No. 638,953. Patented Dec. 12, 1899.

J. W. CAMPBELL.

FLUE OR CHIMNEY.

(Application filed Dec. 31, 1898.)

(No Model.)

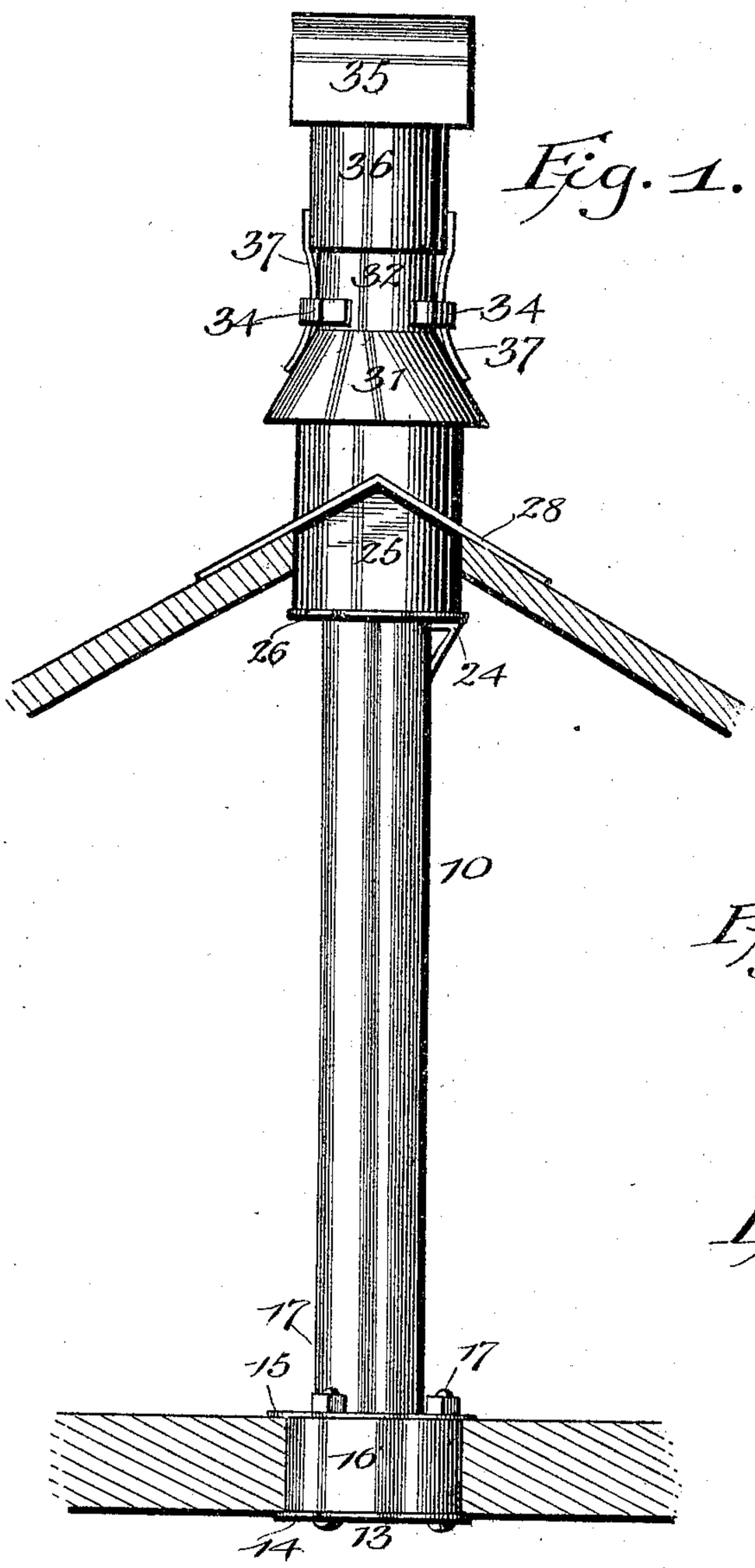

Fig. 1.

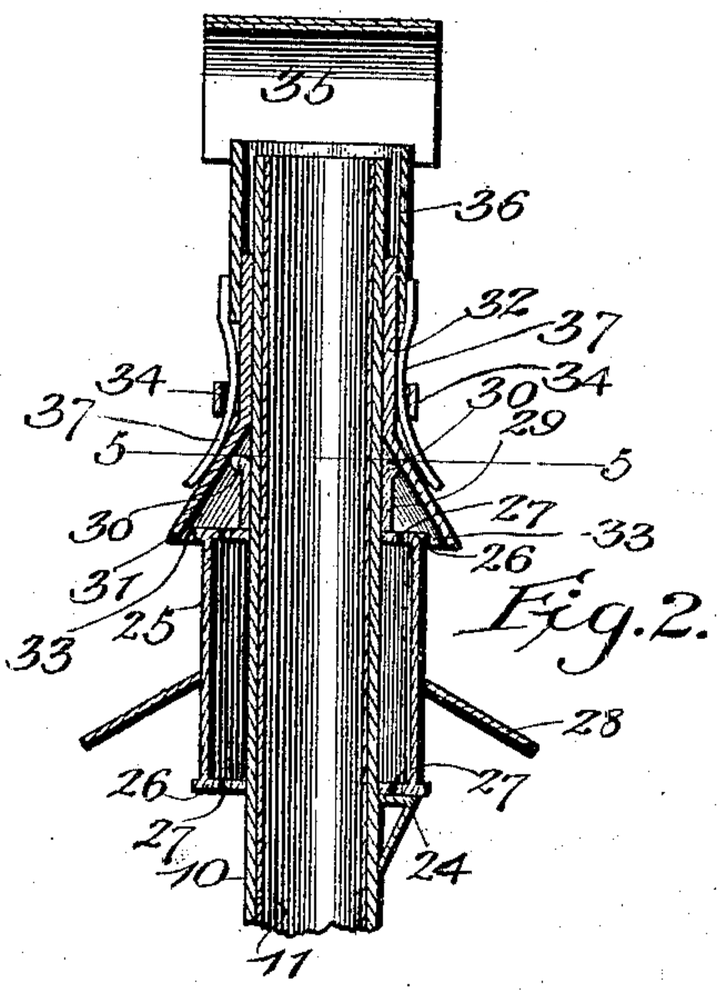

Fig. 2.

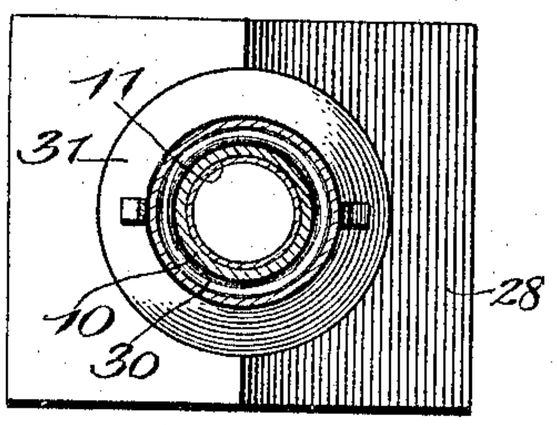

Fig. 5.

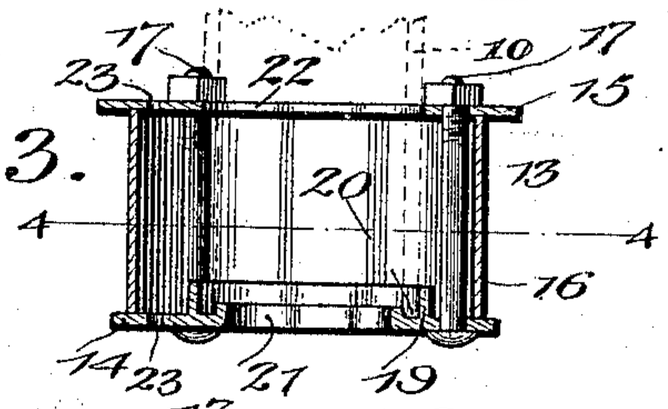

Fig. 3.

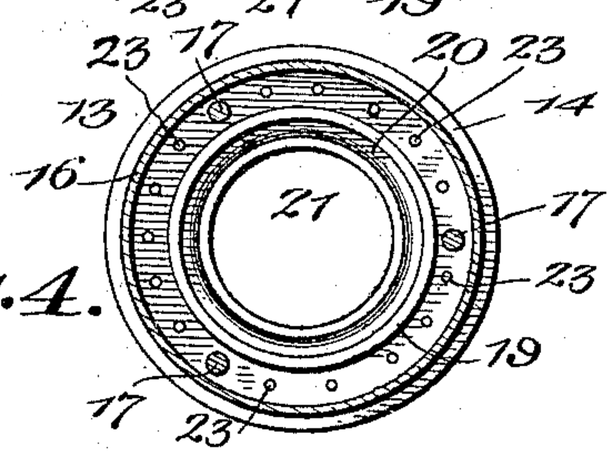

Fig. 4.

Witnesses
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UNITED STATES PATENT OFFICE.

JAMES W. CAMPBELL, OF MANGUM, OKLAHOMA TERRITORY.

FLUE OR CHIMNEY.

SPECIFICATION forming part of Letters Patent No. 638,953, dated December 12, 1899.

Application filed December 31, 1898. Serial No. 700,818. (No model.)

To all whom it may concern:

Be it known that I, JAMES W. CAMPBELL, a citizen of the United States, residing at Mangum, in the county of Greer and Territory of Oklahoma, have invented a new and useful Flue or Chimney, of which the following is a specification.

My invention relates to improvements in chimneys or flues for use in houses or dwellings to carry off the smoke and products of combustion from stoves or furnaces; and said invention relates more particularly to metallic flues which provide for ventilating the rooms or apartments without the necessity for opening windows or doors and which flues may be carried or extended through the floors and the roof without danger of setting fire to the woodwork.

One object of the invention is to provide means which may be applied to a roof to secure a circulation of air between the flue and the roof-thimble and which will also prevent the entrance of rain or snow through the hole in the roof through which the flue passes.

A further object of the invention is to provide a cowl adapted to be adjusted to variable heights on the flue and which is held securely in place by frictional clamping devices that permit the cowl to be readily and easily detached.

With these ends in view the invention consists in the novel combination of elements and in the construction and arrangement of parts, which will be hereinafter fully described and claimed.

To enable others to understand the invention, I have illustrated the same in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a sectional elevation through part of a building, with my improved flue or chimney applied thereto. Fig. 2 is a vertical section through the upper part of the flue. Fig. 3 is an enlarged vertical section through the floor-thimble. Fig. 4 is a horizontal section through the floor-thimble on the line 4 4 of Fig. 3. Fig. 5 is an enlarged horizontal section through the flue on the plane of the rain-excluding hood and indicated by the dotted line 5 5 of Fig. 2.

Like numerals of reference denote like and corresponding parts in each of the several figures of the drawings.

The metallic flue or chimney of my invention is indicated by 10. It is made of sheet metal in one or more lengths or sections, which are sufficiently long to extend from the floor to the roof, or this flue may extend through two or more floors of the dwelling. The metallic flue 10 is carried through one or more floor-thimbles, according to the height of the building, and this flue is provided with a non-combustible lining 11 of tiling, asbestos, or other fireproof material. This lined flue is fitted in the floor-thimbles and the roof-thimble, so as to be held by the thimbles out of direct contact with the woodwork of the dwelling, and these thimbles are constructed to secure a circulation of air within the thimbles and around the flue, whereby the liability of setting fire to the woodwork is minimized and the rooms or apartments are ventilated.

The floor-thimble 13 is constructed in separable parts or members which are adapted to be assembled quickly for ready application to the floor and ceiling of a room, and this thimble consists of a cast-metal ceiling-plate 14, a cast-metal floor-plate 15, the shell or casing 16, and the bolts 17. In putting the thimble 13 in place a hole is cut through the floor and ceiling, the plate 14 is applied against the ceiling, the shell or casing 16 is inserted in the hole, the floor-plate 15 is fitted to the floor over the hole therein, and the bolts 17 are passed through the two plates, so as to draw them firmly together and confine the shell 16 between the plates. These plates are drawn to their places against the floor or ceiling, so as to conceal the rough edges of the hole provided for the passage of the flue 10. The ceiling-plate 14 is furthermore provided on its upper side or face with an annular flange 19, which forms a seat 20 for the lower extremity of the metallic flue or pipe 10, and the hole 21 in the ceiling-plate is smaller than the hole 22 in the floor-plate, whereby the lower end of the metallic flue or pipe 10 may rest upon the seat 20 of the plate 14, and the flange 19 serves to properly center the metallic flue or pipe in the floor-thimble. The pipe from the stove or furnace may be slipped

through the opening 21 in the ceiling-plate 14, so as to enter the flue or pipe 10. The hole in the floor and ceiling exceeds the diameter of the flue or pipe, and the circulation-space is thus provided around the flue 10 and within the casing or shell 16 of the floor-thimble, and in the floor and ceiling plates 15 14 is provided the annular series of perforations 23, which provide for the admission and egress of air within the thimble-casing 16, thus establishing the desired air circulation through the thimble and around the flue or pipe at the point where the latter passes through the floor.

The flue or pipe is extended through the roof, and at a point below the ceiling of this roof a fixed abutment or collar 24 is provided on the flue for supporting the roof-thimble 25, said abutment serving to hold the roof-thimble against displacement in a downward direction on the flue 10. The roof-thimble consists of an imperforate shell or casing which surrounds the flue or pipe, and said thimble is provided at its ends with the annular beads or flanges 26, that are perforated at 27. The thimble is long enough to pass through the roof, and its beads or flanges serve to space the thimble relatively to the flue or pipe 10, so as to secure an intervening circulating-space, into which air is permitted to enter through the vent-holes 27 in the beads or flanges. As is usual, the upper end of the flue 10 projects above the roof a suitable distance, and the thimble 25 also extends above the roof a sufficient distance to carry or support the roof-plates 28. The roof-plates rest on the ridge of the roof to exclude water from entering the space provided for the passage of the thimble 25, and above this ventilating-thimble is arranged the hood, that is fitted to the flue 10, so as to exclude rain or snow from passing through the thimble into the room. A spacing-collar 29 is slipped over the flue to rest upon the upper bead or flange of the roof-thimble, and the upper end of this spacing-collar has an enlarged rib or flange 30. The flared hood 31 has a sleeve 32, which is fitted snugly on the flue 10, and this flared hood rests upon the rib of the spacing-collar 29, so as to be sustained thereby a proper distance above the upper perforated flange 26 of the roof-thimble, thus providing a space 33 between the flared hood and the thimble. It will be observed that the hood projects beyond the cylindrical roof-thimble, but that it does not rest directly upon the thimble, because the collar 29 is interposed between said hood and the thimble, whereby the hood serves to exclude rain or snow from entering the thimble, and at the same time the space 33 is formed to permit the desired circulation of air through the thimble 25.

For the accommodation of the cowl the sleeve 32 of the hood is provided with the keepers or loops 34, which are secured firmly to the outside of the sleeve 32 at diametrically opposite points thereof and contiguous to the flared hood. The cowl 35 may be of any suitable construction, and it is united to a sleeve 36, which is adapted to be fitted on the upper extremity of the flue 10. This cowl is attached adjustably to the hood by means of the yieldable or elastic arms 37, which are secured firmly to opposite sides of the sleeve 36 and are bent or flared outwardly at their free ends. The spring-arms must be compressed in order to slip through the keepers or loops 34 on the sleeve 31 when the cowl-sleeve 36 is slipped over the hood-sleeve 32, and the deflected ends of the spring-arms engage frictionally with the flared hood 31 in order to hold the cowl securely in place on the hood-sleeve. The cowl may be raised or lowered within certain limits, so as to be sustained at variable heights on the flue 10, and in all adjustments of the cowl it is retained in place by the frictional contact of the spring-arms with the flared hood, the arms being confined slidably in the keepers or loops 34. The arms serve to firmly hold the cowl in place, and the cowl may be readily disconnected from or fitted to the hood-sleeve and the flue.

One of the features of my invention consists in the employment of a floor-thimble provided with a flanged seat on the lower member or ceiling-plate thereof, and the flue or pipe 10 is arranged to rest on this seat in order that said flue or pipe may be supported by the floor-thimble. Said flue carries a cowl at its upper protruding extremity above the roof, and it also supports the roof-thimble, and thus the floor-thimble is made to support the flue and the cowl.

Changes may be made in the form and proportion of some of the parts while their essential features are retained and the spirit of the invention embodied. Hence I do not desire to be limited to the precise form of all the parts as shown, reserving the right to vary therefrom.

Having thus described the invention, what I claim is—

1. In combination, a flue, a roof-thimble slipped upon the flue and provided with ventilating-perforations, a stop on the flue to limit the downward movement of the thimble, a collar fitted on the flue and resting on the thimble, and a flared hood provided with a sleeve which is fitted on the flue above the collar, said hood resting on the collar with the lower open end of the hood encircling the thimble and occupying a spaced relation thereto for the free circulation of air between said hood and the thimble, substantially as described.

2. In combination, a flue, a roof-thimble slipped upon the flue from above, and having inner terminal flanges engaging at their inner edges with the sides of the flue and provided with perforations intermediate of their edges, a stop on the flue to limit the downward movement of the thimble, a collar slipped upon the flue and resting upon the upper terminal flange of the roof-thimble inside of the openings thereof and having an

outer rib at its upper end, and a downwardly-flared hood having a sleeve, the latter encircling the flue above the collar and resting upon the rib thereof, and the lower end of the hood encircling the upper end of the roof-thimble and spaced therefrom, substantially as set forth.

3. The combination with a flue and a ventilated roof-thimble, of a hood which partially incloses said roof-thimble, keepers on said hood and a cowl provided with spring-arms which are connected slidably with the keepers and engage frictionally with the hood, substantially as described.

4. The combination with a flue, of a hood fitted thereon and provided with a flared lower part, keepers fixed to said hood above the flared part thereof, a cowl, and spring-arms fast with the cowl and fitted slidably in the keepers to engage frictionally with the flared part of the hood, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JAMES W. CAMPBELL.

Witnesses:

C. W. EDWARDS,

A. S. HAMES.