

(No Model.)

J. G. KUHLMANN.

SNOW PLOW.

No. 323,043.

Patented July 28, 1885.

FIG. 1.

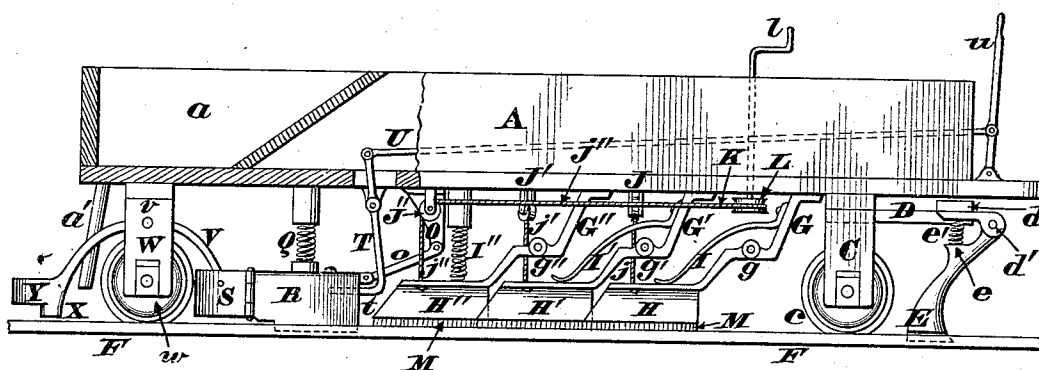


FIG. 2.

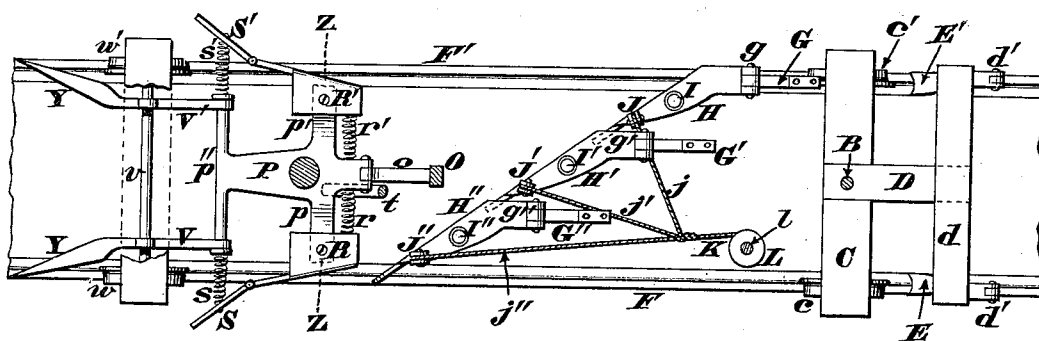


FIG. 3.

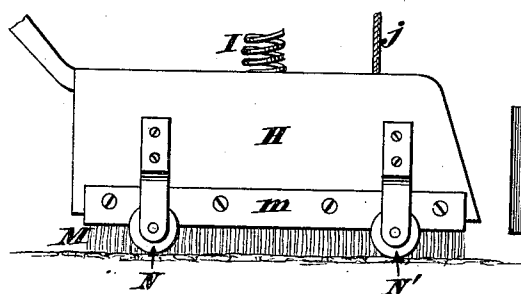
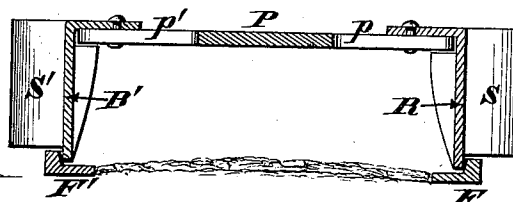


FIG. 4.



Attest.
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UNITED STATES PATENT OFFICE.

JOHN G. KUHLMANN, OF CINCINNATI, OHIO, ASSIGNOR OF ONE-HALF TO
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SNOW-PLOW.

SPECIFICATION forming part of Letters Patent No. 323,043, dated July 28, 1885.

Application filed October 27, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOHN G. KUHLMANN, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Snow-Plows, of which the following is a specification, reference being had therein to the accompanying drawings.

The object of my invention is to provide a plow wherewith snow and ice can be readily removed from street-railroad tracks without employing manual labor. To accomplish this result I make use of a platform-car capable of being drawn by horses, and attach to the underside of said car a set of scrapers, plows, and brushes, which clean the tracks and sweep the snow and ice off to one side of the same, as hereinafter more fully described.

In the annexed drawings, Figure 1 is a sectioned side elevation of my improved snow-plow. Fig. 2 is a plan of the operative parts of the same. Fig. 3 is an enlarged rear elevation of one of the plows. Fig. 4 is an enlarged transverse section of the plow taken at the line *z z* of Fig. 2.

A represents a platform-car capable of being drawn by horses or other suitable power, the rear end of said car being partitioned off, so as to form a bin, *a*, from which salt may be discharged through a pair of pipes or tubes, of which devices one is seen at *a'*. The front of the car is coupled by a king-bolt, B, (seen in Fig. 2,) to the truck C of a pair of wheels, *c c'*, said truck having attached to its mid-length a beam, D, whose outer end carries a transverse bar, *d*, to the extremities of which latter are hinged at *d'* a pair of scrapers, E E', adapted to clean the tracks F F'. Each of these scrapers has a shoulder or bearing, *e*, and a suitable spring, *e'*, the stress of which latter tends to keep the lower ends of the scrapers in contact with the rails, while at the same time the hinges *d'* permit said scrapers to swing rearwardly a sufficient distance to clear stones, spike-heads, and other obstructions.

Depending rigidly from the car A, and near one side of the same, is a hanger, G, to which is jointed at *g* the front plow, H, whose inner end is slightly in advance of the next plow, H', and the latter is arranged in the same manner

with reference to the rear plow, H". The plows H' and H" are pivoted, respectively, at *g' g''* to hangers G' G'', and all the plows are provided with springs that maintain them in their proper position. The plows H and H' are shown furnished with plate-springs I I', whose fixed ends are attached to the hangers G G', while the rear plow, H", has a coiled spring, I'', the upper end thereof being fastened to a suitable keeper.

Depending from the car are three sheaves, J J' J'', over which are passed ropes or chains *j j' j''*, proceeding from the plows H H' H'', said ropes being attached to a short rope or chain, K, adapted to be wound round the drum L of shaft *l*, by which arrangement all of said plows can be simultaneously raised from off the ground and lowered in the same manner. Furthermore, Fig. 2 shows that these plows are all disposed in the same oblique manner, so as to throw the loosened snow and ice off at one side of the tracks. Each plow is shod with wire or splint-bristles or brushes M, secured in suitable heads, of which one is shown at *m* in Fig. 3, small wheels, N N', being applied to the back of the plows to prevent said brushes being crushed down by the pressure of the springs.

Depending from the car is another hanger, O, to which is coupled a link, *o*, the rear end of the latter being jointed to a frame, P, that is maintained in its proper position by the spring Q. This frame has lateral arms *p p'*, to which are pivoted scrapers R R', adapted to clear the tread and flange of the tracks, said scrapers being held up snugly against the inner sides of the flanges by means of springs *r r'*. Hinged to the rear ends of these scrapers are wings S S', which are maintained in their proper oblique position by springs *s s'*, whose inner ends bear against the opposite extremities of the bar *p''* of frame P. In order that this frame and its attached scrapers may be lifted bodily while the car is passing a curve, a lever, T, is provided, the toe of which, *t*, passes in under said frame, while the upper end of said lever has attached to it a rod, U, that connects with a handle, *u*, convenient to the driver.

Coupled to the bar *p''* are two arms, V V', adapted to rock on a rod, *v*, secured to the truck W of the hind wheels, *w w'*, each arm having at its rear end a tongue, X, capable of

entering the groove usually made in the curved portions of street-railroad tracks. Y are oblique wings or deflectors in the rear of said tongues. These tongues are at all times elevated when the scrapers R R' are in their normal position, (seen in Fig. 1;) but the instant said scrapers are raised the tongues are forced down into the grooves of the track, thereby clearing the latter, while the wings Y are removing the snow and ice from the upper surface of the flange. As the front scrapers, E E', are not rigidly attached to the car, but are connected to the truck C of wheels *c c'*, it is evident said scrapers will turn in advance of said wheels, and thereby follow any curve in the track. It is also evident that the plows H H' H'' will effectually break up and throw off to one side the main bulk of snow, while the brushes M will sweep the track clear of smaller obstructions; but any snow that may be thrown over on the rails F F' will be finally removed by the rear scrapers, R R', and wings S S', which wings serve also as guards or fenders to prevent a person slipping in under the wheels *w* *w'* of the car.

I claim as my invention—

1. The combination, in a snow-plow, of the scrapers E E', hinged at *d'* to the cross-bar *d* of the swiveled truck B C D, said scrapers being provided with bearings *e* and springs *e'*, for the purpose described.

2. The combination, in a snow-plow, of a gang of plows, H H' H'', hinged to hangers G G' G'', and provided with lifting devices *j j' j''*, communicating with a common drum, L, suit-

able springs, as I I' I'', being employed for retaining said plows in their normal position, as herein described.

3. The combination, in a snow-plow, of the frame P *p p' p''*, coupled by means of the link *o* to the car, said frame being maintained in its normal position by the spring Q, and being provided with scrapers R R', hinged wings S S', and springs *r r' s s'*, for the purpose described.

4. In combination with the frame P *p p' p''* and its attachments Q R R' S S' *r r' s s'*, the lever T, having its toe engaged under said frame P, for the purpose described.

5. The rock-arms V V', hung on the rod *v*, coupled to the bar *p''* of frame P, and carrying at their rear ends the deflecting wings Y and tongues X, for the purpose described.

6. The combination of the plow H, brushes M, and rollers N N', for the purpose described.

7. The combination, in a snow-plow, of a car provided with a gang of scrapers hinged to its under side and arranged in line obliquely across the track, each scraper being furnished with a branch chain attached to a main chain, which latter is coiled around a drum in order that said hinged scrapers can be raised or lowered simultaneously, in the manner herein described, and for the purpose stated.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN G. KUHLMANN.

Witnesses:

JAMES H. LAYMAN,
SAML. S. CARPENTER.