P. J. LAURITZEN.

SMOKE JACK.

APPLICATION FILED OCT. 29, 1907.

920,763.

Patented May 4, 1909.

2 SHEETS—SHEET 1.

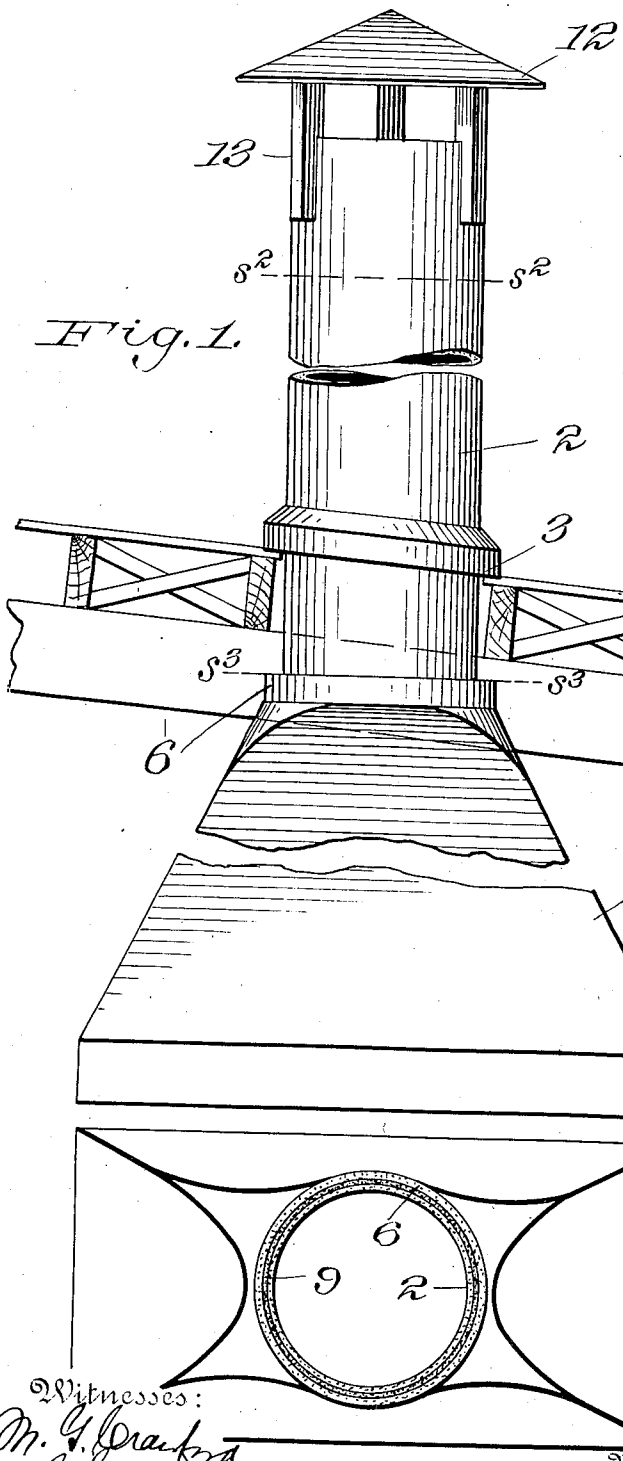


Fig. 1.

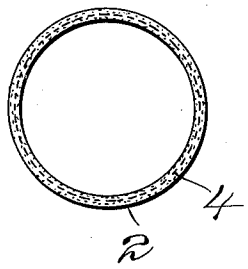


Fig. 2.

Fig. 3.

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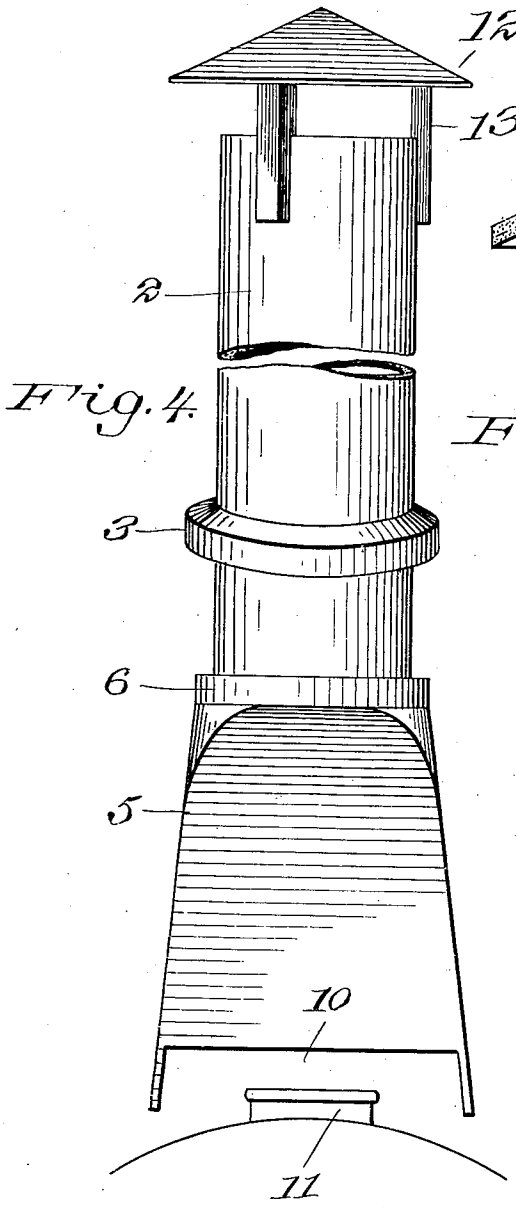


Fig. 4.

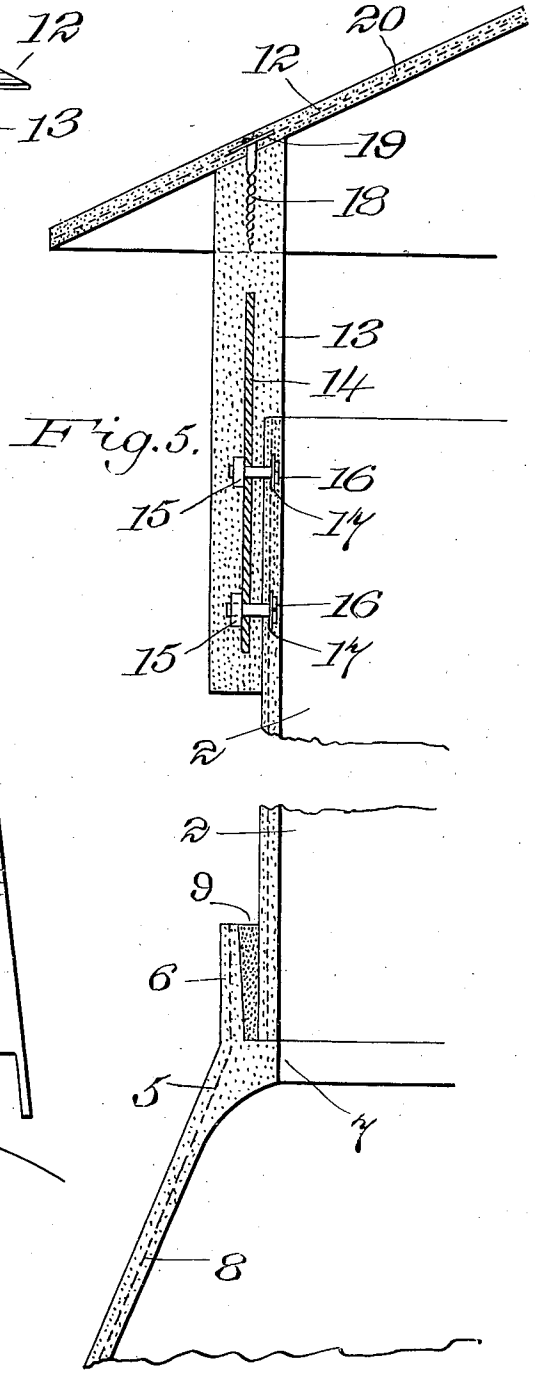


Fig. 5.

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UNITED STATES PATENT OFFICE.

PETER J. LAURITZEN, OF NEW YORK, N. Y., ASSIGNOR TO H. W. JOHNS-MANVILLE COMPANY, A CORPORATION OF NEW YORK.

SMOKE-JACK.

No. 920,763. Specification of Letters Patent. Patented May 4, 1909

Application filed October 29, 1907. Serial No. 399,682.

To all whom it may concern.

Be it known that I, PETER J. LAURITZEN, a citizen of the United States of America, and a resident of the borough of Brooklyn, city of New York, county of Kings, and State of New York, have invented certain new and useful Improvements in Smoke-Jacks, of which the following is a specification.

My invention relates to the construction of flues and passageways for conducting hot gases containing corrosive vapors, and more specifically consists of an improved smoke jack for use in railway engine houses.

In round houses and other buildings in which locomotive engines are stored, it becomes necessary to provide means for the easy discharge through the low roof of the hot sulfurous gases emitted from the smoke stacks of the engines, without permitting the rain and snow to enter through the openings formed in said roof. This is usually accomplished by placing in the roof over the stack of each locomotive a smoke jack of suitable design. The hot gases discharged from the locomotive stack are so charged with acid vapors, as a rule, that if the said smoke jacks are formed of metal they are rapidly disintegrated by chemical action. Even if formed of plates of acid and moisture proof non-metallic material, the metal bolts and fastenings usually necessary to hold these plates together and to support the structure from the roof, are soon eaten out and the smoke jack falls in whole or in part. As these jacks must be supported wholly from the roof, which is usually of wide span, and there are many of such jacks to each round house, it is necessary to make them as light as possible.

I have invented a form of smoke jack composed of plastic materials, preferably provided with a skeleton metallic core, which overcomes all these difficulties and fulfils all the above stated requirements.

One form of apparatus embodying the best form of my invention at present known to me is illustrated in the accompanying two sheets of drawings in which:

Figure 1 is a side elevation of a smoke jack made in accordance with my invention, parts being broken away. Fig. 2 is a cross section on line s_2—s_2 of Fig. 1. Fig. 3 is a cross section on line s_3—s_3 of Fig. 1. Fig. 4 is a second side elevation at right angles to Fig. 1, and Fig. 5 is an enlarged detail cross section through the walls of the jack.

Throughout the drawings, like reference figures indicate like parts.

1 represents a portion of the round house roof by which the jack is supported.

2 is the vertical tubular section of the jack formed of plastic material and having a supporting collar 3 cast or molded on its outside and formed integrally therewith. 4 is a skeleton metal core for this tubular section formed usually of wire cloth or expanded metal. 5 is a second, lower section of flaring shape and oblong cross section, provided at its upper end with a tubular neck 6 into which the lower end of section 2 fits, resting on the inwardly extending flange 7. A skeleton core 8 is also preferably provided for this section. This section is also formed of plastic material and the two sections are preferably fastened together by a body of the same material 9, serving as a plastic cement.

The lower section has its longer sides extending down below the level of the locomotive stack 11, as shown in Fig. 4, but has its shorter ends cut away at 10 to permit the stack to pass under the jack.

12 is a cap preferably of conical form also made of plastic material with a skeleton core 20. This rests upon three or more upright supports 13, 13, formed of plastic material in which are embedded the perforated metal bars 14, 14, and threaded nuts 15, 15. These supports are preferably fastened to the section 2 by bolts 16, 16, which pass through the core 4, through openings in the bars 14, 14, and into the nuts 15, 15. Washers 17, 17, may be employed to give the bolt heads a better bearing on the core 4. The material of section 2, is left open or cut away to permit the bolts to pass through and to embed the bolt heads in it, and after the parts are thus assembled the bolt heads are covered up by plastic material.

The cap 12 is preferably fastened to each support 13 by a screw 18, which bears on a washer 19, and has its head preferably embedded in the plastic material as above described.

While any plastic material may be used which when set is sufficiently hard and resistant to heat, moisture and acid vapor, and

sufficiently light and strong, I prefer to use a magnesium cement, containing magnesium chlorid.

One composition which I find to give good results is formed of the following ingredients in approximately the following proportions by weight, to wit: 8 parts, calcined magnesium carbonate; 4 parts, magnesium chlorid, 4 parts asbestos fiber finely divided; 1 part barytes.

Smoke jacks made in accordance with my invention are light in weight and durable, as there are no metal parts exposed for rust or chemical action of the gases. They are supported without the use of exposed screws or bolts. The collar 3 can be cast on after the jack is in position, and will combine with the section 2 so as to form an integral part thereof. The lower section 5 can then be cemented in place, and the cap fastened on, and the jack is complete.

The magnesium cement herein referred to is particularly adapted to this purpose because it will unite firmly with the adjacent surfaces of the various finished sections when placed against them in a plastic condition. Thus the collar 3, and the portions covering the sunken bolt and screw heads become an integral part of the structure and will not scale or crack off.

Having, therefore, described my invention, I claim:—

1. A smoke jack for railway engine houses all of whose exposed surfaces are composed wholly of magnesium cement.

2. A smoke jack for railway engine houses comprising an integral, tubular section formed of a plastic fireproof and waterproof material, cemented to a lower flaring oblong section of similar material.

3. A smoke jack for railway engine houses comprising an integral, tubular section formed of a plastic fireproof and waterproof material, cemented to a lower flaring oblong section of similar material, said tubular section being provided with an external supporting collar formed integrally therewith.

4. A smoke jack for railway engine houses comprising an integral tubular section formed of a plastic fireproof, and waterproof material, cemented to a lower flaring oblong section of similar material by a cement formed of the same material.

5. A smoke jack for railway engine houses comprising a tubular upper section, and a lower flaring oblong section both formed of and fastened together with magnesium cement.

6. A smoke jack for railway engine houses comprising a tubular upper section, and a lower flaring oblong section both formed of and fastened together with magnesium cement, each section having a skeleton core of metal embedded therein.

7. A smoke jack for railway engine houses comprising a vertical section composed of plastic material with a skeleton core of metal, a conical cap piece of similar construction, and a series of supports for said cap piece each composed of similar material with a perforated metal bar and screw threaded nuts embedded therein, together with a series of bolts passing through the skeleton core of the vertical section, and the perforations in the metal bars in the supports into the threaded nuts, the heads of said bolts being embedded in the material of the vertical section and covered by the plastic material thereof.

8. A smoke jack for railway engine houses comprising a vertical section composed of plastic material with a skeleton core of metal, a conical cap piece of similar construction, and a series of supports for said cap piece each composed of similar material with a perforated metal bar and screw threaded nuts embedded therein, together with a series of bolts passing through the skeleton core of the vertical section and the perforations in the metal bars in the supports into the threaded nuts, the heads of said bolts being embedded in the material of the vertical section and covered by the plastic material thereof, and washers located between the bolt threads and the skeleton core of the vertical section.

9. A smoke jack for a railway engine house comprising a supporting skeleton metallic core and an integral homogeneous covering of magnesium cement.

10. A smoke jack for a railway engine house comprising a supporting skeleton metallic core and an integral homogeneous covering of magnesium cement with a minor proportion of asbestos fiber.

Signed at New York, N. Y., this 26th day of October, 1907.

PETER J. LAURITZEN.

Witnesses:
A. PARKER SMITH,
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