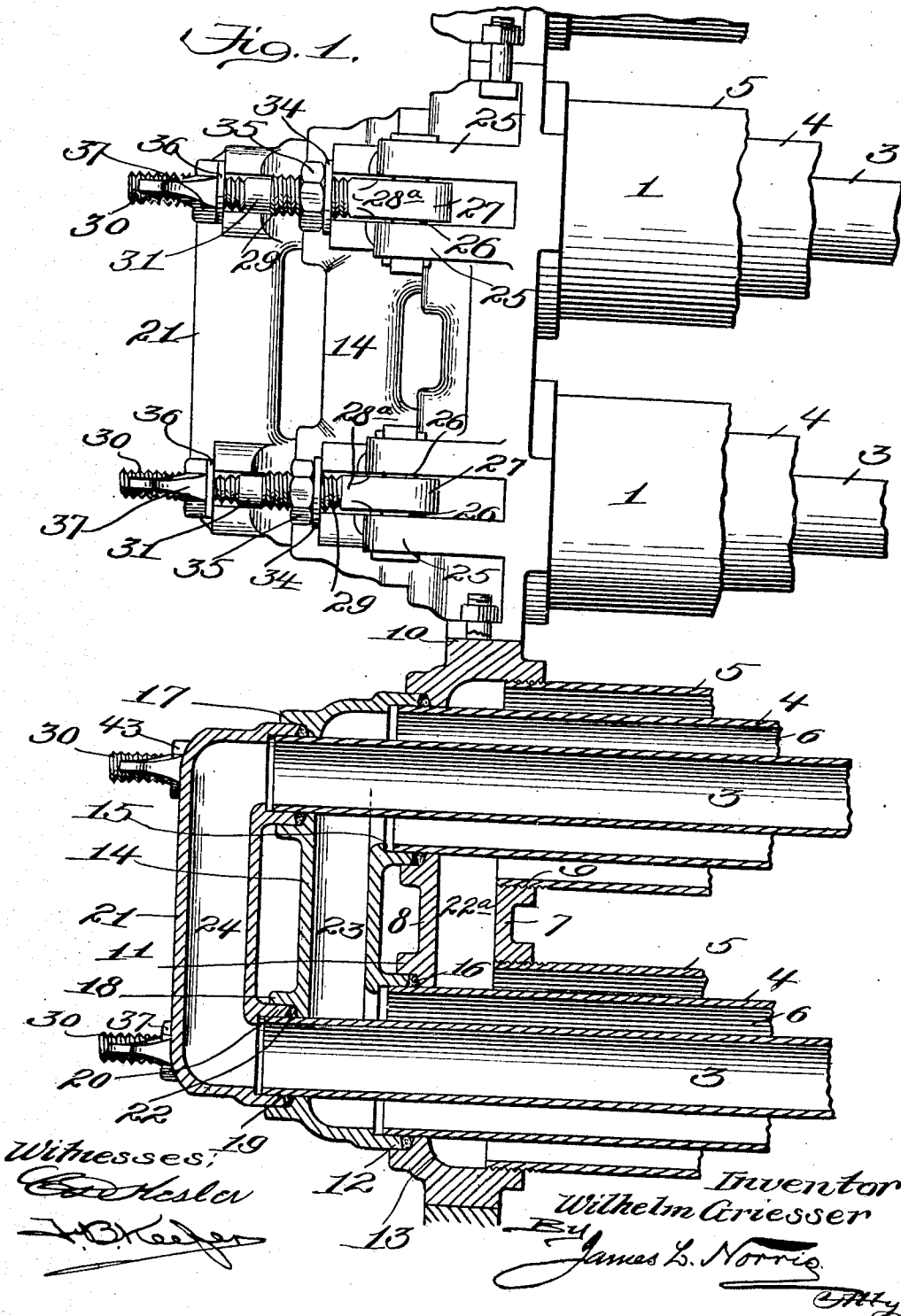


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APPLICATION FILED APR. 18, 1908.

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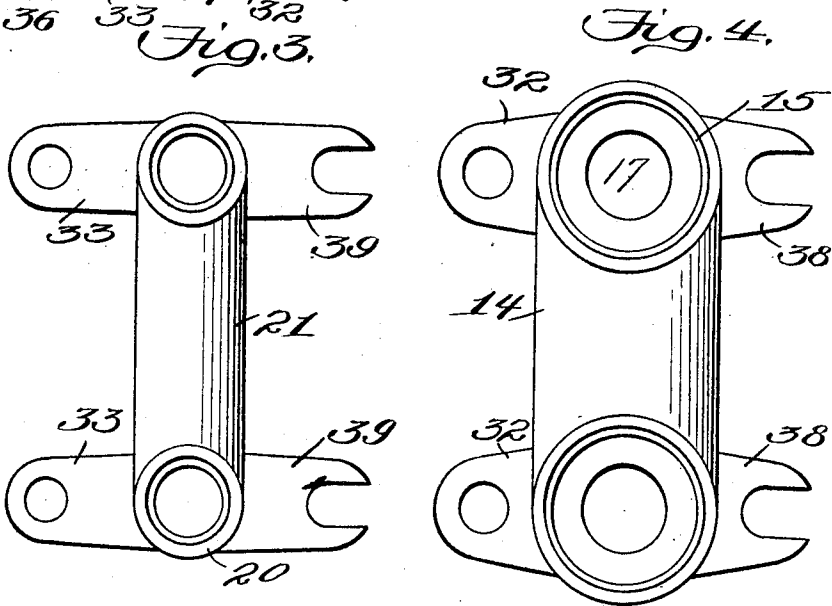
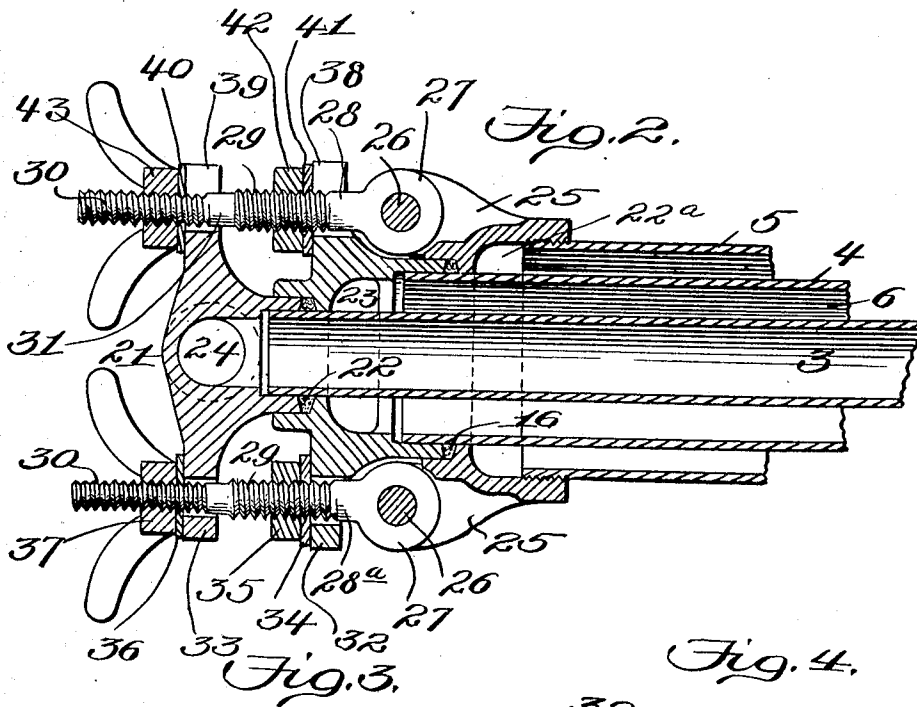
Patented Feb. 16, 1909.
2 SHEETS—SHEET 1.



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Witnesses;
[Signature]
[Signature]

Inventor
 Wilhelm Griesser
 By *[Signature]*
 James L. Norris
[Signature]

UNITED STATES PATENT OFFICE.

WILHELM GRIESSER, OF PITTSBURG, PENNSYLVANIA.

TRIPLE-PIPE BEER-COOLER.

No. 912,671.

Specification of Letters Patent.

Patented Feb. 16, 1909.

Application filed April 16, 1908. Serial No. 427,431.

To all whom it may concern:

Be it known that I, WILHELM GRIESSER, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented new and useful Improvements in Triple-Pipe Beer-Coolers, of which the following is a specification.

This invention relates to triple pipe beer coolers and the object thereof is to provide means whereby the return bends of the pipes can be readily swung from and easily and quickly returned to closing position without separating the same, thus making it unnecessary to completely remove them when it is desired to cleanse or repair the pipes.

With the foregoing and other objects in view, the invention consists of the novel construction, combination and arrangement of parts hereinafter more specifically described and illustrated in the accompanying drawings wherein is shown the preferred embodiment of the invention, but is it to be understood that changes, variations and modifications can be resorted to which come within the scope of the claims hereunto appended.

The drawings illustrate but one end of the cooler for the reason that both ends are identical, the description of one end applying to the other and in the drawings:—Figure 1 is a side elevation partly in longitudinal section of a triple pipe beer cooler embodying this invention. Fig. 2 is a sectional plan. Fig. 3 is an end view of the return bend for the inner pipe, and Fig. 4 is an end view of the return bend for the intermediate pipe.

Referring to the drawings by reference characters, 1 denotes a series of pipe units arranged in parallel relation one above the other and supported at their ends in a manner to be hereinafter set forth. Each of the pipe units comprises an inner pipe 3 for ammonia, an intermediate pipe 4 for beer and an outer pipe 5 for brine. These pipes are concentrically arranged in spaced relation and as it will be seen the beer will circulate in the space 6 between the pipes 3 and 4 and will thus travel in a thin sheet, as it were, between the ammonia and the brine. The pipes of each unit are connected at opposite ends with the corresponding pipes of adjacent units in a manner to afford a continuous circulation of the different liquids employed throughout the entire series of pipes. The manner in which a pair of units is connected will now be described.

The inner pipe 3 is of greater length than the intermediate pipe 4, and the intermediate pipe 4 is of greater length than the outer pipe 5.

A head is provided for each end of a pair of pipe units. This head comprises an inner wall 7 and an outer wall 8. These walls have concentric openings 9 and 13, those of the wall 7, however, being of greater diameter than those of the wall 8. Secured in each of the openings 9 in the wall 7 is one end of one of the pipes 5 and through each of the openings 13 in the wall 8 extends one end of one of the pipes 4. Projecting from the wall 8 and surrounding the openings therein are flanges 11 which are of greater diameter than the pipes 4 and form with the pipes 4 pockets into which project the annular flanges 12 of the intermediate return bend 14.

The outer face of the wall 8 within the flanges 11 and the ends of the flanges 12 of the return bend 14 are beveled, and surrounding the pipes 4 between said face and ends is arranged a beveled packing 16 to prevent leakage.

The flanges 12 of the intermediate return bend 14 snugly engage the ends of the pipes 4. The intermediate return bend 14 is furthermore provided with a pair of openings 17 through which extend the ends of the pipes 3, the diameter of the said openings 17 being such as to cause the sills of the openings to be in close proximity to the periphery of the pipes 3. The intermediate return bend 14 is furthermore provided with a pair of outwardly extending flanges 18 which surround the openings 17 and projecting ends 19 of the pipes 3. The said flanges 18 form pockets into which extend the annular flanges 20 formed upon the outer return bend 21. The flanges 20 snugly engage the pipes 3. The outer face of the return bend 14 and the end of the flange 20 are beveled, and to prevent leakage a beveled packing 22 is interposed between the flanges 20 and the intermediate return bend 14.

The head to which the pipes 5 are secured forms a passage 22^a for establishing communication between the pipes 5, the intermediate return bend 14 forms a channel 23 for establishing communication between the pipes 6 and the outer return bend 21 forms a passage 24 for establishing communication between the pipes 3. The outer return bend 21 and intermediate return bend 14 are so connected to the head for the pipes 5 that

the said return bend can be swung clear of the said head in a convenient manner, whereby access can be had to the pipes 3, 4 for cleaning or removing them when occasion so requires. The manner of connecting the return bends 14 and 21 to the head will now be described.

The head for the pipes 5 is provided at each side with two pairs of apertured lugs 25. Between each pair of lugs 25 is pivoted as at 26 the inner end 27 of a relatively long bolt. The bolts at one side are indicated by the reference character 28 and at the other side by the reference character 28^a. Each of said bolts has two screw-threaded portions 29, 30 separated by a flattened portion 31, the screw-threaded portion 29 being of greater diameter than the screw-threaded portion 30. Projecting from one side of the intermediate return bend 14 is a pair of apertured lugs 32 through which extend the bolts 28^a and projecting from one side of the outer return bend 21 is a pair of apertured lugs 33 through which extend the bolts 28^a. The enlarged portion of the bolt 28^a extends through the lugs 32 and the reduced portion of the bolt 28^a extends through the lugs 33. Mounted upon the screw-threaded portion 29 of the bolts 28^a and bearing against the lugs 32 are the washers 34 and mounted upon the screw-threaded portion 29 of the bolts 28^a and engaging the washers 34 are the clamping nuts 35. Mounted upon the screw-threaded portion 30 of the bolts 28^a and bearing against the lugs 33 are the washers 36 and mounted upon the screw-threaded portion 30 of the lugs 28^a and engaging the washers 36 are the winged clamping nuts 37. The length of the bolts 28^a is such as to project a distance greater than the length of a flange 19 and an intermediate return bend 14. Projecting from the opposite side of the intermediate bend 14 is a pair of bifurcated lugs 38 and projecting from the opposite sides of the outer return bend 21 is a pair of bifurcated lugs 39. The bolts 28 extend through the said bifurcated lugs, the enlarged portion of the bolt 28 extending through the lugs 38 and the reduced portion 30 of the bolt 28 extending through the lugs 39. Mounted upon the bolts 28 are the washers 40, 41 which engage respectively the lugs 39 and the lugs 38. The bolts 28 also carry the clamping nuts 42 and the winged clamping nuts 43. The nuts 42 abut against the washers 41 and the nut 43 against the washers 40. The bolts 28^a and nuts 35, 37, 42 and 43 in connection with the lugs 32, 33, 38, 39 constitute means for retaining the intermediate and outer return bends in position, as clearly shown in Fig. 2 and the bolts 28^a in connection with the nuts 35, 37 and pivots 26 constitute a means whereby the return bends 14 and 21 can be swung away from

the head so that access can be had to clean the pipes 3, 4 or to remove said pipes if it be so desired.

The manner in which the return bends are disconnected from their normal position so that they can be swung away from the head will now be set forth. It will be assumed that the parts are in the position shown in Fig. 2. The nuts 42 and 43 are loosened so as to enable the swinging of the bolts 28 with the nuts thereon away from the bifurcated lugs 38 and 39 so that the release of one side of the return bends 14 and 21 can be had. After such action the nuts 35 are loosened and shifted to a position in close proximity to the lugs 33, the winged nuts 37 are then loosened and shifted to a position in close proximity to the ends of the bolts 28^a, the return bend 21 is then shifted outwardly upon the bolts 28^a and the same action is had with respect to the intermediate return bend 14. This action positions the intermediate return bend so that the flanges 19 thereof will be clear of the lugs 25. The return bends can then be swung away from the head as sufficient clearance therefor has been provided and when swung clear of the head they will be carried by the bolts 28^a. The pipes 3, 4 can then be cleaned or removed and new pipes inserted if it be so desired. To place the return bends 14 and 21 back to their normal position, the bolts 28 are swung back upon their pivots 26, the intermediate return bend positioned in the manner as shown in Fig. 2, and the same action is had with respect to the outer return bend 21. The bolts 28 are swung to their position to engage with the bifurcated lugs 38, 39, the nuts are then screwed home and the bends are then fixedly secured in position. The action of removing the return bends is had without disconnecting entirely the nuts from their bolts and without separating the return bends from the bolts 28^a and it is evident that by such an arrangement the return bends can be quickly and conveniently disconnected from and connected to the head when occasion so requires.

What I claim is:

1. In a beer cooling apparatus in combination a pair of pipe units each comprising a plurality of pipes arranged one within the other in spaced relation, a hollow head secured to the outer pipe of each unit whereby communication is established between said pipes, the intermediate and inner pipe of each unit extending through said hollow head, an intermediate return bend connected to an intermediate pipe of each unit and engaging said hollow head, said intermediate return bend provided with a pair of apertured lugs and a pair of bifurcated lugs, said inner pipe of each unit extending through said intermediate return bend, an outer return bend connected to the inner

pipe of each unit and engaging said intermediate return bend, said outer return bend provided with a pair of apertured lugs and a pair of bifurcated lugs, screw-threaded bolts 5 pivotally connected to said head and engaging in said bifurcated lugs, screw-threaded bolts pivotally connected to said head and extending through said apertured lugs, and clamping nuts for said outer return bend 10 mounted upon said bolts.

2. In a beer cooling apparatus in combination a pair of pipe units each comprising a plurality of pipes arranged one within the other in spaced relation, a hollow head secured to the outer pipe of each unit whereby 15 communication is established between said pipes, the intermediate and inner pipe of each unit extending through said hollow head, an intermediate return bend connected to an intermediate pipe of each unit and engaging said hollow head, said intermediate return bend provided with a pair of apertured lugs and a pair of bifurcated lugs, said inner pipe 20 of each unit extending through said intermediate return bend, an outer return bend connected to the inner pipe of each unit and engaging said intermediate return bend, said outer return bend provided with a pair of apertured lugs and a pair of bifurcated lugs, 30 bolts pivotally connected to said head having screw threaded portions of different diameters, the screw-threaded portion of larger diameter extending through the bifurcated lugs of the intermediate return bend, the screw-threaded portion of smaller diameter extending through the bifurcated lugs of the 35 outer return bend, a second set of bolts pivotally connected to said head and having the screw-threaded portions of different diameters, the screw-threaded portion of larger diameter of the second set of bolts extending 40 through the apertured lugs of the intermediate return bend and screw-threaded portion of reduced diameter extending through the apertured lugs of the outer return bend, 45 and clamping nuts for the outer return bend mounted upon the portions of reduced diameter of both sets of bolts.

3. In a beer cooling apparatus in combination a pair of pipe units each comprising a plurality of pipes arranged one within the other in spaced relation, a hollow head secured to the outer pipe of each unit whereby 50 communication is established between said pipes, the intermediate and inner pipe of each unit extending through said hollow head, an intermediate return bend connected to an intermediate pipe of each unit and engaging said hollow head, said intermediate bend 55 provided with a pair of apertured lugs and a pair of bifurcated lugs, said inner pipe of each unit extending through said intermediate

return bend, an outer return bend connected to the inner pipe of each unit and engaging said intermediate return bend, said 65 outer return bend provided with a pair of apertured lugs and a pair of bifurcated lugs, screw-threaded bolts pivotally connected to said head and engaging in said bifurcated lugs, screw-threaded bolts pivotally connected 70 to said head and extending through said apertured lugs, clamping nuts for said intermediate return bend mounted upon said screw-threaded bolts, and clamping nuts for said outer return bend mounted upon said 75 bolts,

4. In a beer cooling apparatus in combination a pair of pipe units each comprising a plurality of pipes arranged one within the other in spaced relation, a hollow head secured to the outer pipe of each unit whereby 80 communication is established between said pipes, the intermediate and inner pipe of each unit extending through said hollow head, an intermediate return bend connected to an intermediate pipe of each unit and engaging said hollow head, said intermediate return bend provided with a pair of apertured lugs and a pair of bifurcated lugs, said inner pipe 85 of each unit extending through said intermediate return bend, an outer return bend connected to the inner pipe of each unit and engaging said intermediate return bend, said outer return bend provided with a pair of apertured lugs and a pair of bifurcated lugs, 90 bolts pivotally connected to said head having screw-threaded portions of different diameters, the screw-threaded portion of larger diameter extending through the bifurcated lugs of the intermediate return bend, the 100 screw-threaded portion of smaller diameter extending through the bifurcated lugs of the outer return bend, a second set of bolts pivotally connected to said head and having the screw - threaded portions of different 105 diameters, the screw-threaded portion of larger diameter of the second set of bolts extending through the apertured lugs of the intermediate return bend and the screw-threaded portion of reduced diameter extending 110 through the apertured lugs of the outer return bend, clamping nuts for the intermediate return bend mounted upon the screw-threaded portion of larger diameter of both sets of bolts, and clamping nuts for the outer 115 return bend mounted upon the portions of reduced diameter of both sets of bolts.

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

WILHELM GRIESSER.

Witnesses:

R. B. PETTY, Jr.,
E. M. YOST.