

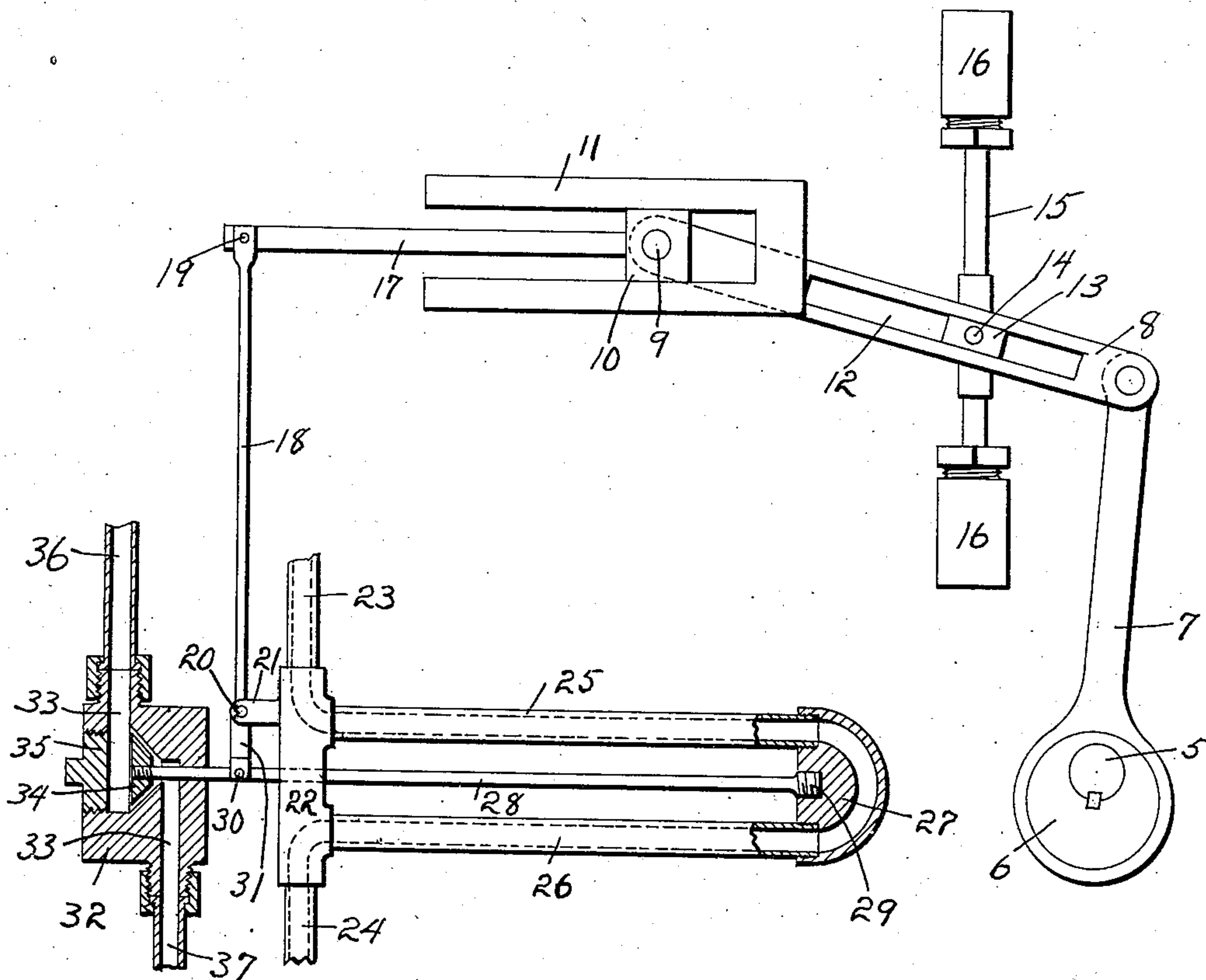
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J. W. & O. U. CHENOWETH.

FUEL AND WATER CONTROLLED APPARATUS FOR FLASH BOILERS.

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Witnesses

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JESSE W. CHENOWETH AND OSCAR URIAH CHENOWETH, OF OTTERBEIN, INDIANA.

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No. 894,255.

Specification of Letters Patent.

Patented July 28, 1908.

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To all whom it may concern:

Be it known that we, JESSE W. CHENOWETH and OSCAR URIAH CHENOWETH, citizens of the United States, residing at Otterbein, in the county of Benton and State of Indiana, have invented certain new and useful Improvements in Fuel and Water Controlled Apparatus for Flash-Boilers, of which the following is a specification.

Our invention relates to a fuel and water controlled apparatus for flash boilers, the object of the invention being to provide a thermostat through which steam from the flash boiler passes, said thermostat actuating both a fuel controlling valve and a pump governor in such manner that when the temperature of the steam increases beyond a predetermined point, the supply of fluid fuel to a burner, not shown, will be cut off and the supply of water to the boiler will be increased and vice versa.

Further objects and advantages of the invention will be set forth in the detailed description which now follows.

In the accompanying drawing, the figure is a view partially in section and partially in elevation of an apparatus designed to carry out the objects of the invention.

It is to be understood that this apparatus is particularly adapted for use upon automobiles and in the drawing the numeral 5 designates the engine shaft of the automobile to which an eccentric 6, is secured. This eccentric actuates an eccentric rod 7 and this eccentric rod in turn actuates a link 8. This link is pivoted at 9 to a block 10 which is slidably disposed in a guide 11. The link is slotted as at 12 for the reception of a block 13 and this block is pivoted as at 14 to a pump rod 15. This pump rod enters the pump cylinders 16 which are of the usual and well known construction, it being understood that these pumps supply water to a flash boiler, not shown.

A rod 17 extends from the block 10 and a second rod 18 is pivoted thereto as at 19. This rod 18 is in turn pivoted at 20 to an ear 21 of a manifold 22. Steam is conducted to this manifold from the flash boiler through a pipe 23 and is conducted from this manifold through a pipe 24. Pipes 25 and 26 are connected by a head 27 having a U-shaped channel formed therein, it being understood that the pipes 25 are constructed of material of great expansive properties. A rod 28 of

small expansive properties is threaded as at 29 into the head 27 and is pivoted as at 30 to an extension 31 of the rod 18. The rod 28 projects into a valve casing 32, said valve casing having a channel 33 formed therethrough. A valve 34 which is mounted upon the end of the rod 28, controls the flow of fluid fuel through this casing as will be readily understood. A plug 35 is threaded into the valve casing opposite the valve and when said plug is removed, the valve may be removed from the casing. Pipes 36 and 37 conduct fluid fuel to and from the valve casing as will be readily understood.

The operation of the device is as follows: Steam from the flash boiler, not shown, passes through the pipes 23, 25, 26 and 24 and through the head 27; and the thermostat formed by these parts, expands or contracts according to the temperature of the steam. When the temperature of the steam goes up, the thermostat expands and pulls the rod 28 toward the right. This closes the valve 34 upon its seat to a certain extent and cuts off some of the fluid fuel to the burner, not shown, by which the flash boiler is heated. At the same time the lower portion 31 of the rod 18 is moved toward the right and its upper portion is moved toward the left. This pulls the link 10 over toward the left and brings the free end of the eccentric closer to the pump rod, thereby increasing the stroke of the pump and supplying more water to the flash boiler. When this results in reducing the temperature of the steam, the thermostat contracts admitting more fluid fuel to the burner and cutting off some of the supply of water to the boiler. The result of providing such an apparatus as this, is to maintain just as much water in the boiler as the heat from the burner can properly evaporate into super-heated steam at the given temperature and to maintain just as much fire as may be needed to accomplish this.

From the foregoing description, it will be seen that simple and efficient means are herein provided for accomplishing the objects of the invention, but while the elements shown and described are well adapted to serve the purposes for which they are intended, it is to be understood that the invention is not limited to the precise construction set forth, but includes within its purview such changes as may be made within the scope of the appended claims.

What we claim, is:

1. In a device of the character described, the combination with a driven member, of a sliding block, a link connected to said sliding block and to said driven member, a pump rod, a sliding connection between said pump rod and said link, a thermostat, and a connection between said thermostat and the sliding block.
2. In a device of the character described, the combination with a driven member, of a sliding block, a link connected to said sliding block and to said driven member, a pump rod, a sliding connection between said pump rod and said link, a thermostat, a connection between said thermostat and the sliding block, a fluid fuel controlling valve, and a connection between said thermostat and said fluid fuel controlling valve.
3. In a device of the character described, the combination with a sliding block, of a guideway in which said sliding block is mounted, a slotted link pivoted to said sliding block, a driven member, a connection between said driven member and the outer end of said link, a pump rod, a sliding connection between said link and said pump rod, a ther-

mostat, and a connection between said thermostat and the sliding block which is adapted to move said sliding block to increase the stroke of the pump when the thermostat expands.

4. In a device of the character described, the combination with a sliding block, of a guideway in which said sliding block is mounted, a slotted link pivoted to said sliding block, a driven member, a connection between said driven member and the outer end of said link, a pump rod, a connection between said link and said pump rod, a thermostat, a connection between said thermostat and the sliding block which is adapted to move said sliding block to increase the stroke of the pump when the thermostat expands, a fluid fuel controlling valve, and a connection between said controlling valve and said thermostat.

In testimony whereof we affix our signatures in presence of two witnesses.

JESSE W. CHENOWETH.

OSCAR URIAH CHENOWETH.

Witnesses:

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