B. A. ASHBY.

SPARK ARRESTER.

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1,328,868. Patented Jan. 27, 1920.

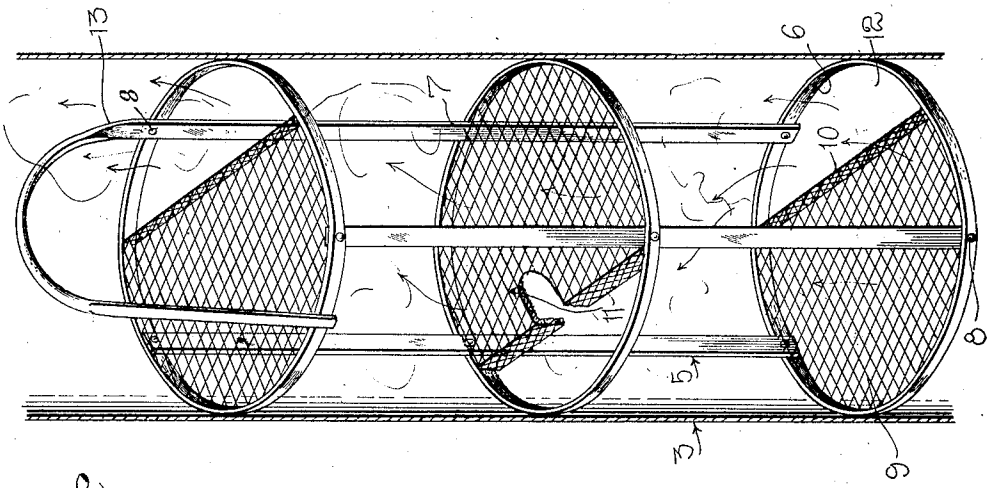


Fig. 2

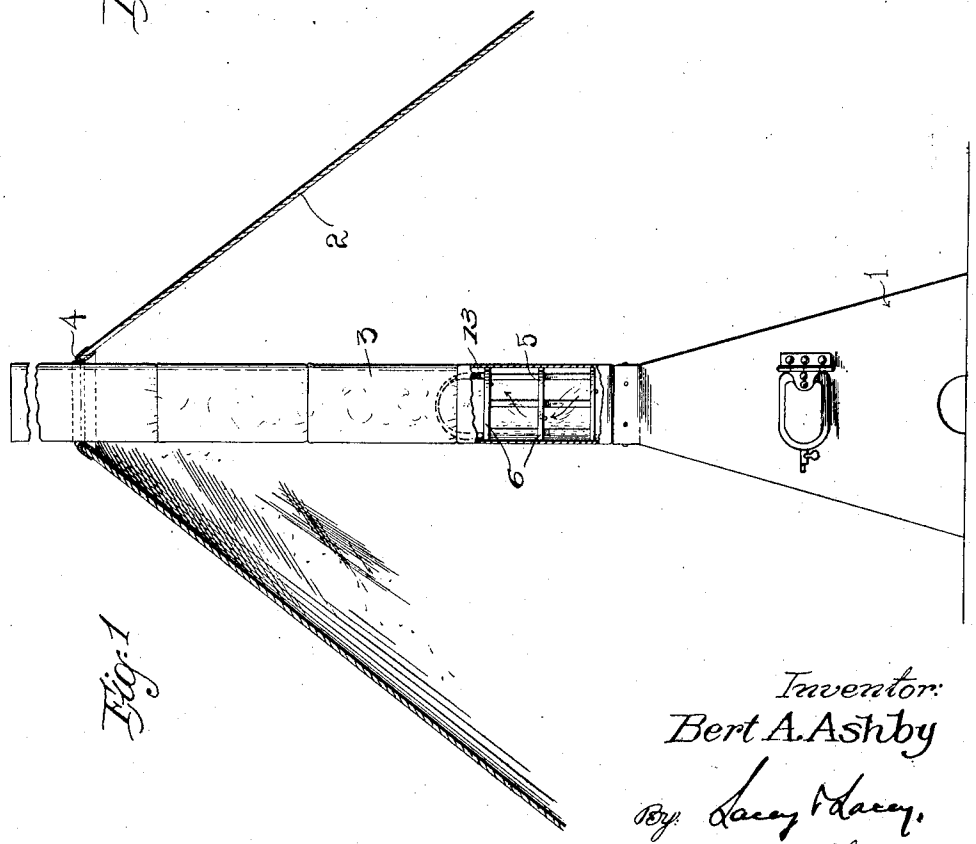


Fig. 1

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UNITED STATES PATENT OFFICE.

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SPARK-ARRESTER.

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To all whom it may concern:

Be it known that I, BERT A. ASHBY, a citizen of the United States, residing at El Paso, in the county of El Paso and State of Texas, have invented certain new and useful Improvements in Spark-Arresters, of which the following is a specification.

This invention relates to spark arresters and more especially to a spark arrester designed for use in the flue leading from a camp- or other small stove. Considerable damage is occasioned through the complete or partial destruction of army tents due to sparks from the flue falling upon the tents. These flues are initially provided with a screen extending entirely across the diameter of the flue but these screens become clogged due to the accumulation of ashes and resinous deposits from the products of combustion of the wood in the stove and sooner or later they are removed by the men occuping the tent in order to obtain the desired draft, and as they are not ordinarily replaced, sparks are, of course, permitted to be discharged promiscuously from the flue, resulting in the damage stated. The primary object of the present invention is therefore to provide a spark arrester especially adapted for use in such a flue and so constructed that while it will effectually prevent the discharge of sparks from the flue, it will yet not be liable to become clogged or choked to such an extent as to interfere with the proper drawing of the stove.

A further object of the invention is to provide a spark arrester for the purpose stated which will be simple in construction and economical to manufacture and which may be readily inserted into place and removed whenever desired and which will be firmly retained in place and may yet be, as stated, readily removed in the event the flue section in which it is arranged becomes burned out or if it becomes necessary to clean the device.

In the accompanying drawings:

Figure 1 is a view illustrating the spark arrester embodying the present invention positioned within the flue of an army stove;

Fig. 2 is a detail perspective view of the spark arrester within the flue, the flue being shown in section.

In the drawings the numeral 1 indicates an ordinary army stove such as is placed within the usual form of wall tent 2, the stove being provided with the ordinary flue 3 which passes at its upper portion through an opening 4 in the top of the tent. This flue is ordinarily formed in sections and the spark arrester embodying the present invention and indicated in general by the numeral 5, may be fitted into any one of the sections desired, it being illustrated in Fig. 1 of the drawings as being arranged within the first section of the flue above the stove 1.

The spark arrester comprises a series of rings indicated by the numeral 6 and these rings are exteriorly of a diameter but slightly less than the internal diameter of the flue 3. The rings are arranged in suitably spaced relation one above another as clearly shown in Fig. 2 of the drawings and are secured together and held in this spaced relation by means of upright connecting bars 7 disposed at suitable intervals about the circumference of the rings and secured thereto by means of rivets or other suitable fastening devices indicated by the numeral 8.

The structure above described constitutes a skeleton frame work carrying a series of screens of special formation. As herein shown the numeral 9 indicates a foraminous sheet arranged within each of the rings 6, and the sheet may be of wire mesh material, of perforated sheet metal or of any other material or construction desired. Each sheet 9 is in the form of a segment of a circle and is of greater extent than a half circle, the arcuate edge of each sheet being secured in any suitable manner within the respective ring 6 and the straight edge of the sheet lying chordal to the circle described by the ring. This latter edge is indicated by the numeral 10 and at this edge the sheet is turned downwardly as indicated by the numeral 11 so as to provide a depending apron portion which braces the free edge of the sheet and also serves a purpose to be presently explained and which may extend downwardly to any desired depth. In the manufacture of the device the several screens will be so relatively positioned that the edges 10 thereof will lie alternately at opposite sides of a line passing through the axes of the several rings 6, the arcuate edges of the screens extending as stated through more than a semi-circle so that the major portion of the space defined by each ring 6 will be covered or occupied by the respective foraminous sheet 9, the remainder of this space being open as indicated by the numeral 12 so as to permit of the free pas-

sage of the smoke and products of combustion past the chordal edges 10 should the screens for one reason or another become clogged with ashes or the resinous products of combustion. It will be understood that the screens being foraminous do not interfere with the free passage of smoke and the gaseous products of combustion through the flue, and that even should they become clogged after the device has been in use for a long period of time the sparks from the fire will nevertheless be arrested as the smoke and products of combustion will be required to taken a tortuous path in passing through the open spaces 12 of the several screen devices in ascending through the flue. It will now be evident that the pendant aprons serve effectively to comb out and arrest any sparks which might otherwise pass the edges of the screens, especially if the latter were more or less clogged with deposits. The result will be that in time a quantity of sparks will accumulate upon the screens and the weight of the device will increase.

While the skeleton frame work is of such contour and size as to be readily inserted within the flue, nevertheless it does not fit so tightly that, with its load of accumulated sparks, it will be held in place without some means for directly accomplishing this result. The means which I provide for this purpose is clearly shown in Fig. 2 and comprises a continuation 13 of one of the connecting bars 7, this continuation or extension being curved or hooked over to substantially U-shape and extending from the upper ring 6 at one side thereof to a point near said ring at the diametrically opposite side. The last mentioned end or tip of the extension 13, however, is not secured to the said ring 6 but is left free and normally stands beyond the line of the ring so that when the device is fitted into the flue this end portion or tip will bear frictionally against the inner side of the flue thereby retaining the device as a whole in its position of adjustment. It will be evident that the said extension 13 may constitute a handle by grasping which the device may be readily inserted within the flue and removed therefrom.

Having thus described the invention, what is claimed as new is:

1. A spark arrester consisting of a frame work including a series of rings one above another, and a series of horizontal screens carried by said rings, each being a disk of foraminous material cut off on a chordal line and its straight edge turned down into an apron, the aprons standing in staggered relation throughout the series.

2. In a spark arrester the combination with a smoke flue, of a skeleton frame work adapted for insertion within the flue, a spring finger carried by said frame work and projecting normally obliquely downward in position to be compressed by the wall of the flue when the frame work is inserted therein, and screens carried by the frame work.

3. In a spark arrester the combination with an upright flue, of a frame work consisting of a series of rings and a plurality of upright bars connecting them, one bar being extended at its upper end and bent over and carried downward into a spring finger standing normally oblique to the axis of the frame work and its tip adapted to be compressed by the wall of the flue when inserted therein, and screens mounted respectively in said rings.

In testimony whereof I affix my signature.

BERT A. ASHBY. [L. S.]