(No Model.)

M. ELLIS.

RAILROAD TRACK CLEARER AND FLANGER.

No. 308,067. Patented Nov. 18, 1884.

FIG. 1

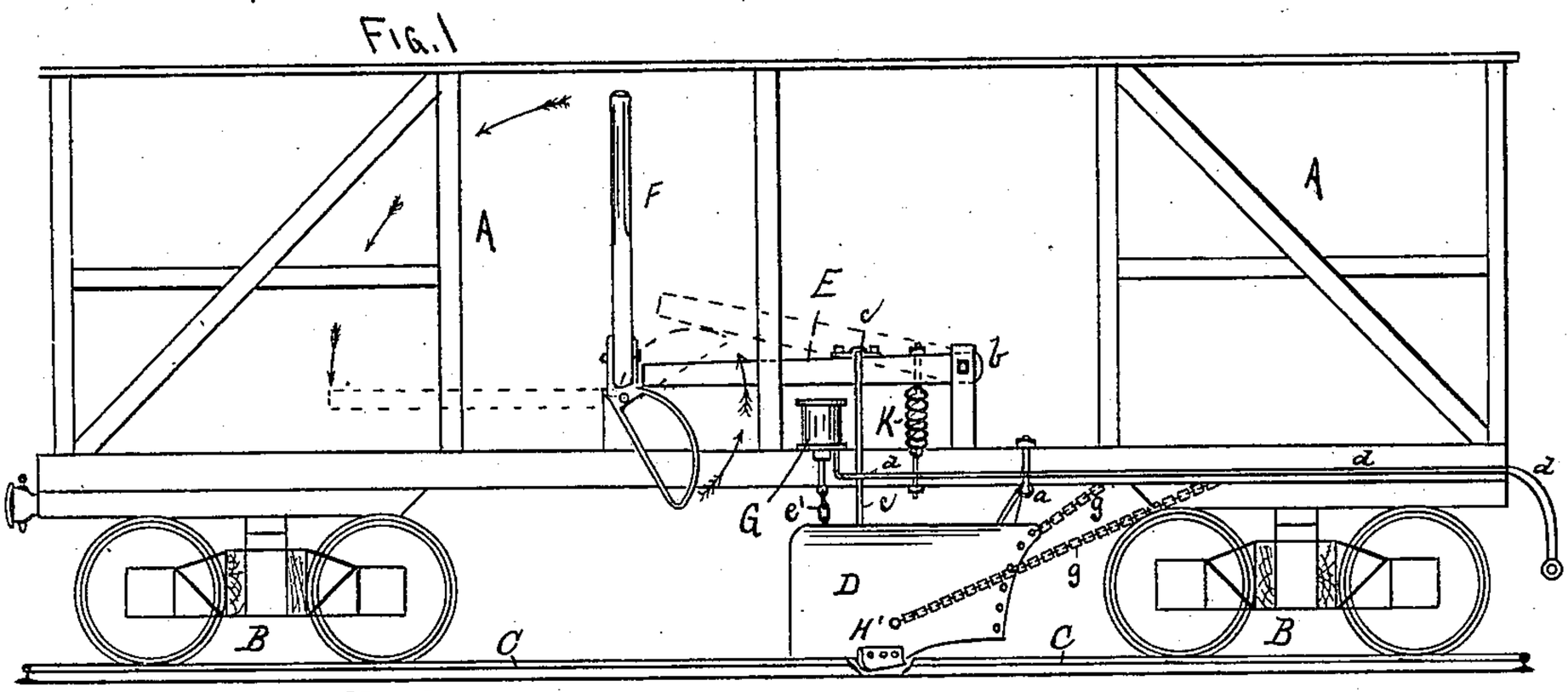


FIG. 2

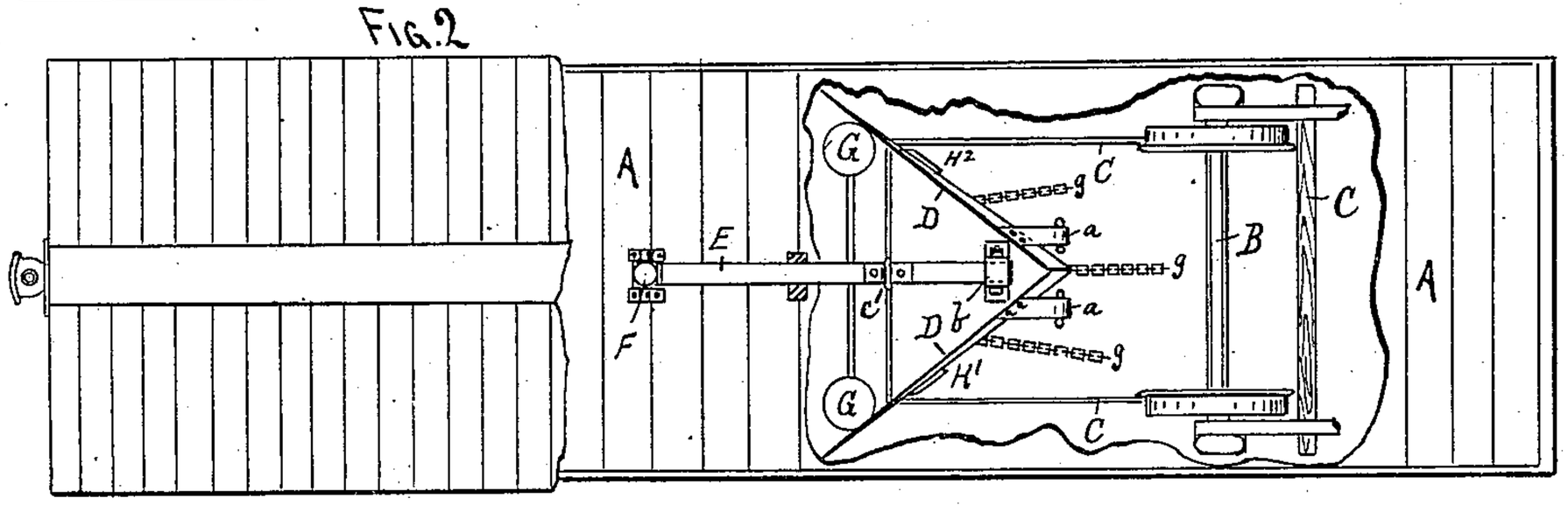


FIG. 3

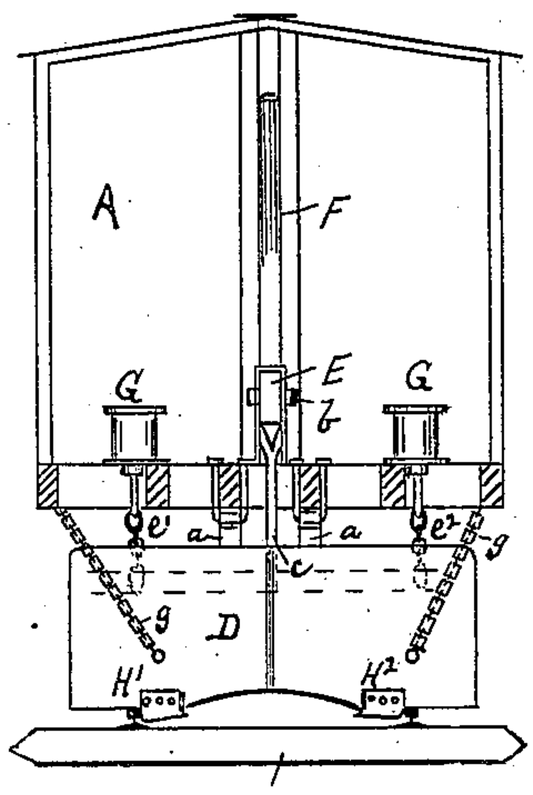


FIG. 5

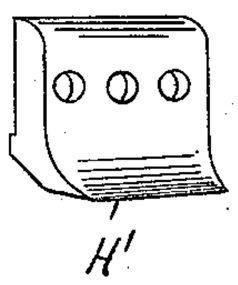
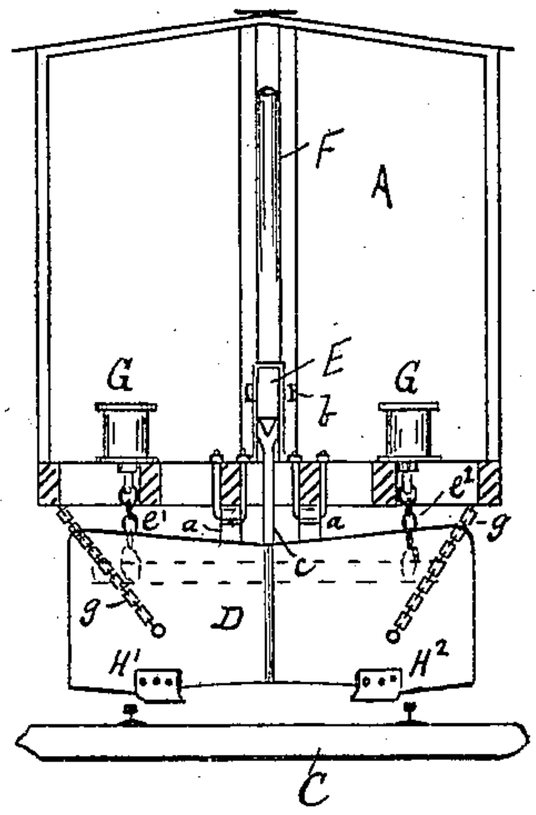


FIG. 4



WITNESSES.
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UNITED STATES PATENT OFFICE.

MATTHEW ELLIS, OF ST. PAUL, MINNESOTA.

RAILROAD-TRACK CLEARER AND FLANGER.

SPECIFICATION forming part of Letters Patent No. 308,067, dated November 18, 1884.

Application filed February 21, 1884. (No model.)

To all whom it may concern:

Be it known that I, MATTHEW ELLIS, a citizen of the United States, and a resident of St. Paul, in the county of Ramsey, in the State of Minnesota, have invented certain new and useful Improvements in Railroad-Track Clearer and Flanger, of which the following specification is a full, clear, and exact description, reference being also had to the accompanying drawings, in which—

Figure 1 is a semi-sectional side elevation, and Fig. 2 is a semi-sectional plan view, of a car, showing my improved clearer and flanger attached thereto. Fig. 3 is an end view of the car, showing the clearer and flanger down in working position; and Fig. 4 is a similar view showing the clearer and flanger elevated as it appears when not in use. Fig. 5 is an enlarged detached perspective view of one of the steel flanging-shoes.

A represents a car-frame mounted upon the trucks B and running upon the track C. Hinged or pivoted by its forward end at *a* to the under side of this frame A is a double-sided mold-board or plow, D, similar in construction to the clearers or plows used upon the forward ends of locomotives to remove snow from the track, and adapted to be raised and lowered by its rear end, to alter the distance between the plow and the track C.

E is a lever, pivoted by one end at *b* to the frame A, and adapted to be raised and lowered at its other end by a cam-lever, F, and connected by a rod, *c*, to the rear of the plow D, by which means the latter may be raised and lowered to any desired extent.

K is a powerful spring attached to the lever E, to hold the plow down to its work, and at the same time allow it to be raised by the lever F when required. Check-chains *g* will be arranged to connect the plow D with the car A, in addition to the pivots *a*, so that in event of the latter being broken the chains will still hold the plow in place.

G G are two small cylinders, connected by a tube or tubes, *d*, with the compressed-air cylinder of the air-brakes, (which is usually connected to the locomotive,) or to a separate compressed-air cylinder formed for that purpose. Each of the cylinders is supplied with a piston and piston-rod, connected by chains c' e^2 to the rear of the plow D, so that by allowing compressed air to enter the cylinders the plungers will be raised up and elevate the rear of the plow. The compressed air will be under the control of the engineer in the same manner as the air-brakes. Steam may be used instead of compressed air under some circumstances, if preferred; but the action would be the same.

Either or both of the means shown for elevating the plow may be used. The levers E F will be used when the plow is connected to locomotives upon which the air-brake appliances are not used, or to enable the plow to be operated by either the train-men or the engineer when used in connection with the compressed air. Only one compressed-air cylinder may be used, if preferred. Small steel shoes H' H^2 will be attached to the lower edges of the plow D, just inside the rails of the track C, to cut the snow and ice away from the rails, to clear the way for the flanges of the wheels of the cars, &c. The car A, carrying this clearer and flanger, will be placed next to the tender, in the rear of the locomotive, so that if any obstruction is met with the plow will not be liable to throw the locomotive from the track, and will not usually effect any further damage than to break a portion of one car, whereas when such devices are used forward of the locomotive great danger exists of throwing the latter, and with it the whole train, from the track, if any obstruction is met with. When placed in the rear of the locomotive, however, it is less liable to do serious injury in event of an accident.

The car A may be constructed with a frame extending from its rear, beneath which the plow D may be suspended, so that no part of the car is in the rear of the plow; hence if any accident occurs to the plow it will be merely torn loose from the frame and not affect the locomotive.

My method of securing the plow D to the frame A by hinging it thereto by its forward end and holding it down by the spring K is also an important feature, as the plow thus arranged, when striking any obstruction or meeting with a stronger resistance from snow and ice than the weight of the car or the strength of the spring can overcome, will be

thrown backward and upward, and thus pass over the obstacle and not injure the car or other parts of the train. Then when the resistance is passed over the plow will be returned to its work by the spring K.

This apparatus is intended to be used after light snows, or as an auxiliary to follow the large snow-plows, to remove the snow and ice which the latter cannot reach.

Having described my invention and set forth its merits, what I claim is—

1. A railroad-track clearer and flanger consisting of a plow, D, suspended by its forward end from a car in the rear of the locomotive, and means whereby said plow may be raised at its rear end by the action of a current of compressed air or steam under the control of the engineer of said locomotive.

2. The combination, with the car A, of the plow D, suspended beneath it by its forward end, and provided with shoes $H' H^2$, cylinder or cylinders G G, provided with plungers, and connected to said plow by chains $e' e^2$, and means whereby compressed air or steam may be introduced into said cylinders, substantially as and for the purpose set forth.

3. The combination of a track-clearer and pneumatic appliances for operating the same.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

MATTHEW ELLIS.

Witnesses:
C. N. WOODWARD,
LOUIS FEESER, Sr.