(No Model.)

G. A. GUNTHER.

SNOW PLOW.

No. 304,098. Patented Aug. 26, 1884.

Fig. 1.

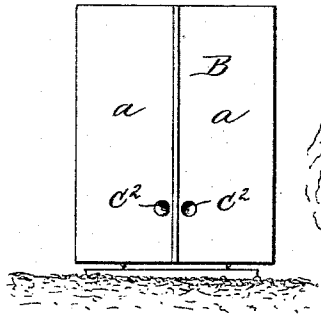


Fig. 2.

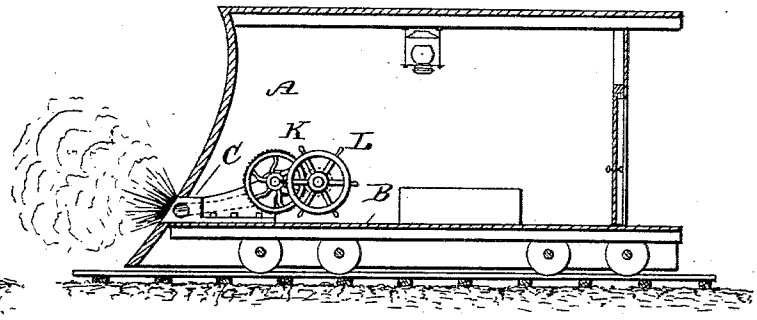


Fig. 3.

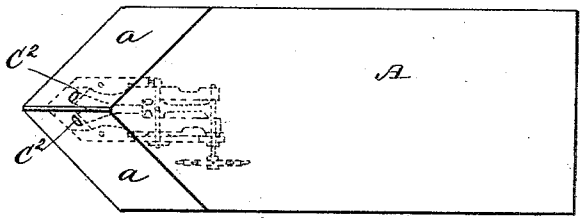


Fig. 6.

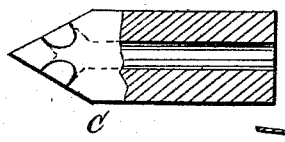


Fig. 4.

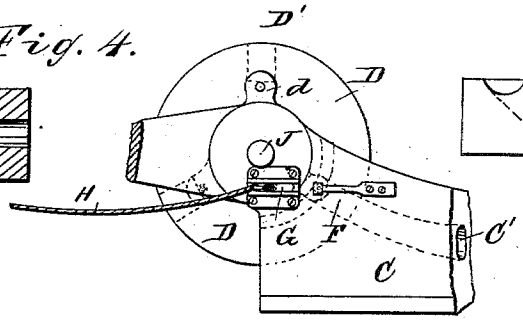


Fig. 7.

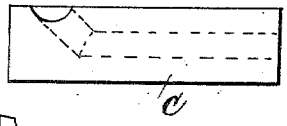
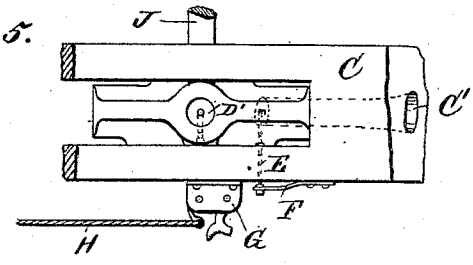


Fig. 5.



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UNITED STATES PATENT OFFICE.

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

SNOW-PLOW.

SPECIFICATION forming part of Letters Patent No. 304,098, dated August 26, 1884.

Application filed January 8, 1884. (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 a new and Improved Snow-Plow, of which the following is a full, clear, and exact description.

This invention relates to improvements upon the snow-plow for which Letters Patent were granted to me July 17, 1883, the same being numbered 281,497, and has for its object to provide a new and improved snow-plow provided with devices for loosening and scattering the snow and for facilitating the entrance of the plow into the snow.

The invention consists in the combination, with a snow-plow, of a cannon or firing-block provided with a longitudinal bore which branches out into two side bores near the outer end of the cannon, the outer ends of the said side bores being flush with the beveled surfaces of the front of the plow.

The invention also consists in the combination, with the said cannon or firing-block, of a wheel for receiving cartridges or torpedoes, a firing-pin, gearing for revolving the wheel, and in other parts and details, as will be fully described and set forth hereinafter.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a front view of my improved snow-plow. Fig. 2 is a longitudinal sectional elevation of the same. Fig. 3 is a plan view of the same. Fig. 4 is an enlarged detail side view of the firing mechanism. Fig. 5 is a plan view of the same. Fig. 6 is a plan view of a modified construction of the cannon. Fig. 7 is a longitudinal elevation of the same.

The snow-plow A is of the usual construction, and rests on a flat car, B. On the front end of the flat car a firing-block or cannon, C, is held, the end of which is beveled, so that the sides of the end will be flush with the beveled ends *a* of the snow-plow. The block C is forked at its rear end, and at the base ends of the shanks, and between the same, an aperture, C′, begins, which extends downward through the block to within a short distance of the front opening of the same, and then branches off into two side openings, C^2, of which one will be at each side of the central ridge, at which the beveled sides of the front end of the plow are connected—that is, the aperture or bore C′ of the firing-block or cannon C separates into two bores a short distance from the front end of the said block or cannon. If desired, the bores C^2, which branch out of the front end of the bore C′ of the firing-block or cannon C, may be inclined upward and outward, as shown in Figs. 6 and 7.

Between the shanks of the fork formed on the inner end of the firing-block or cannon C a wheel, D, is journaled, the edge of which fits closely and snugly against that part of the block C between the base ends of the shanks of the fork formed on the inner end of the said block C. The wheel D is provided with a series of radial apertures, D′, preferably three, and from the inner end of each aperture D′ a small aperture, *d*, extends to the side of the wheel D, which apertures are adapted to receive ordinary blank pistol-cartridges or any suitable fulminate. A firing-pin, E, is held in one of the shanks of the fork formed on the block C, and the outer end of the said pin is secured to a spring, F, secured to the side of the block, which spring F presses the firing-pin outward to such an extent that the inner end of the pin will not prevent the revolving of the wheel D.

Adjoining the spring F a self-cocking hammer, G, of any suitable construction, is secured on the side of the firing-block C, to which hammer a lanyard, H, is fastened. A suitable gear-wheel, K, is mounted on the end of the shaft J of the wheel D, which gear-wheel engages with a pinion on the end of the same shaft with a hand-wheel, L, whereby by turning the hand-wheel the wheel D can be revolved, and the several apertures D′ can successively be brought behind the bore C′ of the firing-block. Suitable means can be provided for checking the wheel D every time that an aperture, D′, coincides with the inner end of the bore C′.

The operation is as follows: A cartridge or torpedo having been placed in one of the apertures D′ of the wheel D, the said wheel D is turned until the aperture containing the cartridge or torpedo coincides with the inner end of the bore C′; then the lanyard is pulled and

the self-cocking hammer strikes the pin E, which explodes the cartridge contained in the aperture *d* of the wheel D, and this cartridge in turn explodes the large cartridge or torpedo held in the aperture D′. The force of the explosion exerts itself downward through the bore C′, and is divided in the front end of the said bore, and exerts itself through the bores C^2, thereby loosening and scattering the snow at both sides of the front of the plow. Then the next cartridge is placed in the next aperture of the wheel D, the wheel is turned, the cartridge or torpedo is fired, and so on. If the firing-block shown in Figs. 6 and 7 is used, the force of the explosion will not only exert itself laterally, but also upwardly, and will throw the snow up out of the cut—that is, it will throw it upon the top of the bank. As the repeated explosions loosen the snow very rapidly, the plow can be easily forced forward to press the snow to one side.

By means of my improved devices for loosening the snow, the snow can be loosened and scattered to such an extent that a very heavy plow can be forced into a drift of snow with comparatively little power.

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

1. The combination, with a snow-plow, of a cannon or firing-block having two side openings, the outer end of the cannon being flush with the outer surface of the walls of the snow-plow, substantially as herein shown and described.

2. The combination, with a snow-plow, of a cannon or firing-block having side apertures, the outer end of the cannon or firing-block being located in such a manner that it will be flush with the beveled outer surfaces of the front of the plow, one of the apertures being on each side of the beveled front of the plow, substantially as herein shown and described.

3. The combination, with a snow-plow, of a firing-block or cannon provided at its inner end with a revolving wheel for receiving the cartridges or torpedoes, substantially as herein shown and described.

4. The combination, with a snow-plow, of a firing-block or cannon provided at its inner end with a revolving wheel for receiving the cartridges or torpedoes, and with a firing-pin and hammer, substantially as herein shown and described.

5. The combination, with a snow-plow, of a cannon or firing-block provided at its inner end with a revolving wheel for receiving the cartridges or torpedoes, a firing-pin, a hammer, and means for revolving the said wheel for receiving the cartridges or torpedoes, substantially as herein shown and described.

6. The combination, with a snow-plow, of a cannon or firing-block having a beveled front end, and having a single longitudinal bore which branches into two side bores in the front end of the cannon, substantially as herein shown and described.

7. A cannon or firing-block provided with a longitudinal bore which branches off into two side bores near the front end of the said block or cannon, the said side bores being inclined upward and outward, substantially as herein shown and described.

GEO. A. GUNTHER.

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