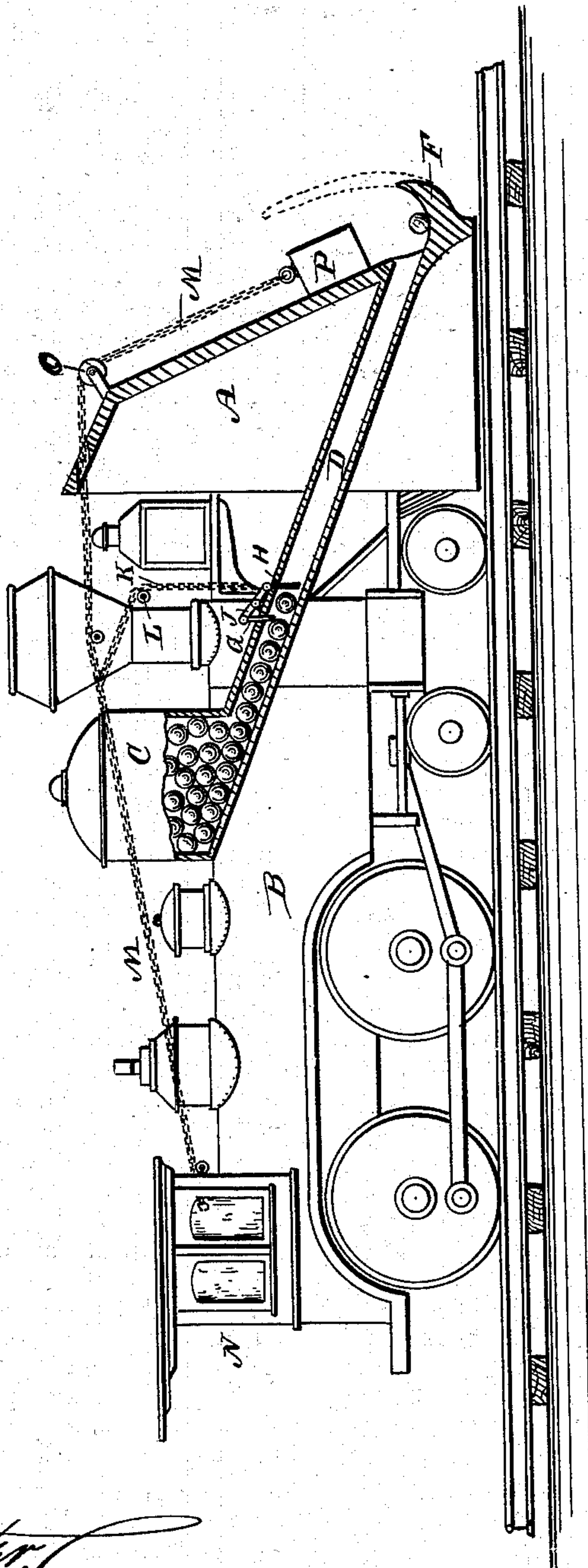


(No Model.)

G. A. GUNTHER.
SNOW PLOW.

No. 276,395.

Patented Apr. 24, 1883.



WITNESSES:

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GEORGE A. GUNTHER, OF NEW UTRECHT, NEW YORK.

SNOW-PLOW.

SPECIFICATION forming part of Letters Patent No. 276,395, dated April 24, 1883.

Application filed January 27, 1883. (No model.)

To all whom it may concern:

Be it known that I, GEORGE A. GUNTHER, of New Utrecht, in the county of Kings and State of New York, have invented certain new and useful Improvements in Snow-Plows, of which the following is a full, clear, and exact description.

The object of my invention is to loosen and throw off the snow in front of the snow-plow while the same is being forced into the snow, whereby the snow can be removed more rapidly and in greater quantities than by the usual means.

The invention consists in the method of loosening and removing snow and facilitating the entrance of a snow-plow in the same by successively exploding torpedoes on the front of the snow-plow.

The invention further consists in devices for conducting torpedoes to the front of the plow, and in devices for exploding the torpedoes on the front of the plow, whereby the snow will be loosened and scattered.

The invention also consists in parts and combinations of the same, as will be fully described and set forth hereinafter.

Reference is to be had to the accompanying drawing, forming part of this specification, in which the figure is a longitudinal elevation of a locomotive provided with my improved snow-plow and device for exploding torpedoes, parts being shown in section.

A snow-plow, A, made very strongly and heavily of iron plates about one inch (more or less) in thickness, is held in front of the engine B in the usual manner. On the engine a box or receptacle, C, for receiving cartridges or torpedoes, is placed and secured, preferably directly behind the smoke-stack, and from the said box a tube, D, extends downward to the front surface of the plow, a short distance above the bottom of the same. A heavy shoe, lug, spout, or anvil, F, projects from the front of the plow, directly below the lower end of the tube D, into which anvil or spout the cartridges or torpedoes pass, which slide from the receptacle C down the tube D. Two valves or gates, G and H, are attached to the ends of a lever, J, pivoted on the tube D, of which valves the one toward the lower end of the tube D is weighted, so that it always closes automati-

cally; or it can be drawn down by a spring. A chain or rope, K, is attached to the front end of the lever J, passes over a pulley, L, in the smoke-stack, or on a standard on the locomotive, and is attached to a rope or chain, extending from the caboose N over a pulley, O, on the top of the plow A, and hangs down on the front of the plow. To the lower end of the chain M a heavy weighted block or hammer, P, is attached, which can be suitably guided to slide up and down on the front surface of the plow. The chain or rope K can be connected in any other suitable manner with the valves or gates G H for operating them, and any other suitable valves may be used in the tube D. The cartridges are to be made spherical or oval, and are to contain an exploding material which will only explode when it receives a strong and heavy blow, so that they will be comparatively safe in handling, and will not be exploded by the shocks they receive from the jolting of the locomotive. They are preferably covered with cement or other suitable material. The plow must be made so heavy and constructed of such thickness of iron that it will not be injured by the explosion of the cartridges or torpedoes.

The operation is as follows: The plow is forced into the snow and the chain M is pulled by a person in the caboose, whereby the hammer or block P will be raised, and at the same time the lower gate, H, will be raised by the chain K and the upper gate, G, will be closed, and prevent the torpedoes in the receptacle C from all sliding through the tube D. The torpedo held in the tube D between the gates G and H, and which has been prevented from sliding down the tube by the gate H, as the same is always held closed, will be permitted to slide down the tube D upon the anvil F as soon as the said gate H is raised by pulling the chain M. The chain M is then released, and permits the block or hammer P to drop or slide down the plow and to strike and explode the cartridge or torpedo on the lug or anvil F. The explosion of the cartridge or torpedo loosens and scatters the snow in front of the plow, and thus facilitates forcing the plow into the snow. The above operation is repeated while the locomotive is in motion, and the snow is thus successively loosened and scattered and

forced aside by the plow. Every time the chain M is pulled a cartridge slides down the tube D and is exploded.

I do not limit myself to the herein-shown devices for conducting torpedoes to the front of a snow-plow and exploding the said torpedoes, but may use any suitable devices for the same purpose.

If desired, the anvil can be provided with an upwardly-projecting shield or guard, as shown in dotted lines.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The method, substantially as herein shown and described, of loosening and removing snow and facilitating the entrance of a snow-plow into the snow, consisting in placing torpedoes or explosive cartridges on a snow-plow and exploding the said torpedoes, as set forth.

2. The combination, with a snow-plow, of devices for exploding torpedoes on the said plow, substantially as herein shown and described, and for the purpose set forth.

3. The combination, with a snow-plow, of devices for receiving torpedoes to be exploded on the said plow, substantially as herein shown and described, and for the purpose set forth.

4. The combination, with a snow-plow, of devices for receiving torpedoes and devices for exploding the said torpedoes, substantially as herein shown and described, and for the purpose set forth.

5. The combination, with a snow-plow, of devices for exploding torpedoes placed on the plow, and of appliances for operating the said devices for exploding the said torpedoes from the caboose of the locomotive, substantially as herein shown and described, and for the purpose set forth.

6. The combination, with a snow-plow, of de-

vices for feeding torpedoes to the front of a snow-plow, and of devices for exploding the said torpedoes, substantially as herein shown and described, and for the purpose set forth.

7. The combination, with a snow-plow, of a receptacle for torpedoes on a locomotive or car, a device for conducting the torpedoes to the front of the snow-plow, and devices for exploding the torpedoes, substantially as herein shown and described, and for the purpose set forth.

8. The combination, with a snow-plow, of the receptacle C on a locomotive or car, the anvil or lug F on the plow, the tube D for conducting the torpedo from the receptacle C to the anvil F, the chain M, and the block or hammer P, substantially as herein shown and described, and for the purpose set forth.

9. The combination, with a snow-plow, of the receptacle C on a locomotive or car, the anvil or lug F on the front of the plow, the tube D, extending from the receptacle C to the anvil F, the block or hammer P, valves or gates in the tube D, and a chain or rope connecting the valves in the tube D, and the chain M, substantially as herein shown and described, and for the purpose set forth.

10. The combination, with a snow-plow, of a receptacle for containing torpedoes, a tube for conducting the torpedoes to the front of the plow, valves in the said tube, a block or hammer for exploding the torpedoes, and devices for raising the hammer and operating the valves simultaneously, substantially as herein shown and described, and for the purpose set forth.

GEO. A. GUNTHER.

Witnesses:

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