(No Model.)

M. RUMELY.

SPARK ARRESTER.

No. 353,379. Patented Nov. 30, 1886.

Fig. 1

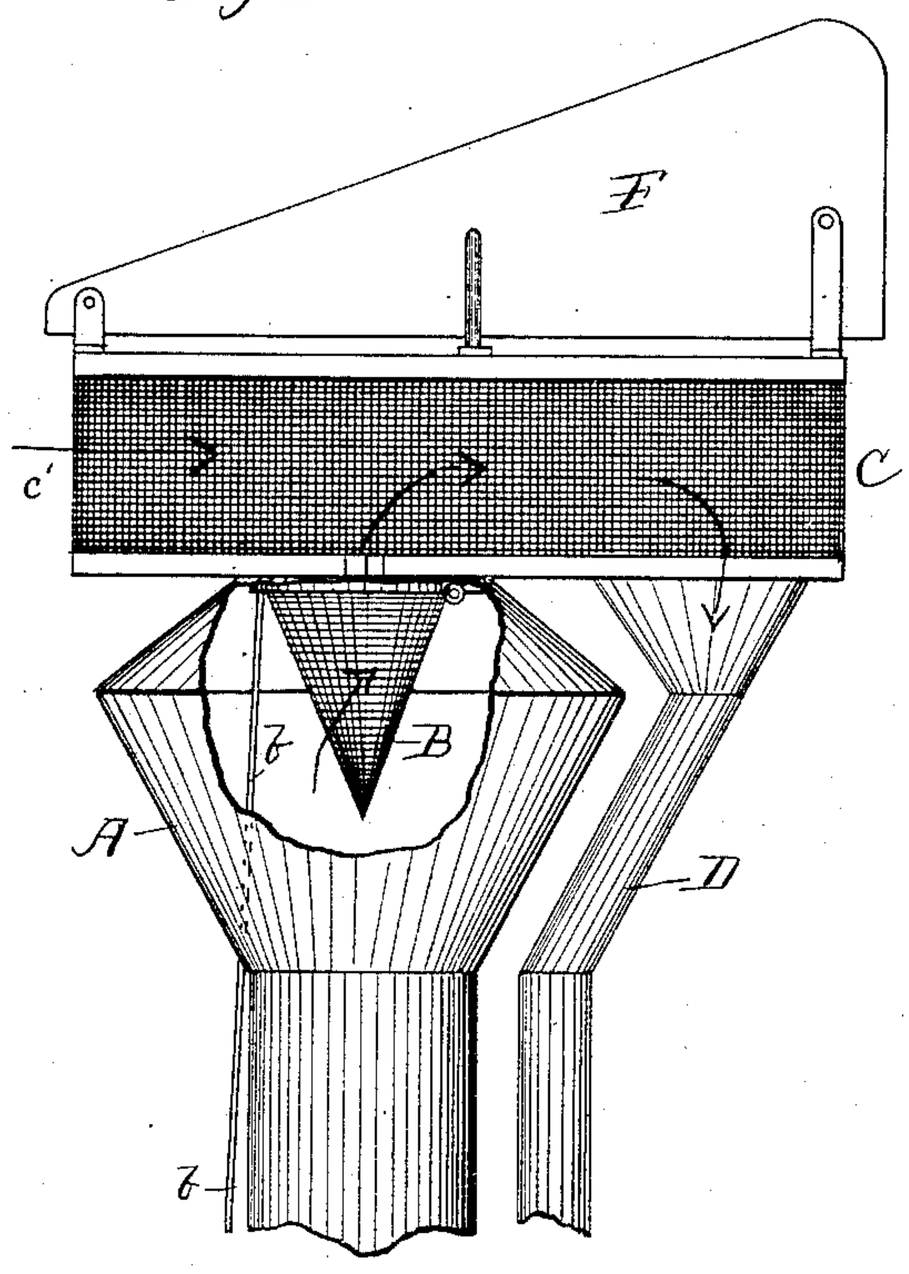


Fig. 2.

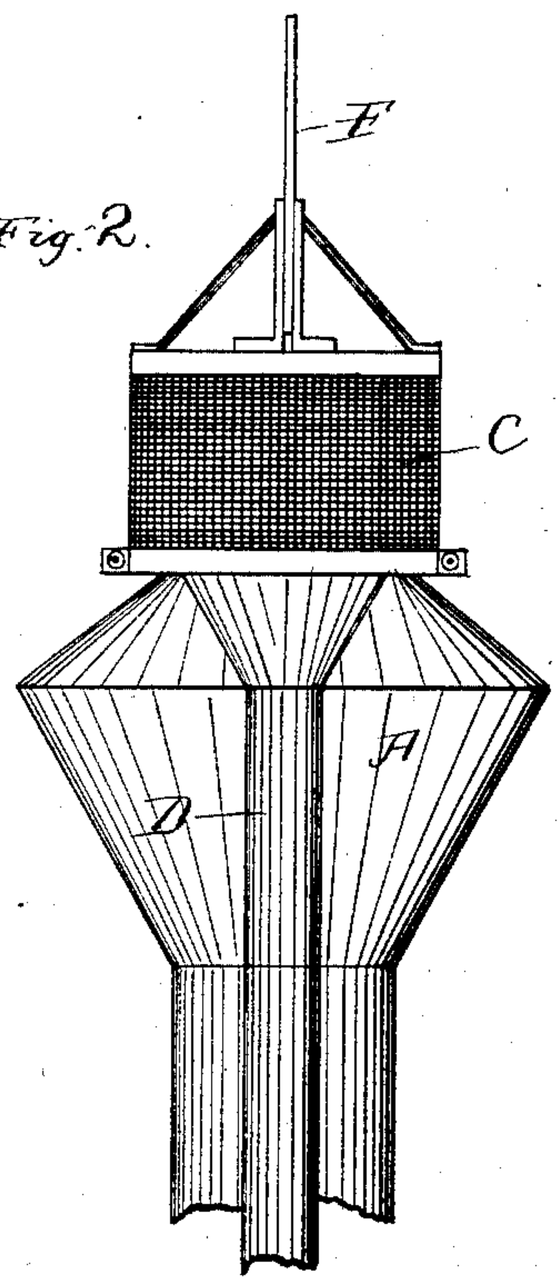


Fig. 3.

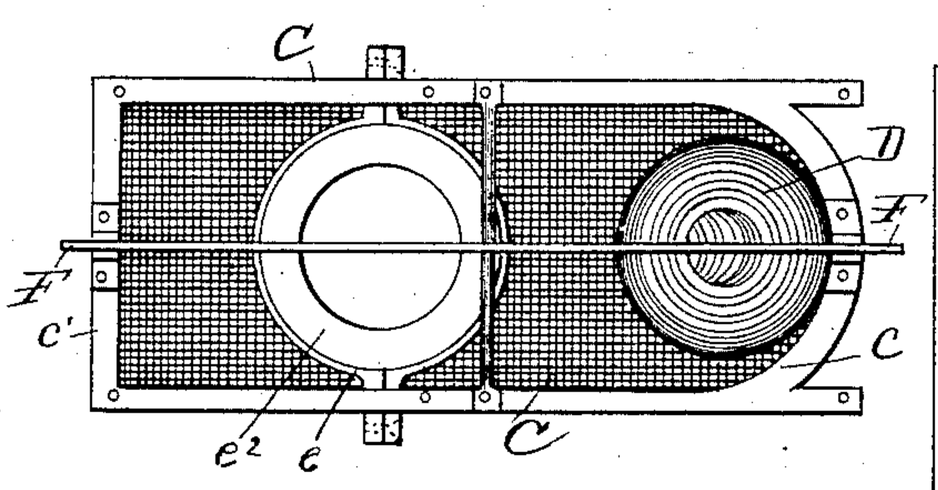


Fig. 5.

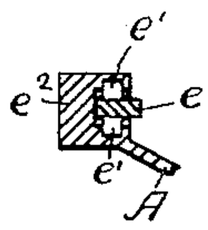
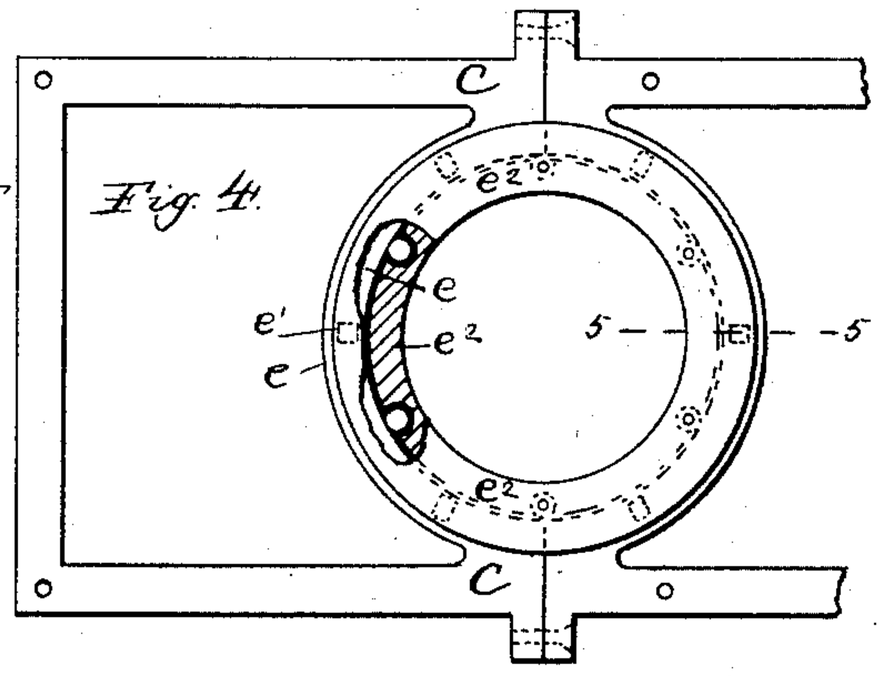


Fig. 4.



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UNITED STATES PATENT OFFICE.

MEINRAD RUMELY, OF LA PORTE, INDIANA.

SPARK-ARRESTER.

SPECIFICATION forming part of Letters Patent No. 353,379, dated November 30, 1886.

Application filed March 29, 1886. Serial No. 196,884. (No model.)

To all whom it may concern:

Be it known that I, MEINRAD RUMELY, a citizen of the United States, residing in La Porte, in the county of La Porte and State of Indiana, have invented a new and useful Improvement in Spark-Arresters, of which the following is a specification.

This invention has for its object to guard the exit of the smoke-stack of straw-burning engines, such as are commonly used for driving thrashing-machines. These engines are generally used in close neighborhood to straw and wheat stacks, and as the nature of the fuel-straw is such that a large number of sparks is generated, the danger from fire, especially if there be any wind blowing, is very great. I overcome this difficulty by applying to the top of the smoke-stack a revoluble spark-screen, which swings into position by the action of the wind, and is contrived to prevent the sparks in any great quantity from escaping into the air. The nature of the means I employ to accomplish this result will be better understood from the following detailed description thereof and the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a side elevation of my improved smoke-stack screen. Fig. 2 is an end elevation of the same. Fig. 3 is a top or plan view of the screen with the upper wire-cloth removed in order to more clearly show the interior. Figs. 4 and 5 are enlarged detail views of portions of the previous figures.

Upon the drawings, A represents a smoke-stack of the usual form. At the top or escape-aperture for the smoke I provide a cone, B, inverted, and hanging in the aperture. It is hinged at one side, and provided at the other with a rod, *b*, by means of which it may be shaken when it is desired to free it of clinging particles that may have accumulated upon it in the passage of the smoke through the meshes of the wire-gauze, of which said inverted cone is composed.

Upon the top of the smoke-stack I mount an oblong frame-work, covered with wire-gauze at the top, bottom, sides, and one end, forming a hood, with one end open to constitute a mouth, which open mouth is to be kept toward the point of the compass from which the wind blows. This open-mouthed hood I have lettered C, the mouth being at *c'*. The hood is mounted pivotally upon the top of the stack in any suitable manner so that it may be turned readily. A good way to mount it is indicated at Figs. 4 and 5, wherein *e* is a ring attached to the frame-work of the hood, and riding between two sets of rollers, *e' e'*, mounted in the ring e^2 at the top of the smoke-stack A. At the end of the perforated hood or box C which is farthest from the open mouth I provide a discharge-tube, D, which may be connected at its upper end by a funnel with the interior of the hood. This discharge-tube D leads down to near the ground, if desired, and serves to convey the sparks and cinders which fall into it to a place of safety. At the lower discharge of this tube a circular trough for containing water may be located, so that the end of the tube in swinging the hood around the stack will always be over some part of the trough; or a tub or vessel of water of any kind may be used for this purpose. It will be sufficient, generally, however, to discharge the sparks and cinders directly on the ground.

Of course the hood may be moved around by hand; but I prefer to construct it in such manner, by pivoting it at the point indicated in the drawings, that the wind will swing it in the right position, like a vane, and to facilitate this and aid the wind by giving it a good purchase I mount upon the box or hood a vane, F. (Shown at Figs. 1, 2 and 3.)

The minor details of the structure herein described may of course be varied to a considerable extent, and I do not desire to be limited in this respect in the exact construction shown.

The mode of operation of the invention is as follows: The smoke, sparks, and cinders passing up out of the stack, such of them as are not caught, deflected, or turned back by the inverted cone B pass up into the interior of the gauze or perforated hood, and by the wind blowing into the open mouth of said hood are carried back to the rear thereof, and the larger portion, if not all, fall into the tube D, and are conveyed by it to the water-vessel or to the ground. The open mouth of the hood is kept toward the wind, either by hand or by the force of the wind itself. Of course the tube D may be dispensed with, in which case the cinders and sparks would collect in the tail of the hood,

whence they could be removed as required, but not so conveniently as by means of the tube.

By reason of the hood being made of wire screening or perforated material, the air which crowds into its open mouth passes with more or less freedom through it, and the sparks and cinders are conveyed thus to the farther end of the hood.

I claim—

1. The revoluble hood for smoke-stacks, pivoted to the top of the smoke-stack in such manner as to be capable of being turned with its open mouth toward the wind, substantially as specified.

2. The combination, with the revoluble open-mouth perforated hood, of a vane for holding the hood in position to the wind, substantially as specified.

3. The combination of the perforated open-mouth revoluble hood, the smoke-stack to which it is pivoted, and the interior inverted cone or screen B, substantially as specified.

4. The combination, with the smoke-stack A, the interior inverted perforated cone, B, attached to the stack in such manner that it may be shaken, of the rod or pull *b*, connected to the cone or its support in such manner that the cone may be shaken by power applied to said rod or pull, substantially as specified.

MEINRAD RUMELY.

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