

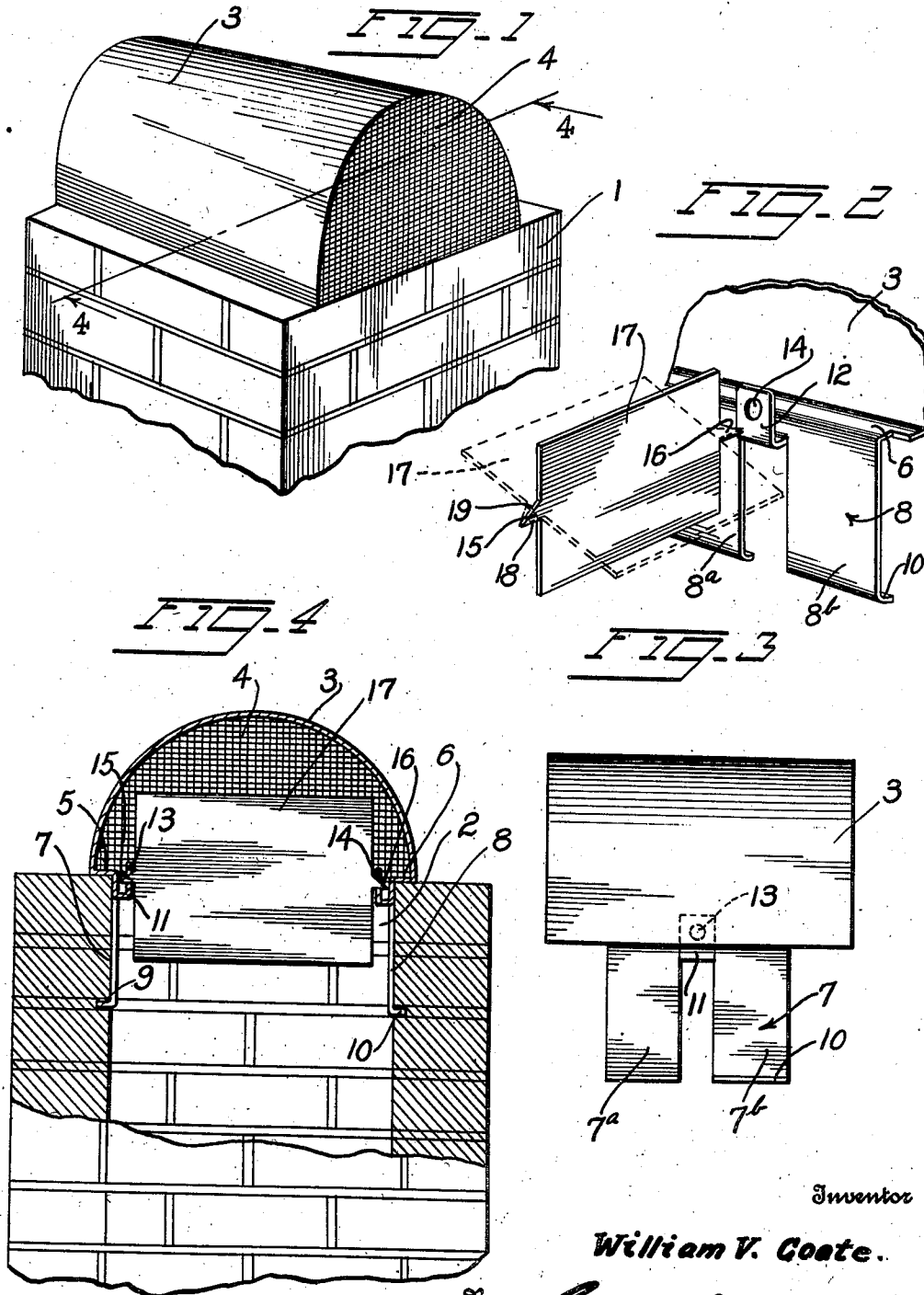
Jan. 12, 1943.

W. V. COATE

2,308,266

COMBINED AUTOMATIC DRAFT GOVERNOR AND SPARK ARRESTER

Filed Feb. 26, 1940



Inventor

William V. Coate.

334

Lacey & Lacey,

Attorneys

UNITED STATES PATENT OFFICE

2,308,266

COMBINED AUTOMATIC DRAFT GOVERNOR
AND SPARK ARRESTER

William Vernal Coate, Greenville, Ohio

Application February 26, 1940, Serial No. 320,943

3 Claims. (Cl. 98—78)

This invention relates to a combined automatic draft governor and spark arrester.

One object of the invention is to provide a device of this character which may be easily installed in the open upper end of a chimney and which will be effective for automatically controlling draft so that fires burning at the lower end of the chimney flue will be permitted to burn steadily, regardless of weather conditions.

Another object of the invention is to provide a combined automatic draft governor and spark arrester which will be operative for preventing the spreading of sparks from the chimney so that accidental starting of fires thereby will be prevented.

A further object of the invention is to provide a combined automatic draft governor and spark arrester which will, by preventing suction in the chimney flue caused by sudden gusts of wind from affecting said flue, assure even burning of fuel and, therefore, prevent waste thereof.

As a still further object, the invention seeks to provide a device of this character which is characterized by the utmost simplicity in construction and which may be installed with the greatest of ease.

Other and incidental objects of the invention not particularly mentioned hereinbefore will become apparent during the course of the following description.

In the accompanying drawing forming a part of this application:

Figure 1 is a perspective view of the invention as it would appear installed in a chimney.

Figure 2 is an enlarged detail perspective view showing the automatic draft governor construction.

Figure 3 is a side elevation showing the spark arrester with draft governor mounting elements thereon.

Figure 4 is a vertical sectional view on the line 4—4 of Figure 1, looking in the direction indicated by the arrows.

Referring now more particularly to the accompanying drawing, wherein like numerals of reference will be seen to designate like parts throughout the various views, the numeral 1 indicates a chimney of conventional construction. The chimney is substantially rectangular in contour and is provided with a rectangular discharge opening 2.

My improved combined automatic draft governor and spark arrester includes a casing 3 which, as best seen in Figures 1 and 4 of the drawing, is substantially semi-circular in con-

tour. The casing is provided with open opposite ends which are closed by screen elements 4, the screen elements covering the entire ends of the casing and having their lower edges engageable with the upper edge of the chimney. The screen elements will cooperate for preventing escape of sparks from the chimney so that fires, which might be started accidentally if said sparks were permitted to escape, will be prevented.

It should be understood that, while the casing 3 of the spark arrester is shown as semi-circular in contour, it may be of any suitable shape. It, of course, follows, that the screen elements 4 would be shaped to conform to the shape of the casing.

Attention is now directed particularly to Figures 3 and 4 of the drawing, wherein is shown the automatic draft governor construction as well as the mounting structure for the entire device. The casing 3 is formed with reduced inwardly offset portions 5 and 6. The offset portions 6 are disposed at substantially right angles to the vertical. The offset portions 5 and 6 extend inwardly to the rim or inner edge of the discharge opening 2 of the chimney 1 and, at this point, on each side of the chimney, the portions are bent downwardly to define mounting members 7 and 8. These mounting members have their corresponding lower end portions turned outwardly to define anchoring lugs 9 and 10, which anchoring lugs are engageable in pockets or recesses formed in the mortar between certain of the bricks of the chimney. The mounting members and anchoring lugs serve effectively to retain the device in proper operative position on top of the chimney.

By referring to Figure 3, it will be seen that each of the mounting members 7 and 8 is bifurcated, throughout the major portion of its length, as shown at 7a and 7b and 8a and 8b. A portion of the material removed during the bifurcating process is turned laterally and upwardly to define mounting tongues 11 and 12 which freely receive bearing trunnions 15 and 16 which are formed near the mid-portions of the ends of a governor element 17. The bearing trunnions 15 and 16, as will be noted by referring to Figures 2 and 4 of the drawing, are of substantially triangular contour, each having straight lower edges 18 and inclined upper edges 19. It will be understood that inasmuch as the bearing trunnions are to be located slightly off center and in alinement, the governor element will be normally disposed vertically within the chimney. As seen, the governor element is sub-

stantially rectangular in contour and comprises a flat metal plate which is of light weight and capable of being swung with the utmost ease.

In use, after the device has been installed in a chimney, the spark arrester will serve, as heretofore stated, to effectively prevent discharge of sparks from the chimney and thus prevent accidental starting of fires. When there is but a small amount of air stirring, the draft governor element 17 will, by virtue of the offset mounting of the bearing trunnions 15 and 16, be disposed vertically within the chimney. Free escape of the products of combustion about the governor element will thus be permitted. In the event that a strong wind should begin to blow, said wind will flow against the top portion of the governor element and will cause said element to tilt to the position shown in dotted lines in Figure 2 of the drawing. In this position, the wind will not affect the draft conditions within the chimney and there will be no tendency to cause sudden waves of suction. The fire burning at the lower end of the chimney will, accordingly, not be affected and there will be no tendency to waste fuel. There will always be present a proper mixture of oxygen and fuel gases so that proper combustion will be assured. Also, soot, caused by improper combustion, will be kept at a minimum so that burning out of the chimney with a resultant dangerous fire will be prevented. It should be understood that the governor element is of sufficient size effectively to largely block the chimney 1 in tilted position. It is believed that further description is unnecessary.

Having thus described the invention, what is claimed is:

1. In a device of the class described, a casing having inwardly offset portions terminating in downwardly directed mounting members, said mounting members having lower end portions bent outwardly to define anchoring lugs engageable between the bricks of a chimney for mounting the device in the chimney, said mounting members being bifurcated to define mounting

tongues, said tongues being bent upwardly and having opposite bearing openings, and a governor element having bearing trunnions pivotally engageable in the bearing openings, said trunnions pivotally mounting the draft governor element within the chimney, said draft governor element being tiltable by a strong flow of air for partially closing the chimney and preventing said flow of air from affecting draft conditions within the chimney.

2. In a device of the class described, a casing having inwardly offset portions terminating in downwardly directed mounting members, said mounting members having lower end portions bent outwardly to define anchoring lugs engageable between the bricks of a chimney for mounting the device in the chimney, said mounting members being bifurcated to define mounting tongues, said tongues being bent upwardly and having opposite bearing openings, and a governor element having bearing trunnions pivotally engageable in the bearing openings, said trunnions pivotally mounting the draft governor element within the chimney, said draft governor element being tiltable by a strong flow of air for partially closing the chimney and preventing said flow of air from affecting draft conditions within the chimney, said bearing trunnions being located off the longitudinal center of the governor element so that said governor element will normally be positioned vertically within the chimney.

3. In a device of the class described, a casing having inwardly offset portions terminating in downwardly directed mounting members, said mounting members having lower end portions bent outwardly to define anchoring lugs engageable between the bricks of a chimney for mounting the device in the chimney, and means mounted between the mounting members and tiltable by airflow for partially closing the chimney and preventing said airflow from affecting the draft conditions within the chimney.

WILLIAM VERNAL COATE.