

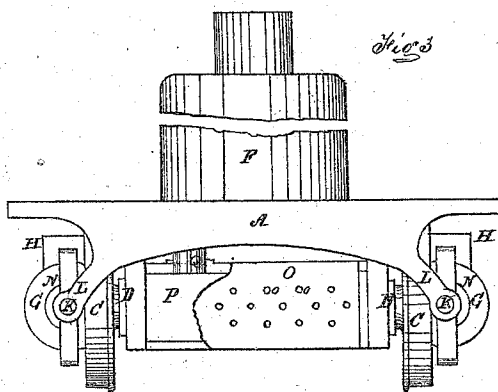
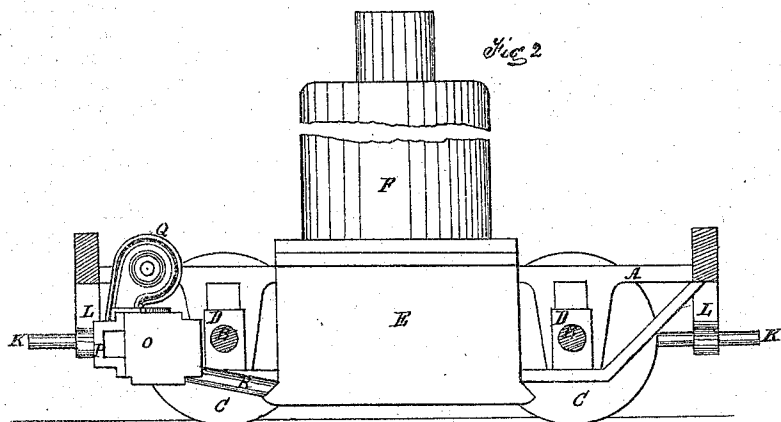
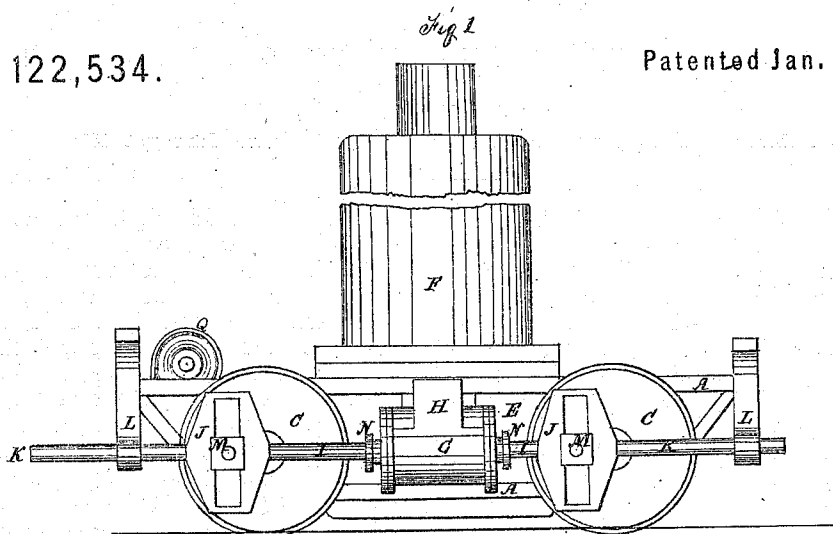
(94.)

T. C. ROBINSON.

Improvement in Dummy Engines.

No. 122,534.

Patented Jan. 9, 1872.



L. G. Doane
W. H. Kinsley

Thomas C. Robinson by
his Atty, Osborn, Doane

UNITED STATES PATENT OFFICE

THOMAS C. ROBINSON, OF MYSTIC RIVER, CONNECTICUT.

IMPROVEMENT IN DUMMY-ENGINES.

Specification forming part of Letters Patent No. 122,534, dated January 9, 1872.

To all whom it may concern:

Be it known that I, THOMAS C. ROBINSON, of Mystic River, New London county, Connecticut, have invented, made, and applied to use certain Improvements in the construction of Dummy-Engines; and that the following is a full, clear, and correct description of the same, reference being had to the accompanying drawing making part of this specification, and to the letters of reference marked thereon, in which—

Figure 1 is a side elevation of my improved dummy-engine. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is an end view of the same.

In the drawing, which is made half the size of the model, like parts of the invention are pointed out by the same letters of reference.

The nature of my invention consists in certain improvements, as more fully hereinafter set forth, in the construction of dummy-engines, the object of the invention being to reduce the cost of building dummy-engines, and the production of a superior engine at a low cost.

To enable those skilled in the arts to make and use my invention I will describe the construction and operation of the same.

A shows a frame for supporting the operative parts of my dummy-engine. B shows the axles, placed at forward and rear ends of the frame to support the driving-wheels. C shows the driving-wheels keyed upon the axles B, flanged to enable them to retain position on track. D shows boxes let into the sides of the frame A, through which the axles B are passed. E is the fire-box, placed about centrally in the frame A, below the line of which it projects, thus giving a combustion-chamber of considerable size. F is the boiler, placed directly over the fire or combustion-chamber E, having water courses extending entirely around it and also on each side of the chamber E. G shows steam-cylinders, two of which are used, placed about centrally between the driving-wheels C, and surmounted by the steam-chests H to supply the cylinders G with steam, which chests H are supplied with steam from the boiler F, suitable connection being established between the chests and the boiler. The cylinders G are connected to the hollow chamber O in order that the exhaust may be formed. I shows pistons, two of which are employed, passing through

the cylinders G, and having their ends attached to the slotted guide pieces J. K are guide-rods for the pistons, passed through guides L attached to the frame A, and having one end attached to the guide pieces J in line with the point at which the pistons are attached to the guide pieces J. J shows guide-pieces, to which the ends of the pistons and guide-rods are attached, which pieces are slotted longitudinally, in which slots are received and move the crank-pins M, secured upon the driving-wheels C. The cylinders have inserted in them the packing-boxes N, in which the pistons move. At the rear of the frame A is placed the condensing apparatus used in connection with the engine. This consists of a hollow chamber O, the rear wall of said chamber being provided with the openings or perforations o, in which are inserted the ends of a series of tubes, the opposite ends of which tubes terminate in a division or partition-plate dividing the chamber O. Back of the hollow chamber O, at one end of the same, and communicating with it, is placed a second chamber, P. Directly above the chamber O and upon one end of the same is placed a rotary blower, Q, driven in any convenient way, which blower Q is employed to force a current of cold air into the hollow chamber O through the chamber P and perforations o. R is a pipe connecting the hollow chamber O with the fire-box E.

Such being the construction, the operation is as follows: The boiler is charged with water, and fire-box is supplied with fuel. The boiler is connected with the steam-chests of the cylinders. As steam rises in the boiler it is supplied to the steam-chests of the cylinders, and through these to the cylinders operating the pistons, the ends of which are attached to the guide pieces, and imparting a reciprocating motion to the pistons. The crank-pins attached to the wheels play in the guide pieces connected to the pistons, as shown, and a rotary movement is given to the wheels as the pistons reciprocate. The blower for condenser is attached to a suitable motor in any convenient manner, and a rotary movement is given to the fan in the same. A current of cold air is thus supplied to the interior of the hollow chamber O through the chamber P and perforations o, condensing the steam supplied by

the exhaust-pipes connecting the cylinders with the hollow chamber, and as this air passes through the chamber it is heated, and in this heated condition is supplied to the fire-box through the pipe R, increasing the heating properties of the fuel employed. It will be observed that the cylinders are placed midway between the driving-wheels, which enables me to economize space and cost in the construction of the engine. Also, that the fire-box extends below the bottom line of the frame A, thus affording a greater amount of heating surface, which allows the more rapid generation of steam in the boiler, and that the condenser, constructed as described, and supplying a cur-

rent of air heated as it passes through the chamber O to the fire-chamber, has a tendency to increase the combustion in said chamber.

Having now set forth my invention, what I claim as new is—

The combination of the hollow chamber O, provided with the perforations o, the rotary fan-blower Q, chamber P, and pipe R, when constructed and operating as and for the purposes set forth.

THOMAS C. ROBINSON.

Witnesses:

LEMUEL CLIFT,

L. W. MORSE, Jr.

(94)