April 27, 1937. L. C. MOORE 2,078,580

SMOKE EXHAUSTER

Filed April 10, 1936

Fig. 3

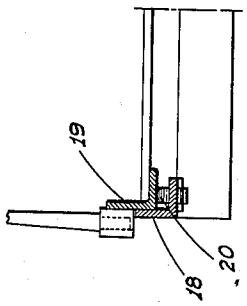


Fig. 1

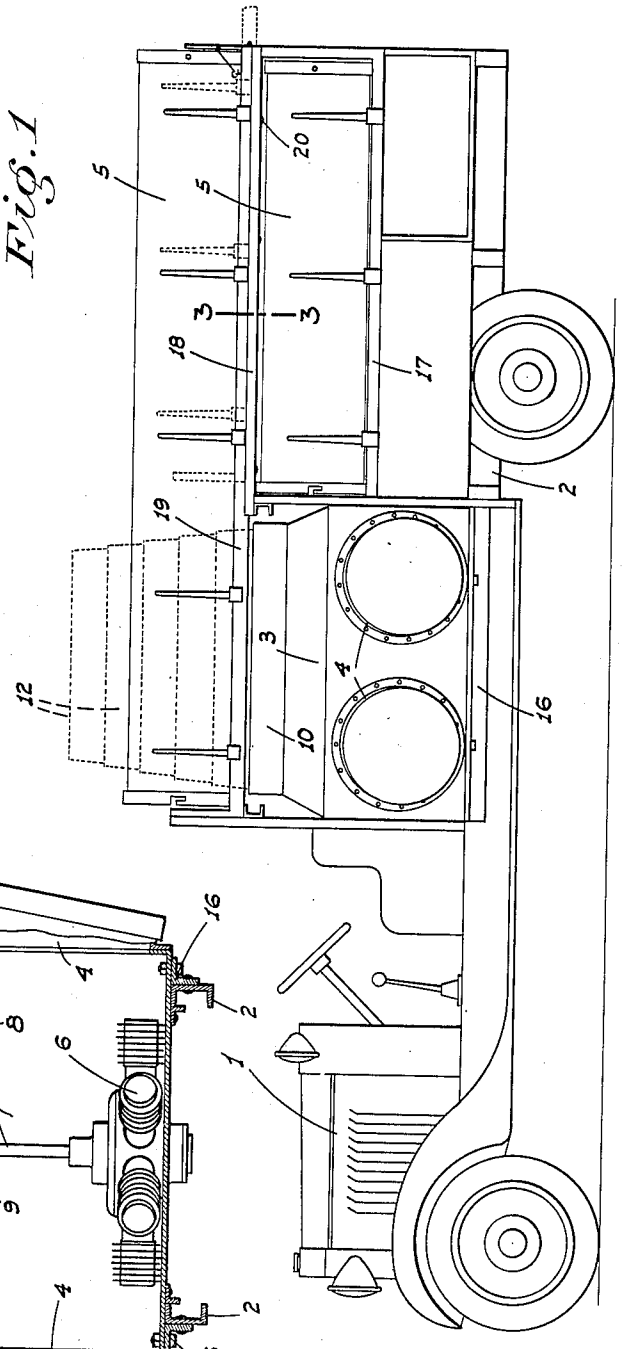
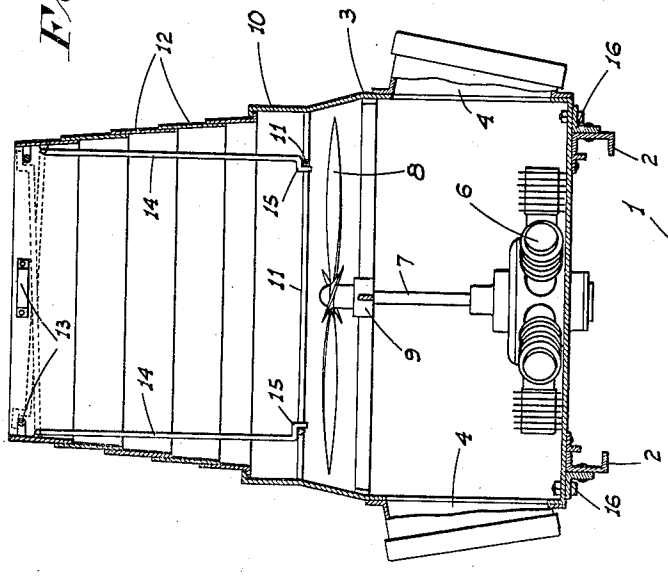


Fig. 2



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2,078,580

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2,078,580

SMOKE EXHAUSTER

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Application April 10, 1936, Serial No. 73,701

5 Claims. (Cl. 169—1

This invention relates to smoke exhausting apparatus for use at fires, under the conditions and for the purpose set forth in my Patent No. 1,874,573 and particularly represents improvements over the type of apparatus shown in my Patent No. 1,926,298 dated September 12, 1933.

In this latter patent, the exhauster was driven from the engine of the truck, and hence was permanently mounted on the same.

One of the objects of this present invention is to provide a self-contained exhauster unit with the exhauster-fan engine within the exhausting chamber, and to removably mount the exhauster on the truck so that it can be taken off the truck and used if necessary in places inaccessibe to the truck.

Also, in the previous structure, the flexible smoke conduits for attachment to the exhauster, were carried on a trailer coupled to the truck, making a somewhat long and unwieldy unit. Another object of my invention is to arrange the exhauster, in connection with the conduit supporting racks, so that they form a relatively compact unit, mounted on a single truck.

The present exhauster is provided with a smoke exhaust stack which when extended carries the smoke upwardly to a point well clear of the ground and which may be collapsed when not in use, and I have arranged one of the conduit racks so that when not in use it extends over the collapsed stack, thus making a very compact structure when the device is not in operation. At the same time the rack may be quickly moved clear of the stack and the latter as quickly extended whenever necessary.

A further object of the invention is to produce a simple and inexpensive device and yet one which will be exceedingly effective for the purpose for which it is designed.

These objects I accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawing similar characters of reference indicate corresponding parts in the several views:

Figure 1 is a side elevation of my improved fire fighting apparatus as in a traveling condition.

Figure 2 is a transverse section of the exhauster, somewhat enlarged and with the smoke stack extended.

Figure 3 is a fragmentary section on line 3—3 of Figure 1, showing the mounting of the slidable conduit rack.

Referring now more particularly to the characters of reference on the drawing, the chassis of the truck 1 includes longitudinal side frames 2; the power plant of the truck and the driver's seat being at the forward end of the truck as usual.

The smoke exhauster is supported on the frames 2 immediately behind the driver's seat, and comprises a rectangular casing 3 having normally capped intake openings 4 on both sides, to which the flexible conduits 5 of suitable type may be connected in the manner set forth in the previous patent.

A self-contained or unitary power plant, such as a radial gas engine 6 of the airplane type, is mounted centrally in the casing at the bottom thereof, the shaft of the engine being vertically disposed and being connected to the shaft 7 of a horizontal fan 8 arranged to discharge upwardly.

Access to the engine for the necessary attention or servicing may be had through any of the openings 4, which are sufficiently large for the purpose.

The fan is disposed adjacent the upper end of the casing, above openings 4; and there being a spider-supported bearing 9 for the fan shaft immediately under the fan.

The casing, above the fan, is formed with a circular collar 10, cross bars 11 extending from side to side of the casing at the base of the collar. This collar forms a housing for the smoke stack of the exhauster when such stack is collapsed. The stack comprises a number of taper ring sections 12, slidably fitted one within the other as shown; the tapering of the sections preventing complete separation of the same.

Handles 13 may be disposed within the innermost or topmost section whereby to pull the stack to an extended position or lower the same; the various sections, when lowered, of course nesting within each other.

Swivelly mounted in the upper stack section are rods 14, having offset hook-like elements 15 on their free ends.

These rods, when the stack is extended, are adapted to hang straight down, the elements 15 then engaging certain ones of the cross bars 11 as shown in Figure 2 and preventing undesired collapse of the stack. When it is desired to collapse the stack, the rods are raised, and the elements 15 engage the corresponding opposed handles as indicated in dotted lines.

As stated, the exhauster is removably mounted on the truck and is supported on the frames 2, the latter having angle brackets 16 along the sides detachably bolted to the casing.

A fixed lower conduit supporting rack 17, extending the full width of the truck as in the

previous patent, is mounted on the truck behind the exhauster; the top of said rack being defined by longitudinal angle bars 18 substantially alined with the top of the collar 10 and terminating just clear of the rear end of the same.

Another conduit rack also extending the full width of the truck, is disposed above rack 17 and includes side bars 19 slidable between the bars 18 and supported for ease of movement on rollers 20 on the latter. These bars 19 normally extend from the rear end of rack 17 to the front end of the exhauster over the collapsed stack and clear of the casing collar 10.

Conduit sections of considerable length may thus be carried, while at the same time, by merely sliding the upper rack back the necessary distance to clear the exhauster, the stack may be easily extended so as to discharge the smoke forced through the same with the operation of the fan at a point well clear of the normal top level of the truck.

From the foregoing description it will be readily seen that I have produced such a device as substantially fulfills the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

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

1. In combination with a motor truck, a smoke exhausting apparatus for use at fires and comprising a casing mounted on the truck intermediate its ends, said casing having a side smoke intake opening and a top discharge opening, means within the casing for drawing smoke through the intake opening and forcing the same through the top opening, a conduit adapted for detachable connection with the casing about the side opening, a conduit supporting rack normally extending from the rear end of the truck to the front of and over the casing, means slidably supporting the rack for rearward movement sufficient to clear the top opening of the casing, and a smoke stack adapted to extend upwardly from said top opening when the rack is moved rearwardly.

2. In combination with a motor truck, a smoke exhausting apparatus for use at fires and comprising a casing mounted on the truck intermediate its ends, said casing having a side smoke intake opening and a top discharge opening, means within the casing for drawing smoke through the intake opening and forcing the same through the top opening, a conduit adapted for detachable connection with the casing about the side opening, a conduit supporting rack normally extending from the rear end of the truck to the front of and over the casing, means slidably supporting the rack for rearward movement sufficient to clear the top opening of the casing, and a collapsible smoke stack mounted on the casing about the top opening and adapted to be extended upwardly from the casing when the rack is moved rearwardly and means on the casing maintaining the stack when collapsed at a level below the bottom of the rack.

3. A fire fighting apparatus comprising a smoke exhauster which includes a casing having a side smoke intake opening and a top discharge opening, a collapsible smoke exhaust stack mounted in connection with the casing and extensible upwardly from said top opening, the stack comprising ring-like sections fitting within each other, a collar on the top of the casing in which said sections are substantially enclosed when collapsed, a driven horizontal fan mounted in the casing adjacent and below the collar, and means to retain the stack sections in the collar when the stack is collapsed.

4. A structure as in claim 3, in which said means comprises a cross bar in the casing at the base of the collar on which the stack sections rest when collapsed, opposed rods pivoted inside the top stack section adapted to be swung down when the stack sections are extended, and hook elements on the lower end of the rods to rest on the crossbar; the length of said rods being such that when the elements thereon are engaged with the bar and the rods are depending vertically, the stack will be fully extended.

5. A fire fighting apparatus comprising a smoke exhauster which includes a casing having a side smoke intake opening and a top discharge opening, a fan in the casing set on a vertical axis above the side opening, and a self-contained power plant requiring fresh air for its operation, directly connected to the fan to drive the same and mounted in the casing on a level substantially below said side opening.

LOYAL C. MOORE.