Dec. 1, 1925. 1,564,176

F. S. MILLER

FUEL SAVING DEVICE

Filed Feb. 28, 1925

Fig. 1.

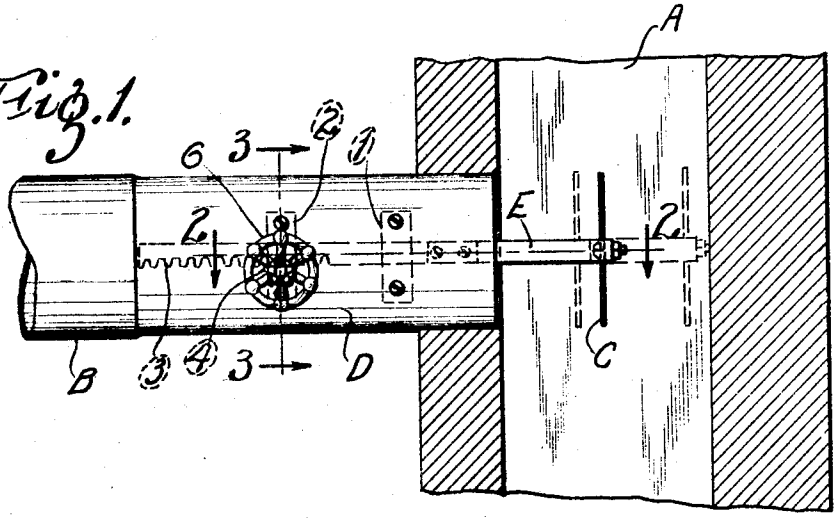


Fig. 2.

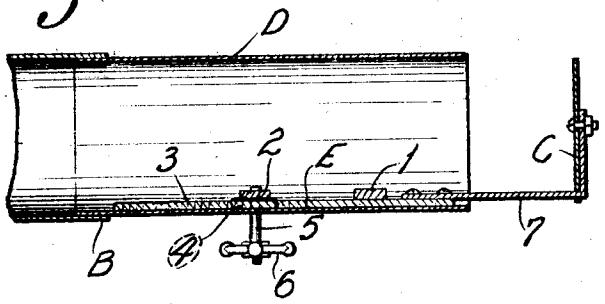
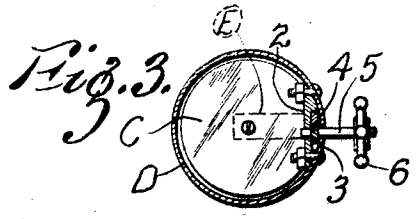


Fig. 3.



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FRANK S. MILLER, OF ST. LOUIS, MISSOURI.

FUEL-SAVING DEVICE.

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To all whom it may concern:

Be it known that I, FRANK S. MILLER, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Fuel-Saving Devices, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to devices of the kind that comprise a member which is adapted to be arranged inside of a flue adjacent the end of a stove pipe that enters the flue so as to diminish the normal draught in the stove pipe and also deflect heat produced by the escaping gases back into the stove pipe, thereby effecting a saving in the consumption of fuel used in the stove from which the pipe leads and also preventing the flue from overheating.

One object of my present invention is to provide a fuel saving device of the character mentioned, that is of novel construction and of such design that it can be installed quickly in any flue, irrespective of the size of same or the normal draught in the stove pipe with which the device is used.

Another object is to provide a device of the character mentioned which is of such construction that the services of a skilled mechanic are not required to install it, thereby enabling the device to be sold in stores to users, due to the fact that the user can install the device. Other objects and desirable features of my invention will be hereinafter pointed out.

Figure 1 of the drawings is a side elevational view of a fuel saving device constructed in accordance with my invention, illustrating said device arranged in operative position in a stove pipe flue.

Figure 2 is a horizontal sectional view of the device, taken on the line 2—2 of Figure 1; and

Figure 3 is a transverse sectional view of the device, taken on the line 3—3 of Figure 1.

Referring to the drawings which illustrate the preferred form of my invention, A designates a flue, B designates a stove pipe that discharges into said flue, and C designates a member arranged inside of the flue in proximity to the stove pipe opening of the flue so as to reduce the normal draught in the pipe B and deflect some of the heat produced by the escaping gases back into said pipe. In installing the member C in the flue it is essential that it be arranged a certain distance away from the point at which the pipe B discharges into the flue, for if said member is arranged too close to the discharge end of the stove pipe, it will cut down the draught too much, and if it is arranged too far away from the discharge end of the stove pipe, it will not perform the function for which it is designed.

The cross-sectional dimensions of flues vary greatly and the normal draught of stove pipes also varies greatly. Accordingly, to be commercially successful, a fuel saving device of the kind to which my invention relates must be of such design that any one can install it, for if the services of a skilled mechanic are required to install the device, it cannot be sold over the counter, or, in other words, sold in stores to users. My device is so constructed that it can be installed quickly and easily simply by removing the end section of the stove pipe and substituting the device for said end section and then adjusting the member C of the device so as to set it in the proper position inside of the flue. After said member C has been set in the correct position during the installation of the device, it is left in this position, and accordingly, the member may be said to be stationarily mounted in the flue when it is in use.

The member C, which preferably consists of a substantially disk-shaped piece of metal of such size that it can be introduced through the stove pipe opening of the flue A, is arranged inside of said flue, preferably in parallel relation to the longitudinal axis of the flue and in proximity to the stove pipe opening in the flue. It is set close enough to the side wall of the flue in which said stove pipe opening is formed to reduce the normal draft in the pipe B and is set far enough away from said opening so that it will not retard the free escape of the products of combustion from the pipe B into the flue A. In the form of my invention herein illustrated the member C is permanently combined with a sleeve D that is adapted to be substituted for the end section of the stove pipe and is mounted on said sleeve in such a way that after the inner end of the sleeve has been positioned in the stove pipe opening of the flue, the member

C can be adjusted towards and away from the inner end of said sleeve, as shown in Figure 1. Various means can be used for supporting the member C and permanently combining it with the sleeve D, but I prefer to connect said member with a bar E that is reciprocatingly mounted on the sleeve D and which co-operates with a manually operable adjusting device carried by said sleeve. As shown in the drawings, the bar E is slidingly mounted in straps 1 and 2 on the inside of the sleeve D and is provided with a rack 3 that meshes with a pinion 4 on a shaft 5 that projects outwardly through the sleeve D, said shaft being journaled in the sleeve and in the strap 2 and being provided at its outer end with a hand wheel or the like 6 that is adapted to be manipulated to reciprocate the bar E, and thus change the position of the member C with relation to the inner end of the sleeve D. The bar E can be made of such length that the member C can be connected directly to same, or, if desired, an L-shaped device 7 formed from a piece of light-weight strap iron can be used for connecting the member C to the bar E. When constructed in this manner the end of the leg of the device 7 that is attached to the bar E acts as a stop on said bar that strikes against the strap 1 on the inside of the sleeve D, so as to limit the movement of the bar E in one direction, thereby preventing the adjusting device 6 from being manipulated in such a manner that the member C will be set too close to the sleeve D, or, in other words, will be set in a position wherein it cuts off the escape of the products of combustion from the stove pipe B.

A device of the construction above described effectively prevents a flue from overheating and it effects a considerable saving in the consumption of fuel used in a stove, due to the fact that it reduces the normal draught in the stove pipe and deflects some of the heat produced by the escaping gases back into the pipe. Moreover, it is so designed that anyone can install it, thereby enabling it to be sold over the counter at a sufficiently low cost to bring it within the reach of every stove user.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

A fuel saving device of the kind described, comprising a sleeve adapted to have one end of same inserted in the stove pipe opening of a flue, a bar reciprocatingly mounted on said sleeve, a member carried by said bar, and proportioned so that it can be introduced through said stove pipe opening and disposed so that it extends substantially parallel to the longitudinal axis of the flue, a manually-operable means for adjusting said bar during the operation of installing the device so as to enable said member to be set in the proper position with relation to the inner end of said sleeve, and means for preventing said bar from being moved in one direction far enough to cause said member to act as a closure for the end of said sleeve.

FRANK S. MILLER.