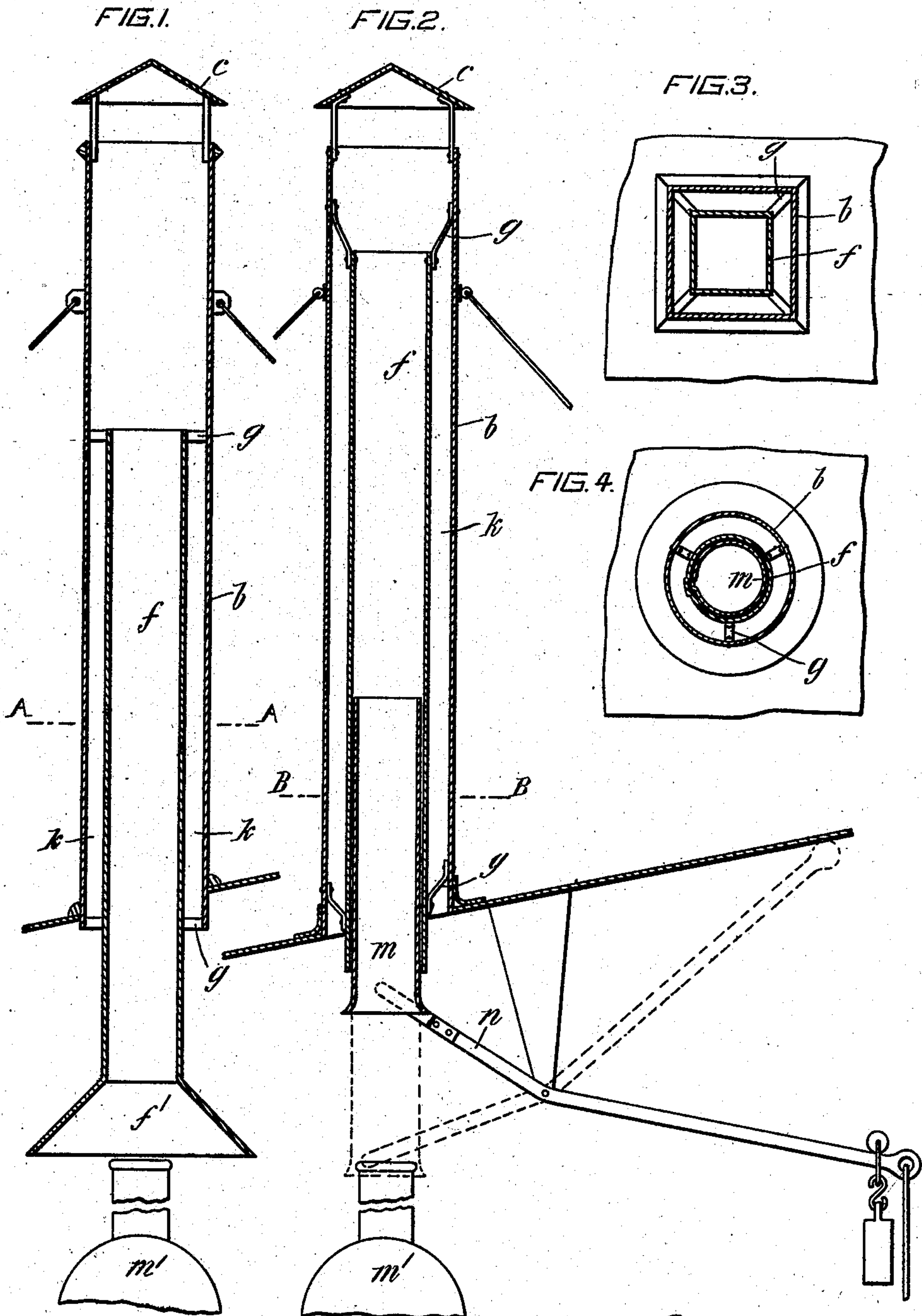


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SMOKE JACK.
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899,667.

Patented Sept. 29, 1908.



Witnesses
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UNITED STATES PATENT OFFICE

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SMOKE-JACK.

No. 899,667.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, RICHARD HARCOURT, of the city of Toronto, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Smoke-Jacks; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention relates particularly to smoke jacks for engine houses.

The invention may be said briefly to consist of a smoke jack carried by the roof of an engine house and comprising a main jack or outer shell extending from the roof upward and permanently open at the top and also open at the bottom so that hot gases beneath the roof may freely enter the same at the level of such roof, and an inner conductor extending from a point near the top of the main jack downward to a point which will be close to a locomotive smoke stack to receive the hot gases therefrom, said inner jack being fixed within the main jack and sufficiently smaller in cross-section than such jack to provide a substantial ventilating flue between them. A drop jack is preferably carried by the lower end of the inner conductor in which case the conductor will be of a length to accommodate it above the locomotive smoke stack.

For full comprehension, however, of my invention reference must be had to the accompanying drawings forming a part of this specification in which like symbols indicate the same parts and wherein

Figure 1 is a longitudinal vertical sectional view of a square smoke jack provided with my invention; Fig. 2 is a similar view of a round smoke jack provided with my invention, and Figs. 3 and 4 are horizontal sectional views taken on the respective lines A A and B B Figs. 1 and 2.

The main jack or outer shell *b* extends from the roof *A* of the engine house upwards and it is permanently open at its upper end and provided with a conical top *c*, while its bottom is also open as at *b'* and in direct communication with the space beneath and in the immediate vicinity of the roof so that the smoke and hot gases collecting at the top of the house can be drawn off. A smaller jack *f* within the main jack extends from a short distance below the roof to within a short distance of the top of the main jack and it is secured rigidly in place by a series of braces or

spacing supports *g*, and the lower end thereof is preferably flared as at *f'* (Fig. 1), while such inner jack is sufficiently smaller in cross-section than the jack proper to provide a ventilating flue *k*.

To meet certain requirements an inner drop jack *m* with its operating gear *n*, (as shown in Fig. 2) is used in conjunction with my improved jack.

The advantage of using my invention is that an upward draft from the interior of the engine house is induced by the hot gases of combustion drawn upwardly from the locomotive (indicated at *m'*) when the latter is standing with its smoke stack beneath the flared end *f'* of the inner jack (as in Fig. 1), or when the drop jack *d* has been lowered over the mouth of such smoke stack (as in Fig. 2) thus creating a suction in the flue *k* and drawing the atmosphere of the engine house near the roof out through the opening *b'*. The house being in this manner cleared of the smoke given off by the locomotive before it arrives with its smoke stack beneath the jack.

What I claim is as follows:—

1. The combination with the roof of an engine house of a smoke jack comprising a main jack or outer shell extending from the roof upward, open at the top and also freely opening in to the engine house at the roof level so that hot gases beneath the roof may freely enter the shell at the level of such roof, and an inner conductor of less diameter than the main jack and located within same to receive the heated gases from a locomotive stack beneath such inner conductor whereby the smoke and steam which accumulates under the roof is forcibly sucked through the outer shell by means of a draft induced by the heated gases issuing from the top of the inner conductor and passing upward through the main jack substantially as described.

2. The combination with the roof of an engine house, of a smoke jack comprising a main jack or outer shell extending from the roof upward, open at the top and also freely opening in to the engine house at the roof level so that hot gases beneath the roof may freely enter the shell at the level of such roof, and an inner conductor of less diameter than the main jack and located within same so that it shall extend above the roof of the engine house to a point near the top of the main jack

but being of less height than the main jack and adapted to receive the heated gases from a locomotive stack beneath such inner conductor, whereby the smoke and steam which
5 accumulates under the roof is forcibly sucked through the outer shell by means of a draft induced by the heated gases issuing from the top of the inner conductor and passing upward through the main jack substantially
10 as described.

3. The combination with the roof of an engine house of a smoke jack comprising a main jack or outer shell extending from the roof upward, open at the top and also freely
15 opening into the engine house at the roof level so that hot gases beneath the roof may freely enter the shell at the level of such roof, an immovable inner conductor of less diameter than the main jack and located within
20 same so that it shall extend in part above the roof of the engine house and in part below it, the part above the roof being of less height than the main jack and the part below extending downwardly to a point which will be
25 close to a locomotive smoke stack to receive the heated gases from such stack, whereby the smoke and steam which accumulates under the roof is forcibly sucked through the outer shell by means of a draft induced by
30 the heated gases issuing from the top of the inner conductor and passing upward through the main jack, and spacing supports or braces securing the top of the inner conductor to the upper portion of the main jack

and the lower end of such inner conductor to
the lower end of the main jack. 35

4. The combination with the roof of an engine house, of a smoke jack comprising a main jack or outer shell extending from the roof upward, open at the top and also freely
40 opening into the engine house at the roof level so that hot gases beneath the roof may freely enter the shell at the level of such roof, an immovable inner conductor of less diameter than the main jack and located within
45 same so that it shall extend in part above the roof of the engine house and in part below it, the part above the roof being of less height than the main jack and the part below extending downward to a point which will be
50 close to a locomotive smoke stack to receive the heated gases from such stack, whereby the smoke and steam which accumulates under the roof is forcibly sucked through the outer shell by means of a draft induced by
55 the heated gases issuing from the top of the inner conductor and passing upward through the main jack, spacing supports or braces between the main jack and the inner conductor, and a drop jack *m* with operating gear *n*,
60 substantially as described.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

RICHARD HARCOURT.

Witnesses:

ARCHER G. WATSON,
BENJAMIN T. WYCH.