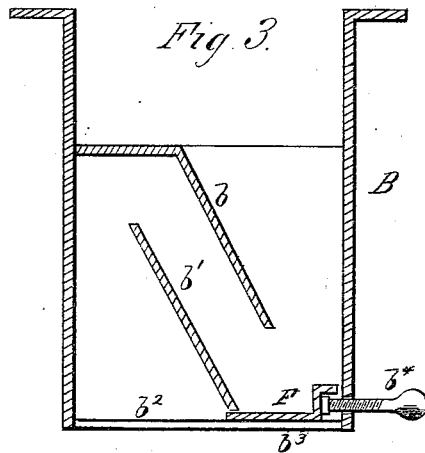
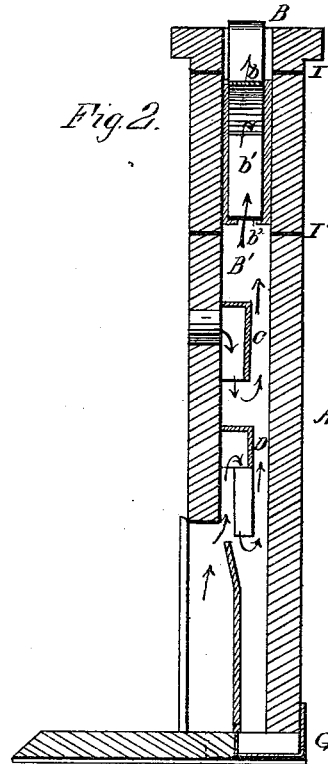
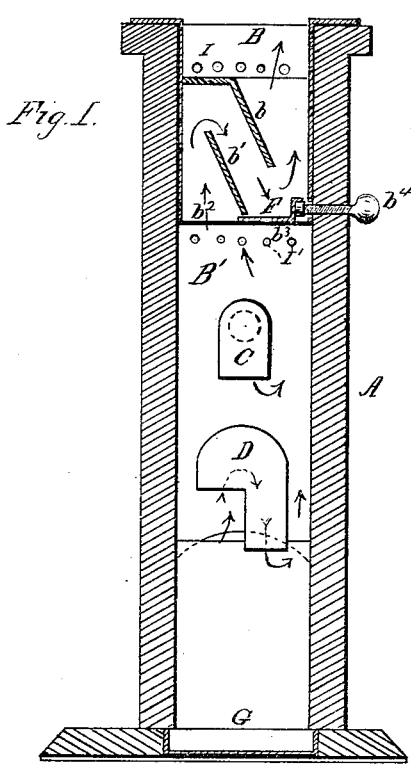


MARION BRINKERHOFF.  
Soot-Arrester for Chimneys.

No. 167,602.

Patented Sept. 14, 1875.



WITNESSES  
E. J. Nottingham  
Wm. H. Brewster

By

INVENTOR  
Mrs Marion Brinkerhoff  
Leageto & Leageto Attorneys.

# UNITED STATES PATENT OFFICE.

MARION BRINKERHOFF, OF MANSFIELD, OHIO.

## IMPROVEMENT IN SOOT-ARRESTERS FOR CHIMNEYS.

Specification forming part of Letters Patent No. 167,602, dated September 14, 1875; application filed August 10, 1875.

*To all whom it may concern:*

Be it known that I, MARION BRINKERHOFF, of Mansfield, in the county of Richland and State of Ohio, have invented certain new and useful Improvements in Soot-Arresters for Chimneys, &c.; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to spark and soot arresters; and consists in a receptacle or peculiar-formed box placed within or at the top of a chimney or smoke stack, to direct, receive, and hold sparks, cinders, and other products of combustion carried up by the ascending smoke; also, in a provision or construction of the chimney-flue to direct and assist in precipitating and depositing the soot, cinders, &c., and arrest inflammable gases, so as to cause them to be consumed before they enter the chimney.

In the drawings, Figures 1 and 2 are vertical transverse sections of a chimney provided with my invention. Fig. 3 is a detached view of the box or receptacle.

The object of my invention is to arrest inflammable gases and cause them to be burned, and to turn the course of soot, cinders, sparks, and other heavy products of combustion passing up the chimney, and deposit them in a receptacle provided for the purpose, thus preventing their being discharged into the atmosphere. At the same time that all soot, sparks, &c., are arrested and prevented from escaping out of the chimney or smoke-stack, yet the flue or draft is left unobstructed and the smoke, &c., have free passage through it.

A represents the chimney, and B my device or soot-arrester applied thereto. The chimney is provided at the lower end with a sliding box or drawer, G, and at the top with a series of perforations, I I', which enter the flue B' just above and below the arrester B. Instead of leading the entrances or flues of the fire-place or stove-pipe directly into the chimney, as is usual, a short, curved, downwardly-projecting flue or pipe is provided, as shown at C D, which causes the smoke, &c., entering the

chimney, to first pass slightly up, then downward, and then up into the chimney-flue. These deflectors are also to check the escape of smoke, &c., sufficiently to allow the inflammable gases contained therein to be consumed before they enter the chimney.

The soot-arrester is constructed substantially as follows: B is a box, of any suitable or appropriate size to fit snug and secure within the flue B' of the chimney, provided with a partition, *b*, which closes a portion of the top of the box and extends slantingly downward to a short distance from the bottom. *b*<sup>1</sup> is another partition placed parallel with and a short distance from the partition *b*, and extending from about half-way of the box down to the bottom thereof. By these partitions a large opening, *b*<sup>2</sup>, is left on one side of the bottom of the box, and a smaller one, *b*<sup>3</sup>, at the other side. F is a sliding box or receptacle placed in the bottom of the box, and closing the small passage *b*<sup>3</sup>, operated by a screw stem or rod, *b*<sup>4</sup>, passing through the chimney to the outside. The smoke, &c., in their passage through this box, pass into the large opening *b*<sup>2</sup>, down the passage between the partitions *b* *b*<sup>1</sup>, and up the chimney, as shown by the arrows.

The operation of my device is as follows: The smoke, soot, ashes, and other products of combustion passing from the stove, fire-place, or other place, in first entering the chimney come against the downwardly-directing flues C D, which checks the gases, &c., and permits the action of the fire therein to consume them, and causes a large quantity of the heavy particles to be thrown down and be deposited in the box or drawer G at the bottom of the chimney. The smoke, carrying the soot, sparks, cinders, &c., from the fire with it, in passing still farther up the chimney now encounters a cool draft from the perforations I at the bottom of the box B, which causes another precipitation of the soot, &c., and extinguishes sparks. The smoke now enters the box B and comes in contact with the curved partition *b*, which turns or directs all the heavy particles down into the box F, while the smoke, &c., continues its course around the end of the partition. The deposit of particles is further assisted, and any remaining

sparks extinguished, by the smoke, as it is about to enter the atmosphere, encountering a cool draft entering the chimney through the perforations I at the top of the box B.

Thus it will be seen that all, or nearly all, the soot, cinders, and other heavy products of combustion are deposited and confined in receptacles, and all sparks are extinguished before they leave the chimney, only allowing the smoke, &c., to be finally discharged into the atmosphere.

By this means all danger from the sparks setting fire to adjoining buildings is avoided, and all soot, cinders, &c., are prevented from entering the atmosphere and being deposited everywhere.

The arrows show the course of the smoke, &c., as they ascend the chimney.

I do not limit myself to this particular form or arrangement shown, the point of the invention being to provide an obstruction or deflector for the soot, &c., and prevent their escape into the atmosphere, and, at the same time, to leave the flue or draft entirely unobstructed and free.

Instead of perforating the walls of the chimney, as shown at I I', a sheet-metal box may be inserted, a few bricks being removed for this purpose.

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

1. The chimney A, constructed or provided at the bottom with box or drawer G, downwardly-projecting entrance-flues C D, and perforations I I', as and for the purposes described.

2. In combination with the chimney A, with perforations I I', the soot-arrester B, constructed with slanting or inclined partitions b b' and valve F, as and for the purposes described.

In testimony that I claim the foregoing I have hereunto set my hand this 6th day of August, 1875.

MRS. MARION BRINKERHOFF.

Witnesses:

THOMAS MCBRIDE,

ROBT. B. BRINKERHOFF.