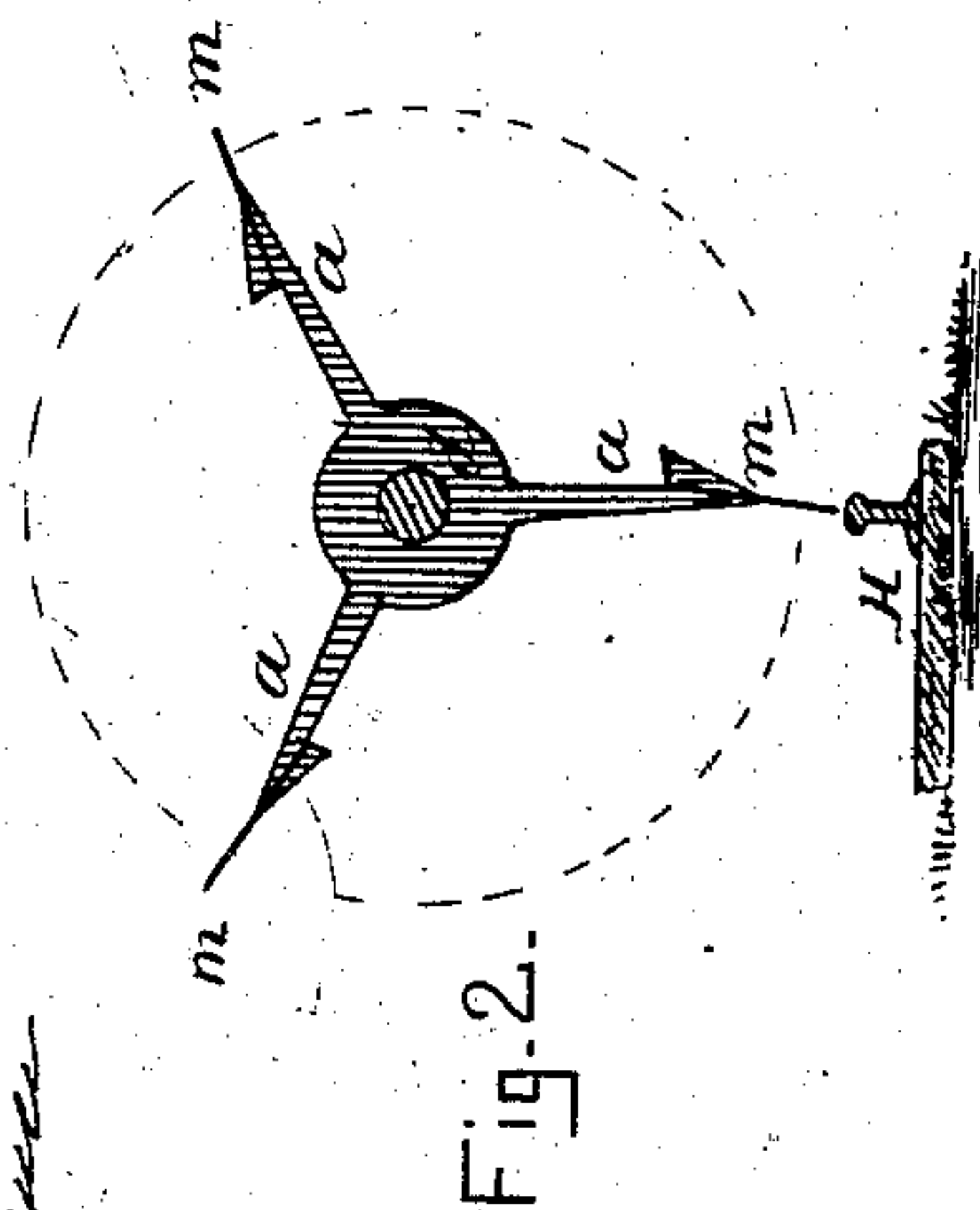
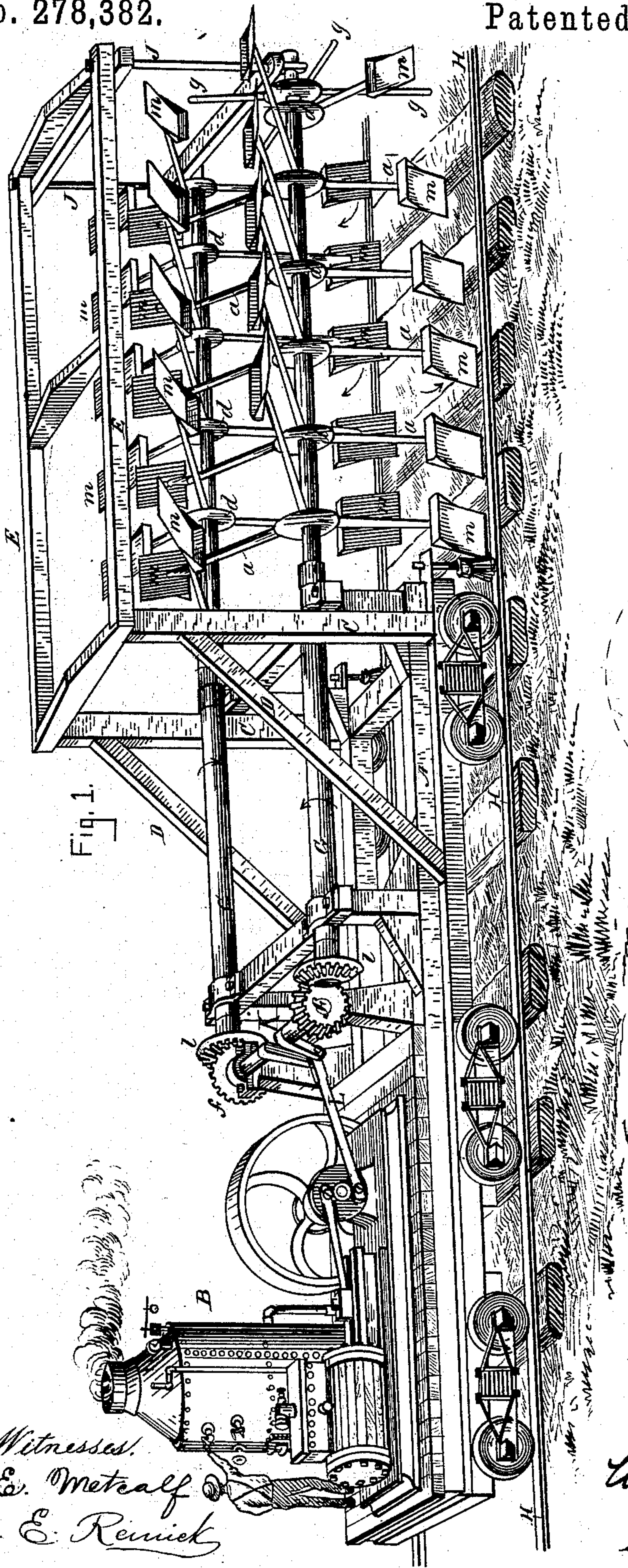


(No Model.)

W. A. WOODS.  
STEAM SNOW SHOVEL.

No. 278,382.

Patented May 29, 1883.



Witnesses:  
H. E. Metcalf  
H. E. Rennie

Inventor  
William A. Woods  
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# UNITED STATES PATENT OFFICE.

WILLIAM A. WOODS, OF WOODFORD'S CORNER, MAINE, ASSIGNOR TO HIMSELF AND LOUISE A. WILLIAMS, OF BOSTON, MASSACHUSETTS.

## STEAM SNOW-SHOVEL.

SPECIFICATION forming part of Letters Patent No. 278,382, dated May 29, 1883.

Application filed October 26, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM A. WOODS, of Woodford's Corner, in the county of Cumberland, State of Maine, have invented a certain new and useful Improvement in Steam Snow-Shovels, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is an isometrical perspective view, and Fig. 2 a sectional end view.

Like letters of reference indicate corresponding parts in the different figures of the drawings.

My invention relates to that class of snow-shovels which are designed to be operated by steam-power in clearing the snow from the tracks of railways; and it consists in a novel construction and arrangement of the parts, as hereinafter more fully set forth and claimed, by which a new and more effective device of this character is produced than is now in ordinary use.

The nature and operation of the improvement will be readily understood by all conversant with such matters from the following explanation.

In the drawings, A is a platform car or truck, which is provided with an engine, B, for operating the shovel. Disposed at the forward end of the car are two vertically-arranged posts, C C, respectively provided with the braces D D, and carrying at their upper ends the horizontally-projecting frame-work E.

Journaled horizontally in proper bearings on the car A are two shafts, G G, one being arranged over each of the rails H of the road, and in parallelism therewith. These shafts carry at their forward ends a series of shovels, *m m*, attached to the outer ends of radial arms *a a*, secured in the stocks or hubs *d d*, each of the hubs being preferably provided with three arms. The blades of the shovels are slightly inclined to their arms, or so arranged thereon that when they pass over the rails H they will stand in a vertical or nearly vertical position.

Projecting downwardly from the forward end of the frame E are two lugs or brackets, J J, in which the outer ends of the shafts G G are journaled and supported.

Mounted on the car A, near the engine B, there is a double crank-shaft, K, provided at its outer ends with the miter-gears *f f*, which intermesh with corresponding gears, *l l*, on the shafts G G, the crank of the shaft K being connected with the engine by the pitman-rod L. Each of the shafts G carries at its forward end a hub, *i*, having a series of stout radial arms, *g g*. These arms are not provided with shovels like the arms *a a*, and are designed for breaking in advance of the shovels *m* the ice or crust which sometimes covers the snow. The first three sets of arms *a a* nearest the car A are longer than those next to the breakers or arms *g g*, the shovel-arms being gradually shortened from the center sets to the outer ends of the shafts G, so that the advance shovels, or those nearest the outer ends of the shafts, will remove the upper layers of the snow, and those nearer the car the middle and lower layers.

The engine B is designed to be provided with proper mechanism for operating the shovels, which it is not deemed necessary to illustrate fully in this connection.

In the use of my improvement the car A is driven or pushed forward by means of the engine (not shown) employed for drawing the train to which the shovel is attached, and at the same time power is applied by means of the engine B to the shaft K through the pitman L, causing the shafts G G to be rotated inwardly or in the direction of the arrows, the shovels *m* being thus brought into contact with and removing the snow from the track, in a manner which will be readily obvious without a more explicit description.

The hubs *d* are arranged alternately on their respective shafts, or in such a manner that the shovels on one shaft will not interfere or come into contact with those on the other as the shafts are revolved.

I am aware that rotary shafts provided with short shovel-carrying arms at different angles have been arranged over the rails at the sides



of a snow-plow, and also that rotary shovel-carrying shafts have been placed over an inclined platform mounted on a wheeled truck.

Having thus explained my invention, what I claim is—

1. The combination of a railway truck or car, a forwardly-extended frame attached to the front end of said truck, parallel shafts arranged longitudinally on said truck, means for operating said shafts, and rotary interlapping shovels attached to said shafts, the shovels of one shaft being opposite the spaces between the shovels of the other shaft, said shovels being adapted to operate directly upon the snow upon the rails, the rear shovels passing in close proximity to the rails, while the forward

shovels are gradually shortened, substantially as described.

2. The combination of a railway car or truck, a forwardly-extended frame attached to the front end thereof, two parallel horizontal shafts, rotary breakers near the front ends of said shafts, and radial shovel-carrying arms attached to said shafts, said arms being gradually shortened from the center of the series toward the forward end thereof, substantially as described.

WM. A. WOODS.

Witnesses:

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