

Nov. 6, 1951

R. F. ABELL

2,573,755

LOCOMOTIVE SHROUD CLOSURE

Filed Feb. 14, 1948

2 SHEETS—SHEET 1

FIG. 1

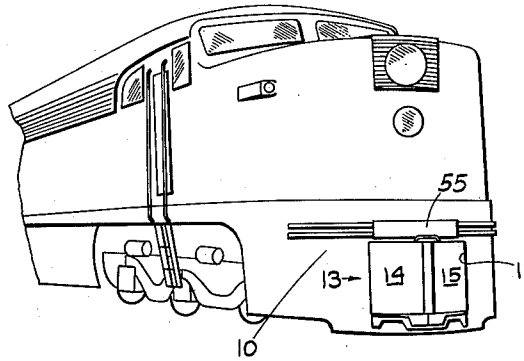


FIG. 2

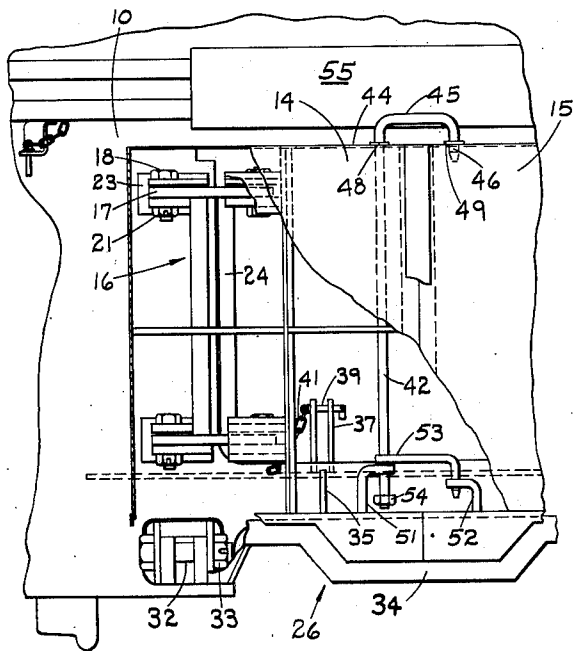


FIG. 3

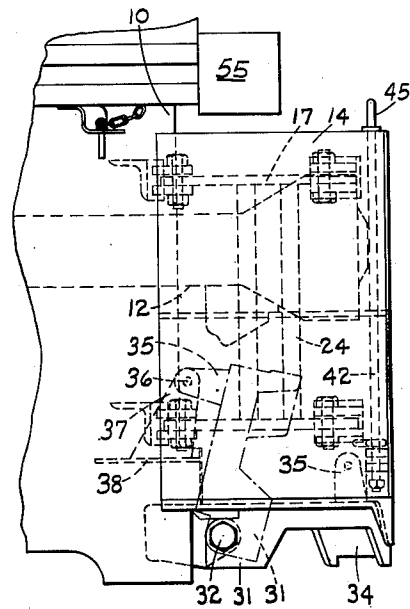
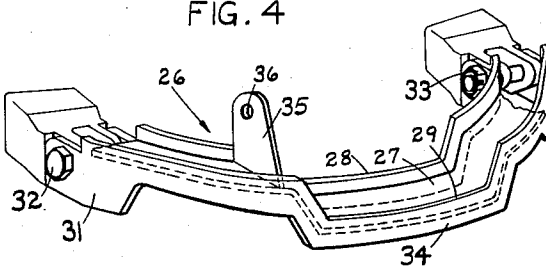


FIG. 4



INVENTOR  
Roy F. Abell

*Maura W. Grady*  
ATTORNEY

Nov. 6, 1951

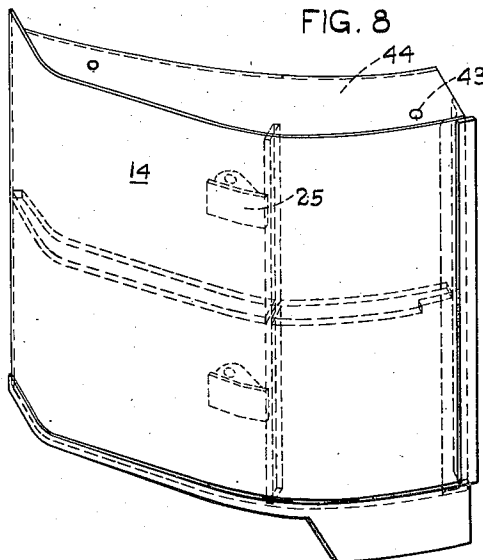
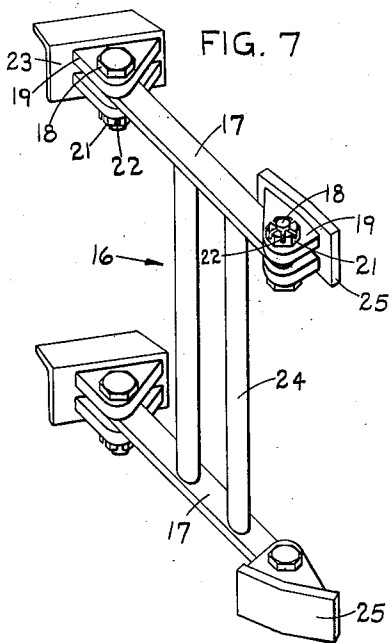
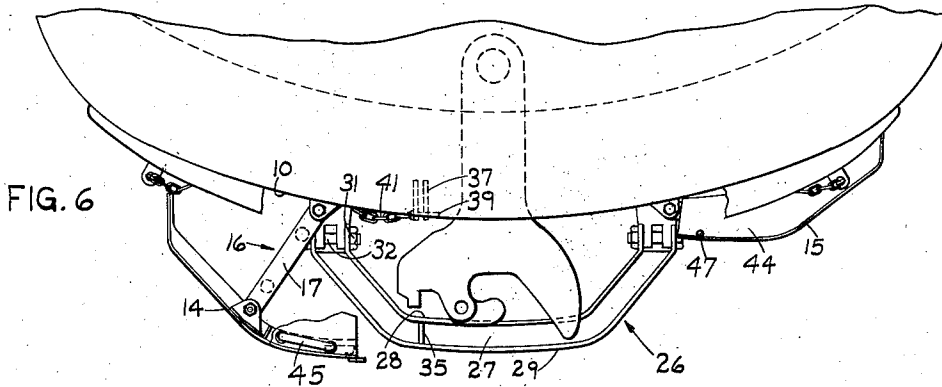
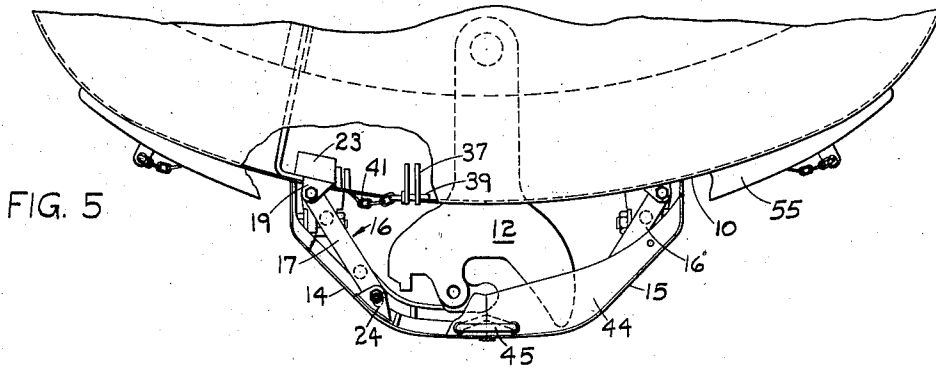
R. F. ABELL

2,573,755

LOCOMOTIVE SHROUD CLOSURE

Filed Feb. 14, 1948

2 SHEETS—SHEET 2



INVENTOR  
Roy F. Abell  
by *Maurice W. Grady*  
ATTORNEY

# UNITED STATES PATENT OFFICE

2,573,755

## LOCOMOTIVE SHROUD CLOSURE

Roy F. Abell, Schenectady, N. Y., assignor to  
American Locomotive Company, New York,  
N. Y., a corporation of New York

Application February 14, 1948, Serial No. 8,349

11 Claims. (Cl. 105—2)

1

This invention relates to a cover structure, and more particularly to such a structure for a coupler compartment on the front end of the stream-lined body of a locomotive.

The shroud of a stream-lined locomotive is customarily fabricated with an opening for a coupler in its lower front portion. A closure or door for the opening, shaped to conform substantially to the curvature of the shroud, is sometimes provided to diminish air resistance and to improve the appearance of the locomotive. Hinged closures are known in the art, but they have proved in some respects unsatisfactory.

An object of this invention is to provide such a cover structure in the form of twin door units swingably mounted on carriers which are in turn swingably mounted on the locomotive body, the door units being shaped to conform substantially to the stream lines of the shroud when they are moved into closed position. Other objects of the invention will appear from the following description and accompanying drawings and will be pointed out in the annexed claims.

In the drawings:

Fig. 1 is a perspective view of the front end of a stream-lined locomotive showing the cover structure of the invention applied thereto;

Fig. 2 is a front elevation of the cover structure locked in closed position with a portion of each of the twin door units cut away to show a portion of one carrier, a portion of the base support, and a portion of the locking mechanism;

Fig. 3 is a side elevation of the cover structure locked in closed position with the base support shown alternately in supporting and retracted positions;

Fig. 4 is a perspective view of the base support;

Fig. 5 is a plan view of the cover structure locked in closed position upon the shroud and with the top portion of the left unit and portions of the shroud and ornamentation shown as cut away;

Fig. 6 is a plan view of the cover structure, with the right door unit swung to fully open position and with the left door unit swung into partially open position, the top portion of the left unit being shown as partially cut away;

Fig. 7 is a perspective view of one carrier member with the door mounts pivoted out of normal attaching position;

Fig. 8 is a perspective view of the left door unit.

Figs. 2, 3, 5, and 6 are on the same scale, and Figs. 4, 7, and 8 are on a larger scale.

2

Referring in detail to the drawings, the stream-lined shroud 10 (Fig. 1) of a locomotive is formed with an opening 11 at its front end through which a coupler 12 may extend. A cover structure, generally indicated at 13, is provided for such opening and comprises twin units 14 and 15, having panel bodies shaped to conform substantially to the curvature of the front portion of the shroud. Each unit is mounted upon a carrier, generally indicated as 16, (Figs. 6 and 7) which is swingable from open position, as shown in the right half of Fig. 6, to closed position, as shown in Fig. 5, and vice versa. Each carrier 16 comprises a pair of spaced horizontally arranged bars 17 pivotally mounted at their inner ends on bolts 18 which are supported by the brackets 19 and maintained in position by castle nuts 21 having the conventional cotter pins 22. The inner brackets 19 may be made integral with or permanently secured (as by welding) to a mounting angle 23 which in turn may be secured to the shroud by conventional means. Vertically arranged bars 24 maintain the bars 17 in spaced relation and serve also to equalize operational stresses thereon. The outer ends of the carrier bars 17 are pivotally connected to the door units 14 in the same manner as their inner ends, the mounting plates 25 being welded to the inner wall of the door unit. Thus, each door unit is pivotally rotatable in relation to the carrier, and each carrier is rotatable pivotally in relation to the shroud. It should here be noted that the lateral ends of each of the twin door units are free.

A retractable support member, generally indicated as 26 (Fig. 4), is provided to be disposed beneath the door unit assembly when the latter is in closed position. Such support is generally U-shaped, as viewed from above in Fig. 6, and comprises a longitudinal center rib 27 to which an inside rail 28 and an outside rail 29 are secured as by welding. The end portions of the rails are turned inwardly into parallel position to form two pairs of lugs 31. Holes are drilled through lugs 31 and are in alignment for the reception of bolts 32 for the rotatable mounting of the support thereon. Such bolts are secured in position by castle nuts 33 in the usual manner. The middle portion of the support 26 is offset as at 34, and adjacent the offset portion and to the left thereof, as viewed in Fig. 4, an upwardly directed lug 35 is fixedly secured, as by welding, to the rib 27 between the rails. Lug 35 has an aperture 36 adapted for alignment with corresponding apertures in the spaced lugs 31 when the support is swung upwardly and rear-

3

wardly (as shown in the alternate position in Fig. 3) to provide clearance whenever the door units are swung into open position. Lugs 37 are formed integrally with pads 38 (Fig. 3) which are secured to the shroud 10 by welding. Keys or keepers 39 are insertible through the lug apertures to lock the support into retracted position. Chains 41, tack-welded to the shroud, are provided to prevent the key from being lost or mislaid when not in use.

A locking mechanism is provided to maintain the door units in closed position. Rod 42 (Fig. 2) extends vertically through an orifice 43 (Fig. 8) in the top portion 44 of the left door unit 14. Such rod is formed with a U-shaped extension 45 at its upper end, the outer leg 46 of which is adapted to fit into the orifice 47 (Fig. 6) in the top portion of the right door unit. A retaining flange 48 on the outer leg 46 and a retaining flange 49 on the rod are provided to locate the rod at desired elevation in locked position. A bracket 51 (Fig. 2) is welded to the inner wall of the left door unit and is formed with an aperture through its upper extension through which the rod 42 is slidable. A second bracket 52 is welded to the inner face of the right door unit and is formed with an aperture through its upper extension for the reception of the latch 53 which is permanently secured to the rod as by welding. An adjustable nut 54 is carried by the rod at its lower end to limit its upward movement. The rod, then, may be raised and lowered manually to slide through the aperture in the bracket 51 and the orifice 43 in the top portion 44 of the left door unit 14, carrying with it the latch 53. Such upward movement will be limited as desired by the adjustable position of the nut 54, and its downward movement will be limited by the location of the retaining flanges 48 and 49.

When it is desired to move the door units into closed position, the support member 26 is released from its retracted locked position, as shown in the dotted-line alternate position in Fig. 3, by withdrawal of the pin 39 from the locking lugs 37. The support member is then lowered to supporting position by rotation about the pivot bolts 32. The door units may then be swung manually from their fully opened position, as shown in the right half of Fig. 6, by means of the carriers 16. Upon reaching fully closed position, the locking rod 42, which is carried by the left door unit 14, may be lifted to the extent permitted by the nut 54 and rotated into position so that leg 47 may be aligned with the orifice 47, and the latch member 53 will be aligned with the aperture in bracket 52. The rod then can be lowered into locking position.

Ornamentation is usually provided at the front end of diesel locomotives and is shown herein at 55.

While there has been hereinbefore described an approved embodiment of the invention, it will be understood that many and various changes and modifications in form, arrangement of parts and details of construction thereof may be made without departing from the spirit of the invention, and that all such changes and modifications as fall within the scope of the appended claims are contemplated as a part of this invention.

The invention claimed and desired to be secured by Letters Patent is:

1. A closure for a stream-lined locomotive shroud comprising a pair of door units shaped to conform substantially to the curvature of the shroud, and a carrier member for each unit piv-

4

otally mounted at its inner end to the locomotive structure and having its outer end in pivotal connection with the door unit intermediate the door's lateral ends so that the door is swingable in relation to the carrier, each of said carrier members being swingable laterally to move the door unit into either open or closed position so that the door unit will conform substantially to the curvature of the shroud in either position.

2. A closure for a stream-lined locomotive shroud comprising a pair of carrier members pivotally mounted on the locomotive structure, and a door unit pivotally mounted on the outer end of each carrier intermediate the door's lateral ends so that the door has free ends movable in relation to the carrier, each such door unit being shaped so that it will conform substantially to the curvature of the shroud when in open and closed positions.

3. A closure for a stream-lined locomotive shroud comprising a pair of door units shaped to conform substantially to the curvature of the shroud when in either open or closed position, a carrier member for each unit pivotally mounted at its inner end on the locomotive structure and having its outer end in pivotal connection with the door unit intermediate the lateral ends of the door so that such door ends are free to swing in relation to the carrier, each of said carrier members being swingable laterally to move the door unit into open and closed positions so that the door will conform substantially to the curvature of the shroud when in either open or closed positions, and supporting means for said door units pivotally mounted on the locomotive structure.

4. A closure for a stream-lined locomotive shroud comprising a pair of carrier members pivotally mounted on the locomotive structure and adapted to swing horizontally, a door unit pivotally mounted on the outer end of each carrier and having free ends movable in reference to the carrier, retractable supporting means for the door units pivotally mounted on the locomotive structure, and locking means to maintain the door units in closed position, said door units being curved so that they will conform substantially to the curvature of the shroud when moved into either open or closed position.

5. In combination with the shroud of a stream-lined locomotive having an opening therein, a pair of door units for said opening, and a pair of horizontally swingable carriers pivotally mounted on the shroud, each carrier having a pivotal connection with a door unit intermediate the lateral ends of the door so that such ends are free to move in relation to the carrier, such doors being shaped to conform substantially to the curvature of the shroud when in either open or closed position.

6. In combination with the shroud of a stream-lined locomotive having an opening therein for a coupler, a pair of door units for said opening, carrier means pivotally mounted at their inner ends on the shroud and having pivotal connection at their outer ends with the door units so that the carrier means may swing with reference to the shroud and the door units may swing in reference to the carrier means, retractable supporting means for the door unit adapted to support such door units when the latter are in closed position, and locking means for such door units when the latter are in closed position, the shape of such door units conforming substantially to

the curvature of the shroud when in either open or closed positions.

7. In combination with a shroud of a stream-lined locomotive having an opening therein for a coupler, a pair of carriers hinged to the shroud on laterally opposite sides of the coupler, a pair of door units for the coupler opening, each of such doors being pivotally mounted intermediate its lateral sides upon the outer end of a carrier, and being shaped to conform substantially to the curvature of the shroud when the door is moved into either open or closed position.

8. In combination with the shroud of a stream-lined locomotive having an opening therein for a coupler, a pair of door carriers hinged to the shroud on laterally opposite sides of the coupler and adapted to swing toward and away from the coupler, and a pair of doors shaped to conform substantially to the curvature of the shroud, each of which is hinged to the outer extremity of a carrier to be rotatable in reference thereto, the arrangement of the carriers and the doors being such that the carriers are swingable away from the coupler to move the doors into alignment with the curvature of the shroud when in open position, and are swingable toward the coupler to move the doors into alignment with the curvature of the shroud when in closed position.

9. In combination with the shroud of a stream-lined locomotive having an opening therein for a coupler, a pair of door carriers hinged to the shroud on laterally opposite sides of the coupler and adapted to swing toward and away from the coupler, a pair of doors shaped to conform substantially to the curvature of the shroud, each of which is hinged to the outer extremity of a carrier to be rotatable in reference thereto, the arrangement of the carriers and the doors being such that the carriers are swingable away from the coupler to move the doors into alignment with the curvature of the shroud when in open position, and are swingable toward the coupler to move the doors into alignment with the curvature of the shroud when in closed position.

10. A closure for the coupler opening in a locomotive shroud of the class which is curved for stream-lined effect comprising a pair of carriers hinged to the locomotive structure on laterally

opposite sides of coupler, and a pair of door units for the coupler opening, each of such doors being pivotally mounted intermediate its lateral ends upon the outer end of a carrier and being shaped to conform substantially to the curvature of the shroud when the door is moved into either open or closed position.

11. A closure for the coupler opening in a locomotive shroud of the class which is curved for stream-lined effect comprising a pair of carriers hinged to the shroud on laterally opposite sides of the coupler and adapted to swing toward and away from the coupler, and a pair of doors shaped to conform substantially to the curvature of the shroud, each of which is hinged to the outer extremity of a carrier to be rotatable in reference thereto, the arrangement of the carriers and the doors being such that the carriers are swingable away from the coupler to move the doors into alignment with the curvature of the shroud when in open position, and are swingable toward the coupler to move the doors into alignment with the curvature of the shroud when in closed position.

ROY F. ABELL.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
58,548	Kast	Oct. 2, 1866
662,434	Hibbard	Nov. 27 1900
1,090,620	Hubbard	Mar. 17, 1914
1,116,817	Heller	Nov. 10, 1914
1,124,655	Powell et al.	Jan. 12, 1915
1,126,640	Jones	Jan. 26, 1915
1,308,287	Lidtke	July 1, 1919
1,462,766	Post	July 24, 1923
1,527,572	Olson	Feb. 24, 1925
1,748,849	Schmidt	Feb. 25, 1930
1,776,464	Blackman	Sept. 23, 1930
2,075,953	Miller	Apr. 6, 1937
2,244,002	Dilworth	June 3, 1941
2,254,470	Blomberg	Sept. 2, 1941
2,266,303	Blomberg	Dec. 16, 1941