

(No Model.)

3 Sheets—Sheet 1.

N. P. COWELL.
VESTIBULE CAR.

No. 457,472.

Patented Aug. 11, 1891.

Fig. 2.

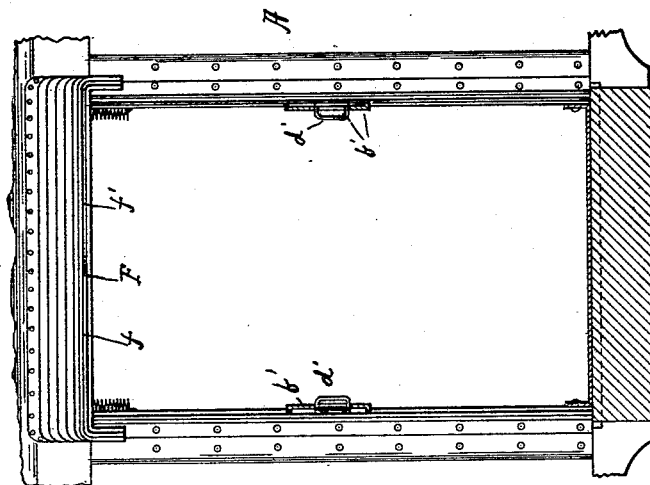
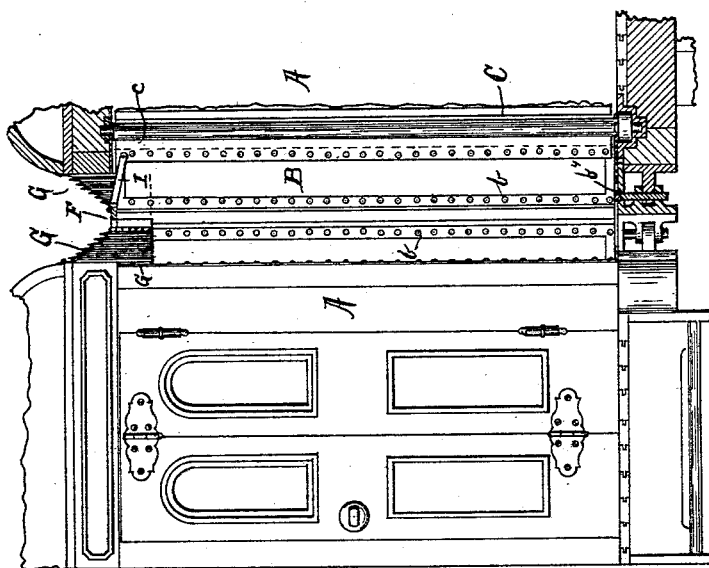


Fig. 1.



WITNESSES

Willis S. Brown

Charles

INVENTOR.

N. P. Cowell
By [Signature]
ATTORNEYS

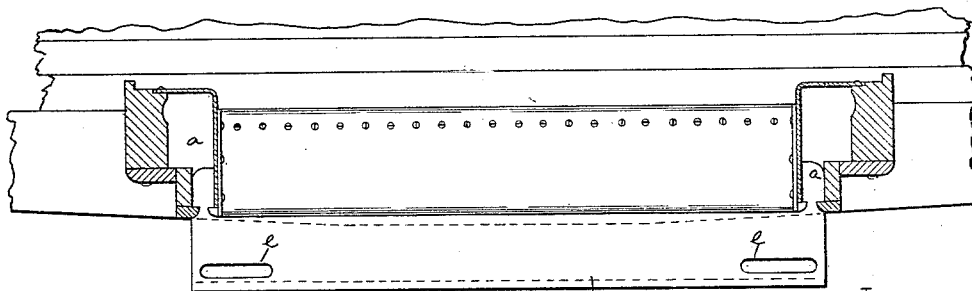
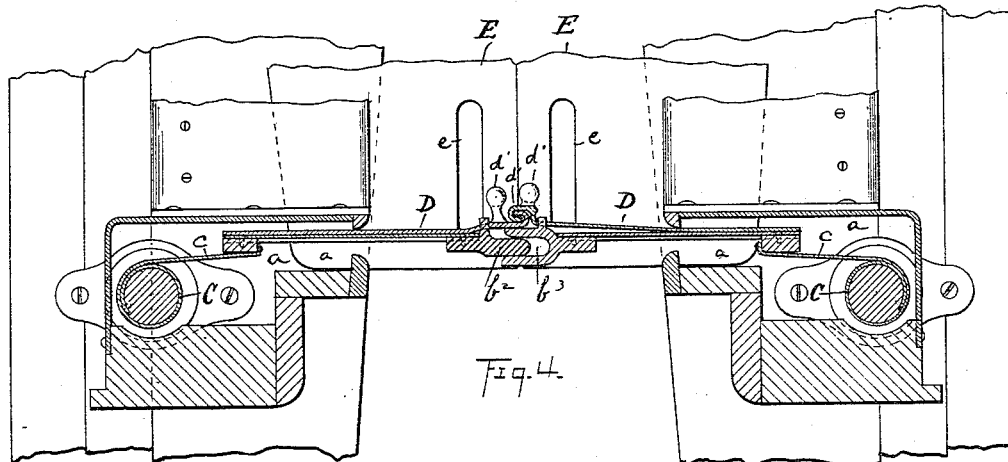
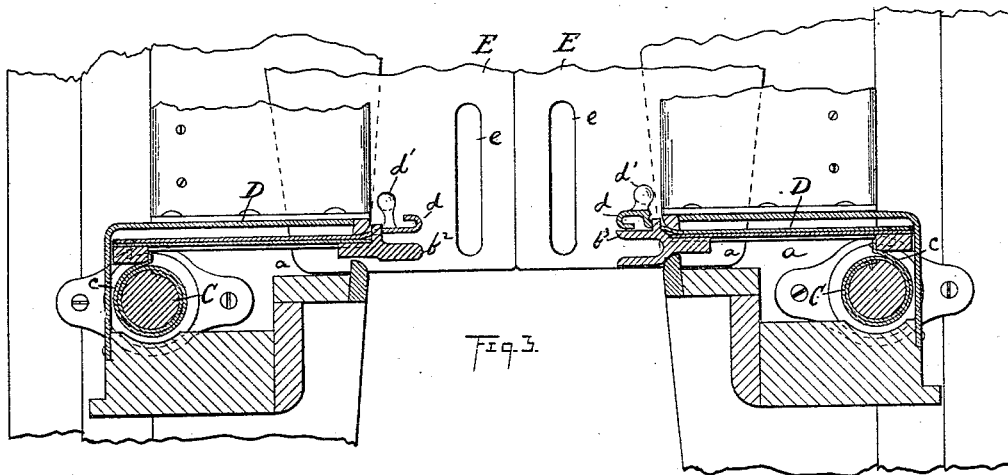
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3 Sheets—Sheet 2.

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WITNESSES

Bell & Co. Lowrie.

C. P. Cowell

Fig. 5. E

INVENTOR

N. P. Cowell
B. F. F. F. F. F.

ATTORNEY

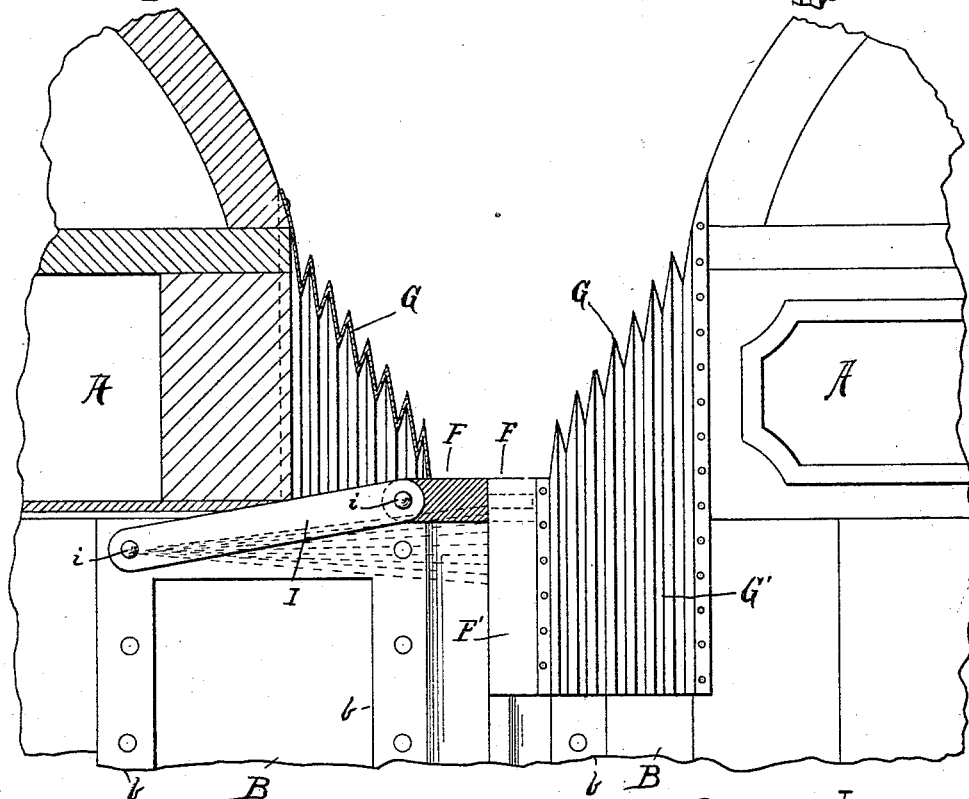
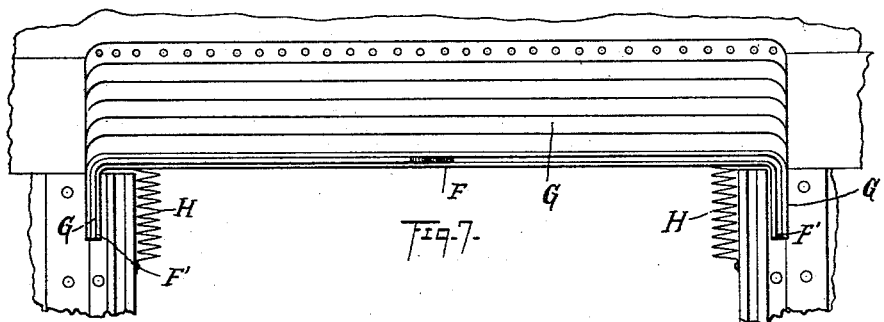
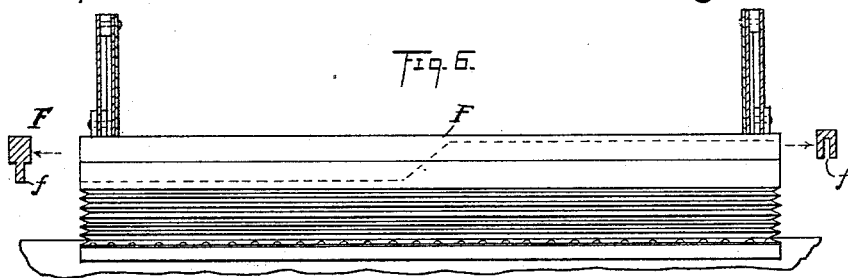
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3 Sheets—Sheet 3.

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WITNESSES

Will S. Loring
C. H. Loring

Fig. 8.

INVENTOR
N. P. Cowell
N. P. Cowell

ATTORNEYS

UNITED STATES PATENT OFFICE.

NEWELL P. COWELL, OF CLEVELAND, OHIO.

VESTIBULE-CAR.

SPECIFICATION forming part of Letters Patent No. 457,472, dated August 11, 1891.

Application filed December 19, 1890. Serial No. 375,257. (No model.)

To all whom it may concern:

Be it known that I, NEWELL P. COWELL, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and
5 useful Improvements in Vestibule-Cars; 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.

10 My invention relates to improvements in vestibule-cars; and it consists in certain features of construction, and in combination of parts hereinafter described, and pointed out in the claims.

15 In United States Letters Patent No. 394,339, granted to me December 11, 1888, heavy metal spring-backed frames or face-plates were shown for attaching, respectively, the outer edges of the curtain. These heavy metal
20 face-plates or frames were expensive to construct, and it was found in practice that the spring-backing thereof, more especially at the upper end of such frame or face-plate, would after a time lose somewhat of its tension, by
25 reason of which the face-plate or frame would not make tight joints with an opposing frame, but, on the contrary, would sometimes gape, perhaps, two or three inches, thus failing to protect the interior of the vestibule from the
30 weather. In view of these difficulties, and in order to construct mechanism less expensive and much more effective for the purpose, I have discarded such face-plates or frames, and in place thereof have devised the mechanism
35 shown in the accompanying drawings.

Figure 1 is a side elevation, partly in section. Fig. 2 is an end elevation. Figs. 3 and 4 are plans in section of the one side of the vestibules, showing, respectively, the curtains
40 or shutters in open and closed position. Fig. 5 is a plan of a portion of the vestibule with the curtain or shutter removed. Figs. 6 and 7 are plans in detail. Fig. 8 is an enlarged side elevation partly in section.

45 A A represent the vestibules of opposing cars, and B B are the side curtains or shutters for closing the lateral spaces between the vestibule-cars. The curtains or shutters may be of any suitable material—such, for instance,
50 as sheet metal or canvas—and in case of canvas or other flexible material they are stretched upon and secured to light frames b, usually of

metal. The curtains and frames, or the shutters, whichever they may be designated, are adapted, respectively, to retire into recesses
55 a, constructed in the side walls of the vestibule. At the rear end of these recesses are provided upright spring-actuated rollers C, and the curtains or shutters have attached
60 strips c of canvas or other strong flexible material, strips c being fastened to and adapted to wind on the respective rollers, whereby the curtains or shutters when not fastened together are drawn into the recesses a a.

To the inner edge of each curtain-frame or
65 shutter I attach a strap D, preferably about midway thereof vertically, and these straps are provided, for instance, with hooks d or other means for fastening together opposing
70 straps D and thereby holding opposing curtains or shutters together, and the other ends of straps D are provided with suitable handles d' for manipulating these straps, and suitable guards or loops are provided, as at b', for holding up the free ends of straps D when
75 unhooked.

The free edges of opposing curtain-frames or shutters have tongues b³ and grooves b³ for mutual engagement, a tongue occurring on the one curtain-frame or shutter and a
80 groove on the other curtain-frame or shutter of the same vestibule, so that if a car be turned end for end the curtain-frames or shutters will match.

E E are the buffers of the opposing cars, 85 the buffers having longitudinal slots or mortises e e, and the curtain-frames or shutters having tenons b⁴, adapted to operate in these mortises, whereby the line of union of opposing curtain-frames or shutters is always co-
90 incident with the contact-line of the buffers.

For closing the space at the tops of the vestibules I provide, first, light metal cross-bars F, usually of malleable cast-iron or of brass, these bars resting on the upper edges of the
95 curtain-frames or shutters, the end sections of bars F being bent down outside the curtain-frames or shutters, as shown at F'. The opposing edges of bars F are provided with
100 tongues f and grooves f' for mutual engagement, a tongue and a groove being located on the same bar, commencing at the longitudinal center thereof, the tongues and grooves extending in opposite directions to

the respective ends of the bar, so that these bars will match in changing ends of the car. A hood G, of canvas, leather, or other suitable material, is folded like a bellows, the one edge of the hood being attached to the vestibule and the other edge being attached to the adjacent bar F, the ends of the hood extending down some little distance past and on the outside of the upper sections of the curtains or shutters, as shown at G'; also, on the inside I provide member H, usually of the same material as the hood and folded like a fan and attached the one edge thereof to the inside of the hood and the other edge to the curtain-frame or shutter.

II are slight links or push-bars, constructed usually of thin metal straps, pivoted at *i* to the curtain-frame or shutter and pivoted at *i'* to the next adjacent bar F, so that in drawing the curtains or shutters together links I will force and hold the opposing bars F together, and thereby distend the hoods. If one bumper happens to be higher than the opposing bumper, as is likely to be the case where one car is not so heavily laden as the opposing car, this does not matter, although it would raise the one curtain or shutter perhaps an inch or two above the opposing curtain or shutter; but the hoods can accommodate themselves to such inequality, and in closing bars F F the lower bar would have to be raised to a level with the other bar, so that the tongues and grooves thereof could interlock, and in such position of parts the vestibule would be as effectually closed as when the opposing bumpers were on the same level. Straps D, although strong enough to hold the curtains or shutters together, still if the cars were inadvertently uncoupled and separated without unfastening these straps the straps would break without causing any further damage, and in uncoupling the cars it is only necessary to unhook or unfasten straps D, after which the curtains or shutters will take care of themselves, being quickly retired into the recesses by the action of the spring-actuated rollers. As straps D are fastened to the inner edges of the curtain-frames or shutters, these straps when fastened together can accommodate themselves to any up-and-down movement or irregularity of the curtains or shutters, and loops *b'* are made long enough to allow straps D considerable movement up and down. I may add that a comparatively thin

sheet of metal, preferably steel, might take the place of the curtain and curtain-frame shown, in which case these parts of the device would more properly be called "shutters," and in my judgment the one construction is as practical as the other, each having its advantages, according to circumstances. The slots in the buffers are long enough so that the swaying of the cars does not materially affect the curtains or shutters.

What I claim is—

1. In vestibule-cars, the combination, with shutters substantially as indicated, of cross-bars resting upon the shutters and tongued and grooved for mutual engagement, such cross-bars having depending ends or members overlapping the shutters on the outer side of the latter, substantially as set forth.

2. In vestibule-cars, the combination of shutters and cross-bars substantially as indicated, links or push-bars pivotally connected with the respective shutters and with the adjacent end sections of opposing cross-bars for actuating the latter with the movement of the shutters, substantially as set forth.

3. In vestibule-cars, the combination, with shutters substantially as indicated, of car-buffers, the latter having longitudinal slots and the shutters having tenons adapted to operate in such slots, substantially as set forth.

4. In vestibule-cars, the combination, with shutters, cross-bars resting upon the shutters, and links or push-bars connecting the shutters and cross-bars, of a hood of the bellows-fold variety, such hood being fastened the one edge thereof to the vestibule and the other edge thereof to the adjacent cross-bar, substantially as set forth.

5. In vestibule-cars, the combination, with shutters or curtains having frames or means of holding such curtains distended, of straps connecting, respectively, with the rear or inner edges of the curtains or shutters, the free ends of such straps having attached mutually-engaging locking mechanism for holding the curtains or shutters closed together, substantially as set forth.

In testimony whereof I sign this specification, in the presence of two witnesses, this 20th day of November, 1890.

NEWELL P. COWELL.

Witnesses:

C. H. DORER,
WARD HOOVER.