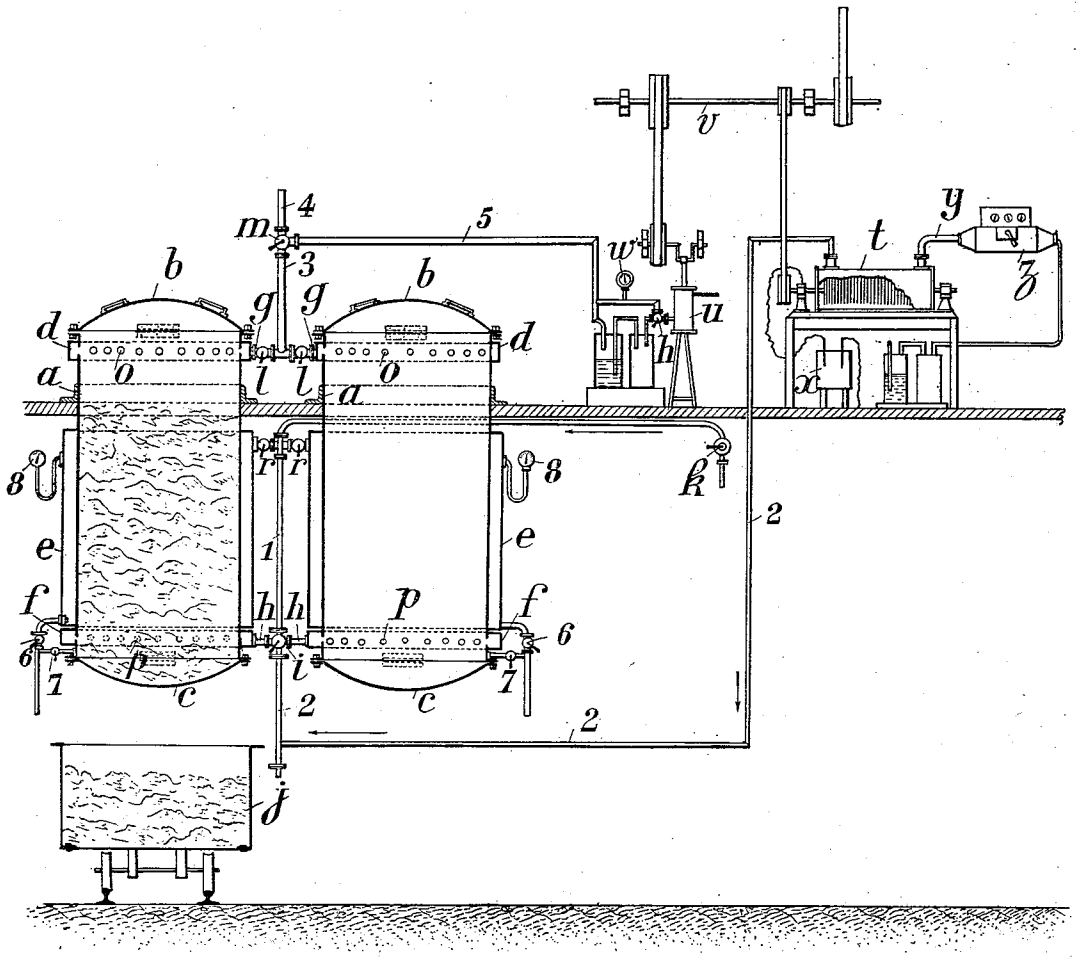
No. 733,673. PATENTED JULY 14, 1903.

M. OTTO.

APPARATUS FOR DISINFECTING.

APPLICATION FILED MAR. 16, 1903.

NO MODEL.



WITNESSES

H. M. Kuehne

John A. Percival.

INVENTOR

Marius Otto

BY Richards & Co

ATTORNEYS

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 733,673. Patented July 14, 1903.

UNITED STATES PATENT OFFICE.

MARIUS OTTO, OF PARIS, FRANCE.

APPARATUS FOR DISINFECTING.

SPECIFICATION forming part of Letters Patent No. 733,673, dated July 14, 1903.

Application filed March 16, 1903. Serial No. 148,108. (No model.)

To all whom it may concern:

Be it known that I, MARIUS OTTO, doctor of science, of No. 5 Avenue du Bois de Bologne, Paris, France, have invented a certain new and useful Apparatus for Disinfecting Linen, Fabrics, or the Like; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention refers to a simple and economical contrivance to be applied to the purpose of disinfecting linen or fabrics—such as mattresses, carpets, and the like—by the combined action of steam and sterilizing-gas, such as ozone.

The accompanying drawing shows, as a representative example, a sectional elevation of the whole installation whereby the process may be carried into effect.

The apparatus consists of a receiver *a* for the purpose of holding the linen or other fabric to be disinfected, or several similar receivers suitably connected together may be employed, each being fitted with a removable cover *b* and a hinged bottom *c*. The wall of these receivers, which are preferably cylindrical in shape and are placed in a vertical position, is pierced at its two extremities by two rings of orifices *o p*, which communicate, respectively, with the annular chambers *d* and *f*. A pipe *g* leads to the upper chamber *d*, and to this pipe is connected a system of pipes, which are used alternately as a means of escape to the atmosphere and for suction by an exhaust-pump. A pipe *h* leads to the lower chamber *f*, and to this is connected a system of pipes which are used alternately for the passage of a current of steam for the impregnation and heating and for the entrance-passage of sterilizing-gas. Between the two chambers *d* and *f* the cylinder is encircled by a steam-jacket *e*. The pipe *h* can communicate, by means of a stop-cock *i*, having two or three passages, according to whether a single cylinder *a* or two cylinders coupled are used, either with the pipe 1 for the entrance of the steam, which has a stop-cock *k*, or with the pipe 2 for the entrance of the ozone, which comes from an apparatus *t* for producing ozone. The pipe *g* communicates when the stop-cock *l* is open with a pipe 3, in which is arranged a stop-cock *m*, having three passages, which allows of this pipe being placed in direct communication with the atmosphere by the pipe 4 or in communication with a pipe 5, joined to a pump *u* and fitted with a stop-cock *n*. The piston of the pump can be worked by a shaft *v*, which also at the same time operates the rotating apparatus for ozone *t*. This ozone apparatus receives the current from a source *x*, and the air or oxygen enters it by a pipe *y*, through a registering-meter *z*. The steam-jacket *e* communicates, by means of a pipe in which there is a stop-cock *r*, with the pipes 1.

In order to put the apparatus into working order, using, for example, only one of the cylinders *a*, the linen and fabrics to be disinfected are placed in this cylinder after lifting the cover *b*, which is replaced in such a manner as to hermetically seal the apparatus. The stop-cock *k* for obtaining steam is opened, and also the stop-cock *l*. Then the stop-cock *i* is turned to the left in such a way as to put the pipe 1 and the pipe *h* into communication with each other and the chamber *f*. By opening the stop-cock *r* the steam is also allowed to enter the steam-jacket *e* and heat the cylinder *a*. The steam will now pass through the orifices *p* into the interior of the cylinder *a*, which will be sufficiently heated to avoid condensation. The linen is thus completely moistened, partially disinfected, and prepared to be readily submitted to the action of a disinfecting-gas. The excess of steam escapes from the upper portion of the cylinder *a* by passing through the orifices *o* into the chamber *d*, from whence it escapes by the pipe 3, the stop-cock *l* being open, and enters the atmosphere by the pipe 4, if care is taken to place the stop-cock *m* in the proper position. After this preliminary disinfecting and impregnating operation the stop-cock *m* is turned in such a way as to put the pipes 3 and 5 into communication with each other, still leaving the stop-cock *l* open, and the exhaust-pump *u* is set in motion. When the manometer *w* indicates that the pressure is sufficiently near zero, the stop-cock *i* must be turned in such a way as to put the pipe *h* into communication with the ozone-pipe 2. This operation must be repeated several times,

thus having successively a vacuum and admission of ozone till it is considered that the disinfection process is complete. These successive aspirations and impregnations insure a perfect penetration of the sterilizing-gas into the pores of the linen or fabrics to be disinfected. The disinfected materials are delivered into trolleys *j*, which can be brought under the cylinders *a* along a conveniently-arranged track. To empty the cylinders, the bottom *c* is unfastened and allowed to open by turning on its hinge. The apparatus is provided with discharge-valves 6 and 7 and other accessories, such as a pressure-indicator 8.

It goes without saying that an installation of the whole can be made up, if necessary, of any number of elements *a* and of organs arranged for the intercommunication of these elements or for their successive or simultaneous isolation.

I do not wish to limit myself to the vertical type of cylinder, as other forms may be used.

I claim—

An apparatus for disinfecting linen, fabrics or the like comprising receivers *a* each provided with a removable cover *b*, a movable bottom *c* and a steam-jacket *e*, said receivers having at each end of their extremities a ring of orifices *p o*, annular chambers *f d*, pipes *h*, *g*, fitted thereto, said ring of orifices opening into the said chambers, a stop-cock in the pipe *h*, a pipe 1, and a sterilizing-gas pipe 2 both adapted to be put in communication with the pipe *h* alternately, a pipe 4 having free passage to the atmosphere, an exhaust-engine, a suction-pipe 5 connected therewith, the said pipe *g* being adapted to be put alternately in communication with the pipes 4 and 5.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

MARIUS OTTO.

Witnesses:
ANDRÉ MOSTICKE,
AUGUSTUS E. INGRAM.