Sept. 23, 1924. 1,509,724

P. FRAME

SOOT CONSUMING DEVICE

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Fig 1

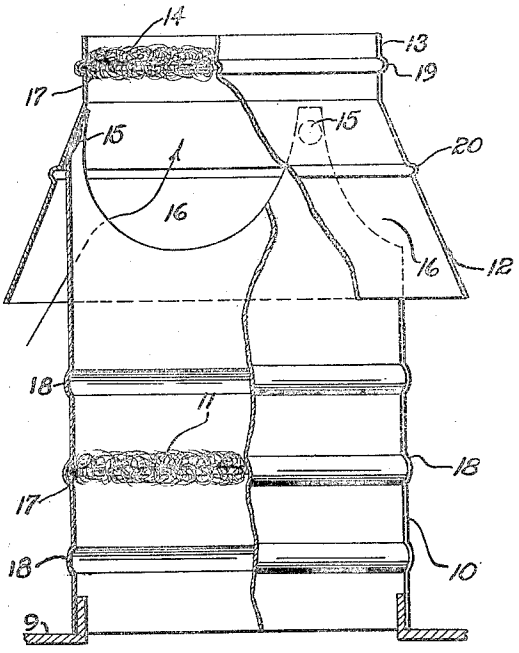


Fig 2

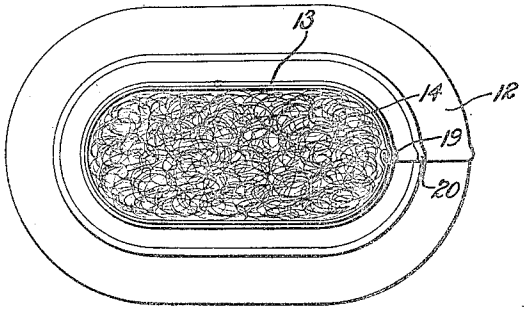
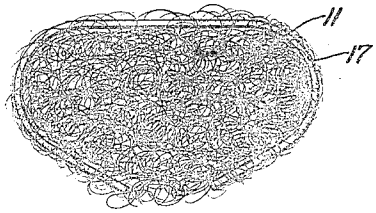


Fig 3



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Fig 4

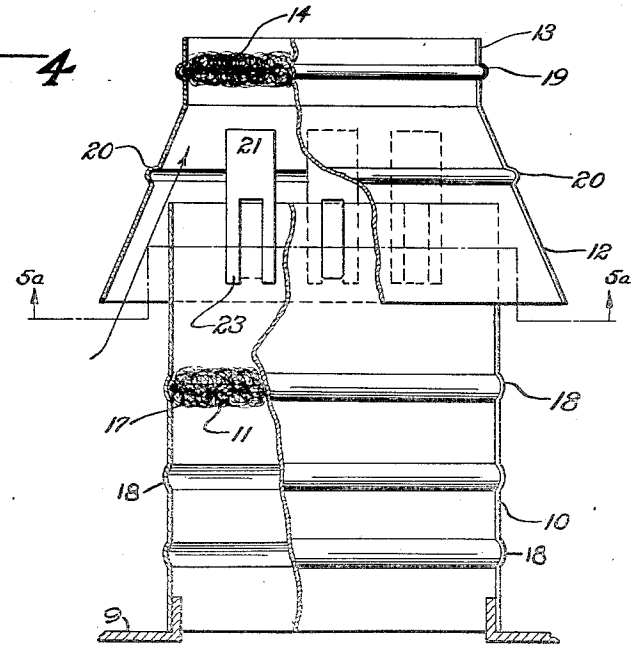


Fig 5

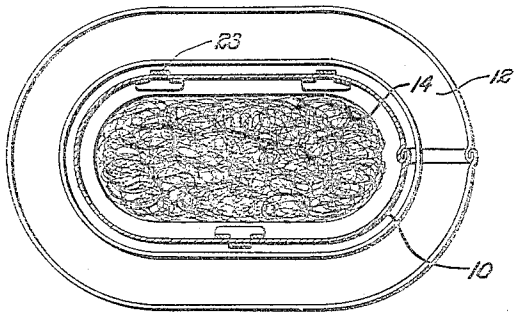
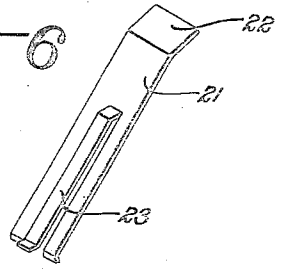


Fig 6



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Patented Sept. 23, 1924. 1,509,724

UNITED STATES PATENT OFFICE.

PAUL FRAME, OF BALTIMORE, MARYLAND, ASSIGNOR TO GAS & ELECTRIC APPLIANCE CORPORATION, A CORPORATION OF MARYLAND.

SOOT-CONSUMING DEVICE.

Application filed March 29, 1923. Serial No. 628,537.

To all whom it may concern:

Be it known that I, PAUL FRAME, a citizen of the United States, and resident of Baltimore, in the county of Baltimore and State of Maryland, have invented certain new and useful Improvements in Soot-Consuming Devices, of which the following is a specification.

This invention relates to improvements in devices for catching and consuming soot and grease given off in the cooking vapors and products of combustion from a stove to prevent fouling of walls and hangings. An object of this invention is to provide an improved means for mounting the soot catching material and to simplify the construction, making such devices of fewer parts yet durable and rigid.

According to this invention, a steel wool mat is held in a flue from a gas or other range, and the end of the flue carries a hood supported on a plurality of fingers, the hood carrying a second mat. The mats are of novel construction comprising a spring ring to frictionally engage the pipe or hood and carrying the mat. In the preferred embodiment, the hood is spot welded to fingers on the flue pipe formed by slotting the upper end of said pipe to provide a rigid and light unitary structure.

Referring to the drawings:

Fig. 1 is a side view, partly in section,

Fig. 2 is a top view of Fig. 1,

Fig. 3 shows a detail of the split ring and mat,

Fig. 4 is a side view partly in section showing a modification,

Fig. 5 is a section on the line 5^a—5^a of Fig. 4, and

Fig. 6 is a detail of one of the supporting fingers.

The flue 10 is located on hood 9 over a range or the like to catch the cooking vapors and products of combustion. Located within the flue pipe, which is relatively short, is an incombustible mat 11 of material for catching and preferably consuming grease, soot, and other impurities contained in cooking vapors. Such a material is metal wool, and it has been found that #3 steel wool is particularly suitable and effective to consume the impurities as by slow combustion without getting fouled from soot and grease, as do ordinary filter materials, such as asbestos, which do not consume the soot and grease. Mounted on the flue pipe is a steeply inclined overhanging hood 12 provided with an upper collar 13 in which is located another mat 14 of self-cleaning steel wool. The heated air rising outside the flue pipe 10 is caught and directed inwardly by the hood to increase the draft through the mat 11. As shown, the hood extends below the large openings 16 between the upstanding fingers 15 to which the hood 12 is spot welded. If desired the mat 14 of steel wool may be of less thickness than layer 11 to offer less resistance to the draft. As a means for conveniently mounting the mats 11 and 14, split rings 17 are provided, as shown in Fig. 3. The steel wool may be wrapped around the edges of the split ring and the ring contracted and then sprung in place in one of the beads 18, to retain the wool within the flue pipe. A number of these beads may be provided in order to make the layer of non-fouling metal wool adjustable and have it placed at the desired height within the flue pipe to obtain the best accentuation of draft within the pipe and cooperation between the separated mats.

A similar bead 19 is provided in the collar portion 13 for the same purpose of retaining a split ring. This split ring construction is useful for holding a filter mat, such as asbestos or glass wool, or the like, as well as the preferred metal soot consuming wool. The hood and flue pipe are preferably stamped from sheet metal and the hood may be provided with a strengthening bead 20 in its skirt portion. The upstanding collar portion 13, as well as the beads 18 and 19 are all formed in the stamping operations.

Figures 4 to 6, inclusive, show a modification in which the hood is mounted on a plurality of supporting fingers 21. Each of these fingers is provided at the top with a bent up portion 22 adapted to be secured to the skirt portion of the hood and permit the lower portion of the supporting fingers to be in a substantially vertical position. The lower part of each supporting finger 23 is split in a plurality of places so that the top of the flue pipe may be inserted within the splits and these fingers securely position the hood.

Among the advantages of this invention may be enumerated the simplicity of construction, whereby sheet metal is by stamp-

ing operations formed into a durable structure. The self-cleaning layers of metal wool are provided with a simple and effective supporting means in the split ring used. The form of invention illustrated in Figures 1 to 3 shows a soot consuming flue structure which is integral and unitary wherein the hood will not become accidentally displaced through jars.

It will be understood that the invention may be used wherever it may be desired to remove soot and impurities from heated gases and vapors without becoming covered with an objectionable deposit.

I claim:

1. A device for catching flue impurities comprising a split expansible ring removably carrying a non-combustible non-fouling steel wool mat.

2. The combination with a flue pipe, of a hood above said pipe, a mat carried by the hood, and a lower mat adjustably carried by the pipe below the hood.

3. In combination a flue pipe provided with a plurality of recesses at different heights, and a non-fouling metal wool mat adapted to be adjustably secured at the desired height within one of said recesses.

4. The combination with a flue pipe having a peripheral groove, of a split ring, and a self-cleaning filter material of steel wool held in said pipe groove by said ring.

5. The combination with a flue pipe, of a hood spaced therefrom and above the pipe, a stamped-up collar portion surmounting the hood, the pipe, hood, and collar each having strengthening beads stamped therein, and the top of said pipe having upstanding fingers to which the hood is secured.

6. The combination with a flue pipe, of a hood mounted above the pipe and spaced from at least a portion thereof, more than two fingers supporting said hood on the pipe, an upstanding collar portion on the hood provided with a groove therein, a split ring in said groove, and a non-fouling metal wool mat retained in position in said collar portion by said ring.

Signed at Baltimore, in the county of Baltimore and State of Maryland, this 27th day of March A. D. 1923.

PAUL FRAME.