March 21, 1939. B. E. FOLKE 2,151,656

CHOKE FITTING FOR STEAM HEAT PIPES

Filed Dec. 11, 1937

FIG. 1

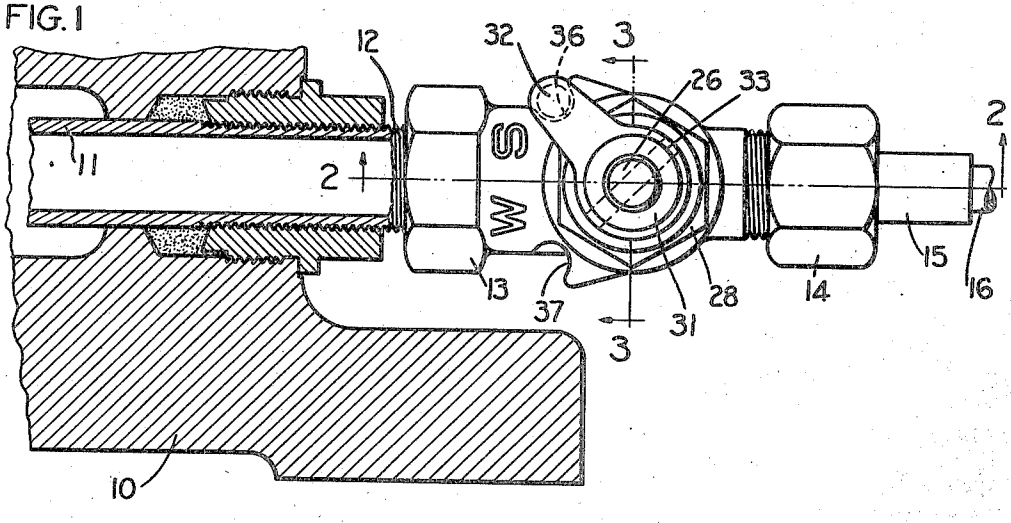


FIG. 2

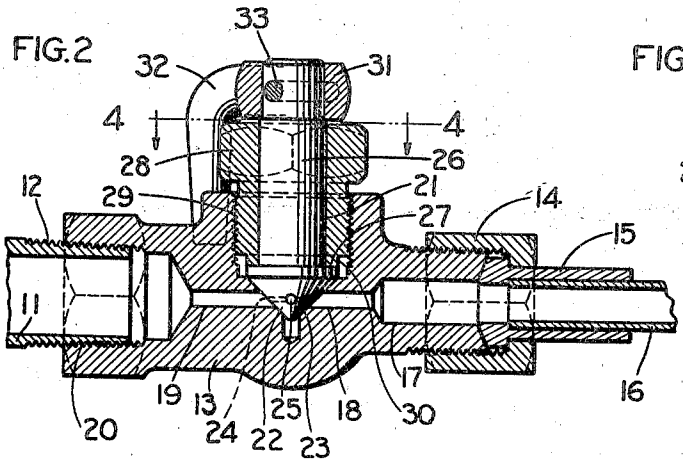


FIG. 3

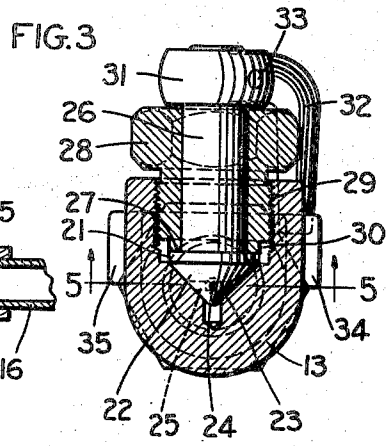


FIG. 4

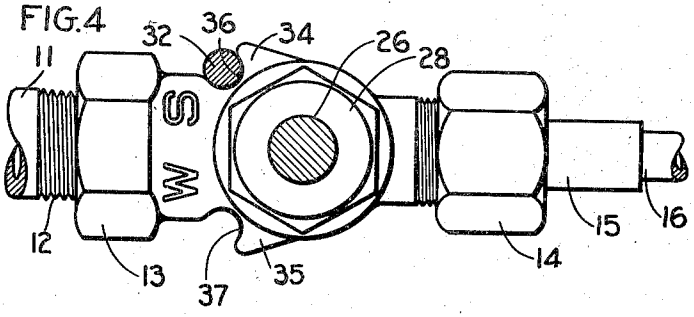
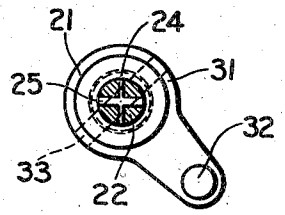


FIG. 5



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CHOKE FITTING FOR STEAM HEAT PIPES

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1 Claim. (Cl. 138—45)

The purpose of this invention is to provide a simple and dependable means for controlling the amount of steam admitted into heater pipes of apparatuses such as force feed lubricators, for instance, for controlling the temperature of the oil therein.

The heavy consistency of the oil required to be fed by a force feed lubricator for lubricating, for example, locomotive steam cylinders, necessitates the use of some means for heating the oil in the lubricator. A steam heat element in form of a pipe is usually provided in the lubricator for such purpose. The amount of steam entering the steam heat pipe is usually controlled by a choked inlet, the size of which is changed at the beginning of the summer and at the beginning of the winter so as to supply sufficient heat during the winter season and to prevent overheating in the summer.

The chokes generally used for regulating the steam supply heretofore were located so that it was necessary to disconnect the steam supply pipe in order to ascertain whether or not the proper size choke was used. Lubrication difficulties frequently resulted because too small a choke was used during the cold season or vice versa.

It is one of the principal objects of this invention to provide a choke fitting for steam heat pipes which may be readily adjusted for summer or winter conditions without disturbing the steam piping or connections.

Another object is to provide a means whereby the position of the heater choke is at once apparent by observing the location of an indicator which is a part of the device.

A further object is to provide clearly discernible means indicating summer or winter positions of the indicator.

Another object is to provide readily removable means for inspecting or cleaning the chokes without disturbing the steam piping or the connections.

Other objects will become apparent in the following specification and the accompanying drawing in which a preferred embodiment of the invention is shown.

In the drawing,

Fig. 1 is a fragmentary sectional view of a force feed lubricator casing showing the inlet end of a steam heat pipe extending therethrough and an exterior view of the choke fitting attached to it;

Fig. 2 is a longitudinal sectional view, partly in elevation, taken along the plane of line 2—2 in Fig. 1;

Fig. 3 is a cross-sectional view, partly in elevation, taken along the plane of line 3—3 in Fig. 1;

Fig. 4 is a longitudinal sectional view, partly in elevation, taken along the plane of line 4—4 in Fig. 2; and

Fig. 5 is a cross-sectional view through the choke member proper only taken along the plane of line 5—5 in Fig. 3.

Like characters of reference denote similar parts throughout the several views of the following specification.

Referring to Fig. 1, 10 shows a fragmentary sectional view of a lubricator casing provided with a heating element or steam heat pipe 11 having a threaded inlet connection 12. 13 is the body of a choke fitting provided with a coupling nut 14 and pipe sleeve 15 for connection to a steam supply pipe 16. Body 13 is provided with steam ports 17, 18 and 19 in alignment with each other and a threaded outlet opening 20 adapted to be attached to the threaded end 12 of the steam heat pipe 11.

21 is a valve member having a conically shaped head 22 adapted to contact with a correspondingly shaped seat 23 in the body 13 which separates the ports 18 and 19. The head 22 is provided with a comparatively small duct 24 and a somewhat larger duct 25 substantially at right angles to duct 24. These ducts are so disposed in relation to the ports 18 and 19 through the body 13 that either one or the other will communicate with ports 18 and 19 at one time. The conically shaped head 22 has an upwardly extending stem 26 of smaller diameter than the largest diameter of the head so as to form the shoulder 27 therewith.

Surrounding the stem 26 is a gland 28 exteriorly threaded at 29 to engage a correspondingly threaded recess in the body 13 immediately above the seat 23 and having its bottom end 30 bear against the shoulder 27 of the member 21, holding the same firmly against the seat. The upper end of the stem 26 which extends above the top of the gland 28 has fitted to it a hub 31 of an indicator 32 which is bent at right angles thereto and extends towards the body 13 substantially parallel to the stem 26. The hub of the indicator is fastened to the stem 26 by means of a pin 33.

Body 13 has at its sides lugs 34 and 35 forming, respectively, semi-circular grooves 36 and 37 which serve to fix the positions of the lower end of the indicator 32. One of these positions is marked "W" to represent the location for winter operation, while the other position is marked "S"

to represent the proper location of the indicator for summer operation. In the position shown in the drawing the indicator **32** is located in the summer position.

The indicator **32** is so fixed on stem **26** by means of the pin **33** that the small ducts **24** in the head **22** are brought in alignment with ports **18** and **19** in the body **13**. Loosening gland **28** permits raising the complete valve member assembly **21** together with the indicator **32** until the lower end of the indicator can be passed above the top surface of the lugs **34** and **35** on the outside of the body **13** so that the indicator is free to be turned into the groove **37** indicated by "W". The gland **28** can then be screwed down holding the conically shaped head **22** of the member **21** firmly against its seat **23** and so in the winter position. When thus fixed, duct **25** in the head **22** will be in communication with ports **18** and **19** in body **13**. Duct **25**, being comparatively larger in diameter than duct **24**, will permit a greater amount of steam to pass into the steam heat pipe **11**.

While I have shown in the preferred embodiment a member **21** with two fixed choke ducts of different size, it will be apparent that three or more different sized choke ducts may be used where severe climatical conditions should make this desirable.

Furthermore, while I have particularly described the invention as applied to a force feed lubricator to serve as a control device for its steam heat pipe, it is obvious that it may be used for other similar purposes as well.

It is understood that various changes in the form, proportion and minor details of construction may be resorted to, without departing from the principles or sacrificing any of the advantages of the invention, as defined in the appended claim.

What I claim as new, is:

In a choke fitting for a steam heat pipe comprising a body having a port in register with the said pipe, a valve member having a head seating within the body and having a plurality of different sized ducts adapted to be brought selectively in register with the said port, means for indicating the selected positions of said ducts comprising a rigid indicator arm fastened to the said valve member exteriorly of the body in fixed relation to the said ducts, locking recesses on the exterior of the body for receiving said arm, and a gland to lock the said valve member and indicator arm in a selected position with the said arm held fixedly in one of the recesses, the said gland, member and indicator arm being removable as a unit by raising the gland until the indicator arm becomes disengaged from its recess.

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