

Apr. 3, 1923.

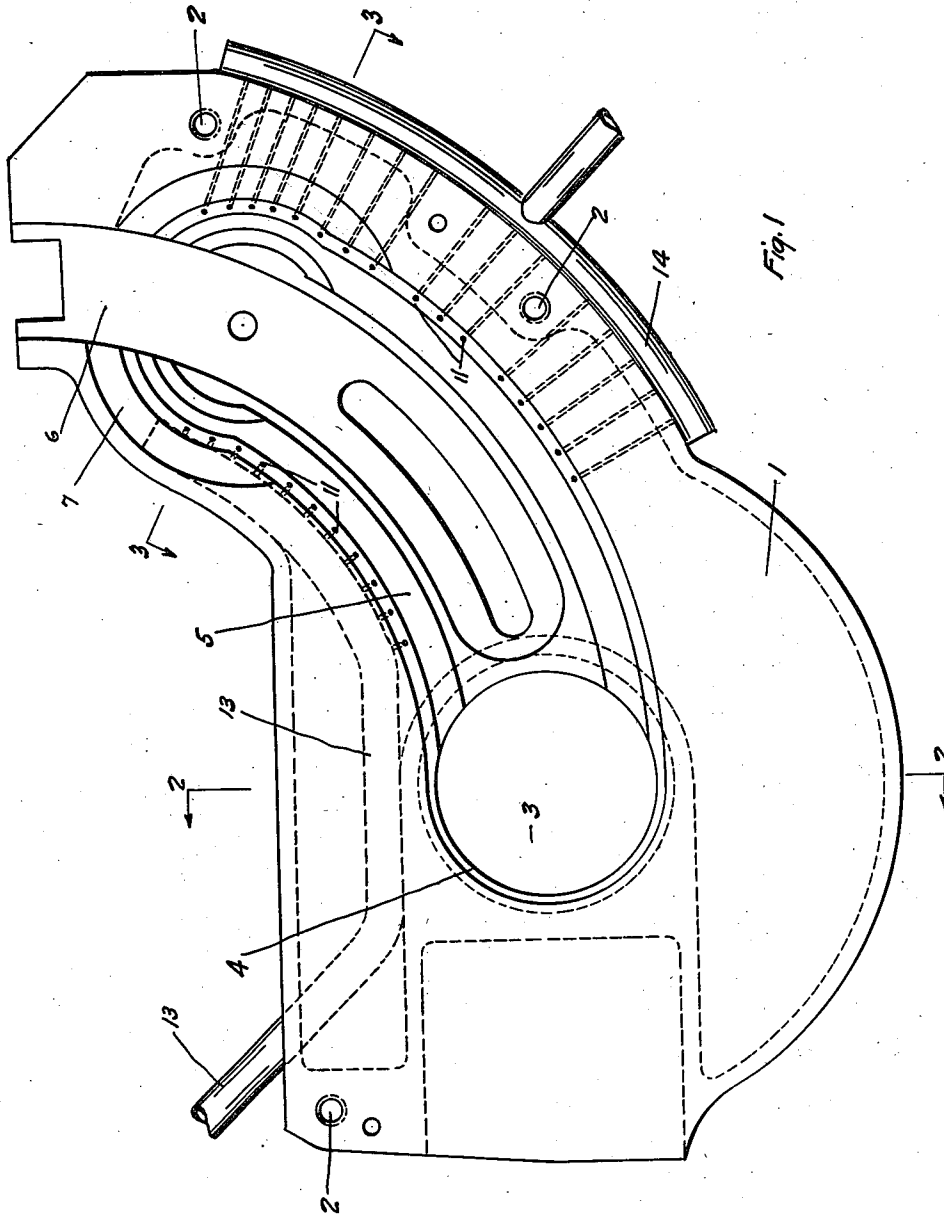
1,450,356

A. N. CRAMER

CAP STERILIZER AND CAN CENTERING PLATE FOR CAN SEALING MACHINES

Filed Mar. 11, 1918

2 sheets-sheet 1



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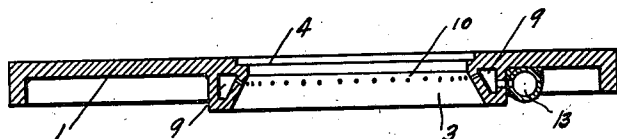


Fig. 2

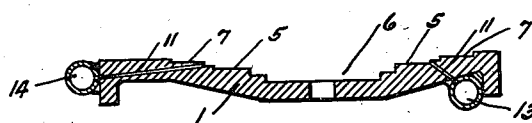


Fig. 3

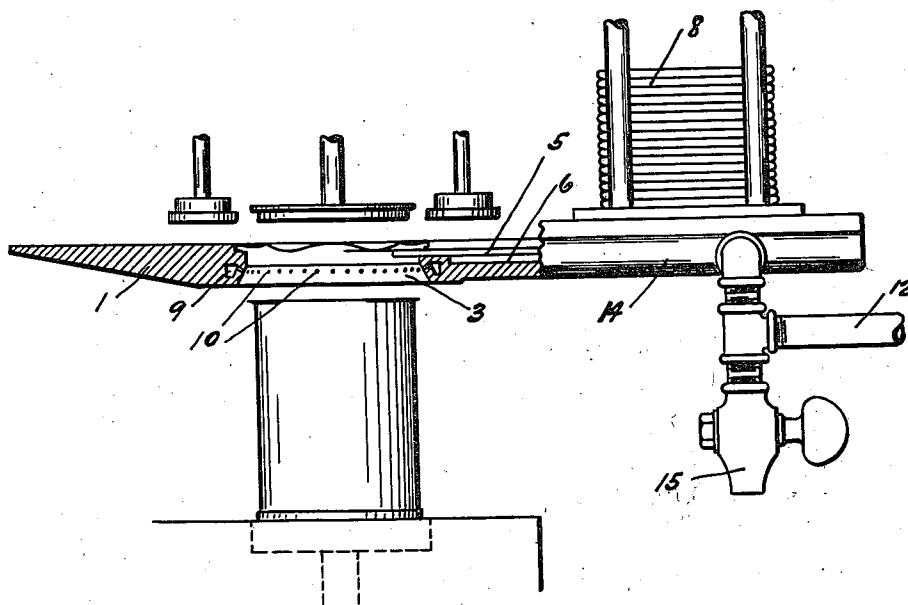


Fig. 4

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UNITED STATES PATENT OFFICE.

ALBERT N. CRAMER, OF COLUMBUS, OHIO.

CAP STERILIZER AND CAN-CENTERING PLATE FOR CAN-SEALING MACHINES.

Application filed March 11, 1918. Serial No. 221,786.

To all whom it may concern:

Be it known that I, ALBERT N. CRAMER, a citizen of the United States of America, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Cap Sterilizers and Can-Centering Plates for Can-Sealing Machines, of which the following is a specification.

My invention comprises a combined cap sterilizer and can centering plate for can sealing machines and is in the nature of a plate for attachment to a machine for sealing the ends of cans. This attachment is constructed to support a stack of caps and at the same time provide a guideway having a pusher tongue reciprocable therein, the structure being such that the caps may be successively selected and moved along a centering plate to a position immediately above the can which is to be capped. These cans are likewise intended to be successively moved into position below an opening in the centering plate and then to be elevated so that they pass through this centering plate, the top of the can lifting the cap from this centering plate and the can with its cap being then subjected to the sealing means.

My invention is particularly novel in its application of a means for subjecting the stack of caps to a directly applied sterilizing medium, and further subjecting each cap, in its travel to its position of application and then while in such position, to the sterilizing medium.

The preferred embodiment of my invention is shown in the accompanying drawings wherein similar characters of reference designate corresponding parts, and wherein—

Figure 1 is a plan view of my improved centering plate, detached and with the pusher tongue removed, showing the manner of conducting the sterilizing medium to the stack of caps and to each cap during its movement along its guideway.

Figure 2 is a section taken on line 2—2 of Figure 1.

Figure 3 is a section taken on line 3—3 of Figure 1.

Figure 4 is an assembly view showing the relation of the centering plate to the sealing apparatus.

In the drawings, the centering plate 1 is

of a substantially arcuate form and is intended to be secured in position by bolts passing through bolt holes 2. At one end, there is provided a circular aperture 3 of slightly less diameter than the cap to be applied and having a shoulder 4 to ensure centering of the flanged cap. Leading to this circular aperture 3 there is a slideway 5 in the upper face of the plate whose cross-section is of a contour conforming with the caps which are to be pushed along it. This slideway is further provided with a depressed portion 6 within which operates a pusher tongue (not shown). At the end of the centering plate opposite to the end containing the circular aperture and in communication with slideway 5 is a circular depression 7 within which is supported the stack of caps 8 shown in Figure 4. It will be apparent that the caps descend by gravity as each bottom cap is removed by the pusher tongue, while this pusher tongue successively moves the caps into position above the opening 3.

Depending from the walls of the aperture 3 and forming a part thereof is an annular chamber 9 having a series of regularly spaced outlet ports 10 so positioned that a fluid introduced into this annular chamber will escape through such ports and contact with the under surfaces of each cap when it is in position above the aperture 3. Likewise the walls of the slideway 5 are ported as at 11. Thus, a fluid directed through these ports 10 and 11 will contact with the under surfaces of the moving cap and the lower cap of the stack, causing a gradual heating of the caps in the stack before they are presented to the direct action of the treating medium.

As a sterilizing medium I prefer to use steam at a high temperature and this steam at a high temperature is introduced through the pipe 12 (see Figure 4) and is conducted to the annular chamber 9 by a branch pipe 13 soldered to the wall of this annular chamber 9 and having an opening registering with an opening in such chamber (see Figure 2). The ports 11 are likewise fed by branch pipes 13 and 14 which are soldered in position and have ports spaced to register with ports 11. Pipe 12 is provided with a drainage pet cock 15 normally open to bleed the excessive moisture from the steam.

In operation, steam is admitted to the pipe 12 at a high temperature and from this pipe

12 it passes to the branches 13 and 14, by connections not shown. When it leaves these branches it is directed with considerable force so as to have a washing action upon the bottom of each cap, this washing action being practically continuous from the moment the cap reaches the bottom of the stack until it is lifted by the can. As this can moves into position for lifting the cap, its upper edge is likewise sterilized.

The device is particularly important in connection with a sterilizing system wherein the product is sterilized in open vessels and it is notable because it provides sterile surfaces for centering such vessels and sterilizes the caps and vessel heads completely and automatically with very little, if any, superfluous mechanism.

Having thus described my invention, what I claim is:

1. A can centering plate embodying means for sterilizing the upper end of a can.
2. A can centering plate embodying means for sterilizing a cap and the upper end of a can.
3. A can centering plate comprising a cap slideway with ducts leading thereto for the

discharge of a sterilizing medium onto a cap passing through said slideway.

4. In combination with a can centering plate having cooperating therewith a means for holding a stack of caps, a cap sterilizing mechanism forming a part thereof and comprising means for directing streams of a fluid sterilizing medium against the caps while stacked and during movement into position to close the cans.

5. In combination with a can centering plate, a cap slideway in said plate, and ducts in the walls of said slideway for the discharge of a sterilizing medium therethrough.

6. Sterilizing apparatus comprising a can centering plate with an aperture into which the cans are passed, and means for spraying such cans from the walls of said aperture.

7. A centering plate comprising means for sterilizing a cap and then supporting it in position for application to a can.

In testimony whereof I hereby affix my signature in the presence of two witnesses.

ALBERT N. CRAMER.

Witnesses:

F. H. LANDRUM,
JESSIE L. JORDAN.