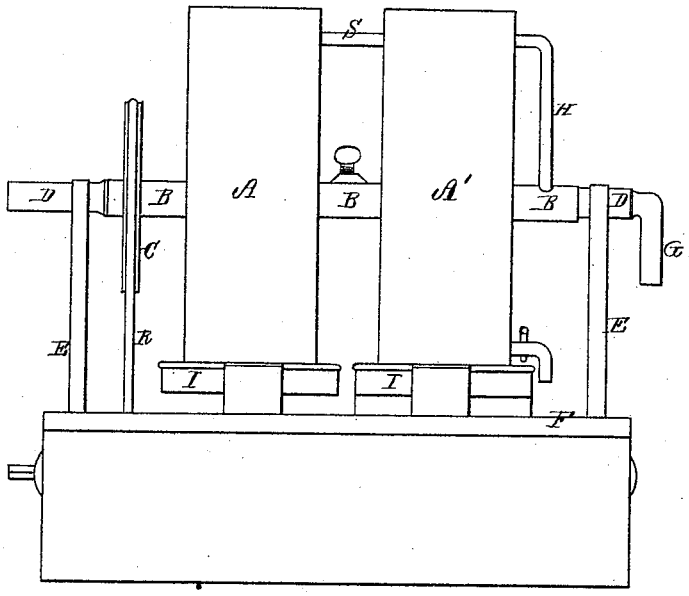


Fig. 2.

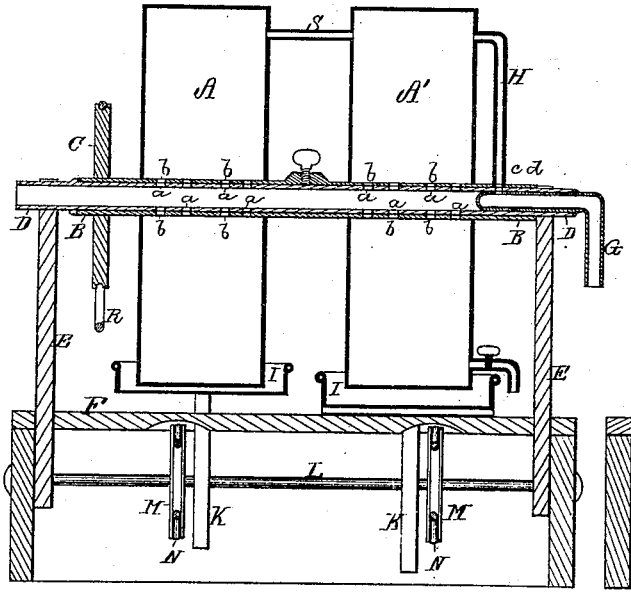
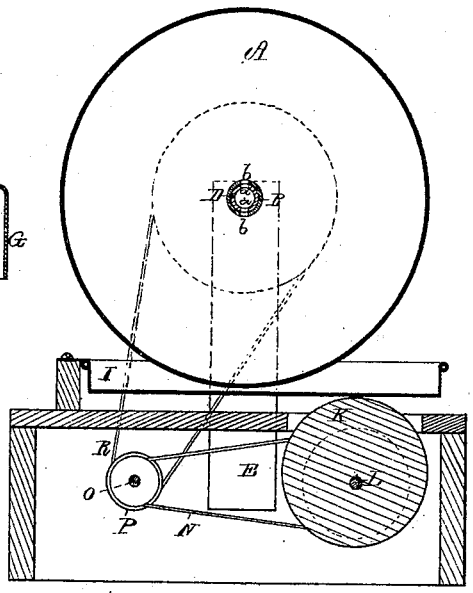


Fig. 3.



Witnesses

S. W. Pfeiffer.

L. W. Möller.

John. S. Rogers.

by his attorney

R. Eddy

UNITED STATES PATENT OFFICE.

JOHN S. ROGERS, OF GLOUCESTER, MASSACHUSETTS.

IMPROVEMENT IN DRYING APPARATUS.

Specification forming part of Letters Patent No. **169,194**, dated October 26, 1875; application filed October 5, 1875.

To all whom it may concern:

Be it known that I, JOHN S. ROGERS, of Gloucester, of the county of Essex and State of Massachusetts, have invented a new and useful Apparatus for Desiccating Gelatine for its conversion into a sheet or sheets; and do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a front elevation; Fig. 2, a vertical and longitudinal section; and Fig. 3 is a transverse section of it.

The nature of my invention consists in one or more rotary drums provided with means of heating such, in combination with one or more liquor-pans, arranged with such drum or drums, and to operate therewith, substantially as hereinafter set forth; also, a rotary drum provided with means of heating it, in combination with a liquor-pan, and mechanism for successively depressing and raising the pan relatively to the said drum, as hereinafter explained; also, a perforated induction-pipe, a support-pipe, and eduction-pipes, in combination with one or more devices, all being arranged in manner and to operate substantially as hereinafter explained.

In the drawings, A A′ represent two metallic cylindrical drums, mounted on a hollow or tubular shaft, B, provided with a driving-pulley, C. This shaft B has extending through it an induction-tube, D, supported by two standards, E E, erected on a base, F. The tube D is closed at its inner end, and there extends from it outwardly, as shown, an eduction-tube, G. The tube D within each of the drums has one or more holes, *a*, made laterally in it, a corresponding hole or holes, *b*, being made in the tube B, and arranged so that during each revolution of the drum a hole, *b*, shall be so brought around in line with a hole, *a*, as to open communication between the bore of the tube D and the interior space of the encompassing drum A or A′. An auxiliary eduction-pipe, H, leads out of the side of one drum A and opens through the tube B, as shown at *c*, there being a corresponding passage, *d*, leading laterally through the tubes D and G. Under each drum is a pan, I, which at one end is hinged to the base F. This pan, near its other end, rests on the periphery of a cam, K, fixed on a shaft, L. Besides the said cam there is a pulley or wheel, M, on the said shaft. An endless belt, N, goes around the said pulley or wheel, and another or smaller one fixed on another or driving shaft, O. There is fixed to the said shaft O another pulley or wheel, P, about which and the wheel or pulley C an endless belt, R, is arranged. On revolving the shaft O a slow rotary motion will be imparted to the drum or drums, and to the cam K. During each revolution of the said cam it will raise the pan upward toward the drum, and subsequently allow it to fall back upon the base.

If we suppose the steam to be let into the drum and the pan to be charged with a gelatinous solution, this latter, during each rise of the pan, will be forced into contact with the drum, which, continuing to revolve, will take up on its periphery a portion of the liquid. The drum, being heated by the steam let into it, will cause the water of the solution thus taken up to be evaporated, thereby leaving the gelatine on the periphery of the drum. As the drum may continue to revolve, the layer of gelatine upon it will continue to grow thicker, and after it may have attained the necessary thickness it may be cut across, and heated in the form of a sheet from the drum.

On letting steam flow into the pipe D it will be discharged therefrom into the drum A whenever the holes *a b* may be in line with or open into each other. The waste steam will escape through the tube H and the holes *c d* into and through the pipe G.

Where two or more drums are used, each may be connected with that next it by a pipe, S, to lead from one to the other. The means of introducing steam into the drum A and discharging it therefrom consist of the pipes D, B, H, and G, provided with the passages *a b c d*.

I would remark that each drum should be provided with a cock or other suitable means of discharging the water from it that may result from condensation of the steam.

In the above-described apparatus, I claim as my invention—

1. The rotary drum A, provided with means of heating it, as described, in combination with the liquor pan or reservoir I, arranged with such drum, to operate therewith as explained.

2. The rotary drum A, provided with mechanism for revolving it, and with pipes or means of heating it by steam, as described, in combination with the liquor-pan I, and its mechanism for successively moving it, as set forth, relatively to the drum, while the latter may be in revolution.

3. The pipes D B H G, having the perforations *a b c d*, as described, in combination, and arranged with the drum A, substantially as explained.

JOHN S. ROGERS.

Witnesses:
R. H. EDDY,
J. R. SNOW.