E. C DAMROW.

STEAM JET.

APPLICATION FILED MAR. 6, 1915.

1,195,915. Patented Aug. 22, 1916.

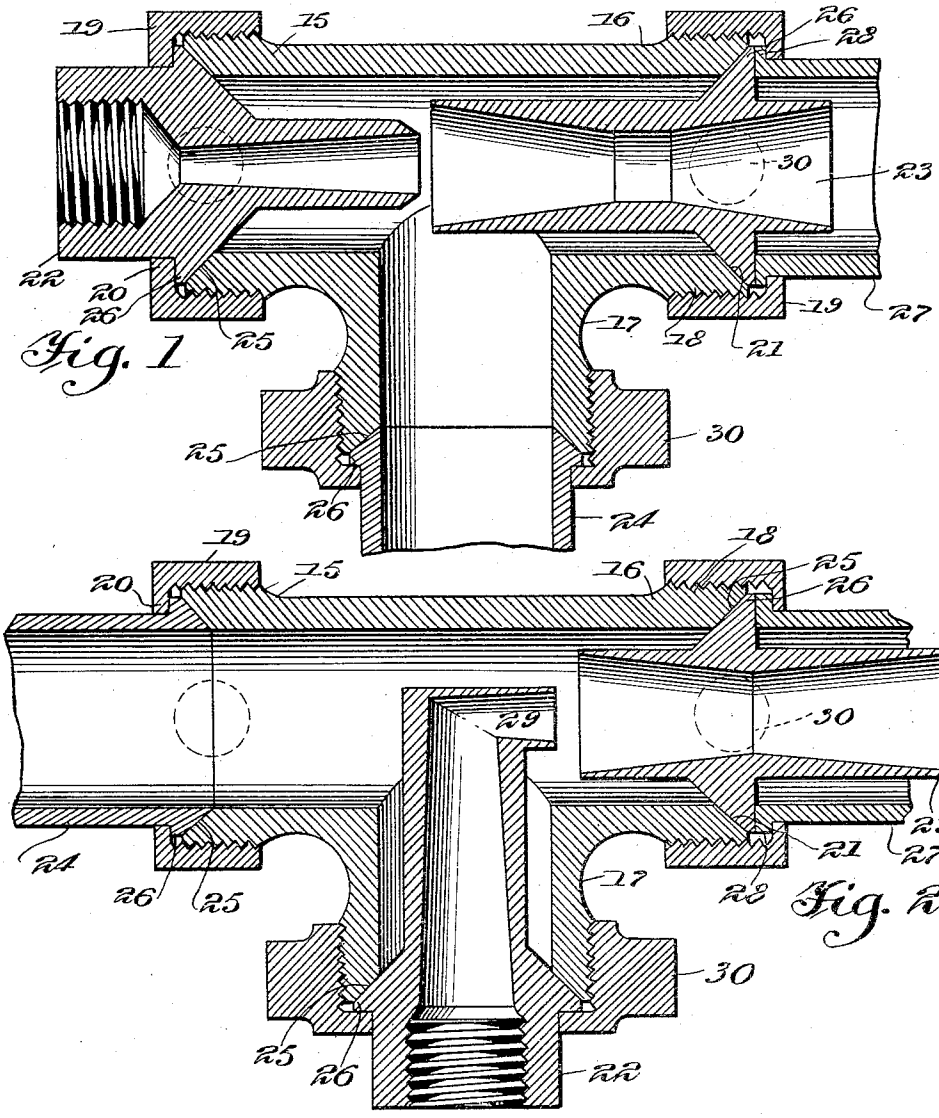



Fig. 1




Fig. 2.

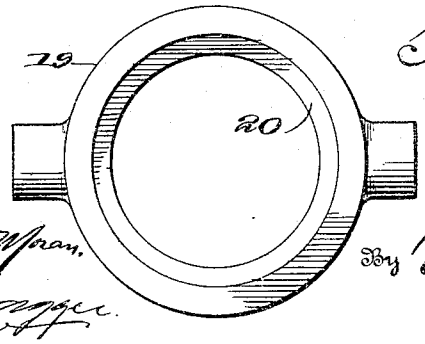



Fig. 3.

Witnesses

Frederick W. Mpran.

Inventor

E. C. Damrow

By Victor J. Evans

Attorney

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

# UNITED STATES PATENT OFFICE.

EDWARD C. DAMROW, OF FOND DU LAC, WISCONSIN.

## STEAM-JET.

1,195,915. Specification of Letters Patent. Patented Aug. 22, 1916.

Application filed March 6, 1915. Serial No. 12,642.

*To all whom it may concern:*

Be it known that I, EDWARD C. DAMROW, a citizen of the United States, residing at Fond du Lac, in the county of Fond du Lac and State of Wisconsin, have invented new and useful Improvements in Steam-Jets, of which the following is a specification.

This invention relates to steam jets of the injector type for lifting or elevating liquids. Devices of this type are at the present time being extensively employed in dairies, creameries, cheese factories and the like for the purpose of lifting and handling liquids. As ordinarily constructed difficulty is experienced in disassembling the parts for the purpose of thoroughly cleaning the same.

The present invention has for its prime object to produce a steam jet, the parts of which may be very conveniently assembled and disassembled from each other and from their respective pipe connections, the parts of the steam jet being removable so that they may be conveniently cleansed and sterilized.

A further object of the invention is to produce a device of the class described in which the steam inlet and discharge nozzles, as well as the various pipe sections, may be readily disassembled and again connected together in a steam tight manner without the use of skilled labor.

With these and other ends in view which will readily appear as the nature of the invention is better understood, the same consists in the improved construction and novel arrangement and combination of parts which will be hereinafter fully described and particularly pointed out in the claim.

In the accompanying drawing has been illustrated a simple and preferred form of the invention, it being, however, understood that no limitation is necessarily made to the precise structural details therein exhibited, but that changes, alterations and modifications within the scope of the claim may be resorted to when desired.

In the drawing,—Figure 1 is a vertical sectional view of a device constructed in accordance with the invention. Fig. 2 is a vertical sectional view illustrating a slight modification. Fig. 3 is an end view of one of the connecting sleeves.

Corresponding parts in the several figures are denoted by like characters of reference.

The tubular casing of the improved device is substantially T-shaped having alining branches 15, 16 and a divergent branch 17, each of said branches being terminally enlarged and externally threaded, as seen at 18, for the reception of a nut or sleeve 19 having an annular flange 20 at its outer end. Each of the branches 15, 16 and 17 is internally ground at its outer end to form a beveled seat 21.

The steam inlet nozzle 22, the discharge nozzle 23 and the inlet pipe or suction pipe 24 are each provided with a beveled seat engaging portion 25 and also with a circumferential shoulder or offset 26 adapted to be engaged by the flange 20 of one of the sleeves or nuts 19, which latter are thus utilized for the purpose of assembling the parts. In connection with the discharge nozzle there has been shown a pipe section 27 having an external annular flange 28 abutting upon the shoulder or offset 26 of said discharge nozzle and interposed between said shoulder and the flange 20 of the nut or sleeve 19.

The branches of the casing are of equal diameter so that the parts of the device may be interchanged. In Fig. 1 the inlet and discharge nozzles are connected with the alining branches 15, 16 of the casing, the suction pipe being connected with the divergent branch 17. In Fig. 2 the suction pipe and the discharge nozzle are connected with the alining branches 15, 16, and the steam inlet nozzle is connected with the divergent branch 17. This arrangement necessitates a special construction of steam nozzle with an angularly disposed discharge port 29. This and other modifications may be resorted to without departing from the spirit of the invention.

It is evident that by the construction and arrangement of the parts of the device, as herein shown and described, the inlet and discharge nozzles, as well as the suction pipe, may be separated from the casing by simply unscrewing the nuts or sleeves 19, thus enabling said nozzles and pipe, as well as the casing, to be easily and thoroughly cleansed and sterilized, after which the parts may be quickly reassembled without the use of other tools than an ordinary wrench or spanner for engagement with which the sleeves have been shown provided with laterally extending lugs 30. The beveled seats 25 of the nozzles and the suction pipe are obviously intended to be ground in such a manner as to snugly engage the seats 21 formed on the branches of the casing, thus producing steam and liquid-proof joints.

While the invention has been described as a steam jet, it is obvious that other fluid, such as compressed air, may be utilized for the purpose of creating the partial vacuum required to lift the milk or other fluid that is to be handled.

Having thus described the invention what is claimed as new, is:—

A device of the injector type for lifting liquids, the same consisting of a three-way casing having angularly disposed branches of equal diameter, each branch being externally threaded and provided with an internally disposed beveled seat; an inlet nozzle, a discharge nozzle and a suction pipe, each externally beveled to engage one of the seats, and the inlet nozzle and the suction pipe being also each provided with an external shoulder or offset; a discharge pipe section having an external flange abutting on the shoulder of the discharge nozzle; and internally threaded sleeves engaging the branches of the casing and having flanges engaging the shoulders or offsets of the inlet nozzle and the discharge nozzle and the flange of the discharge pipe which is seated on the offset of the discharge nozzle, whereby the said inlet nozzle, the discharge nozzle and the suction and discharge pipes will be detachably and interchangeably connected with the branches of the casing.

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

EDWARD C. DAMROW.

Witnesses:
WM. FREIBERG,
EDITH B. WILKINSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."