W. Wanklyn.
Cotton Picker.

No. 41,731. Patented Feb. 23, 1864.

Fig. 1.

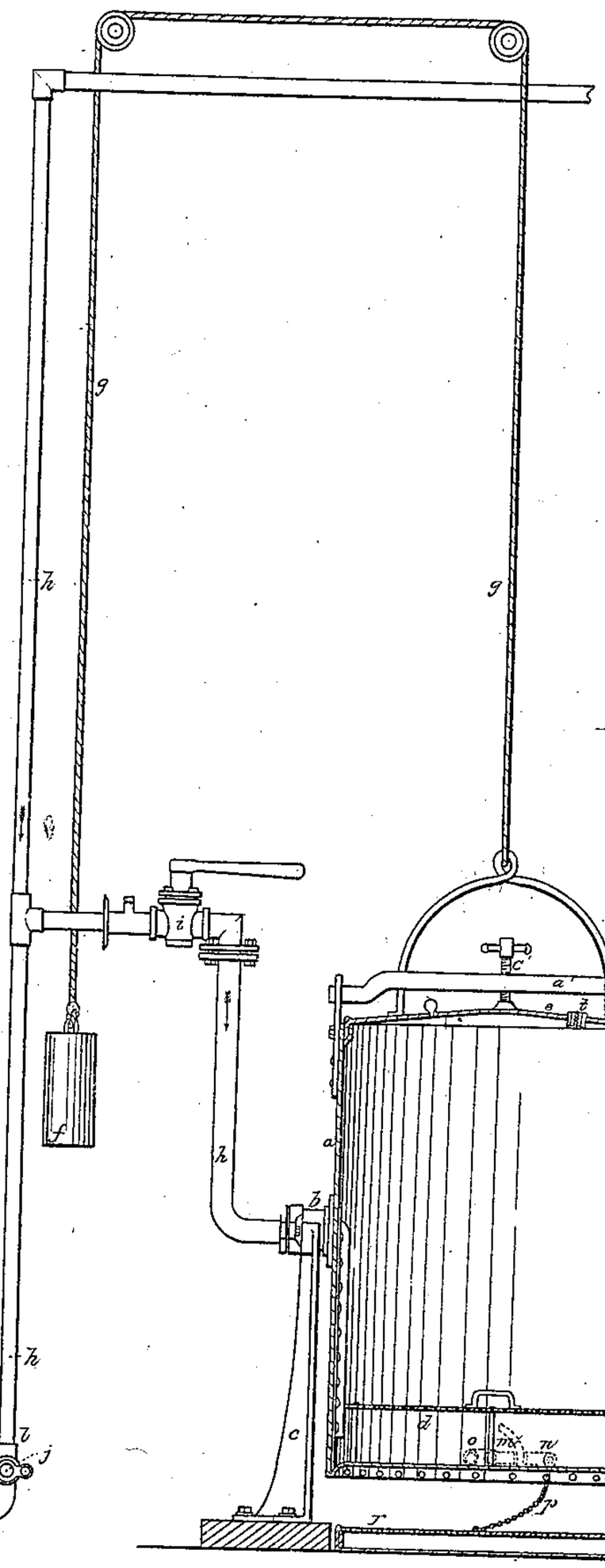


Fig. 3.

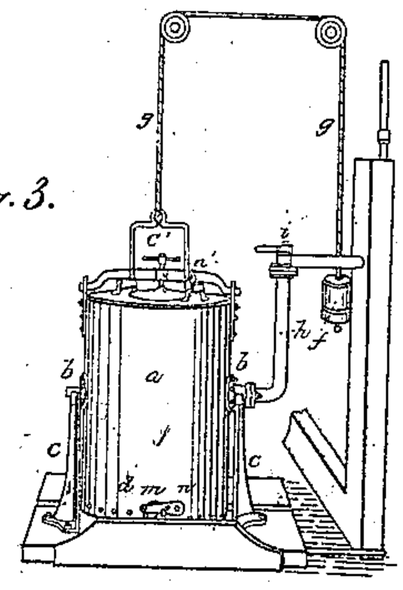
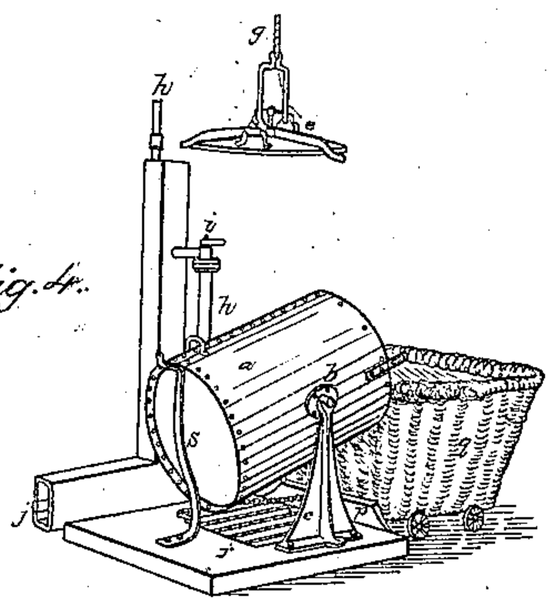


Fig. 4.



Witnesses.
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UNITED STATES PATENT OFFICE.

WILLIAM WANKLYN, OF ALBION MILLS, BURY, ENGLAND.

IMPROVEMENT IN MACHINES FOR TREATING COMPRESSED COTTON AND OTHER FIBROUS MATERIALS

Specification forming part of Letters Patent No. **41,731**, dated February 23, 1864.

To all whom it may concern:

Be it known that I, WILLIAM WANKLYN, of the Albion Mills, Bury, Lancaster, England, cotton-spinner, have made certain new and useful Improvements in Opening and Conditioning Cotton and other Fibrous Substances; and I do hereby declare that the following is a clear and exact description thereof, reference being made to the drawings annexed, forming a part of this specification.

It is well known that cotton and other fibrous materials are somewhat injured by the compression into bales for the purpose of transportation, and it has been found that by the proper action of steam upon the fibers they may be restored to their normal condition.

My invention effects this proper action; and it consists in an arrangement of the apparatus by which the steam is brought as dry as possible to act upon the fibers, thus preventing the moist and soggy character which will be given when the steam is admitted directly into the cotton.

I make use of a steaming-chamber supported by trunnions. This chamber has a perforated false bottom and a steam-tight lid, which is suspended to a chain or cord and counterbalanced. Steam is admitted to the chamber by a pipe in which is a tap, and the steam should be at a high pressure. I also apply a siphon or other suitable apparatus to the steam-pipe to prevent the water of condensation entering the chamber with the steam. The cotton, when taken out of the bale, is placed in the chamber, and when full, or nearly so the lid is put on and steam is admitted. As soon as the steam has had time to permeate and heat the cotton, the lid is removed and the steam-chamber is swiveled partly around on its trunnions, to allow the cotton to be raked into a truck or other carriage, in which it is removed to the room in which the subsequent operation is to be performed. A blow-off tap is inserted in the steam-chamber under the false bottom to discharge the water.

In the drawings, Figure 1 is an elevation, partly in section, of my improved apparatus. Fig. 2 is a plan of part of the same. Figs. 3 and 4 are elevations in perspective on a reduced scale.

a is the steaming-chamber, made of sheet-iron or other suitable metal or material. The chamber *a* is supported by the trunnions *b* on the standards *c*.

d is the perforated false bottom, and *e* the lid, of the steam-chamber. The lid is made steam-tight by means of a rib on its outer circumference fitting in a recess in the steam-chamber, and by the screw *c'*, passing through the cross-bar *a'*. The lid, which may be made steam-tight in any other convenient manner, is counterbalanced by the weight *f*, attached to the end of the chain or cord *g*, passing over suitable guide-pulleys.

Steam, at a pressure of two or three atmospheres, by preference, is admitted to the space between the false bottom *d* and the bottom of the chamber *a*, through one of the trunnions *b*, from the pipe *h*, in which is the tap *i*; and as it is absolutely essential to the proper working of this apparatus that the water of condensation should be excluded from the steam-chamber, I make use of the following contrivance: A prolongation of the vertical pipe *h* is secured to the horizontal pipe J, (seen best in Fig. 2,) to one end of which is fixed the cross-head *k*, and at the other end is a valve, *k'*. The cross-head *k* and valve *k'* are connected by the side rods, *l*. So long as the steam from the pipe *h* enters the pipe J, the heat of the steam keeps the pipe expanded to its full length and closes the valve *k'*; but if water accumulates in the pipe *j* the temperature of the pipe *j* decreases, consequently the pipe contracts and opens the valve *k'* to allow the water to escape. By this means hot, dry steam is at all times supplied to the chamber *a*.

At the bottom of the steam-chamber *a* is the blow-off tap *m*, which is opened and closed by the lever *n*, hinged at *o*, and provided with a chain or elastic band, *p*, the other end of which is secured to the floor or to the framing of the apparatus.

q is a truck or carriage, into which the cotton is removed from the steam-chamber.

s is a self-acting spring-crutch, and *t* a spring safety-valve for the escape of surplus steam.

The mode of operation is as follows: The cotton, when taken out of the bale, is placed in the steam-chamber *a*, and when partially filled the lid *e* is put on and secured. The

attendant then turns the tap *i* to admit steam to the chamber. When the steam has had time to permeate and heat the cotton, which in general requires about one minute, the supply of steam is shut off and the lid removed, being raised by the weight *f*, so as to be out of the way of the attendant. The steam-chamber is then swiveled partly around, as shown in Fig. 4. This movement brings the lower edge of the chamber against the self-acting spring-crutch *s*, which retains the chamber in a slanting position while the attendant, by means of a rake or other instrument, removes the cotton from the steam-chamber into the truck or carriage *q*, in which it is conveyed to the blowing-room or otherwise disposed of. While the steam-chamber is being swiveled over, as above described, the chain *p*, being tightened, opens the blow-off tap *m* to discharge the water of condensation from the space under the false bottom *d*, and when the steam-chamber has been emptied the attendant liberates the spring-crutch *s* to allow the chamber to regain its vertical position for receiving a fresh charge. During this time the lever *n* drops by its own gravity and closes the tap *m*. The operations are then repeated as before. The water discharged by the tap *m* escapes through the perforated plate *r* into a pipe or gutter carried under the floor of the room. The water from the pipe J is also carried off in a pipe or gutter.

It will thus be seen that by means of the perforated false bottom in the steaming-chamber and admitting the steam below the steam will be dry when it comes in contact with the cotton, as above shown.

I claim—

The arrangement and construction of the closed steaming-vessel, having a perforated false bottom and receiving the steam below said false bottom, substantially in the manner and for the purposes set forth.

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