J. LARIVEE.
VENTILATING MEANS FOR ROUNDOHUSES, SHOPS, STATIONS, &c.
APPLICATION FILED APR. 20, 1906.
VENTILATING MEANS FOR ROUNDHOUSES, SHOPS, STATIONS, &c.

UNITED STATES PATENT OFFICE.

JOSEPH LARIVEE, OF NEW HAVEN, CONNECTICUT.


To all whom it may concern:

Be it known that I, JOSEPH LARIVEE, a citizen of the United States, residing at New Haven, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Vентилating Means for Roundhouses, Shops, Stations, &c., of which the following is a specification.

This invention has for its object to provide simple and effective means for carrying off smoke, gases and other products of combustion given off by engines and other fuel consuming mechanisms, the engines being most especially adapted for engine houses or stations and shops where smoke and products of combustion are given off by a series of devices.

The invention contemplates an elevated conduit, a stack or chimney in communication therewith, a series of smoke and gas collectors at intervals in the length of the conduit, dampers and damper controlling means for regulating communication between the several smoke and gas collectors and the conduit and between the latter and the stack or chimney.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result, reference is to be had to the following description and accompanying drawings.

While the invention may be adapted to different forms and conditions by changes in the structure and minor details without departing from the spirit or essential features thereof, still the preferred embodiment is shown in the accompanying drawings, in which:

Figure 1 is a top plan view of means for carrying off smoke, products of combustion and the like constructed in accordance with the invention, parts of the conduit being broken away. Fig. 2 is a side view of a portion of the conduit showing the latter in section and illustrating the parts on a larger scale, the dotted lines representing a locomotive engine in position with its stack directly below one of the smoke and gas collectors. Fig. 3 is a transverse section of the conduit and a smoke and gas collector on the line 3—3 of Fig. 4, showing the damper and the operating means therefor in full lines. Fig. 4 is a side view of a smoke and gas collector showing a portion of the conduit in longitudinal section. Fig. 5 is a transverse section on the line 5—5 of Fig. 1, showing the parts on a larger scale. Fig. 6 is a cross section on the line 6—6 of Fig. 1, one of the dampers being open and the other closed. Fig. 7 is a detail view showing the inclination of the branch connecting an end of the conduit with the stack or chimney.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The conduit 1 is elevated and may be suspended from above by hangers or supported from below by means of pillars or columns or by a combination of both. The conduit may be of any material which will resist the action of heat such as metal, masonry, concrete or other artificial stone composition. In transverse section the conduit may have any outline according to the capacity and particular use and for which intended. It is preferred to construct the conduit so that its bottom will be flat and its top and sides arched. The conduit is elevated and may have any form in its length, and since it is designed most especially for roundhouses it is illustrated in the accompanying drawings as of circular form, being in communication with a stack or chimney 2 which may be conveniently located and connected to the conduit by means of a branch 3. The stack or chimney 2 is subdivided by means of a partition 4 to form independent passages 5, each of which is connected by a branch 3 with the respective ends of the conduit 1. The branches 3 incline upward from the conduit to the chimney or stack so as to insure a draft therethrough. The branches 3 are in communication at a point between their leads by means of a transversely connecting passage 6, a damper or gate 7 controlling said passage and adapted to be operated by means of a lever 8 and a rod 9, the latter extending within convenient reach of the floor of the structure having the invention installed therein. Other dampers or gates 10 are interposed in the length of the branches 3 and are at all times open, being adapted to be closed only in an emergency, as when it is required to make repairs or to clean the stack or conduit. The conduit 1 is provided with a partition 11 at a point diametrically opposite the chimney or stack 2, dividing the same into sections, each of which is in communication with a passage 5 of the chimney or stack. It will be understood that from the construction disclosed either section of
the conduit may be used to the exclusion of the other section, and by reason of the dampers 7 and 10 either section of the conduit may be connected with either one of the passages 8 or with both of said passages, as may be required.

As indicated, the conduit 1 is supported both by means of hangers and pillars or columns, each hanger consisting of a rod 12, bow sections 13 and a yoke 14. The bow sections 13 are bolted or otherwise fastened at their upper ends to opposite sides of the rod 12 and from lower ends passed through openings of the yoke 14, the rod 12 being let into a beam, rafter or other supporting means of the roundhouse or other structure provided with the invention. A column 15 is preferably provided at its top and bottom with plates to provide an extended bearing, whereby the parts obtain a substantial purchase.

The conduit is provided at intervals in its length with clean-out doors 16 set into the side thereof and which admit of ready access to the interior of the conduit when it is required to remove soot, ashes and lint accumulations therefrom. A series of smoke and gas collectors are likewise provided at intervals in the length of the conduit, each consisting of a hood 17 and a pipe 18, the latter being fitted to the conduit so as to communicate therewith and the hood being of flaring form so as to gather in the smoke and gases and direct the same to the pipe 18. A damper 19 is arranged in the pipe 18 and is connected to a shaft 20 which is provided with a pulley 21 grooved in its periphery and adapted to be operated by means of a chain or cord 22. The pulley 21 is provided with an indicator 23 for designating the position of the damper so that the operator may readily ascertain the position of the damper to meet varying conditions and requirements. The chain or rope 22 extends within convenient reach of the operator. A flanged collar is provided for each smoke and gas collector and is let into an opening in the bottom or lower side of the conduit, the flange 24 overlapping the bottom portion of the conduit adjacent to the opening through which the collar 25 passes, and to which the upper end of the pipe 18 is bolted or otherwise fastened. The lowest portions of the smoke and gas collectors are at such an elevation as to admit of the smoke stack of a locomotive engine passing thereunder so that the smoke, gases and other products of combustion may find a ready exit by way of the collector and conduit to the stack or chimney 2. Inasmuch as the draft is strongest through the smoke and gas collector nearest the stack or chimney and weakest through the collector farthest from said stack or chimney, it is proposed to equalize the draft through all of the smoke and gas collectors by a progressive gradation of the openings or connections between said smoke and gas collectors and the conduit, the openings gradually increasing in size from the collector nearest the chimney to the collector farthest therefrom. This is plainly indicated in Fig. 1. It is to be understood in this connection that the openings between the smoke and gas collectors and the conduit may be of uniform size or vary according to the special use and adaptation of the invention.

As stated herein, the invention is illustrated in connection with a roundhouse or locomotive engine house, the turn-table 26 occupying a central position and the various tracks 27 radiating therefrom and each having a smoke and gas collector arranged above its outer end and in communication with the conduit 1. It is the intention to have the dampers 19 of the smoke and gas collectors not in use closed, and to open the same at such times only to carry off the smoke, gases and products of combustion given off by a locomotive engine run upon the track corresponding thereto. In shops and other places, the conduit may have straight or curved runs corresponding to a line of forges or other fuel consuming devices from which it is required to carry off the smoke and products of combustion.

It is to be understood that a single stack or chimney may be employed in connection with the conduit instead of the duplex or twin stack or chimney illustrated, this being an obvious adaptation of the invention.

Having thus described the invention, what is claimed is:

1. Means for carrying off smoke and the like, the same comprising a stack, a conduit in communication therewith, and a series of smoke and gas collectors in communication with the conduit at different points in its length, the openings between said smoke and gas collectors and the conduit gradually decreasing in size from the stack so as to equalize the draft.

2. In means for carrying off smoke and products of combustion, the combination of a conduit, smoke and gas collectors at intervals in the length of the conduit, two smoke passages for delivering the smoke and products of combustion at a convenient point of discharge, and valved branches connecting the conduit with both of said passages to admit of establishing communication between the conduit and either one or both of said smoke passages.

3. In means for carrying off smoke and products of combustion, the combination of a stack or chimney comprising two passages, a conduit having communication with each passage of the stack, a valved passage connecting the passages of the stack to admit of cutting off or establishing communication between them, valves located in the passages.
of the stack to act jointly with the valve in the passage connecting the passages of the stack so as to connect the conduit with either one or both passages of the stack, and smoke and gas collectors at intervals in the length of the conduit substantially as specified.

The herein described means for carrying off smoke and products of combustion, the same comprising a stack subdivided into two passages, an elevated conduit having opposite ends connected with the respective passages of the stack, a transverse passage subdividing the conduit into two sections, a series of smoke and gas collectors in communication with each section of the conduit, a damper for each smoke and gas collector, a valved passage connecting the passages of the stack, and other valves arranged in the passages of the stack.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH LARIVEE. [L. S.]

Witnesses:
L. H. LARIVEE,
JEREMIAH A. PECK.