(No Model.)

D. M. BORNARTH.

DEVICE FOR THAWING LOCOMOTIVES.

No. 305,042. Patented Sept. 16, 1884.

Fig. 1.

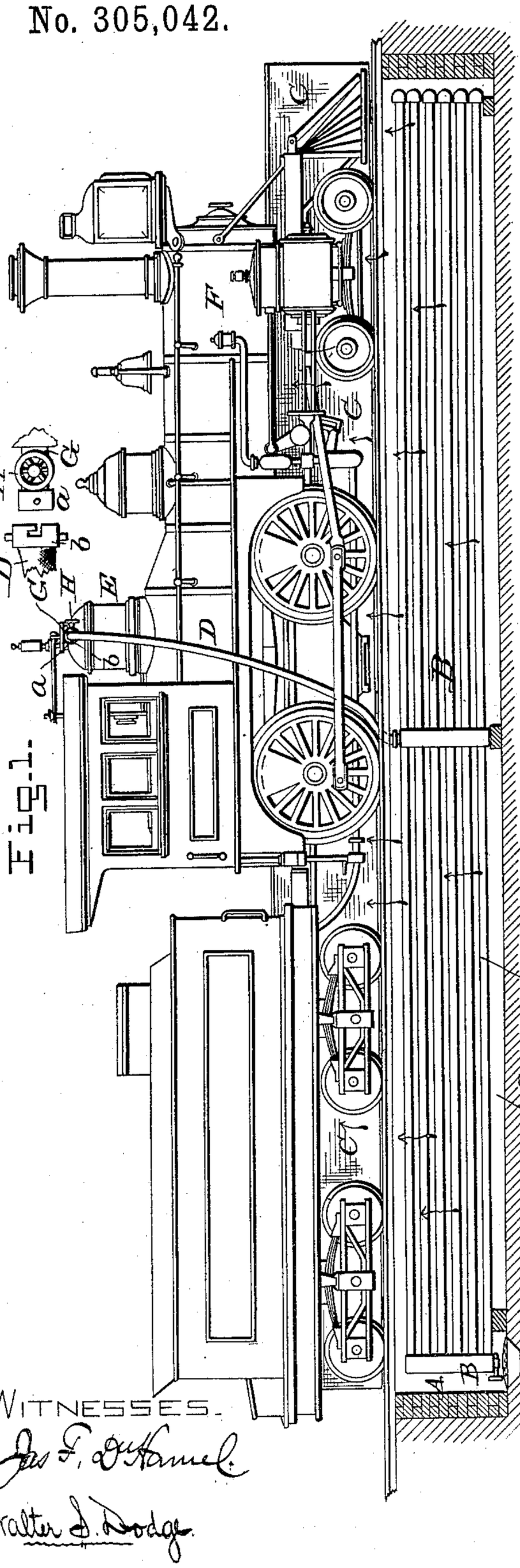
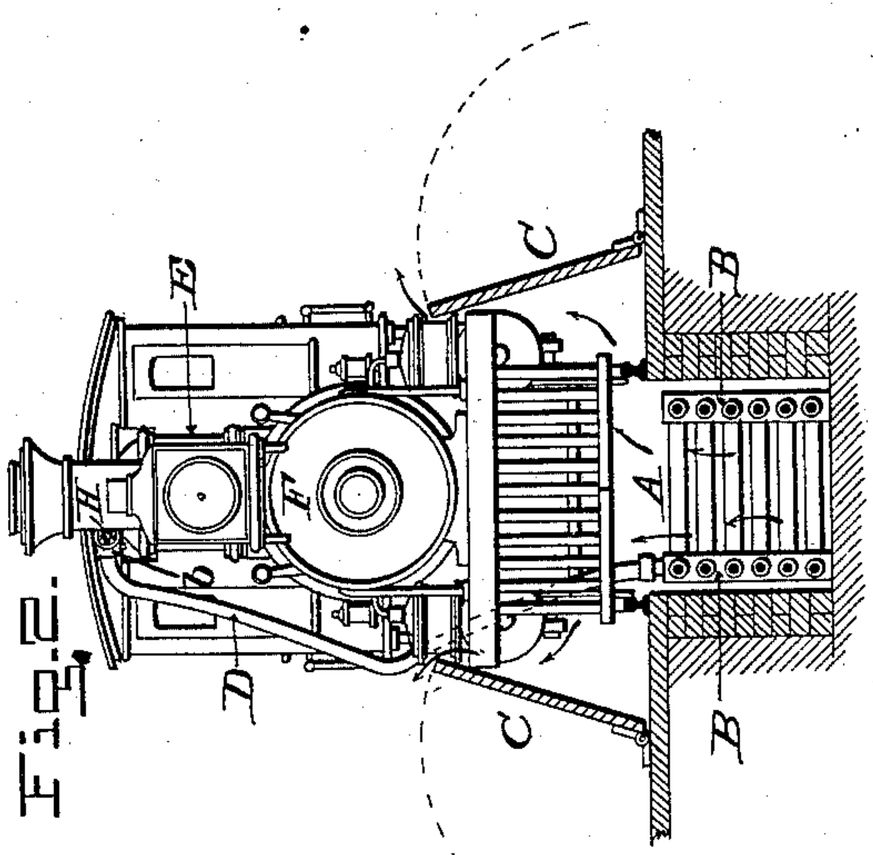


Fig. 2.



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DEVICE FOR THAWING LOCOMOTIVES.

SPECIFICATION forming part of Letters Patent No. 305,042, dated September 16, 1884.

Application filed February 14, 1884. (No model.)

To all whom it may concern:

Be it known that I, DANIEL M. BORNARTH, of Shakopee, in the county of Scott and State of Minnesota, have invented certain Improvements in Devices for Thawing Locomotives, of which the following is a specification.

My invention relates to apparatus for thawing out ice-blocked locomotives, and is designed, more particularly, for small way-stations, where special means for the purpose are not ordinarily to be found.

In the drawings, Figure 1 represents a side elevation of a locomotive standing over the pit of a round-house, showing my thawing apparatus; Fig. 2, an end elevation of the same, both figures showing the pit partly or wholly in section.

Locomotives when run off upon a side track or required to stand for a considerable time in an exposed place in cold weather become clogged with ice, formed by the freezing of the condensed steam in the cylinders, steam-chest, and other parts, and frost gets into the wheels and mechanism, rendering it dangerous for the locomotive to be put to use, even if that be possible. In large stations and depots, in cold climates, there is generally a round-house furnished with a steam-generator and appliances for the special purpose of thawing out such locomotives; but, owing to the expense of such apparatus and the comparative infrequency of a demand therefor at small stations, such apparatus is not provided at such places. Much delay and inconvenience arises from this cause, as well as great danger of accident, and to avoid such inconveniences, delay, and danger, I have devised the following plan: The locomotive, while not in operation, may still be employed to generate steam, which is carried through a pipe provided with suitable couplings or connections into a steam-coil or radiator placed in the pit of a round-house or other convenient place, or which may even be above ground and close to each side of the track, so that when the locomotive is run to the point where the heater is located, connection may be quickly established between the locomotive-boiler and the heater, and the latter thus supplied with steam to thaw out the locomotive furnishing the steam; or one locomotive may furnish steam to thaw out another.

Referring now to the drawings, I will explain a preferred arrangement of the apparatus, remarking, however, that the details may be considerably varied, the essential feature being the supplying of steam to the heater from the locomotive.

A indicates a pit in a round-house or station, provided with a steam-radiator, B, which may be of convenient form or construction. At each side of the track and pit are hinged boards or guards C, of suitable width to reach to the top of the driving-wheels, or thereabout, and as long as, or somewhat longer than, the pit. These guards lie flat upon the ground floor of the round-house, ordinarily, but are designed to be turned up against the sides of the locomotive and tender, as in Figs. 1 and 2, when the thawing operation is to be performed, so as to direct the heat which is given off by the radiator B against the wheels, cylinders, and reversing-gear of the locomotive, and the trucks and lower part of the tender.

To apply steam to the radiator, which is represented as made of steam-pipes united by manifolds, the radiator is furnished with a supply-pipe, D, which may be permanently connected thereto, and is preferably made of flexible hose or tubing capable of withstanding a considerable pressure. If preferred, only a short length of flexible tubing or hose may be employed, a metal pipe being carried up to about the height of the steam-dome E of the locomotive F, with which dome the pipe and radiator are to be put in communication. The steam-dome of the locomotive is to be provided with a steam-outlet, G, having a half-coupling, *a*, and the flexible pipe D is furnished with the other part, *b*, of the coupling, so that connection may be quickly made. A cock or valve, H, in the outlet-pipe G is then opened to permit steam to pass in any desired quantity to the radiator or heater B. When the operation is completed, the valve H is closed, the coupling *a b* disconnected, the guards C turned down, and the locomotive is ready to move off.

Instead of employing the guards C, the heater or radiator B, which may be one continuous structure, or in several sections, may be carried up at each side of the track and across one end, and left there as a permanent fixture; but the arrangement described and

shown is deemed preferable. It will be seen that by this plan the necessity of a special steam-generator is obviated, as also the need of employing an attendant therefor; the expense of maintaining a constant fire in such special generator, or the delay incident to starting such fire and getting up steam, is avoided, and equally good results are attained without any of these sources of expense or delay.

Having thus described my invention, what I claim is—

1. In combination with a locomotive and a steam-heater, substantially as shown and described, to heat the mechanism of the locomotive, intermediate connection, substantially such as described, for conveying steam from the boiler of the locomotive to the heater.

2. The herein-described thawing apparatus for locomotives, consisting of a pit between the rails of the track, a steam-heater within said pit, guards adapted to direct the heat arising from said pit to the running-gear and mechanism of the locomotive, and a pipe communicating with the heater and with the locomotive-boiler to deliver the steam from the latter to the former.

3. The combination, substantially as shown and described, of a locomotive, F, having steam-outlet G, valve H, and coupling-section *a*, heater B, provided with flexible pipe D, and coupling-section *b*, substantially as and for the purpose explained.

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