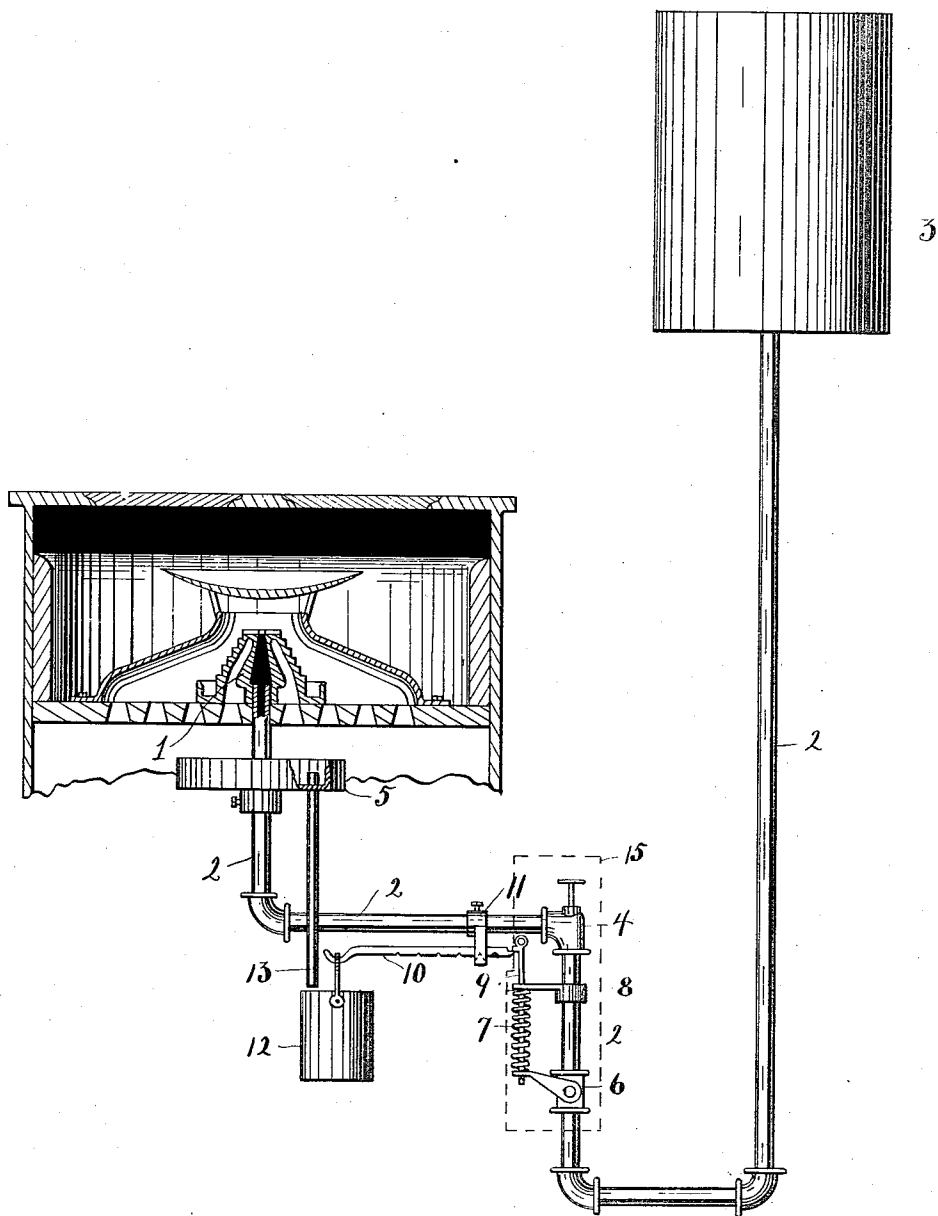


(No Model.)

F. L. & A. L. McGAHAN.
SAFETY ATTACHMENT FOR OIL BURNERS.

No. 508,039.

Patented Nov. 7, 1893.



WITNESSES:

A. M. Hood.
E. K. Hood.

INVENTORS

Frederick L. McGahan.
Annie L. McGahan.

BY

H. P. Hood,

ATTORNEY.

UNITED STATES PATENT OFFICE.

FREDERICK L. MCGAHAN AND ANNIE L. MCGAHAN, OF ST. LOUIS, MISSOURI.

SAFETY ATTACHMENT FOR OIL-BURNERS.

SPECIFICATION forming part of Letters Patent No. 508,039, dated November 7, 1893.

Application filed July 15, 1893. Serial No. 480,579. (No model.)

To all whom it may concern:

Be it known that we, FREDERICK L. MCGAHAN and ANNIE L. MCGAHAN, citizens of the United States, residing at St. Louis, State of Missouri, have invented a new and useful Safety Attachment for Oil-Burners, of which the following is a specification.

Our invention relates to an improved safety attachment for fuel-oil burners.

The object of our improvement is, to cause the overflow of unconsumed oil from a fuel-oil burner to operate to stop the supply of oil to said burner.

The accompanying drawing illustrates our invention.

The figure represents a section of a stove and of an oil burner for which Letters Patent No. 476,294 were issued to the said F. L. McGahan, together with our improvement shown in elevation.

In the drawings, 1, indicates the hollow burner to which the fuel-oil is supplied by means of the pipe, 2, leading from the oil reservoir, 3, the flow of oil being controlled by the valve, 4. A drip-cup, 5, is arranged beneath the burner to receive a portion of the oil for heating the burner to the proper temperature for vaporizing the oil. The oil supplied to the burner escapes therefrom at the top and flows down over the outside and is vaporized by the heat thereof.

It is found in practice, that, in using this class of burners, the oil sometimes flows faster than it is consumed and collects in the bottom of the stove beneath the pan, thus forming a dangerous collection of oil. For the purpose of avoiding this difficulty and promptly shutting off the supply of oil when there is an excessive overflow from the burner, we place in the oil-supply pipe a stop-valve, 6, having, connected with its operating lever, suitable mechanism for automatically closing the valve, as a spring, weight, or other motor. We have illustrated as this motor a spiral spring, 7, having one end connected with the valve-lever and the other end resting against a bracket, 8, secured to the supply pipe. Valve 6 is held normally open, and spring 7 is held in tension, by means of a rod, 9, which is secured to the lever of the valve at one end and engages with its upper end a trip-lever, 10, which is mounted on a fulcrum, 11, which

is adjustably secured to pipe 2. From the free end of lever 10 a bucket, 12, is suspended in such a position as to receive the overflow from the burner, said overflow being first received into the drip-cup 5 and passing from thence to the bucket through the pipe, 13, which is secured in the bottom of the drip-cup and projects within the cup a suitable distance to retain a sufficient amount of oil in the cup for heating the burner. The arrangement of lever 10, fulcrum 11, and spring 7, is such that the weight of the bucket 12 when empty, and the long end of the lever, will counterpoise the tension of spring 7 and thereby hold the valve open, the fulcrum being adjustable for this purpose. For the purpose of protecting the valves and the valve operating mechanism from accidental displacement, we inclose that portion of the pipe on which they are situated in a woven-wire cage which is represented in the drawing by dotted lines 15.

In operation, valve 6 being open, and the mechanism connected therewith being in the position illustrated in the drawing, valve 4 is opened until the oil overflows from the burner and a small amount collects in the drip-cup 5, but not sufficient to overflow through the pipe 13. Valve 4 is then closed and the oil in the drip-cup is then ignited. By this means burner 1 is heated to the temperature suitable to vaporize the oil thereon, which is ignited. Valve 4 is then opened so as to allow sufficient oil to flow to give the required volume of flame from the burner. If now, the flame from the burner should be accidentally extinguished, or the oil overflow faster than it is consumed, the surplus oil falls into the drip-cup and passes from thence through pipe 13 into the bucket 12. The weight of the oil and bucket operates to trip lever 10 and disengage it from rod 9, thus releasing spring 7 which operates to immediately close valve 6, thus shutting off the supply of oil and preventing further waste. It will be observed that this apparatus may be applied to oil burners of different forms and construction and we therefore do not confine ourselves to the particular form of burner here shown.

We claim as our invention—

1. The combination with a fuel-oil burner,

an oil-supply pipe leading thereto, and a stop-valve arranged in said supply-pipe, of a receptacle arranged to receive a portion of the overflow of oil from said burner, and intermediate connecting mechanism connecting the valve and the oil receptacle whereby the position of the valve is controlled by the weight of the oil receptacle, substantially as and for the purpose set forth.

2. The combination with a fuel-oil burner and an oil-supply pipe leading thereto, of a stop-valve placed in the supply pipe, a spring or other suitable motor arranged to close the valve, an oil receptacle arranged to receive the excess of oil which overflows from the burner, and intermediate connecting mechanism connecting said valve and its motor with said receptacle, whereby the motor is restrained and the valve is held open by the normal weight of the oil receptacle, and the motor is released by the increased weight of

the oil receptacle due to the presence of oil therein, all substantially as set forth.

3. The combination with a fuel-oil burner, an oil-supply pipe leading thereto, and a stop-valve arranged in said supply pipe, of the spring arranged to close the valve, the rod arranged to engage said spring, the trip-lever provided with an oil receptacle and arranged to engage said rod and to thereby hold the spring in tension, the drip-cup arranged to receive the overflow from the burner, and the pipe arranged to conduct a portion of the oil from said drip-cup to said oil receptacle, all arranged to co-operate substantially as and for the purpose set forth.

FREDERICK L. MCGAHAN.
ANNIE L. MCGAHAN.

Witnesses:

E. W. BANISTER,
G. H. SMITH.