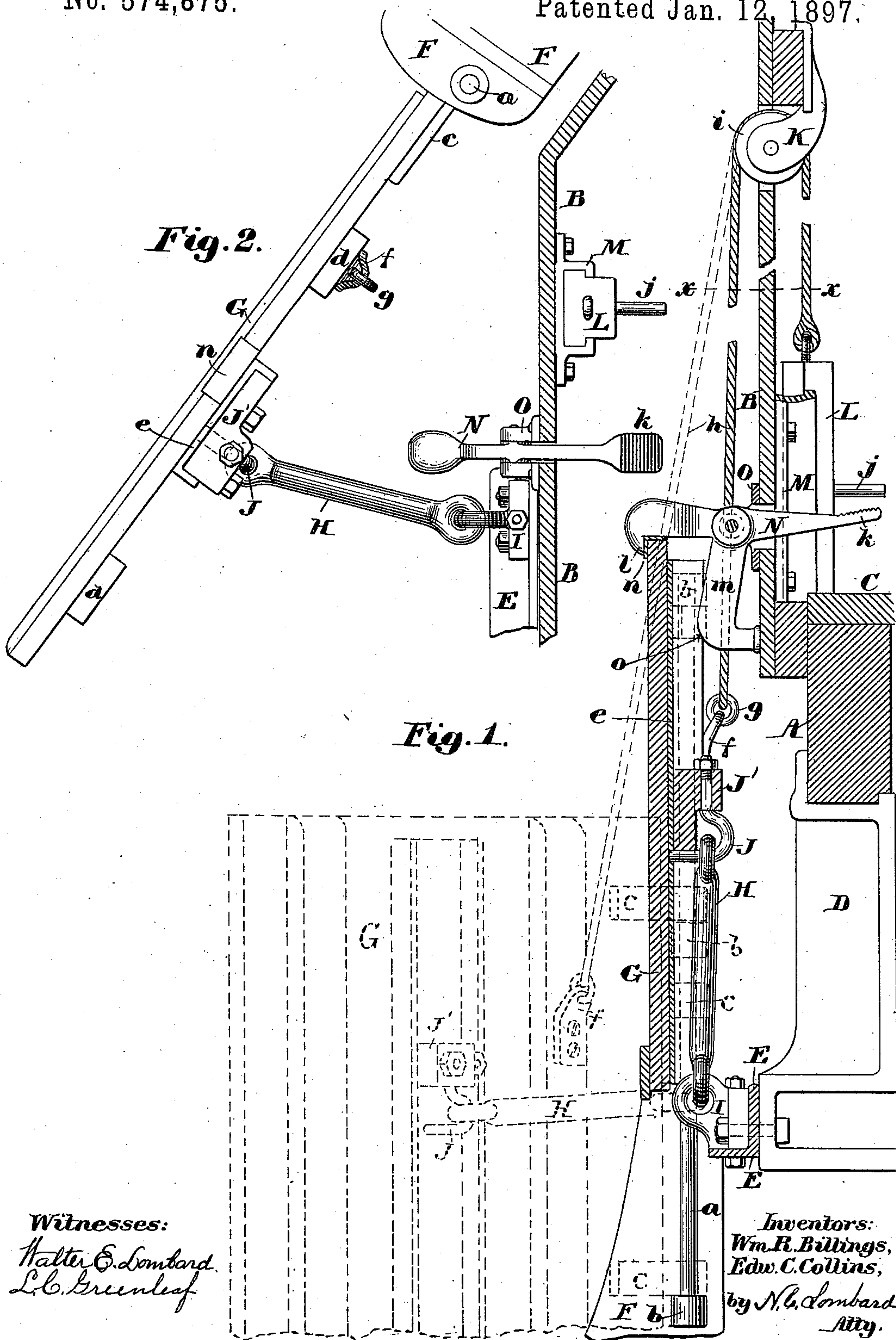


(No Model.)

W. R. BILLINGS & E. C. COLLINS.
SNOW PLOW FOR STREET RAILWAYS.

No. 574,875.

Patented Jan. 12, 1897.



Witnesses:
Halter E. Lombard.
L. C. Greenleaf

Inventors:
Wm. R. Billings,
Edw. C. Collins,
by N. C. Lombard
Atty.

UNITED STATES PATENT OFFICE.

WILLIAM R. BILLINGS AND EDWARD C. COLLINS, OF TAUNTON, MASSACHUSETTS, ASSIGNORS TO THE TAUNTON LOCOMOTIVE MANUFACTURING COMPANY, OF SAME PLACE.

SNOW-PLOW FOR STREET-RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 574,875, dated January 12, 1897.

Application filed October 17, 1896. Serial No. 609,186. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM R. BILLINGS and EDWARD C. COLLINS, of Taunton, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Snow-Plows for Street-Railways, of which the following, taken in connection with the accompanying drawings, is a specification.

Our invention relates to snow-plows for street-railways, and especially to the mechanism for operating and controlling the wings or pivoted extensions of the plowshares, and is an improvement upon the invention shown and described in the Letters Patent No. 527,523, granted to Francis W. Dean and William E. Mathews October 16, 1894; and it consists in certain novel features of construction, arrangement, and combination of parts, which will be readily understood by reference to the description of the accompanying drawings, and to the claims hereto appended, and in which our invention is clearly pointed out.

Figure 1 of the drawings is a transverse vertical section through a portion of one side of a snow-plow embodying our invention and showing in full lines the position of the wing when thrown out of action by being raised and folded into a position parallel, or nearly so, to the side of the car-body, and also showing in dotted lines the position of the same parts when the wing is dropped to its lowest position and swung into operative position. Fig. 2 is a horizontal section through a portion of the car-body on line $x x$ on Fig. 1 and showing in plan the wing in operative position.

In the drawings, A is the sill of the car-body, B one of the side walls, C the floor of the car, D the housing for the axle-box, E an angle-iron connecting the housings on the same side of the car, and F is a small portion of the main body of the plowshare, all of which parts are constructed and arranged substantially as shown and described in the Letters Patent before cited.

G is the wing or pivoted share extension, connected to the main plowshare by means of the vertical rod a , mounted in fixed ears b on said main plowshare, and the bearings $c c$,

secured to said wing and fitted to and movable circumferentially and vertically on said rod, substantially as in said before-cited patent.

The wing G is held in its expanded or operative position by the link H, provided at its ends with eyes, one of which is engaged by the eye I, firmly secured in a fixed position to the angle-iron E, and the opposite end of which engages the eyebolt or hook J, secured in a fixed position to the wing G, as shown.

The wing G has secured to its inner face the wooden battens $d d$ and the metal angle-iron batten e , to the latter of which the eyebolt or hook J is connected by means of its stand J' and suitable bolts, as shown.

A plate f , carrying at its upper end the metal ring g , is secured to the inner side of the wing G, and said ring has secured thereto one end of the rope h , which passes over the sheave i , mounted in the stand K, secured to the inside of the wall of the car-body, as shown, and has suspended from its other end the weight L, fitted to slide in guideways M, secured to the inside of the wall of the car-body, and adapted to partially counterbalance the weight of the wing G to such an extent that a person by placing his foot upon the pin j , projecting inward from said weight, and pressing downward thereon may raise the wing G to the extreme of its upward movement, during which movement the link H is moved upward about its connection to the eye I into and slightly past a vertical position, when the wing G assumes the raised and folded position parallel to the side of the car-body, as shown in Fig. 1. The wing G will remain in such raised and folded position without being otherwise secured, while the car remains at rest by virtue of the fact that the upper end of the link H is thrown inward beyond a position perpendicularly above the center of the eye I, but to prevent the jar of the car displacing it when in operation it is necessary to lock or latch said wing in its raised and folded position, when it is not required to be in operation, while the main plowshare is in operation.

N is a three-armed lever pivoted to a stand O, secured to the outside of the wall of the

car-body, through which one arm of said lever projects into the interior of the car and is provided at its end with a roughened pad *k*, while the opposite horizontal arm projects
 5 outward, is weighted at its outer end, and provided with the downwardly-projecting lug or catch *l* to engage the outer face of the wing *G*, as shown in Fig. 1.

The pendent arm *m* of the lever *N* is so
 10 formed as to rest against the side of the car-body at *m'* when in its normal position, and is held in such contact by the action of gravity until displaced by force.

When the wing *G* is raised and moved in-
 15 ward by depressing the counterweight *L*, the metal plate or angle-iron *n*, secured to the upper edge of said wing, strikes the outer inclined surface of the catch or lug *l* and raises the weighted outer end of the outer
 20 horizontal arm of the lever *N* to permit the edge of said wing to pass said catch, when the weighted end of said lever will fall with the catch *l* outside of the angle-iron *n* and effectually prevent the wing *G* being moved out-
 25 ward again until said catch is raised. When it is desired to drop the wing and move it into operative position, the operator, standing inside the car, places his foot upon the pad *k* of the lever *N* and depresses it sharply to
 30 disengage the catch *l* and cause the knuckle *o* of the pendent arm *m* to strike the inner surface of the angle-iron *e* with a sharp blow and move the wing *G* outward till the upper end of the link *H* is inclined outward to such
 35 an extent that the force of gravity acting upon said wing will cause it to fall into its lowest and operating position.

The main plowshare and the mechanism for controlling its operation may be of the
 40 same construction as shown and described in the before-cited patent or of any other suitable construction, but as they do not constitute a part of our present invention they are not shown or described in our present appli-
 45 cation.

The operation of our invention will be readily understood from the foregoing without further description here.

It is evident that a chain may be substi-
 50 tuted for the rope or cord *h* without affecting the principles of our invention.

What we claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a snow-plow, the combination of a
 55 share extension-wing pivotally connected to the main plowshare, and adapted to be raised relative to said main share and moved about said pivotal connection; a sheave mounted in the side of the car-body; a cord or chain con-
 60 nected at one end to said extension-wing and

passing over said sheave into the interior of the car-body; a weight secured to the other end of said cord or chain, and guided by a suitable bearing, and adapted to partially
 65 counterbalance the weight of the extension-wing; and means for receiving the operator's foot to depress said weight and raise said wing.

2. The combination of a share extension-wing pivoted at one end to the main plow-
 70 share of a snow-plow, and adapted to be moved about said pivotal connection, and raised relative to said main share; a link pivoted at one end to a fixed part of the plow-frame, and at its other end to a fixed connec-
 75 tion to said wing, and adapted to be moved from a horizontal, to a vertical position; a sheave set in the side wall of the car-body; a counterweight fitted to a suitable guide
 80 within said car-body; a cord or chain passing over said sheave, and connected at one end to said share extension-wing, and at its other end to said weight; and means for depressing
 85 said weight and raising said wing by the pressure of the operator's foot.

3. In a snow-plow, the combination of a share extension-wing pivotally connected to the main plowshare, and adapted to be raised
 90 relative to said main share and moved about said pivotal connection; means for raising said wing relative to said main share, and moving it about its pivotal connection thereto; a locking-lever pivoted to the wall of the car-
 95 body, and provided, outside of said car-body, with a catch to automatically engage the upper edge of said wing when in raised and folded position, and on the inside of said car
 100 body with a pedal-arm by which said catch may be disengaged from said wing by the operator within the car; and means for auto-
 105 matically impelling said wing away from said car-body when released.

4. In a snow-plow, the combination of the pivoted wing *G*; means for raising said wing
 110 and moving it about its pivotal axis; the three-armed lever *N*, one arm of which is provided with the foot-pad *k*, another arm with the catch *l*, and the third with the knuckle *o*, all constructed, arranged and operating sub-
 115 stantially as described.

In testimony whereof we have signed our names to this specification, in the presence of two subscribing witnesses, on this 9th day of October, A. D. 1896.

WM. R. BILLINGS.
 EDW. C. COLLINS.

Witnesses:

H. T. ALLRO,
 H. N. INGELL.