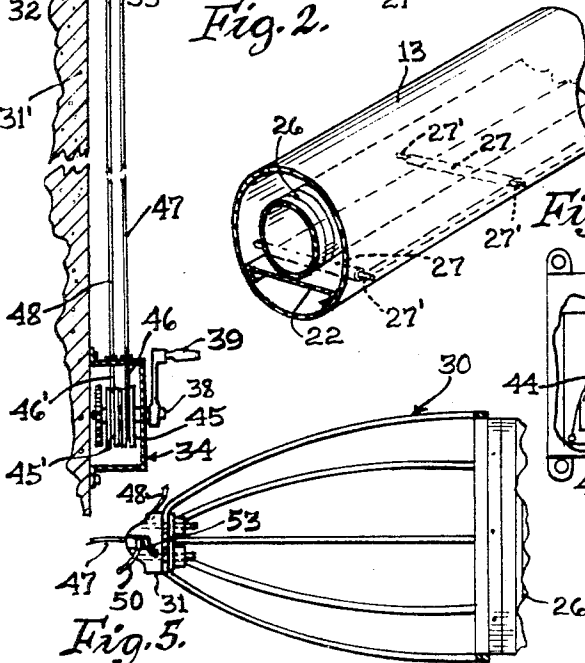
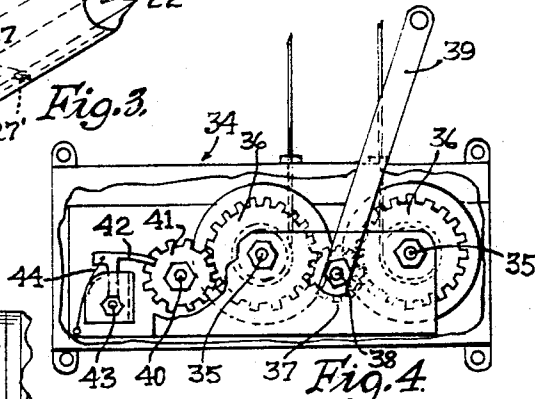
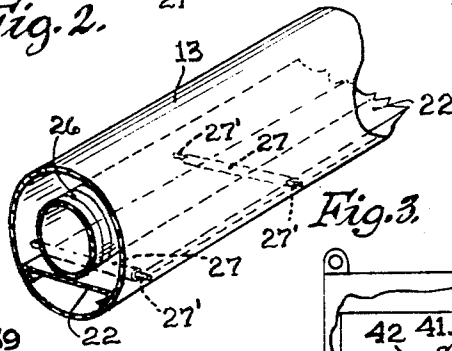
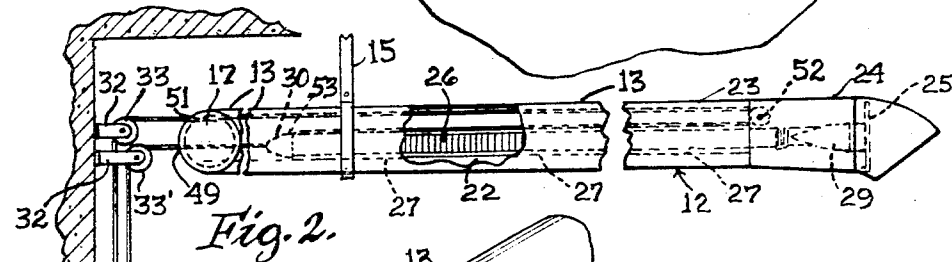
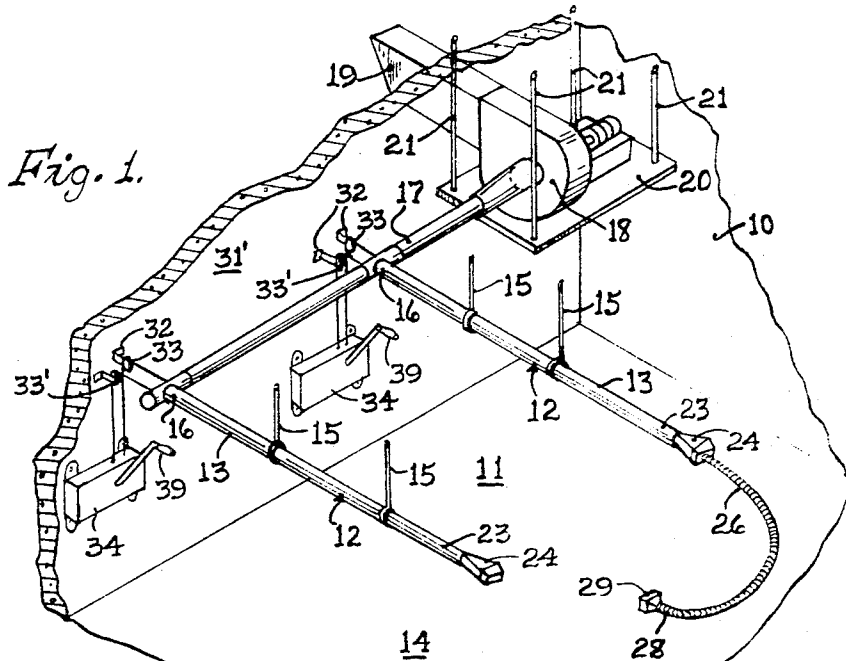


Oct. 21, 1969

C. A. IMMING
OVERHEAD STORED EXHAUST FOR CARRYING OFF
MONOXIDE GAS OR OTHER FUMES
Filed Aug. 29, 1968

3,473,462



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3,473,462

OVERHEAD STORED EXHAUST FOR CARRYING OFF MONOXIDE GAS OR OTHER FUMES

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Filed Aug. 29, 1968, Ser. No. 756,218

Int. Cl. F24f 7/00, 13/00, E04h 6/42

U.S. Cl. 98—43

2 Claims

ABSTRACT OF THE DISCLOSURE

An overhead stored exhaust for exhausting monoxide gas in which the exhaust flexible tube is telescoped when not in use in a storage duct suspended in an area from interference with workmen repairing or otherwise testing an internal combustion engine while the engine is operating, the exhaust pipe being easily and conveniently extended from stored position ready for attachment to an exhaust pipe of the engine.

This invention relates particularly to an overhead stored exhaust for carrying off monoxide gas or automobile fumes which normally result during the running of an internal combustion engine while such engine is undergoing repairs or tests.

SUMMARY OF THE INVENTION

My invention is especially useful in garages or other places where automobile internal combustion engines are running or are undergoing repair or timing and testing. The invention provides a simple and inexpensive arrangement for storing the flexible exhaust tube when not in use so that it will not interfere with the movement of the workmen within the work area. Means is also provided for expeditiously moving the exhaust tube from its stored position for coupling to an exhaust pipe of the engine.

The invention will be best understood by reference to the accompanying drawings showing the preferred form of construction and in which:

FIG. 1 is a perspective view of the invention showing the same located in a work area of a building;

FIG. 2 is an elevational view of the same;

FIG. 3 is a fragmentary perspective view of the storage duct and exhaust tube;

FIG. 4 is an elevational view of a winch embodied in the invention; and

FIG. 5 is an elevational view of the inner end of the exhaust tube.

The several objects of my invention are preferably carried into effect by the preferred form of construction illustrated in the drawings and not described in substantial detail.

The invention is located preferably in a building 10 having a work area 11 wherein internal combustion engines are repaired, tested or otherwise adjusted during operation. During the operation of such engines considerable monoxide gas is emitted from the engine and obviously unless this gas is carried away or exhausted from the work area it could be very injurious to the workmen.

To exhaust such gas I provide one or more systems indicated at 12. Each of these exhaust systems are of substantially the same construction, therefore the description as to one will be applicable to the remainder.

In this connection each system 12 comprises a rigid metallic conduit 13. Such conduit is suspended a substantial distance above the floor 14 of the building 10. This is accomplished by means of suitable hangers 15 of a length sufficient to suspend the conduit a suitable distance

above the floor so as not to interfere with the movements of the workmen. These hangers are connected by any suitable means (not shown) to the ceiling or rafters or other structural element of the building.

The conduit 13 communicates at one end 16 with a substantially rigid metallic exhaust conduit 17. To this conduit 17 all of the conduits 13 have communication. The exhaust conduit 17 has communication with a motor-driven exhaust fan 18 of any approved construction such as will serve the intended purpose. This motor 18 provides an outlet duct 19 through which the exhaust fumes are forced by the exhaust motor 18 to the outside of the building.

The motor-driven fan 18 may be suspended from the ceiling or rafters of the building by mounting the same upon a suitable platform 20 suspended from the ceiling by rods 21.

Within the conduit 13 there is arranged an elongated metallic flat plate 22 which extends substantially the full length of the conduit 13 and occupies the extreme lower longitudinal portion of such conduit 13.

The end 23 of the conduit 13 is provided with an enlarged hood 24 within which is mounted in any suitable manner a flap or door 25 spring urged into closing position as shown in FIG. 2. Such door may also be hinged in a manner within the conduit 13 such that the same will close by gravity under its own weight.

Telescopically arranged in the conduit 13 is a flexible tube 26 through which the fumes are drawn. The tube 26 is positioned upon the metallic plate 22 and is supported thereover by a plurality of rollers 27 which extend transversely of the conduit 13 with their end portions 27' journaled in the adjacent walls of the conduit 13, there being a number of such rollers to facilitate smooth movement of the flexible tube 26 into and from telescopical position with respect to the conduit 13.

The outer end portion 28 of the tube 26 is provided with an adaptor 29 which is designed to fit over the end of an exhaust pipe (not shown) of an automobile or the like in a manner similar to that shown in my Patent 2,765,752 dated Oct. 9, 1956.

The opposite end portion of the tube 26 has connected thereto in any suitable manner a wire-formed nozzle 30. To the end of this nozzle 30 is connected a U-clamp bolt 31 for reasons to be presently explained.

Attached to the wall 31' or other structure of the building 10 are a pair of brackets 32, each carrying a pulley 33 and 33', respectively.

Attached to such wall 31' above the floor 14, within reach of the workmen, is a winch 34. This winch 34 is of a well known construction and comprises spaced shafts 35 on which are gears 36. The gears 36 mesh with a pinion 37 mounted on a shaft 38. On this shaft 38 is a handle 39 by means of which the winch 34 is operated. Mounted on a shaft 40 is a latching gear 41 which meshes with the adjacent gear 36. A latch arm 42 is pivotally carried on a shaft 43 and includes an operating cord or cable 44 by which the latch head may be withdrawn from engagement with the latch gear 41 to permit rotation of the gears 36 by movement of the handle 39.

On the shafts 35 are mounted pulleys 45 and 45'. Attached to the pulley 45 in any suitable manner is one end portion 46 of a flexible cord or cable 47. Attached to the pulley 45' as at 46' is a cord or cable 48. The cord or cable 47 is passed over the pulley 33' and through an opening 49 formed in the side wall of the conduit 17 and has its end portion 50 attached to the U-clamp 31.

The cord or cable 48 is passed over the pulley 33 and through an opening 51 formed in the side wall of the duct 17 and extends longitudinally into the conduit 13 where it passes over a pulley 52 carried at and by the outer end

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portion of the conduit 13. The cord or cable 48 has its end portion 53 attached to the U-clamp 31. The U-clamp 31, which is of a well known construction, provides a common connection for both corresponding ends of the cords or cables 47 and 48 to the inner end portion of the tube 26.

When the exhaust tube 26 is telescopically arranged in stored position in the conduit 13 the cable 47 will be wound on its respective pulley 45 and the cable 48 will be unwound from its pulley 45'. By rotating the pulleys 45 and 45' by manipulation of the handle 30 so as to wind the cable 48 from its pulley and to unwind the cable 47 on its pulley, the exhaust tube 26 will be projected outwardly from its storage conduit 13 to dispose the adaptor 29 in a position to be conveniently grasped by the workman and applied to the end of the exhaust pipe of the engine.

To store the exhaust tube 26 requires simply the reversing of the direction of rotation of the handle. As the exhaust tube 26 is projected from telescopical position in the conduit 13 the door or flap 25 will be forced open and will remain open until the exhaust tube and adaptor are fully stored in the conduit 13 and hood.

It will be obvious from the foregoing description that I provide a simple and effective means for exhausting the fumes of an internal combustion engine by an arrangement in which the exhaust tube is conveniently stored out of the way of interference with the workmen when it is not in use. Also the exhaust tube may be conveniently projected into a position of use by a simple operation of the winch.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

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

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1. An overhead exhaust for monoxide gas or other fumes comprising:

- (a) a substantially rigid duct suspended from the ceiling of a room above a work area in such room,
- (b) an exhaust fan communicating with one end portion of said duct and with the exterior of the room,
- (c) a flexible exhaust tube movable into and out of said duct and having an adaptor at one end thereof for connection to the exhaust pipe of an engine, and
- (d) means for moving said tube from and into said duct,
- (e) said moving means comprising a winch mounted to a wall of said room, said winch including a pair of pulleys, flexible cables having corresponding end portions connected to said pulleys for alternately winding and unwinding from said pulleys, and means for connecting the opposite corresponding end portions of said cables to the inner end portion of said exhaust tube.

2. An overhead exhaust defined in claim 1 characterized by the provision of a plate within the duct and extending substantially throughout its length, and spaced pulley members carried by said duct and extending transversely with respect thereto between said plate and said tube for supporting said tube for sliding movement into and out of said duct.

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WILLIAM E. WAYNER, Primary Examiner

U.S. Cl. X.R.

98—115; 104—52; 137—355.24