To all whom it may concern:

Be it known that I, Levy E. Carter, a citizen of the United States, residing at Huntsville, in the county of Madison and State of Alabama, have invented new and useful Improvements in Flue-Leak Invertors, of which the following is a specification.

This invention relates to means for temporarily stopping leaks in tubular boilers.

The object of the present invention is to provide a means for covering the water leaking from around the flue of a defective boiler, and delivering it to said flue thereby preventing it from reaching the fire box.

Another object of the invention is to provide a device for insertion in the flue of a locomotive boiler, which may be applied at any time, irrespective of the fact that fire may be at the time within the fire box.

A further object is the provision of a device of this class for insertion in the flue of a boiler, and held securely therein by direct contact with the inner wall of the flue.

With the above objects in view the invention consists of a tubular member provided with longitudinal open ended slots, a circumferentially grooved flange formed upon one end of said member and commencing therewith, an enlargement formed upon the outer surface of the tubular member and an abutment provided in the end of said member.

In the drawings;

Figure 1 is an elevation of the end of the locomotive boiler, showing the flue sheet, and having the invention applied to one of the flues;

Fig. 2 is an enlarged longitudinal section through the end of one of the flues, with the invention in position;

Fig. 3 is a similar view taken at right angles with Fig. 2 and on the line 2-2 thereof.

Fig. 4 is a detailed perspective view of the inventors removed;

Fig. 5 is a view similar to Fig. 2 illustrating a modification of the invention;

Fig. 6 is a detailed perspective of this modification removed from the flue; and

Fig. 7 is a detailed perspective of the inventor and the holder utilized for inserting it in the flue.

In the practical form of my invention, the same consists of a tubular member 1 provided with oppositely arranged longitudinal open ended slots 2, in order to provide a resilient end and permit the compression and expansion of the member. Formed upon the opposite end of the tubular member is a flange 3, having formed in its rear face a circumferential groove 4 adapted to communicate with the interior of the tubular member by means of oppositely arranged openings 5. The front and rear walls of the openings 5 are inclined for the purpose of more readily directing the water from the groove 4 into the interior of the tubular member 1. Formed around the inner edge of the flange 3 is a circular groove 6, provided with an asbestos or other packing 7, so that when the device is in position it will form a leak proof joint between the flue sheet and this edge of the flange.

To further aid in securing the device within the flue, which is shown at 9, the tubular member is provided intermediate its ends with an enlargement 10, sloping toward the rear end of the member 1 in order to provide for the easy insertion of this member within the flue. In the event of a leak occurring around the flue, the device is inserted until the packing 7 is seated firmly against the flue sheet, so that the leak from around the flue will enter the groove 4, and pass into the tubular member through the openings 5. At the end of the tubular member is formed an abutment, which in the preferred form of the invention consists of a circular flange 11, which effectually prevents the leaking water from dripping out of this end of the flue into the fire box, the draft through the said flue aiding to carry the water in the opposite direction.

In the modified form of the invention the end of the tubular member is entirely closed as shown at 12, so that there is no possibility of the fire or cinders stopping up the flue, otherwise action of the invention being the same.

In order to permit the device to be inserted into the flue while there is fire in the fire box there is provided a holder 13, having formed upon one end a seat 14 adapted to receive the flange 10 of the inventor, so that the same may be inserted in the end of the boiler flue, and the operator remain at some distance from the flue sheet.

From the foregoing description it will be seen that the invention provides a quick and efficient means for preventing the water...
from around a leaky flue reaching the fire box, and directing it backward through the said flue away from the fire.

Having described the invention, what is claimed, is:

1. The combination with a boiler, of a tubular member, said tubular member being longitudinally slotted at one end in a manner to permit of the same being compressed for insertion within a boiler flue and a circumferentially grooved flange formed at the opposite end of said member co-operating with the face of the boiler to provide a closed annular chamber, said chamber communicating with the interior of the tubular member through openings provided in said member adjacent the flanged end thereof.

2. The combination with a boiler, of a tubular member, said member being longitudinally slotted at one end in a manner to permit of the same being compressed for insertion within a boiler flue and a circumferentially grooved flange formed at the opposite end of said member co-operating with the face of the boiler to provide a closed annular chamber, said chamber communicating with the interior of the tubular member through openings provided in said member adjacent the flanged end of the same, the tubular member being further provided at its flanged end with an annular inwardly extending wall.

In testimony whereof I affix my signature.

LEVY E. CARTER.

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