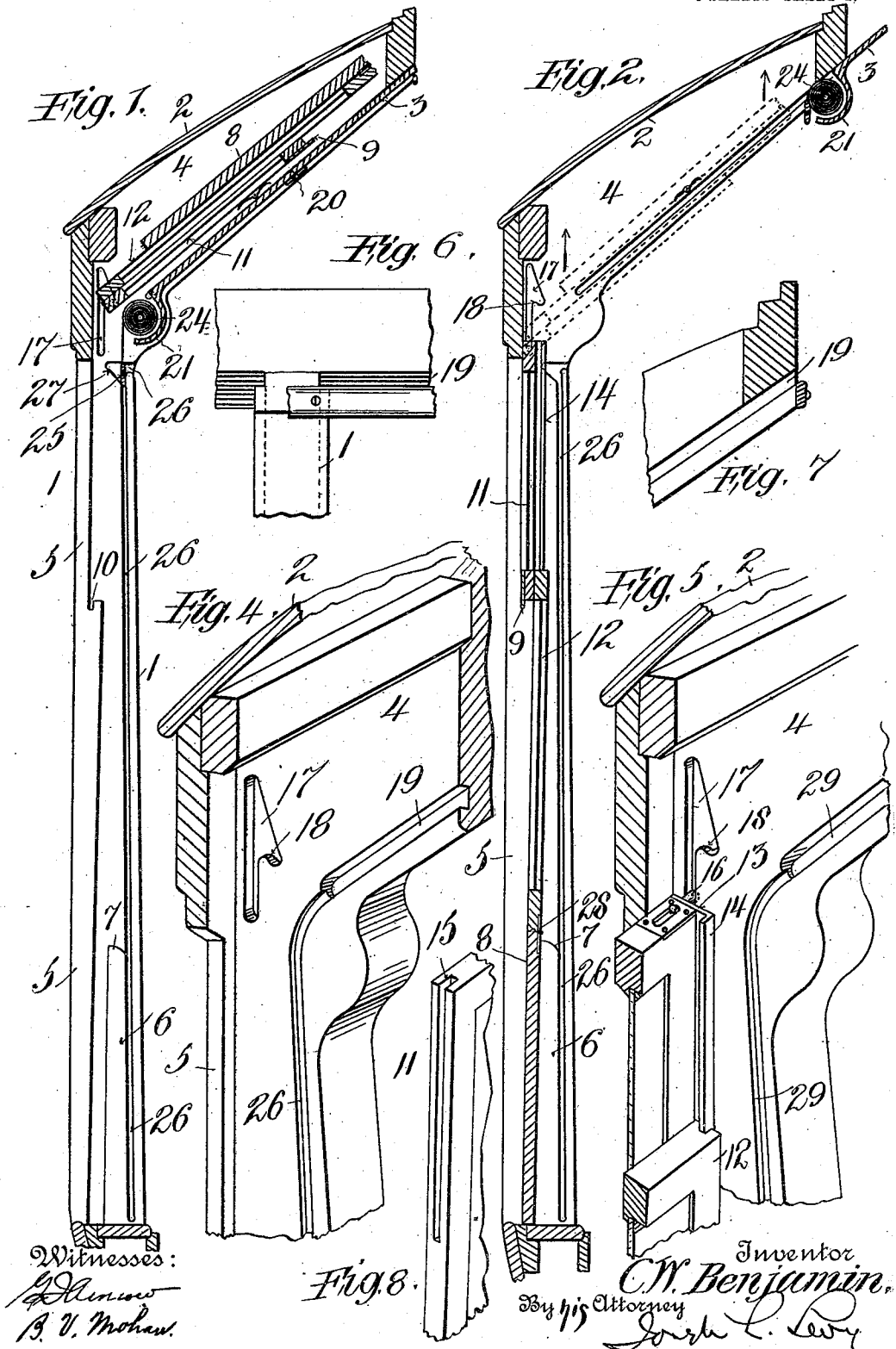


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 CONVERTIBLE CAR.
 APPLICATION FILED APR. 9, 1908.

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Patented Sept. 21, 1909.

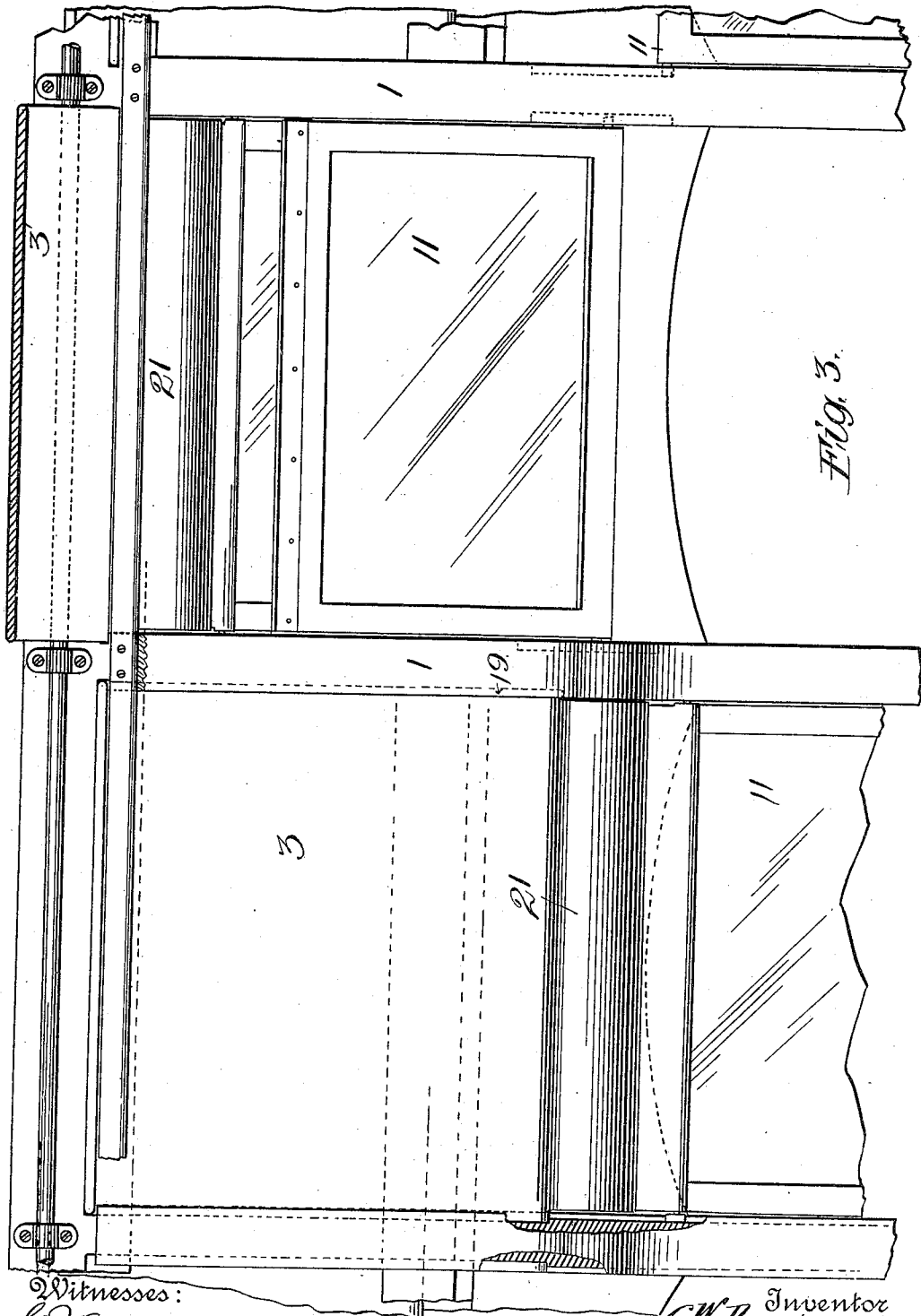
5 SHEETS—SHEET 1.



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5 SHEETS—SHEET 2.



Witnesses:
G. H. Currier
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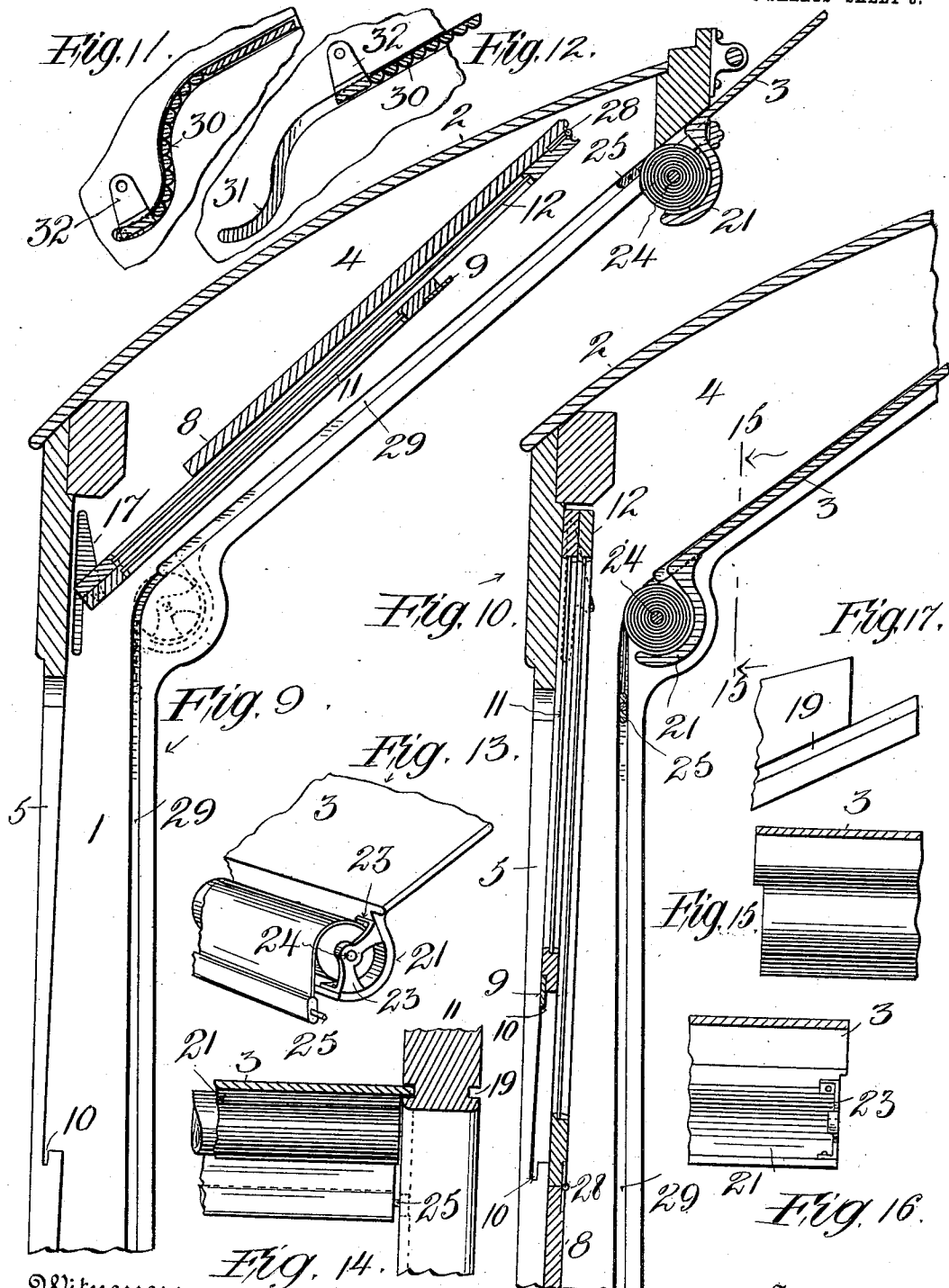
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6 SHEETS—SHEET 3.



Witnesses:
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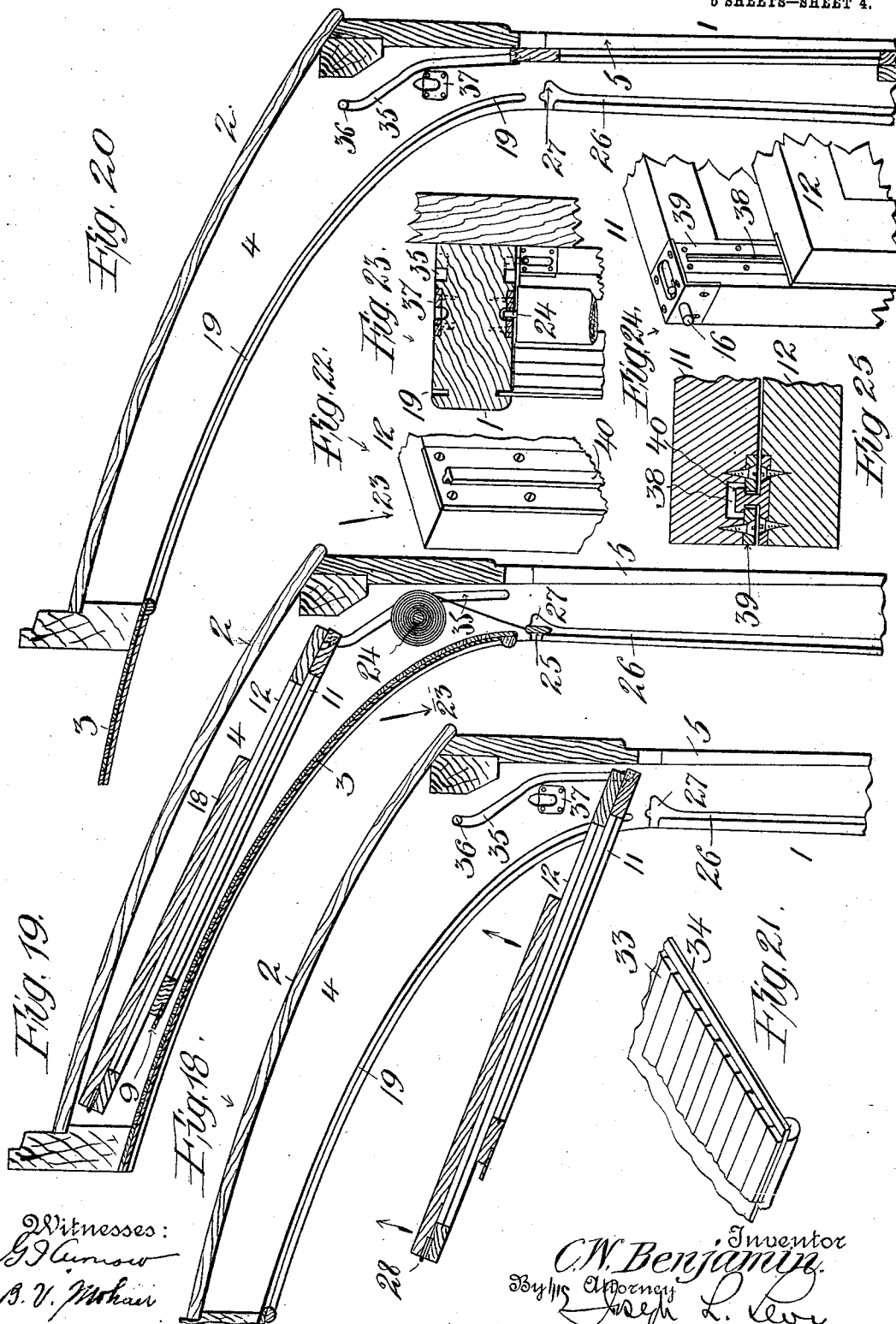
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5 SHEETS—SHEET 4.



Witnesses:
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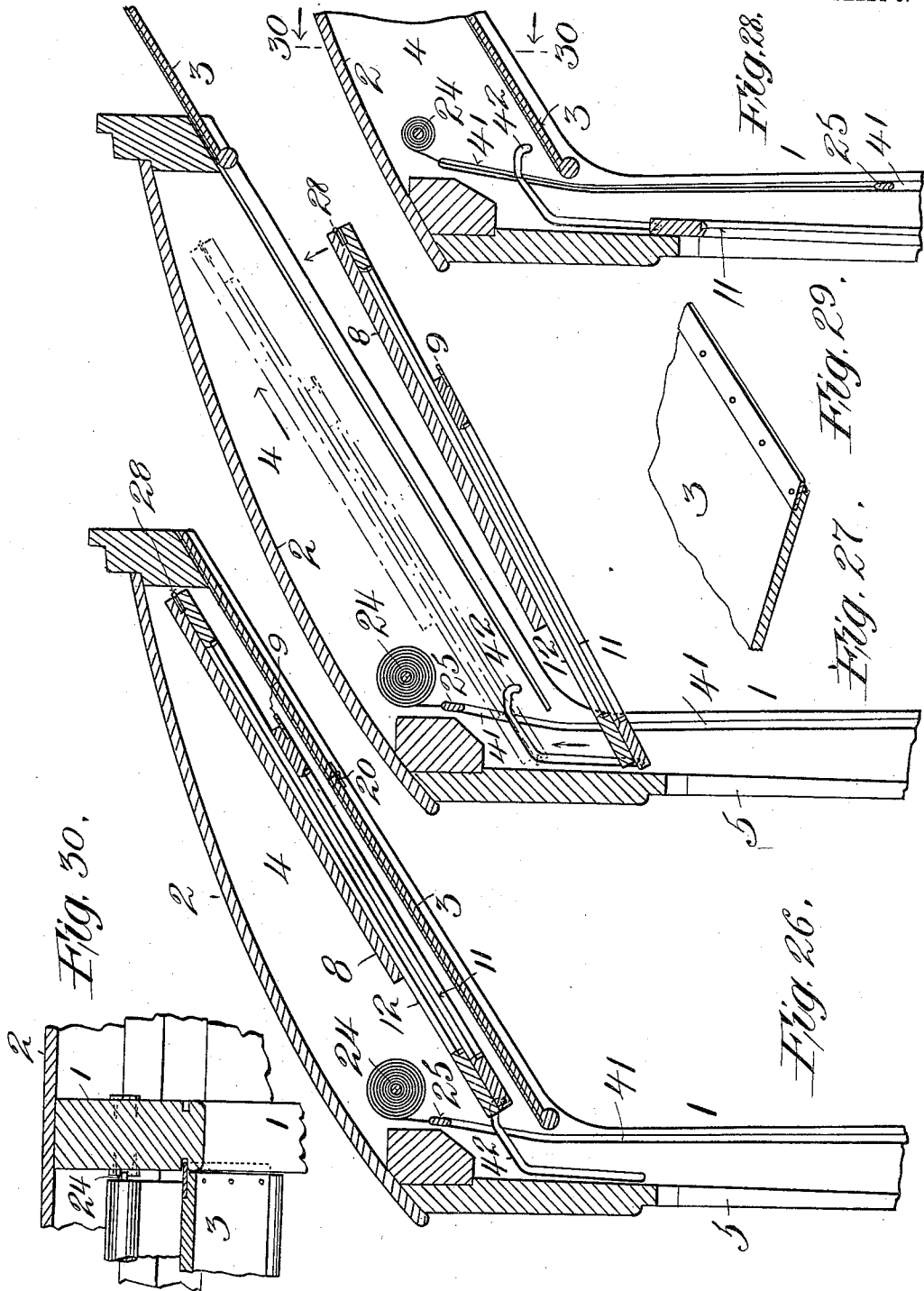
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5 SHEETS—SHEET 5.



Witnesses:
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UNITED STATES PATENT OFFICE.

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CONVERTIBLE CAR.

934,788.

Specification of Letters Patent. Patented Sept. 21, 1909.

Application filed April 9, 1908. Serial No. 426,020.

To all whom it may concern:

Be it known that I, CHARLES W. BENJAMIN, a citizen of the United States, and a resident of the borough of Roselle Park, in the county of Union and State of New Jersey, have invented certain new and useful Improvements of Convertible Cars, of which the following is a specification.

My invention relates to improvements in convertible cars, in which the panels and sashes may be moved upwardly and stored in roof pockets formed above the interior head lining of the car.

The object of my invention is to provide a movable head lining which may be moved temporarily to allow the panels and sashes to be moved into the roof pocket. By making the head lining movable the pockets may be made smaller, as the head lining is moved to allow the sashes sufficient space while turning in, to enter the roof pockets.

My invention also relates to a novel construction of the sashes and stanchions as well as to a curtain and curtain groove. While I have shown and described a full convertible car nevertheless certain of the features may be used independent of the others, in a partially or semi-convertible car. Certain of the features are independently new, such as the means by which one sash serves to guide the other, and the method of folding and moving the sashes and panels.

In the drawings forming a part of this application, Figure 1 is a cross section of a portion of a car showing one form of my invention, Fig. 2 is a similar view showing the sashes and panel down, when the car is used as a closed car, Fig. 3 is a front elevation from the interior of the car, Fig. 4 is a perspective view of the upper part of one of the stanchions showing the groove formation, Fig. 5 is a similar view with the sashes, Fig. 6 is an elevation of the parts shown in Fig. 7, Fig. 7 is a partial section, showing the formation of the groove which guides the head lining, Fig. 8 is a perspective view of the upper part of the lower sash, Fig. 9 is a view similar to Fig. 1, showing a modification of the curtain arrangement, Fig. 10 is a similar view showing the sashes and panel during the change, Figs. 11 and 12 are sectional views showing modified forms of head linings, Fig. 13 is a perspective view of the curtain and its

casing, Fig. 14 is a front elevation of the parts shown in Fig. 13, as applied to a car, Fig. 15 is a sectional view taken on the line 15—15 of Fig. 10, Fig. 16 is an elevation of the curtain casing and bracket, Fig. 17 is a side elevation of a portion of the stanchion at the termination of the lining groove, Fig. 18 is a section showing a modification of the sash groove and curtain arrangement, Fig. 19 is a similar view thereof with the sashes stored, and showing a flexible head lining, Fig. 20 is a similar view, with the sashes, lowered and the head lining moved up ready for the sashes to be stored, Fig. 21 is a perspective view of a portion of a flexible head lining, Fig. 22 is a similar view showing one form of engaging means, Fig. 23 is a sectional view taken on the line 23—23 of Fig. 19, Fig. 24 is a perspective view showing one form of sash construction, Fig. 25 is a sectional view of the same, Fig. 26 is a cross section of a portion of a car showing a modified arrangement of the curtain, Fig. 27 is a similar view thereof, showing the sashes during their movement to the roof pocket, Fig. 28 is a similar view showing the sashes down, Fig. 29 is a perspective view of the head lining used in the last three views, and Fig. 30 is a cross section taken on the line 30—30 of Fig. 28.

I will first describe the construction shown in Figs. 1 to 8 inclusive and then I will describe the modifications.

In the construction of a convertible car the various stanchions define intermediate side openings for the entrance and exit of passengers when the car is used as an open car and these spaces are closed by members which are usually called panels and sashes. The member that closes the space from the car floor to the belt of the car is usually called the panel and is generally formed of non-transparent material such as wood; while the members which close the space above the panels are generally called sashes; and these usually consist of frames in which glass is provided so that the upper part of the inclosure is transparent. In the present case I have provided both panels and sashes for closing the side openings which are adapted to be moved into pockets formed under the roof of the car and the means for placing the sashes and panels in the roof pockets is new as well as the disposition and arrange-

ment of the curtain and its groove so as not to interfere with the placing of the sashes and panels in the roof pockets. Where stationary head linings have been used which define the inner part of the roof pockets a great deal of space has to be allowed for the sashes to turn as they enter the roof pockets and it is my object to provide a sliding head lining which may be temporarily moved out of the way while the sashes and panels are being placed in the roof pockets and which may be returned when the sashes have been stored, and the construction is such that the appearance of the car is not sacrificed by the arrangement.

In the construction of the car a plurality of side posts or stanchions 1 are provided which extend from or below the floor to the roof 2 of the car and the upper part of the stanchions extend inwardly at the top and form a support for the roof and the inner head lining 3, which latter, together with the stanchions and the roof form storage pockets 4 for the storage of the sashes, and when the car is an entirely convertible one, for the panels also. The stanchions below the roof are provided with suitable means for guiding and retaining the panels and sashes of the car and in the present construction this means consists of the outer or weather strip 5 which extends the whole length of the outer side of the stanchion; and an inner or parting strip 6 which in this construction terminates at a suitable point 7 for the purposes which will appear. It will be observed that the panel 8 when in its lowered position is held between the two strips 5 and 6 while the sashes are held against the outer strip by a projection 9 on the upper sash 11 which engages in a recess 10 formed in the outer strip 5. The upper sash, in the construction now being described, has a laterally extending flange 13 from which extends a rib 14 which runs parallel with the sash and at a slight distance therefrom which latter engages in the groove 15 formed in the edges of the lower sash 12. The sashes are thus slidably engaged one with the other. The upper sash is provided with a pintle 16 on each side near the top which engages and travels in the short grooves 17 in the stanchion of the car, the groove having an extension forming a shoulder 18 on the stanchion which engages the pintle when the sashes are in their raised position and retains them there.

The stanchions along the inner side of their upper portions are provided with a groove 19 in which the head lining 3 of the car slidably engages, the head lining being adapted to be moved upward and toward the interior of the car to the position shown in Fig. 2. The head lining is preferably hinged at a point along its length such as at 20 so that when the upper half has passed

out of the groove 19 it may hinge downwardly so as not to interfere with the monitor deck. When the upper part of the head lining is thus turned downwardly there is enough space for the lining to move until the roof pocket is practically opened on its inner side. The head lining is provided at its bottom with a pocket 21 suitable for enclosing and carrying a curtain roll 22, as will be seen in Figs. 13 and 16, the casing being of less width than the portion of the head lining which enters the groove 19. This casing 21 is provided with brackets 23 on each side which support the curtain rods 24 whereby the curtain moves with the head lining when it travels to its raised position, thus taking the curtain out of the way of the movement of the sashes and panel. The curtain stick or rod 25 travels in a vertical groove 26 formed in each stanchion and the upper end of the groove is formed so that the curtain rod may be taken out of the groove when the head lining and curtain is being moved up for the changing of the sashes. For such purpose I have provided an outlet at the upper end of the groove which turns inwardly at 27 and then opens outwardly at 26 whereby the curtain rod may be turned and then removed from the groove. After it has been removed from the groove the entire curtain moves bodily with the head lining.

It will be seen that the panel 8 is hinged at 28 to the lower sash.

The operation of the device so far described is as follows: While the parts are in the position shown in Fig. 2 the panel is held between the two strips 5 and 6 and closes the lower portion of the car. The upper sash is held against the outer strip by the engagement of the projection 9 in the recess 10. As the tongue and groove engagement between the sashes hold them together, the projection 9 also serves to hold the lower sash in place. In this position it will be noticed that the head lining is in its normal or lower position, and the curtain rod is free to move up and down in the groove 26 to any position desired. When it is desired to convert the car into a summer car, the curtain rod is moved out of the groove and the head lining is moved in its grooves until it is in the position shown in Fig. 2. The panel and sashes are then moved upwardly until the panel is above the inner parting strip 6 when it is swung inwardly in the car and is folded up against the sash 12. As the projection 9 is now out of the recess and as the stanchion is flush from the outer strip inwardly, both sashes and panel, after the lower sash has been moved up on its guiding rib 14, are swung in from the pintles 16 and their free ends are moved into the roof pockets as shown in Fig. 1, when they are allowed to drop a slight distance until the pintles 16 en-

gage against the shoulders 18 when they will be held in their elevated position. It will be clear that if the head lining were stationary this swinging of the sashes and panel could not take place. After the sashes and panel have been stored the head lining is brought down to its former position and the car is used as an open car. When it is desired to close the car the action is simply reversed. It will be apparent from the foregoing that the roof pockets may be formed very small and without providing unnecessary space within the pockets themselves for the sashes to turn in entering the roof pockets as heretofore.

In Figs. 9 to 12 I have shown a slightly modified form of curtain arrangement and head lining. In Figs. 9 and 10 it will be seen that the groove 29 in which the head lining travels is continued down the stanchion and forms the guide for the curtain rod 25. In this construction the curtain rod need not be removed from the groove but is moved up to the curtain roller and when the head lining is moved it travels with it in the same continuous groove. The head lining shown in Figs. 11 and 12 is provided with a flexible portion 30 at its lower end formed of ribs and this flexible portion is curved by the curved portion of the groove 31 so as to form a casing for the curtain. When the head lining is moved upward in this instance the flexible part straightens out in the groove in the straight part, and the shape of the casing is lost, the casing returning when the head lining resumes its position. In this case the curtain is supported by the brackets 32 at the lower end of the flexible portion.

In Figs. 18 to 25 I have shown further modifications. In this construction the head lining is made of ribs 33 throughout, which are flexibly secured together, so that any desired curve may be given to the guiding groove for the head lining. Here the projecting edge 34 is guided in the grooves instead of the ribs. The groove 35 is of different shape to the first form and terminates in a depression 36 where the pintle is seated to hold the sashes up. The curtain instead of traveling with the head lining is removably placed between the stanchions in such a way that it may be removed entirely while the car is being converted. In this case the curtain roller ends are supported by plates 37 from which it is removable and the original form of groove shown in Fig. 1 is used. The curtain is held by the plates 37 at all times except when the car is being converted and the curtain is adapted for use when the car is either open or closed. In these views an improved form of sash construction is shown which may be advantageously used not only in the present car but in various other forms of convertible cars. One of the sashes (in the present showing the upper) is

provided with a groove 38 on each side of the sash frame, and the groove is of T shape, opening through a narrowed portion to the face of the sash and this outer part of the groove or slideway is defined by a metal plate 39 on the face of the sash. The lower sash is provided with a rib 40 of T shape which has its cross head traveling in the groove 38, whereby both sashes are locked together by a sliding connection.

In Figs. 26 to 30 I have shown a further change in the disposition of the curtain. In this case the curtain groove 41 extends up above the location of the sashes and the curtain roller is supported high enough so that the curtain rod may be moved up out of the way when the sashes are being stored, and may be lowered when the sashes are either in the roof pocket or in their lowered position in the car side. In this instance the pintle groove 42 and curtain groove 41 cross each other so that the sashes may be moved beyond the point of crossing of the two grooves so the curtain may be lowered when the sashes are in the position shown in Fig. 26.

As has been stated, while I have shown a full convertible car nevertheless some of the features may be used in a semi-convertible car without departing from the spirit of my invention.

Having described my invention what I claim is:

1. A railway car having stanchions and a roof pocket, sashes between the stanchions and adapted to be stored in the roof pocket and a slidable head lining adapted to be moved for the purpose of allowing said sashes to be moved into the roof pocket.

2. A railway car having stanchions and a roof pocket, a sash between the stanchions and adapted to be moved into the roof pocket, said stanchions having a groove, and a head lining movable in the stanchion grooves and adapted to slide therein to be moved out of the path of said sash during the latter's movement into the roof pocket.

3. A railway car having stanchions and a roof pocket, a sash between the stanchions and adapted to be moved into the roof pocket and a slidable head lining adapted to be moved to allow the sash to be moved into the roof pocket and a curtain carried by the said head lining.

4. A railway car having stanchions and a roof pocket, a sash between the stanchions and adapted to be moved into the roof pocket and a slidable head lining adapted to be moved to allow the sash to be moved into the roof pocket, a casing carried by the said head lining and a curtain roller in said casing and adapted to be moved therewith.

5. A railway car having a roof pocket, a sash adapted to close a portion of the car and to be moved into the roof pocket, said

car having guiding means and a slidable head lining engaged by said guiding means and a portion of said head lining being adapted to turn after it passes beyond the
5 said guiding means.

6. A railway car having a roof pocket, partly defined by a head lining, stanchions and means for closing a space between said stanchions and means whereby said closing
10 means may be swung inwardly from its upper portion and moved into the roof pocket, said head lining being adapted to be slid free of the movement of said closing means and to be returned after the latter has been
15 placed in said roof pocket.

7. A railway car having stanchions and a roof pocket, a sash and panel between said stanchions, said panel being hinged to the sash and adapted to be folded against the
20 same, said sash and panel being adapted to be moved into the roof pocket.

8. A railway car having stanchions and a roof pocket, an upper and a lower sash, slidably engaging each other, a panel secured
25 to the lower sash and adapted to be folded against the same, the said lower sash and panel being adapted to be raised to overlap the upper sash and means whereby both sashes and panel may be swung into the
30 said roof pocket.

9. A railway car having stanchions and a roof pocket, said stanchions having a groove near the upper part, means for closing the car between the stanchions comprising an
35 upper sash having pintles engaging in said grooves, a lower sash slidably engaging the upper sash and a panel secured to the lower sash, said panel being adapted to be folded upon the lower sash and the latter with the
40 panel moved to overlap the upper sash and all three being adapted to be swung from the said pintles and raised into the roof pocket.

10. A railway car having a roof pocket,
45 stanchions provided with an outer strip and

an inner strip, and means for closing the space between the stanchions comprising a sash adapted to be held against the outer strip and a panel hinged to the said sash and held between said strips, said panel being
50 adapted to be raised free of the inner strip and to be folded upon said sash and both sash and panel being adapted to be moved into said roof pocket.

11. A railway car having a roof pocket, 55 stanchions provided with an outer strip having a recess, an upper sash having pintles engaging in a groove in said stanchions and provided with a projection for engaging in said recess and a lower sash slidably en- 60 gaging the upper sash and adapted to be moved to overlap the same, said sashes being adapted to be raised to disengage the projection on the upper sash from its engaging recess and to be swung on said pintles and 65 placed in said roof pocket.

12. A railway car having a roof pocket, stanchions and means for closing a space between the stanchions and adapted to be moved into the roof pocket, a head lining 70 and a curtain device carried thereby, said stanchions having a curtain groove extending down the same and a groove in which said head lining may slide, said curtain groove and head lining groove being con- 75 tinuous whereby the curtain device may be moved up with the said head lining to allow the said closing means to be moved into the roof pocket.

13. In a railway car a plurality of sashes, 80 one of which is provided with a groove having a reduced opening and the other of said sashes having a T rail engaging in the groove of the other sash whereby said sashes are slidably engaged. 85

Signed this first day of April 1908.

CHARLES W. BENJAMIN.

Witnesses:

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