

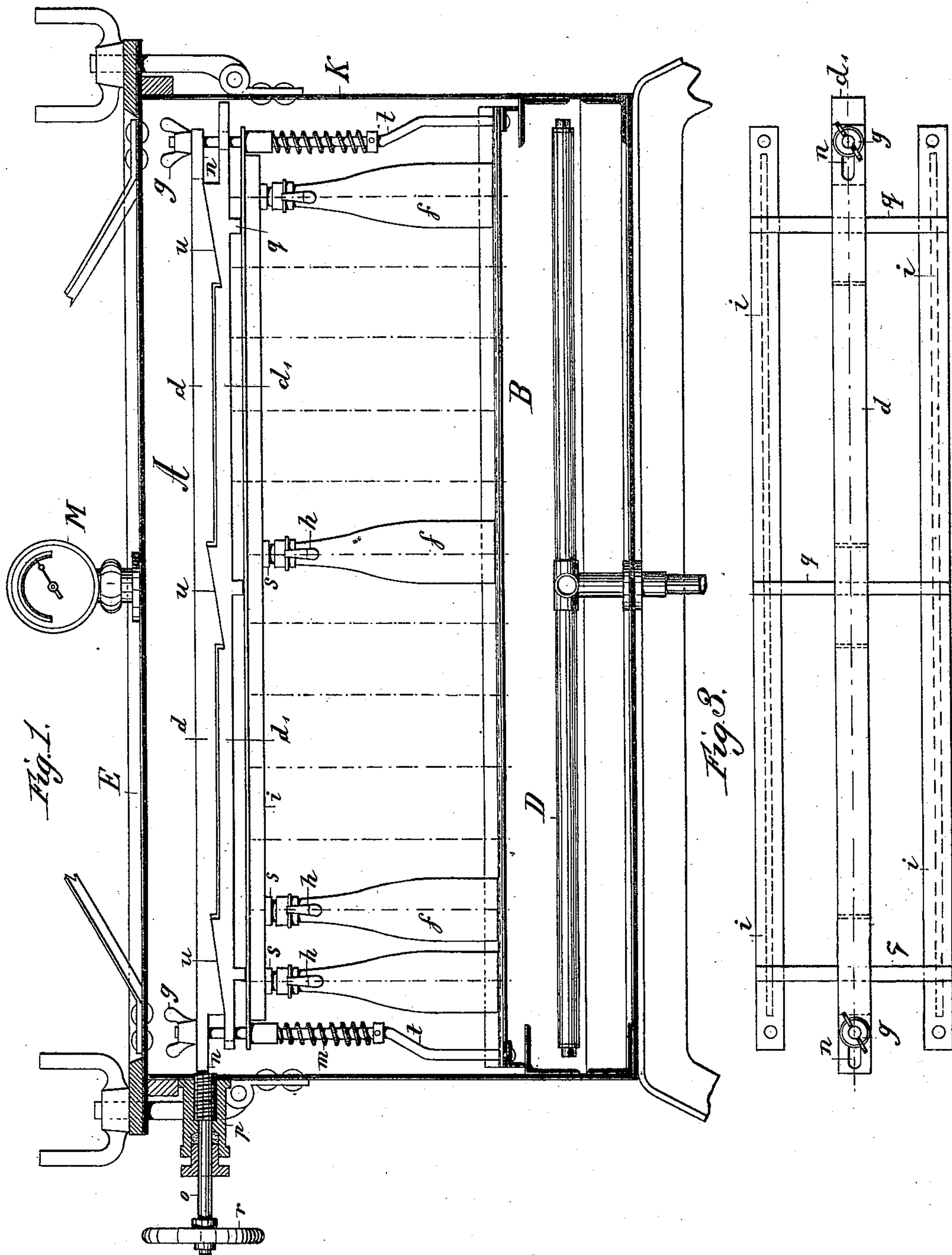
(No Model.)

3 Sheets—Sheet 1.

M. VON SKOTNICKI.  
STERILIZING APPARATUS.

No. 465,393.

Patented Dec. 15, 1891.



Witnesses:  
William Miller  
Edward Wolff.

Inventor.  
Marcell von Skotnicki.  
By  
Van Santvoord & Hauff.  
his attys

(No Model.)

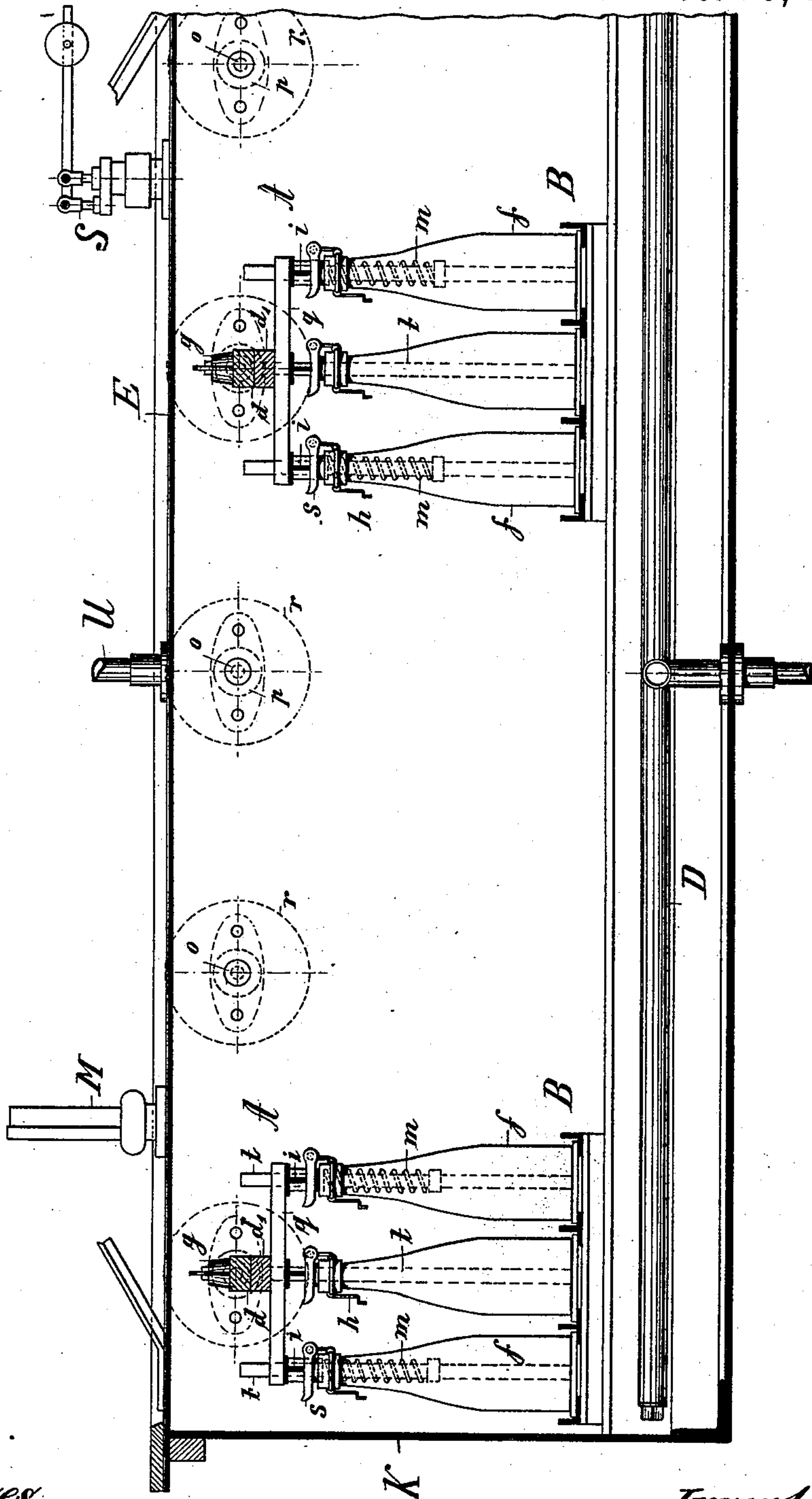
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*Fig. 2.*



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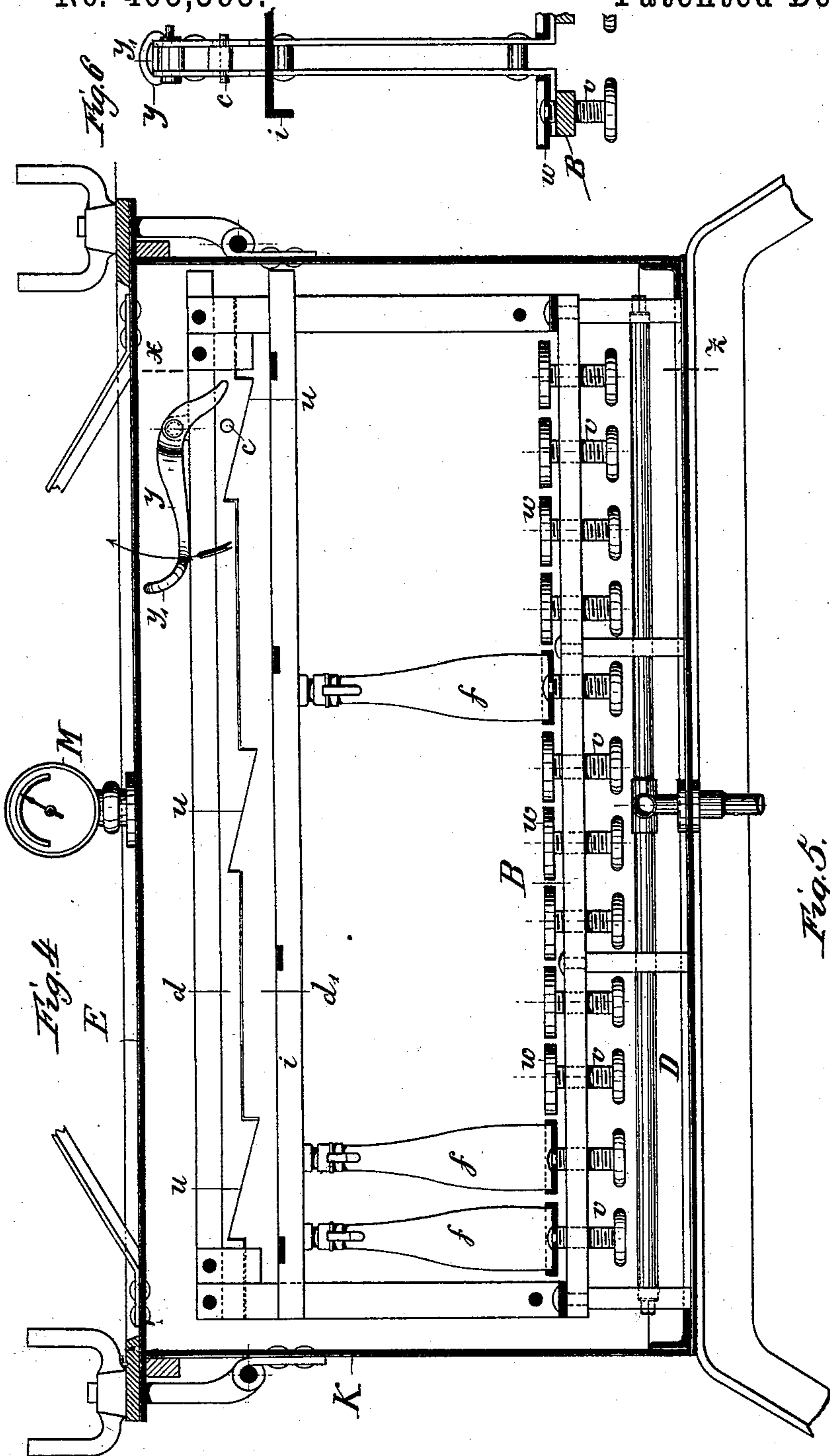


Fig. 4.

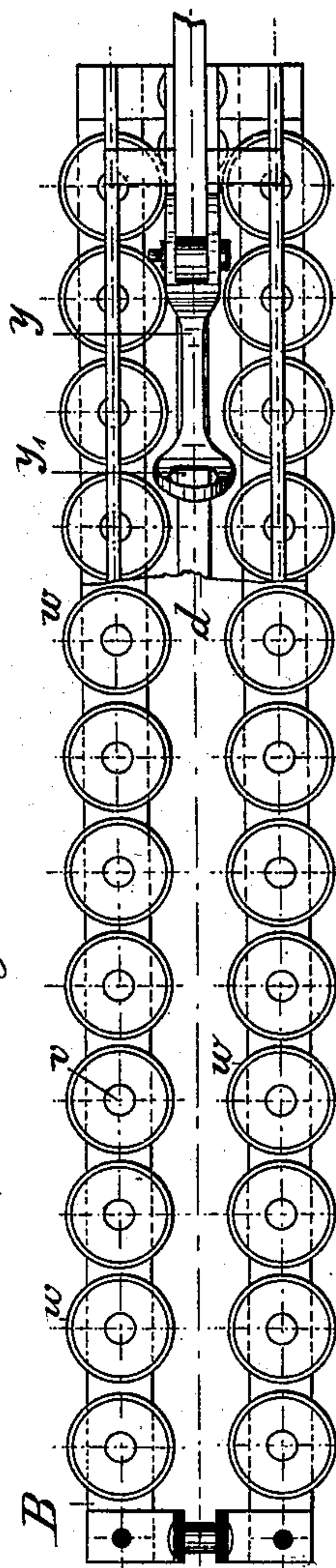


Fig. 5.

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# UNITED STATES PATENT OFFICE.

MARCELL VON SKOTNICKI, OF CHARLOTTENBURG, NEAR BERLIN, GERMANY,  
ASSIGNOR TO GEORGE VON SKOTNICKI, OF SAME PLACE.

## STERILIZING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 465,393, dated December 15, 1891.

Application filed June 11, 1891. Serial No. 395,947. (No model.)

*To all whom it may concern:*

Be it known that I, MARCELL VON SKOTNICKI, a subject of the King of Prussia, residing at Charlottenburg, near the city of Berlin, in the Kingdom of Prussia and German Empire, have invented new and useful Improvements in Sterilizing Apparatus, of which the following is a specification.

When sterilizing fluid in bottles, the latter must not be tightly closed when placed into the apparatus, so that during the process—that is, during the heating of the fluid—the air contained therein can pass off; but at the close of the sterilization there must be a tight closing of the bottles while in the apparatus in order to prevent all access of air after the sterilization.

This invention, illustrated in the drawings, relates to arrangements of a sterilizing apparatus by which the bottles inserted therein and which contain the fluid to be sterilized can be securely closed from without when the sterilization is completed.

In the arrangement shown in Figures 1 to 3 the bottles can be securely closed while the apparatus is shut, and in the arrangement shown in Figs. 4 to 6 such closing can be done immediately on opening the apparatus.

Fig. 1 is a transverse section of the sterilizing apparatus. Fig. 2 is a longitudinal section. Fig. 3 shows a plan view of a holding device for the first kind of sterilizing apparatus. Fig. 4 is a transverse section of the second kind or modified form of apparatus. Fig. 5 is a plan view of Fig. 4, partly broken away. Fig. 6 is a section along line *xz*, Fig. 4.

In the drawings the letter K indicates the steam box or chest with the cover E.

The letter D indicates a perforated steam-pipe for the entry of superheated steam. U is the steam-outlet. M is a manometer, and S a safety-valve.

The bottles *f* are provided with a well-known closing device, such as a stopper *s* and lever or hook *h*, and said bottles are placed into the apparatus in separate holders. The latter consist of the base B, arms or uprights *t*, and top part A. In the apparatus shown in Figs. 1 to 3 the holders are each arranged for receiving three rows of twelve bottles each,

or a total of thirty-six bottles. The top part A can be raised and lowered on the arms or carriers *t* and can be supported by springs *m* on said arms, and said top part comprises three longitudinal ridges *i* of T-iron, said ridges corresponding to the rows of bottles and resting over the several stoppers *s* of said rows and holding said stoppers swung over onto the bottle-mouths. A tight closure of the bottle does therefore not result at this stage. Said top part A also comprises the cross-pieces *q* over the ridges *i*, and over the cross-pieces at the center lie the pressure-rods *d d'*, provided with inclines *u*. The upper rod *d* is held on the lower one by the nut *g*; but by the proper arrangement of slots *n* said upper rod can be adjusted or slid lengthwise. Such a sliding or adjustment (in Fig. 1 this sliding takes place toward the right hand) by the sliding of the inclines *u* causes a depression of the lower rod *d'* and a pressure of the ridges *i* on the stoppers *s*, so that the latter are firmly pressed onto the bottles and secure a firm closing of the latter. To effect the sliding of the rod *d* from without, the apparatus is provided for each holder at the side near the head of rod *d* with a screw *o*, having a hand-wheel *r* at such height that the inner end of the screw meets the head of the rod *d*. The screw passes through a stuffing-box *p*, and when said screw is turned the rod *d* is moved and the several stoppers are pressed into the bottles contained in the respective holder. The powerful friction between the rods *d d'* at the inclines *u* prevents a receding of the rod *d*, so that the bottles are kept under secure closure and the holders can be taken freely out of the apparatus. It is then only necessary to lock the hook *h* by hand, after which the nut *g* can be loosened and the bottles taken out of the holder to make room for a new supply.

In the foregoing apparatus it is necessary that the bottles placed into the holders should be of exactly the same height, so that the stoppers of the several bottles will be reached by the ridges and will receive an equal pressure from the latter; but, as the height of the several bottles varies considerably, the apparatus shown in Figs. 4 to 6 has for each bottle



a support *w*, which can be adjusted in height by the screw *v*, passing through base B. These supports *w* receive the bottles and are raised or lowered, according to the height of the latter, so that the stoppers are lightly pressed by the ridges *i*. In this manner the several bottle-stoppers on all bottles receive an equal pressure on the subsequent firm closing by the rods *d d'*.

10 Immediately after the close of the sterilization the sterilized fluid, on the removal of the cover of the apparatus, overflows or boils slightly out of the bottles, so that no air can enter the bottles for a short period after the  
15 apparatus is opened. If, therefore, within this period the stoppers are firmly closed, it is certain that no air has reached the sterilized fluid. In order to effect such closing immediately on opening the cover of the apparatus,  
20 the apparatus of Figs. 4 to 6 has a lever *y*, which, when one arm is raised, presses with the other arm against a stud or lug *c* on rod *d*, so as to move said rod, whereupon by the sliding of the wedge-faces *u* the ridges are pressed  
25 against the bottle-stoppers. Said levers *y* are provided for each top part A, and such levers have an eye *y'*, into which a hook can be inserted immediately on opening the cover and the lever moved in the direction of the arrow.  
30 The closing can thus be effected so rapidly that even if the apparatus is open no air will enter the bottles.

What I claim as new, and desire to secure by Letters Patent, is—

1. A sterilizing apparatus consisting of a box or chest containing bottle-supports, means for heating the contents of the box or chest, bottle-stopper-closure devices composed of upper and lower pressure-rods having inclines, and means for moving one of the pressure-rods lengthwise to close the stoppers, substantially as described.

2. A sterilizing apparatus consisting of a box or chest, a base arranged in the box or chest and having a gang of vertically-adjustable bottle-supports, means for heating the contents of the box or chest, bottle-stopper-closure devices composed of upper and lower pressure-rods having inclines, and means for moving one of the pressure-rods lengthwise to close the stoppers, substantially as described.

3. A sterilizing apparatus consisting of a box or chest, a base arranged in the box or chest and having a gang of vertically-movable bottle-supports, a screw for adjusting each bottle-support, means for heating the contents of the box or chest, bottle-stopper-closure devices composed of upper and lower pressure-rods having inclines, and means for moving one of the pressure-rods lengthwise to close the stoppers, substantially as described.

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

MARCELL VON SKOTNICKI.

Witnesses:

C. ROB. WALDER,  
PAUL MÜLLER.