No. 666,863. Patented Jan. 29, 1901.

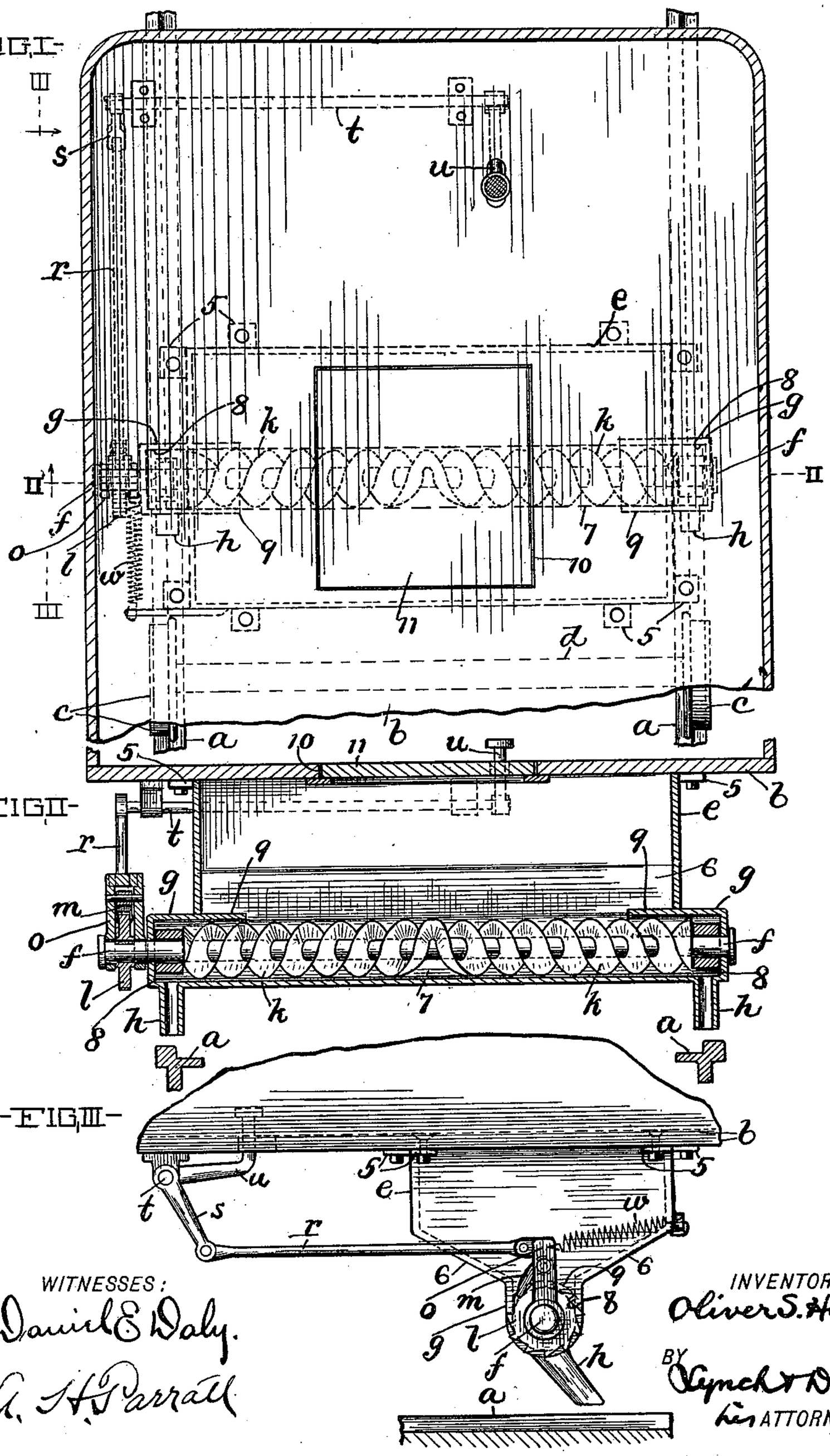
O. S. HAMMOND.

SANDING MACHINE FOR RAILWAY CARS OR VEHICLES.

(Application filed Mar. 29, 1900.)

(No Model.)

FIG. I.



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SANDING-MACHINE FOR RAILWAY CARS OR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 666,863, dated January 29, 1901.

Application filed March 29, 1900. Serial No. 10,712. (No model.)

To all whom it may concern:

Be it known that I, OLIVER S. HAMMOND, a resident of Toronto, in the county of York and Province of Ontario, Canada, have invented certain new and useful Improvements in Sanding-Machines for Railway Cars or Vehicles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to improvements in sanding-machines for railway cars or vehicles, and more especially to the provision of a railway car or vehicle with a machine for feeding sand or other equivalent material in advance of the forward wheels of the car or vehicle to the rails of the track along which the car or vehicle is adapted to be propelled.

My invention consists in providing the car or vehicle, in advance of the forward wheels of the car or vehicle, with a hopper having two spouts depending from opposite ends, respectively, of the hopper and arranged to discharge in advance of the said wheels upon the rails of the track upon which the car or vehicle is adapted to travel and two suitably-operated screw conveyers arranged within the lower portion of the hopper and adapted to feed material from the hopper to the different spouts, respectively.

My invention consists also in certain features of construction and combinations of parts hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure I is a top plan of a portion of a railway car or vehicle provided with my improved means for conveying sand or equivalent material to the rails of the track along which the vehicle or car is adapted to be propelled. Fig. II is an elevation, mostly in vertical section, on line II II, Fig. I. Fig. III is a side elevation on line III III, Fig. I.

Referring to the drawings, *a* and *a* designate the two rails of a track along which the car or vehicle is adapted to travel, and *b* represents the floor of the car or vehicle.

c and *c* designate the two oppositely-arranged forward wheels of the vehicle, that are connected in the usual manner by the axle *d*.

A hopper *e* is arranged below the car-floor in advance of and between the wheels *c* and *c*. The hopper *e* has its upper end provided, preferably, with any suitable number of external lugs or flanges 5, that are bolted or otherwise secured to the car-floor in any approved manner. The hopper *e* has its bottom declining inwardly and downwardly, as at 6, from the forward and rear sides of the hopper. The central portion of the hopper-bottom between the sloping portions 6 and 6 is depressed from end to end of the hopper, so as to form a channel 7, extending from end to end of the hopper. A shaft *f* extends through the channel 7, centrally between the sides of the said channel, and has bearing at the ends of the hopper in housings *g*, that extend over and cover the ends of the shaft at the outer sides of the end walls of the hopper. The chambers 8 of the housings *g* are in open relation with the channel 7. The hopper is provided with two discharge-spouts *h* and *h*, arranged at opposite ends, respectively, of the hopper and formed, preferably, upon and depending from the different housings, respectively. The spouts *h* and *h* have their upper ends communicating, therefore, with the chambers of the different housings, respectively. The spouts *h* and *h* have their lower ends arranged to discharge upon the different rails, respectively, in advance of the wheels *c* and *c*.

Two screw conveyers *k* and *k*, the one right-handed and the other left-handed, are formed upon the shaft within the hopper and extend from the central portion of the channel 7 outwardly in opposite directions, respectively, and have their outer ends terminating at opposite ends, respectively, of the hopper, and the arrangement of the conveyers is of course such that they shall during the rotation of the shaft feed material from within the hopper to the two discharge-spouts simultaneously.

Means for preventing the passage of material from within the hopper to the discharge-spouts when the conveyer-shaft is not being operated is provided and comprises, preferably, two covers 9 and 9, extending over and in close proximity to the outer ends of the different screw conveyers, respectively.

Mechanism for intermittently rotating the shaft is provided and comprises, preferably, a ratchet-wheel *l*, that is operatively mounted upon the shaft at the outer side of one of the shaft-supporting housings. The ratchet-wheel is engaged by a pawl *m*, that is arranged at the top of the wheel and between the end members of a U-shaped frame *o*, to which the pawl is pivoted horizontally and longitudinally of the conveyer-shaft. The pawl-bearing frame has its end members journaled or loosely mounted upon the conveyer-shaft and normally stands in an upright position and has its central member or upper end operatively connected, by means of a link or rod *r*, that extends forwardly from the pawl-bearing frame, with the lower or free end of a lever *s*, that depends from and is operatively mounted upon an oscillating shaft *t*, that is arranged below and transversely of and suitably supported from the car-floor. The shaft *t* is provided also with a foot-lever *u*, that extends upwardly through the car-floor within reach of the foot of the operator. A suitably-applied spiral spring *w* acts to retain the pawl-bearing frame and the mechanism operatively connected with the said frame in their normal position, and the said spring in the case illustrated has one end thereof attached to the rear side of the pawl-bearing frame and is attached at its opposite end a suitable distance rearward of the said frame to the hopper.

The arrangement of the parts is such that a depression of the lever *u* will result in the actuation of the pawl against the action of the spring *w* and in the direction required to effect a partial rotation of the ratchet-wheel and connected screw conveyers in the direction required to cause the said conveyers to feed material to the discharge-spouts of the hopper.

The hopper is provided at the top with an inlet that is formed, preferably, by an opening 10, formed in the car-floor and closed by a trap-door 11, as shown in Fig. II.

What I claim is—

1. The combination, with a railway car or vehicle having wheels arranged at opposite sides, respectively, of the vehicle, and a hopper arranged transversely of the vehicle in advance of and between the aforesaid wheels, which hopper has two spouts extending from opposite ends, respectively, of the hopper and arranged to discharge in advance of the aforesaid wheels, of a shaft arranged horizontally and transversely of the vehicle within the lower portion of the hopper, which shaft is supported from the hopper at the upper ends of the discharge-spouts, a right-handed screw conveyer and a left-handed screw conveyer formed upon the said shaft between the central portion and opposite ends, respectively, of the shaft, mechanism for rotating the shaft, and covers 9 over the outer ends of the screw conveyers within the hopper, substantially as and for the purpose set forth.

2. The combination, with a railway car or vehicle having two wheels arranged at opposite sides, respectively, of the vehicle, of a hopper arranged in advance of and between the said wheels and having two spouts extending from opposite ends, respectively, of the hopper and arranged to be discharged in advance of the different wheels, respectively, which hopper has its bottom sloping downwardly and inwardly from the forward and rear sides of the hopper and has its central portion, between the aforesaid sloping portions of the bottom, depressed, and has the said depressed portion extending from spout to spout, a horizontally-arranged shaft extending centrally and longitudinally of and through the centrally-depressed portion of the hopper, which shaft is supported at the ends of the said depressed portion of the hopper, mechanism for operating the shaft, and a right-handed screw conveyer and a left-handed screw conveyer formed upon the said shaft between the central portion and opposite ends, respectively, of the shaft.

3. The combination, with a railway car or vehicle having two wheels arranged at opposite sides, respectively, of the vehicle, of a hopper arranged in advance of and between the said wheels and having two spouts depending from opposite sides, respectively, of the hopper and arranged to discharge in advance of the different wheels, respectively, which hopper has its bottom sloping downwardly and inwardly from the forward and rear sides of the hopper and has its central portion, between the aforesaid sloping portions of the bottom, depressed, and has the said depressed portion extending from spout to spout, a suitably-operated and suitably-supported horizontally-arranged shaft extending centrally and longitudinally through the said depressed portion of the hopper, a right-handed screw conveyer and a left-handed screw conveyer formed upon opposite ends, respectively, of the aforesaid shaft, and the covers 9 formed over the outer ends of the screw conveyers over and in close proximity to the screw conveyers between the aforesaid sloping portions of the hopper's bottom.

4. In a railway car or vehicle, the combination, with a hopper supported from the car and provided with an outlet arranged to discharge upon a track-rail along which the vehicle is adapted to travel, of a suitably-supported shaft extending through the lower portion of the hopper, a screw conveyer formed upon the said shaft and arranged to feed material from within the hopper to the aforesaid outlet, a ratchet-wheel operatively mounted upon the shaft, a frame journaled upon the shaft, a pawl engaging the ratchet-wheel and pivoted to the said frame horizontally and longitudinally of the shaft, a suitably-applied

spring acting to retain the pawl-bearing frame in its normal position, and lever mechanism operatively connected with the said frame, and the arrangement of parts being such that the operation of the said lever mechanism shall result in the oscillation of the pawl-bearing frame in the direction required to cause the pawl to actuate the ratchet-wheel in the direction required to operate the screw conveyer.

Signed by me at Toronto, Canada, this 10th day of March, 1900.

OLIVER S. HAMMOND.

Witnesses:

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