

No. 743,504.

PATENTED NOV. 10, 1903.

E. S. HART.
DUMPING CAR.

APPLICATION FILED AUG. 15, 1902.

NO MODEL.

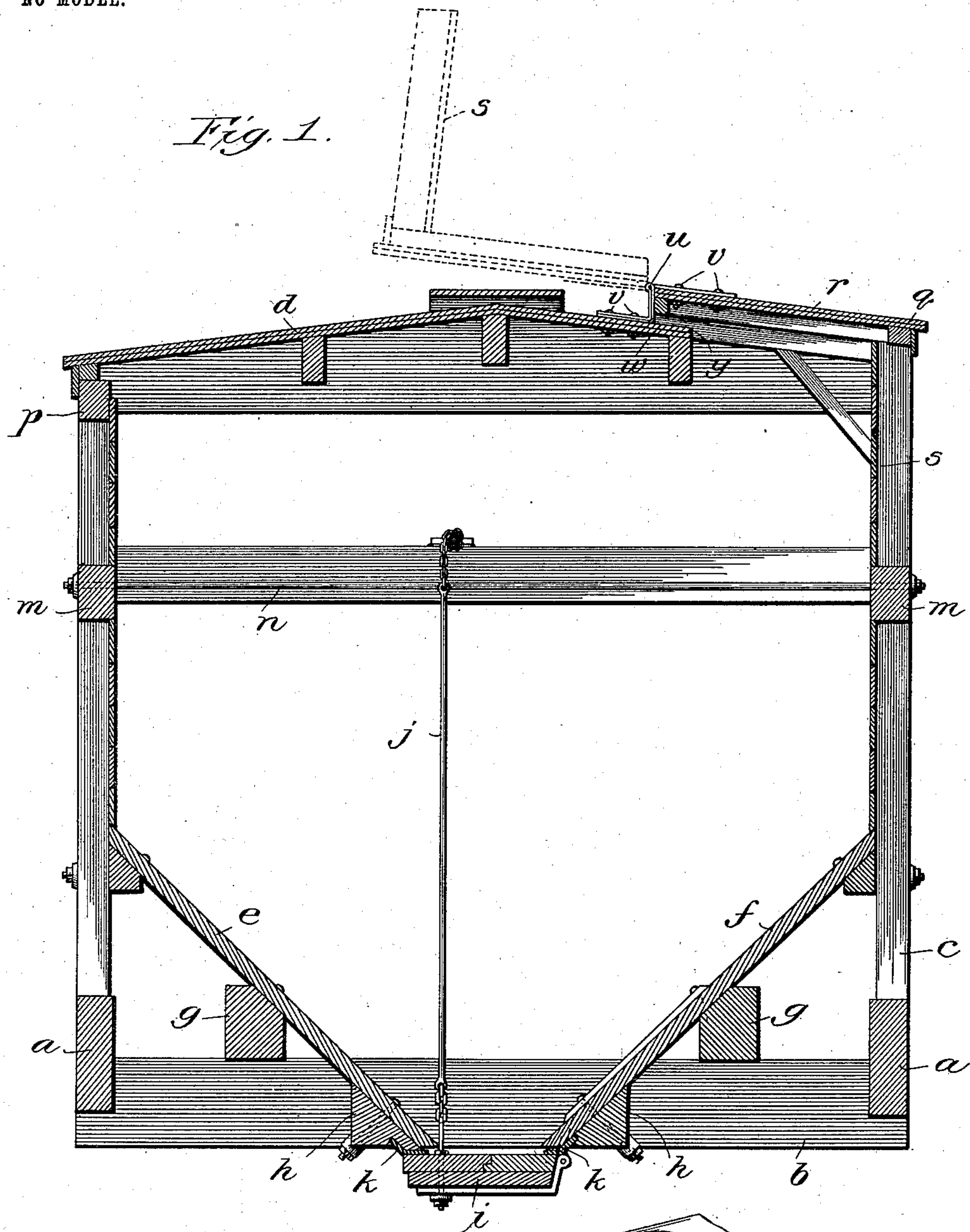
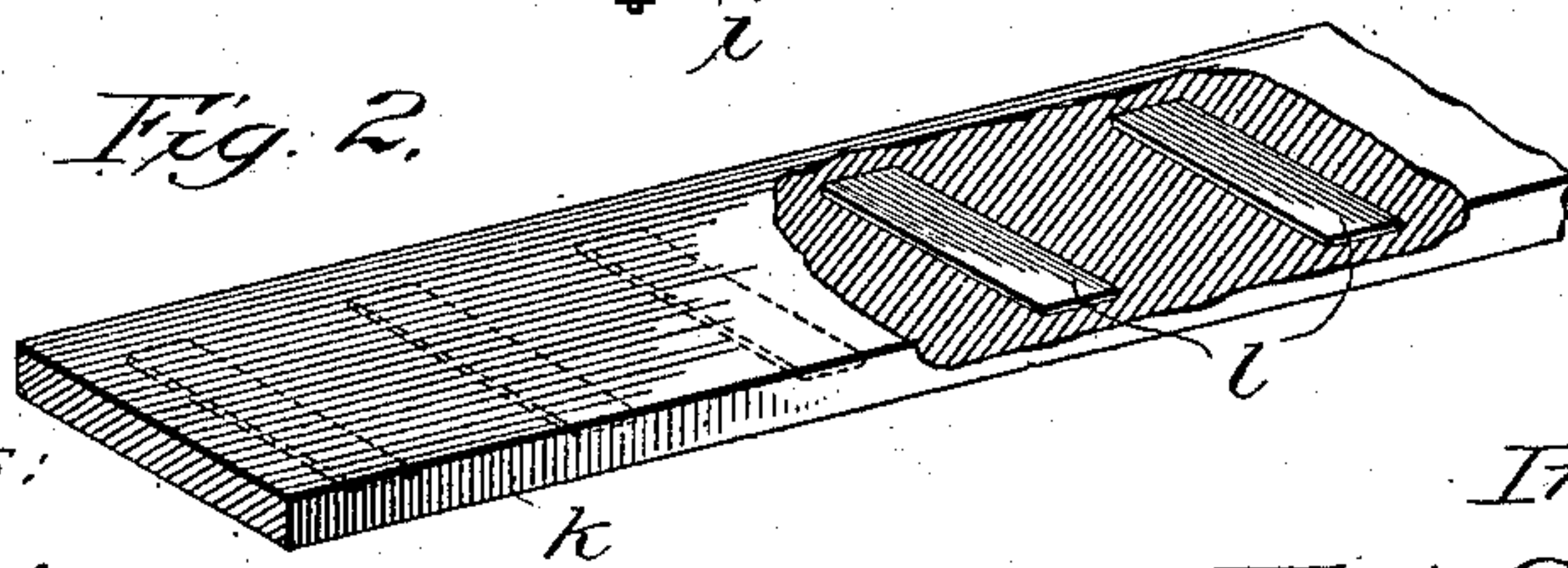


Fig. 2.



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DUMPING-CAR.

SPECIFICATION forming part of Letters Patent No. 743,504, dated November 10, 1903.

Application filed August 15, 1902. Serial No. 119,743. (No model.)

To all whom it may concern:

Be it known that I, ELI S. HART, a citizen of the United States, residing at Chicago, Illinois, have invented certain new and useful Improvements in Dumping-Cars, of which the following is a specification.

This invention relates to that class of dumping-cars known as "hopper-bottom" dumping-cars, and particularly to the means by which the space between the dumping-door and the hopper-bottom is sealed, all of which will more fully hereinafter appear.

The principal object of this invention is to provide a simple, economical, and efficient hopper-bottom dumping-car with a dumping-door and means for sealing the space between such door and the hopper-bottom, consisting of elastic compressible sealing-strips, and to provide means for springing such strips into normal position and shape under all climatic conditions and though frozen comparatively stiff and having ice formed thereon.

A further object is to provide means for permitting the car to be loaded when desired without opening side doors or any part of the car below the top of the load.

Further objects of the invention will appear from an examination of the drawings and the following description and claims.

The invention consists principally in the combination of a car-body provided with a hopper-bottom, a dumping-door movably secured thereto, and elastic sealing-strips interposed between such door and the hopper-bottom.

It consists, further, in sealing-strips provided with means for springing such strips back into normal position although frozen comparatively stiff and having ice formed thereon.

The invention consists in the features, combinations, and details of construction hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a vertical sectional elevation of a car-body constructed in accordance with these improvements, and Fig. 2 an enlarged perspective view of a portion of the sealing device.

In the art to which this invention relates it is well known that when a dumping-car is used for carrying coarse materials not much attention need be paid to the structure of the

car, in that it is unnecessary to seal all of the cracks and openings, but that when such car is used for carrying grain or fine ores it is essentially necessary that it be constructed in such a manner as to prevent the egress of the materials or the ingress of moisture and permit material to be readily loaded and unloaded without waste. The principal object of this invention, therefore, is to provide a car of the class illustrated with a hopper-bottom having at its discharge-opening a pivoted door and elastic sealing devices arranged between the door and the hopper-bottom, which cause the space between the door and the hopper-bottom to be sealed to prevent the egress of grain or the ingress of moisture or water and at the same time assist in opening such door whenever desirable or necessary. A further object is to provide in connection with these elements a door or doors forming a part of the roof and a part of the side portion of the car and adapted to permit material to be loaded by means of chutes and without opening the car below the "load-line"—that is, below the point level with the top of the load—all of which will more fully hereinafter appear.

In illustrating and describing these improvements I have only illustrated and described that which I consider to be new, taken in connection with so much as is old as will properly disclose the invention to others and enable those skilled in the art to practice the same, leaving out of consideration other and well-known elements, which if illustrated and described herein would only tend to confusion, prolixity, and ambiguity.

In constructing a car in accordance with my improvements I provide a dump-car formed of side sills *a*, cross-sills *b*, side posts *c*, longitudinal tie-beams *m*, transverse tie-rods *n*, and roof portion *d*, laid upon rafters *o*, which are connected to the end frame in any ordinary manner. A roof-plate *p* may extend along one side of the car. The upper corner of at least one side, however, is provided with doors *q*, each having a main body portion *r*, which when the door is closed forms a portion of the roof, and a perpendicular portion *s*, extending substantially at right angles thereto and forming a part of the enclosing side portion of the car when closed.

These doors are connected to the roof, as at *w*, thus forming a sealed joint when tightly pressed into closed position. By this arrangement when the doors are open the corner of the car is open from the point of the roof *y* to the top of the longitudinal tie-beam *m*, and a chute for loading may thus readily be extended through the openings thus afforded and the car loaded without other openings or doors being necessary. In other words, a car is thus provided having its main inlet-opening arranged above the load-line or top of the load, and thus adapted to be sealed throughout below such point. This dispenses with the necessity for any doors or openings below the load-line except the discharge-door. The bottom of the car is formed of two inclined portions *e* and *f*, inclining downwardly and inwardly to a point adjacent to the longitudinal center of the car and resting upon intermediate sills *g* and *h*, to which they are firmly secured. Pivotaly secured to one of these inclined hopper-bottom portions is a dumping-door *i*, which by means of a rod-and-chain mechanism *j* is closed or permitted to drop into open position.

When the car is used for grain, as hereinbefore alluded to, it is very desirable that some device or devices be used elastic in their nature which will permit of a seal being formed between the door and the hopper-bottom, so as to prevent the egress of material or the ingress of rain or moisture. To provide for this, I make a sealing device consisting of main strips *k*, formed, preferably, of rubber or similar elastic waterproof material. Metallic strips *l*, formed, preferably, of steel, are laid transversely of the main strips at intervals and preferably embedded therein in such a manner that when the main strips are secured in place the metallic transverse strips will extend downwardly and inwardly. As the door is raised up and contacts the free ends of these strips it bends them up into the position shown in Fig. 1. In this position they form a perfect seal or joint, which prevents the egress of materials or the ingress of rain or moisture. When the rod is loosened, however, these strips assist somewhat in the opening of the door—that is, there is a tendency in them on account of their elastic nature to resume their normal position in a flat plane, and thus assist in opening the door. Again, it is desirable that these strips should be made in this way in order that any material laid

between them may be discharged from contact therewith. It is also very desirable that the sealing-strips be arranged back from the edges of the discharge-opening, so as to be overhung by the lower edges of the inclined hopper, sides and thus protected from the load as it is discharged through such opening.

I claim—

1. In a car of the class described, the combination of a hopper-bottom, a door arranged at the bottom of such hopper, and a sealing-strip consisting of a main strip of compressible material provided with a plurality of elastic metallic strips extending transversely thereof arranged between the door and the hopper-bottom, substantially as described.

2. In a car of the class described, the combination of a hopper-bottom, a door arranged at the bottom of the hopper, and a plurality of sealing-strips each consisting of a main strip of elastic compressible material having a plurality of elastic metallic strips embedded therein and extending transversely thereof arranged between the door and the hopper-bottom, substantially as described.

3. In a car of the class described, the combination of a hopper-bottom, a door hinged at the lower edge of one side of such hopper and extending to the lower edge of the opposite side thereof, and sealing-strips each consisting of a main strip of elastic compressible material having a plurality of elastic metallic strips extending transversely thereof embedded in the lower edges of the hopper-bottom and extending between such edges and the door, substantially as described.

4. In a car of the class described, the combination of a car-body comprising a hopper-bottom having inclined side portions and provided with a discharge-opening between the lower edges thereof, a discharge-door extending across such opening, and a flexible sealing-strip comprising a main strip of flexible material and a plurality of elastic metallic strips extending transversely thereof arranged on each side of the discharge-opening overhung by the lower edge of the inclined hopper side and extending between the door and the hopper when the door is in its closed position, substantially as described.

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