

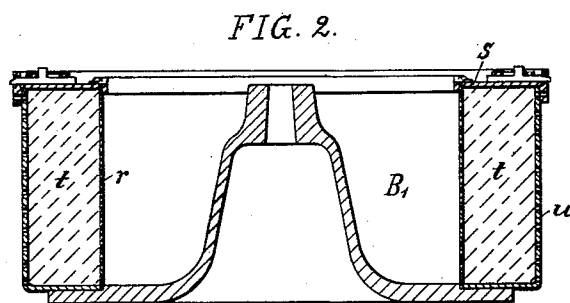
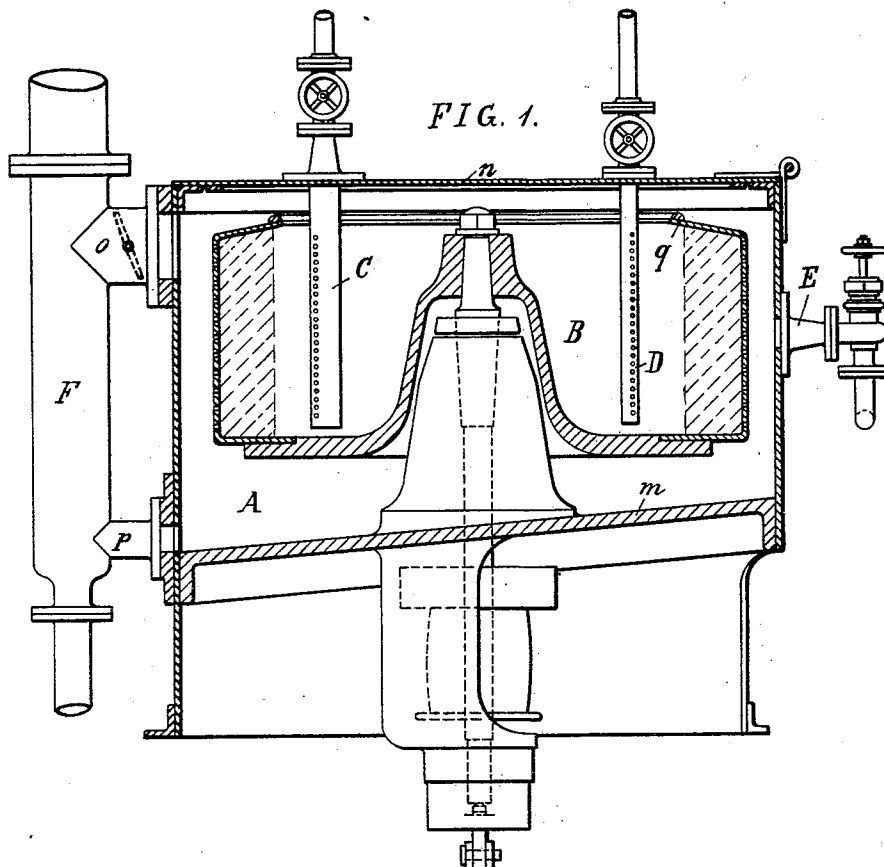
No. 738,077.

PATENTED SEPT. 1, 1903.

J. SELWIG.
APPARATUS FOR STEAMING GUNCOTTON.

APPLICATION FILED APR. 2, 1903.

NO MODEL.



Witnesses:
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APPARATUS FOR STEAMING GUNCOTTON.

SPECIFICATION forming part of Letters Patent No. 738,077, dated September 1, 1903.

Application filed April 2, 1903. Serial No. 150,757. (No model.)

To all whom it may concern:

Be it known that I, JOHANNES SELWIG, engineer, a subject of the German Emperor, residing at Brunswick, Germany, have invented a new and useful Improvement in Steaming Apparatus for Guncotton, Collodion-Cotton, Nitrates of Cellulose, and Similar Nitrates, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which make part of this specification.

Heretofore the steaming of guncotton and similar nitrated bodies, the object of which is the freeing from acid and stabilizing of these bodies, took place in fixed wooden vessels provided with perforate false bottoms under which high-pressure steam was admitted, which destroyed by its high temperature the unstable compounds contained in the guncotton. The apparatus employed for this purpose must be regarded as unsuitable and defective, because the guncotton even in thin layers is very unequally acted on by the steam. Immediately above the false bottom it is so superheated that it sometimes catches fire, while the top layers are sufficiently heated. In addition the condensation-water, which contains the decomposition products, drains away badly from the guncotton on account of the spongy nature of the guncotton, and this can give rise to further decomposition. A further disadvantage of the employing of apparatus heretofore used is that the subsequent washing of the guncotton has to be carried out in another vessel. My improved guncotton-steaming apparatus is free from these drawbacks, as it is provided with a perforated centrifugal basket rotating during the steaming which serves as a receptacle for the guncotton, the principal advantage arising therefrom being the removal as soon as formed of the decomposition products resulting from the action of the steam on the guncotton with the condensation-water.

Figure 1 of the accompanying drawings is a vertical section through the apparatus. Fig. 2 shows a centrifugal drum of modified form generally employed if wet guncotton in fibers is to be steamed.

The apparatus consists of a cylindrical steaming vessel A, in which a perforated centrifugal basket B is so fitted that it can be ro-

tated. The bottom *m* of the vessel is inclined for the drainage of the condensation-water. It has a closely-fitting lid *n*, on which a pipe for admitting steam C is arranged, also a water-inlet pipe D, both fitted with admission valves or cocks, so that either steam or water can be let into the basket. The steam can also be admitted from the outside of the vessel through a pipe and valve E, replacing the inlet-pipe C. The pipe F, connected above and below by short branches *o* and *p* with the vessel A, serves for the escape of the non-condensed steam and the flowing off of the condensation-water. The branch pipe *o* can be closed by a throttle-valve.

The basket B, (shown in Fig. 1,) which has a fixed upper edge *g*, is generally employed if guncotton forming a pulp is to be steamed. Therefore it is lined inside with flannel or fustian. The basket B', Fig. 2, which serves for steaming guncotton in fibers, is fitted inside with a perforated cylinder *r*, the diameter of which is about six-tenths to eight-tenths of the diameter of the basket, the interstice between it and the circumference of the basket being closed above with a loose annular rim *s*, which can be taken off or fixed by slip-bolts. The closed annular room *t* thus formed is filled with the guncotton after the removal of the rim *s*, which is afterward put up again. The outer wall of the basket consists of perforated sheets *u*.

The steaming process is conducted as follows: The lid *n* of the apparatus having been opened, the basket is filled either by running the guncotton-pulp into the basket, which may be at rest or already rotating, or by pressing the guncotton in fibers into the room *t*, if a basket B' (shown in Fig. 2) is employed. Then the centrifugal is set in motion, (if this has not been done before,) and after the cover has been closed high-pressure steam, which may be mixed with air to moderate the temperature, is admitted. The steam penetrates the guncotton, which is pressed against the sides of the basket, heats it uniformly, and thereby destroys the unstable products contained in the guncotton. The products of decomposition dissolve at once in the condensed water and are immediately removed by the centrifugal action and cannot occasion any further decomposition. The time necessary

for steaming is found by experiment. When the steaming is finished, the guncotton is left in the still-revolving basket and washed, first with hot and then with cold water. The steaming process can also be alternated with washing.

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

1. In a steaming apparatus for guncotton or similar substances, a steaming vessel, a cover therefor, and a centrifugal basket capable of rotation and serving as a receptacle for the guncotton, &c., combined with a steam-admission pipe and a water-inlet pipe, each extending into the basket, and a valve for each pipe whereby said pipes are adapted to be independently employed, substantially as and for the purposes set forth.

2. In a steaming apparatus for guncotton or similar substances, a steaming vessel, a cover therefor, a centrifugal basket capable of rotation and serving as a receptacle for the guncotton, &c., combined with a steam-admission pipe and a water-inlet pipe, each extending into the basket, a valve in each of said pipes, and a pipe for the escape of non-condensed steam and water of condensation, substantially as and for the purposes set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JOHANNES SELWIG.

Witnesses:

AUGUST BERGER,
FRITZ VENNEN.