

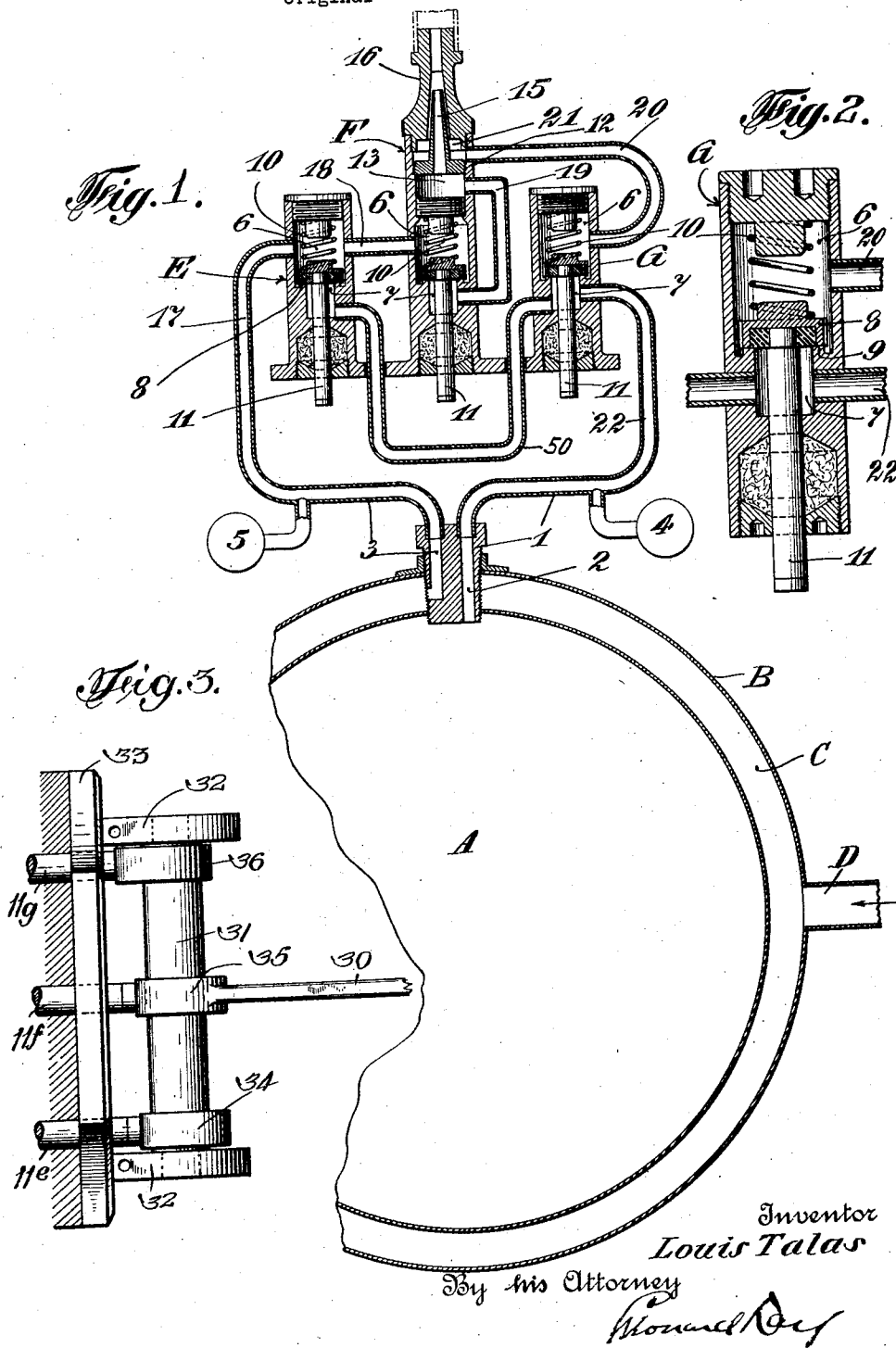
Dec. 28, 1926.

1,612,752

L. TALAS

VALVE CONTROLLER FOR STERILIZERS

Original Filed August 14, 1920



UNITED STATES PATENT OFFICE.

LOUIS TALAS, OF NEW YORK, N. Y., ASSIGNOR TO THE KNY-SCHEERER CORPORATION OF AMERICA, A CORPORATION OF NEW YORK.

VALVE CONTROLLER FOR STERILIZERS.

Application filed August 14, 1920. Serial No. 403,627. Renewed November 17, 1923.

This invention relates to the control of the passage of fluid to and from a number of chambers. It is particularly adapted to the control of the process of sterilization in a steam sterilizer. In a sterilizer of the type in which the sterilizing chamber in a surrounding steam jacket is employed, live steam under pressure is constantly supplied to the steam jacket. In the functioning of such a sterilizer the air in the articles to be sterilized and surrounding them in the sterilizing chamber must first be allowed to expand into the atmosphere while no escape is permitted to the steam in the steam jacket. After the contents of the sterilizer have been brought approximately to the steam chamber, it is then desired to effect a vacuum in the sterilizing chamber. This has been found to be best facilitated by ejecting the air from the sterilizer chamber through the medium of a steam jet, supplied by steam from the steam jacket. After a vacuum is created in the sterilizing chamber, it is desired to close the sterilizing chamber to the atmosphere and to fill the sterilizing chamber with live steam under pressure while at the same time steam pressure in the steam jacket is maintained. The present invention is applicable to the above type of sterilizing service.

Heretofore, either separately manually manipulating valves or a single disk valve having suitable parts have been employed. Both have proven far from the best practice. The disadvantage of the disk valve lies both in the difficulty of maintaining steam and vacuum tight valve action and also in the liability of the valve to freeze against manipulation, after the apparatus has been allowed to stand out of service for sometime. Impurities carried by the steam have made such valves stick.

An object of the present invention is to combine with the valve stems of a suitable number of poppet valves, a plurality of cams mounted on a cam shaft and operated by a manipulating handle, all together, with an indicator so that various positions for the cam shaft into which it may be moved by the handle, and in which position it may be indicated by the indicator, effected through the medium of the poppet valves and suitably interconnecting ducts make possible the various connections for different chambers and the desired passage of fluid.

The above will further be pointed out in the following claims which are directed to the illustrative embodiment of the invention set forth in the following specification, which is directed merely for purposes of illustration to the accompanying drawings which form a part hereof and in which like characters designate corresponding parts in the several figures.

In the drawings,

Fig. 1 is a fragmentary diagrammatic section through an embodiment of the invention showing the valve control;

Fig. 2 is an axial section through one of the valves and drawn to an enlarged scale; and

Fig. 3 is an elevation partly in section and with parts broken away showing a lever operated cam shaft for controlling the valves.

A is a sterilizing chamber of the sterilizer B, which has the steam jacket C adapted to be supplied with steam under pressure from the source D. The coupling nipple 1 which mounts the valve mechanism is provided with a duct 2 directly connecting with the sterilizing chamber A and with a separate duct 3 connecting only with the steam jacket C. Pressure gauges 4 and 5 are respectively connected permanently with ducts 2 and 3.

Three poppet-valves, E, F and G are employed in the present embodiment. Each of these valves comprises a back chamber 6 and a front chamber 7, normally separated by the valve 8, seating upon valve seat 9, against which it is forcibly spring pressed by compression spring 10 and from which it may be opened by pressure against valve stem 11.

Poppet-valve F has a rearward extension 12 forming an aspirator or steam-ejector, in this construction, a chamber 13, separated from valve chamber 10 by a partition 14 is provided. This chamber 13 gives entrance to the steam nozzle 15 which is surrounded by the aspirating nozzle 16.

The live steam duct 3 leads to chamber 6 through duct 17 of valve E, which chamber in turn is connected with chamber 6 of valve F by duct 18.

Chamber 7 of valve F is connected with aspirating chamber 13 by duct 19. A duct 20 connects chamber 6 of valve G with chamber 21 of the aspirator nozzle 16, while

the duct 1 is connected with chamber 7 of valve G by duct 22.

The operation of the valves E, F and G may be coordinated and effected manually through means of a handle operatively associated with the cam shaft 31 suitably mounted in trunnions 32 projecting from a base plate 33 so that cams 34, 35 and 36 are in cooperative relation with the valve stems which are connected respectively for the various valves E, F and G by numbers 11^e, 11^f and 11^g in Fig. 3.

The cam shaft 31 is suitably mounted as in trunnions 32 on a plate 33 carried by the ends of the valves E, F and G, so that the shaft passes across the ends of the valve stems 11^e, 11^f, and 11^g. Three cams, one for each valve stem and respectively 34, 35 and 36 are carried by shaft 31. These cams are preferably so shaped and positioned as is shown in Fig. 3, with the handle 30 horizontally, the heating of the sterilizing chamber is effected and the expanding air is permitted to escape. In this position, only the valve G is opened.

Proper movement of the lever 30 will cause the cams to open valves E and F and cause valve G to be closed. This operates the aspirator and produces a vacuum

in the sterilizing chamber. When valves F and G are closed and E open the entrance of live steam into the sterilizing chamber is effected.

What is claimed and desired to be secured by United States Letters Patent is:

1. In sterilizing apparatus in combination, a sterilizing chamber; a steam jacket; three valves; ducts interconnecting said valves, said sterilizing chamber and said steam jacket; a live steam connection for said steam jacket; and means for operating said valves into each of three combination positions, one for exhausting the sterilizing chamber while maintaining live steam in the jacket, one for maintaining live steam in the jacket alone, and one for supplying live steam to both said jacket and said sterilizing chamber.

2. The structure as described in claim 1 and further characterized by the fact that an aspirator is associated with said ducts and valves to cooperate in exhausting the sterilizing chamber.

In witness whereof, I have signed my name to this specification this 7th day of August, 1920.

LOUIS TALAS.