July 21, 1953 H. G. LANDRY 2,646,476

SWITCH FOR SIGNALING DEVICE FOR STOKERS AND THE LIKE

Filed April 9, 1951

Fig. 1

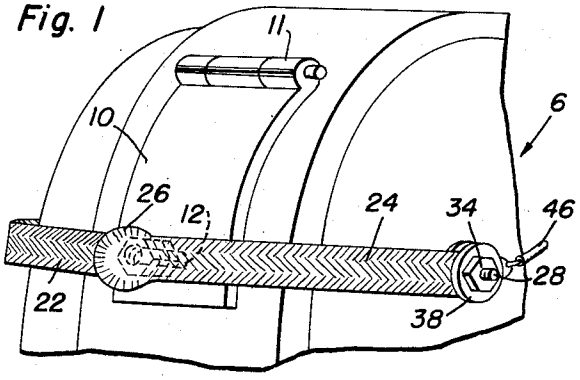



Fig. 2

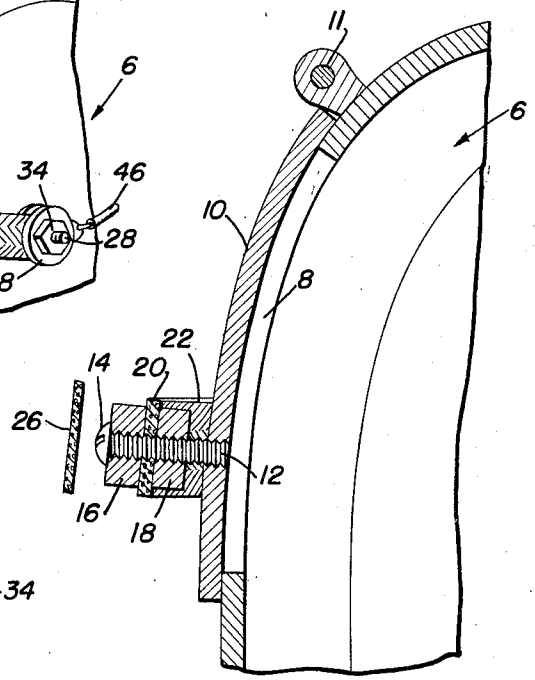



Fig. 3

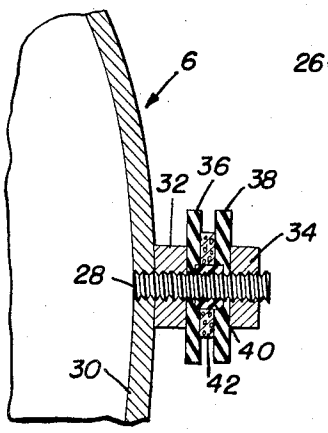
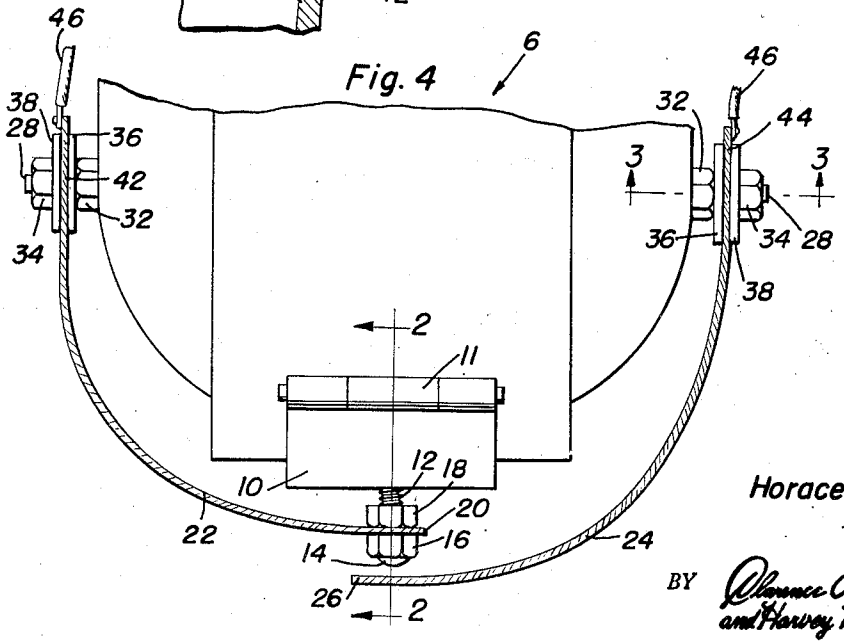



Fig. 4




Horace G. Landry
INVENTOR.

BY Clarence A. O'Brien and Harvey B. Jacobson
Attorneys

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## SWITCH FOR SIGNALING DEVICE FOR STOKERS AND THE LIKE

Horace G. Landry, Oneonta, N. Y.

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3 Claims. (Cl. 200—54)

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The present invention relates to stoker signaling and alarm devices in general and has more particular reference to a circuit make and break device which is expressly adapted for use on the ash receiver door and which minimizes the likelihood that ashes and dust will escape from the receiver and render the furnace room and adjoining cellar space unsightly or otherwise unsanitary.

Handling and emptying ashes and tending a coal stoker is most assuredly a disagreeable and time-consuming task. Even though the one who is delegated to take care of the ash cleaning and disposal job is industrious and watchful, it is not unusual for the receiver to pack up with ashes, force the usual hinged door open and to cause dust and ashes to spill on the floor or to collect elsewhere. There has long been a recognized need for ways and means whereby to lessen the difficulties of those who are called upon to cope with the ash handling problem. It follows, therefore, that the object of the present invention is to provide a simple and practical circuit make and break device which when properly mounted and associated with a circuit closing door on the ash receiver will serve to close a signaling circuit just as soon as the door starts to pop open under the pressure of a build up or over load of ashes in the ash receiver.

More specifically, novelty has to do with a pair of complemental flexibly resilient current conducting straps or members which have their circuit make and break end portions normally spaced apart and which have their opposite corresponding end portions mounted on existing portions of the ash receiver within the vicinity of the openable and closable over load actuated circuit closing door, whereby to render the structure in readiness for operation just as soon as the door, when acted on by overload pressure, has swung to a partially open position.

Other objects and advantages will become more readily apparent from the following description and the accompanying sheet of illustrative drawings.

In the accompanying drawings wherein like numerals are employed to designate like parts throughout the views:

Figure 1 is a fragmentary perspective view of an ash receiver forming a part of a domestic type coal stoker or equivalent furnace construction showing the alarm circuit make and break means constructed in accordance with the principles of the present invention;

Figure 2 is an enlarged fragmentary detail section taken on the plane of the line 2—2 of Figure 4, looking in the direction of the arrows;

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Figure 3 is a similar fragmentary section on an enlarged scale taken on the plane of the line 3—3 of Figure 4, looking in the direction of the arrows; and

Figure 4 is a top plan view, slightly enlarged, of the structure depicted in Figure 1.

Referring now to the drawings by reference numerals, it will be seen that the so-called ash receiver of the furnace stoker is denoted, as a unitary structure, by the numeral 6 and said receiver is, of course, of any suitable construction and provided with suitably arranged clean-out means (not shown). The usual overflow opening thereof is denoted at 8 and this is closed by a relatively small upwardly swingable cover or door 10 which is hingedly mounted in any suitable way as at 11. As above stated, it is not unusual for one to forget to clean out the ashes on time and, therefore, they will back up in the receiver, force the door open and spill on the floor. With the device herein disclosed and suitable audible or visible signaling means (not shown), the likelihood of overflow and spilling of ashes from the receiver 6 is reduced to a minimum.

In carrying out the principles of this invention one of the circuit making and breaking contacts is carried by the hinged door 10. Therefore, this door functions herein as a circuit closing member. The contact is made up of a simple bolt 12 which, as shown in Figure 2, is adjustably and detachably screwed into a screw-threaded hole provided therefor in the door. The head 14 of the bolt functions as a contact element. Mounted on this bolt are nuts 16 and 18. An end portion 20 of an arcuate flexible braided wire strap or member 22 is mounted between the two nuts in the manner shown. The complemental arcuate brass or equivalent strip or band is denoted at 24 and this has a free terminal end 26 which is opposed to the contact head or element 14 and these two elements 14 and 26 provide a simple circuit make and break device. Both end portions of the straps 22 and 24 are anchored on diametrically opposite sides of the casing of the ash receiver structure 6. Not only this, the mode of attaching each strap end is the same and is shown in particularity in Figure 3. It seems necessary to describe but one strap or band attaching means. Reference is had to Figure 3 wherein it will be seen that a headless stud or bolt 28 is provided and this is screwed into a hole provided therefor in the casing 30. The numerals 32 and 34 designate nuts which are threaded on said stud and which serve to hold in place a pair of washers 36 and 38 both of which are suitable insulation material. There is also a hub

element 40 and this is a rubber sleeve and is, therefore, an insulating member. The nuts serve to clamp the insulated elements 36, 38 and 40 together and also serve to bind the apertured end portion 42 of the strap or band between said washers. This portion of the band, as shown in Figure 4, is constructed with an ear or the like 44 to which a current conducting wire 46 is suitably connected. The wire is one of the circuit wires which is employed in a signaling or alarm circuit (not detailed). The signal or alarm may be a light, a bell or the like and may include an appropriate transformer and a suitable throw or equivalent cut-out switch. By having an audible alarm arranged in a suitable place it will be evident that if the space in the casing 30 becomes overloaded with ashes the ashes will tend press out through the door closed hole 8. The door will be forced open and the contact element 14 will be pressed into electrical contact relation with the contact element 26. Now the circuit will be closed and the bell or other signal will be sounded. Consequently, the man-of-the-house will be notified that overloading of the ash receiver has occurred and that it is time to do something about it. It will be clear that the structure under consideration is an improvement in this line of endeavor in that it reduces the number of parts entering into the combination thereby not only increasing the efficiency of the structure as a whole, but also rendering the same less costly to manufacture and to otherwise simplify factors of assembling, installation, sale and use.

It is thought that persons skilled in the art to which the invention relates will be able to obtain a clear understanding of the invention after considering the description in connection with the drawings. Therefore, a more lengthy description is regarded as unnecessary.

Minor changes in the shape, size, materials and arrangement of parts may be resorted to in actual practice without departing from the spirit and scope of the invention, as claimed.

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

1. A circuit make and break attachment for an ash receiver door comprising an elongated flexibly resilient arcuate strap member, first bolt and nut means for mounting one end of said member on a receiver, second bolt and nut means for mounting the opposite end of said member on a swingable door, a complemental elongated flexibly resilient arcuate strap member, and additional bolt and nut means on one end of the latter for anchoring same on said receiver.



2. A circuit make and break construction comprising, in combination, a stoker ash receiver embodying an ash accumulating casing having an overflow opening, an outwardly swingable door hinged on said casing and normally closing said opening, an arcuate flexible strap member of current conducting material attached at one end to said casing, a contact bolt mounted on said door, means detachably attaching the adjacent end of said strap member to said bolt, a second arcuate flexible strap member of current conducting material having a free end in spaced cooperating alignment with said bolt, and means anchoring the other end of said second-named member on said casing, said means embodying a screw-threaded stud, washers of insulation material mounted on said stud, the coacting end of said member being clamped between said washers, and nuts on said stud coacting with said washers.

3. The structure defined in claim 2, wherein said members are also resilient, the cooperating end portions of said members extending in directions at right angles to the path of swinging movement of said door and being situated in spaced relation to the exterior surface of said door and being collectively yieldable in directions away from the door, whereby not to obstruct or interfere with the movement of said door to a partially open position.

HORACE G. LANDRY.

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