No. 781,294. PATENTED JAN. 31, 1905.

D. S. McEWING.

SLEEPING CAR.

APPLICATION FILED OCT. 12, 1904.

6 SHEETS—SHEET 1.

Fig. 1

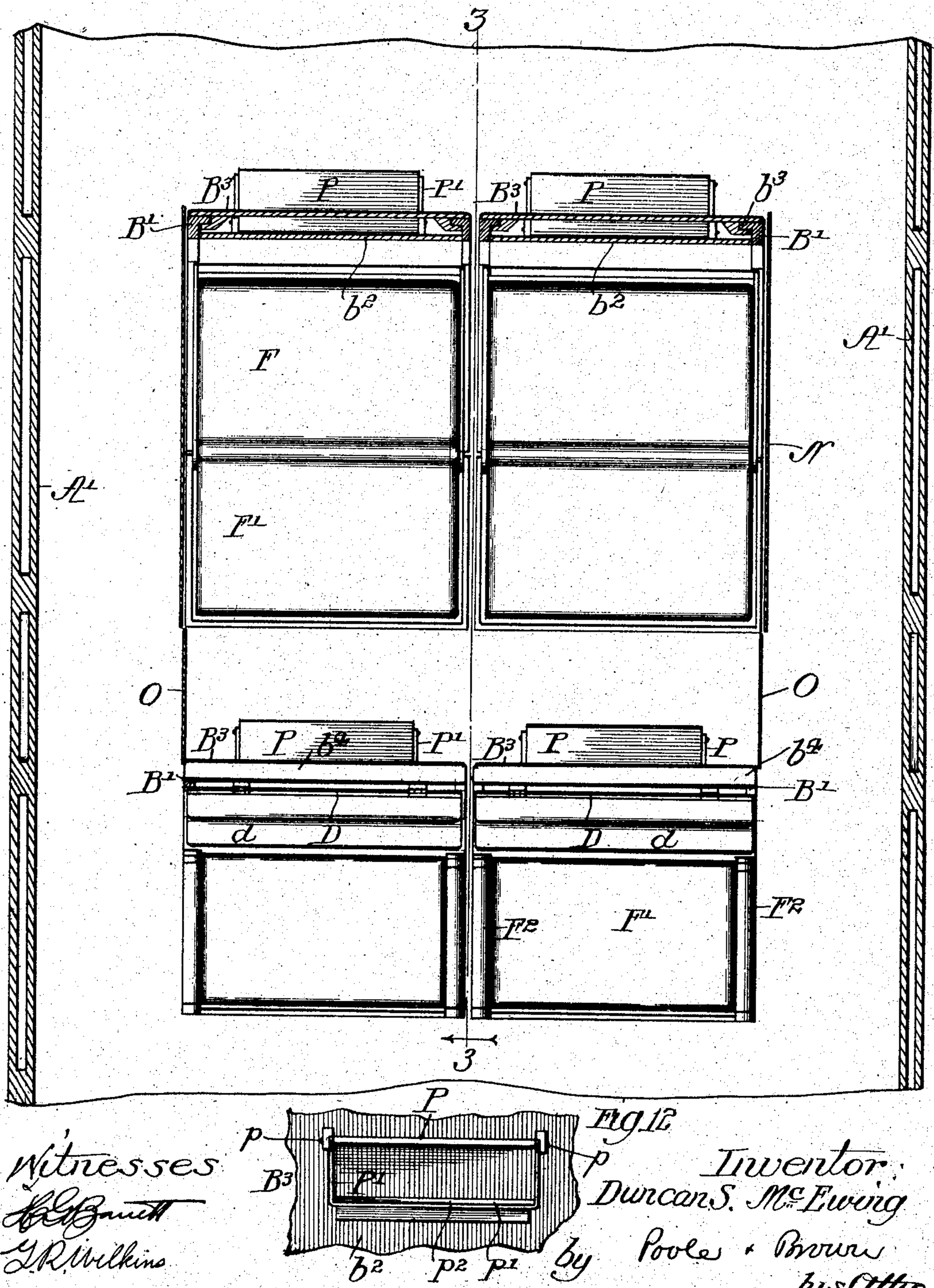

Fig. 12

Witnesses

[illegible] Bennett

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his Attys

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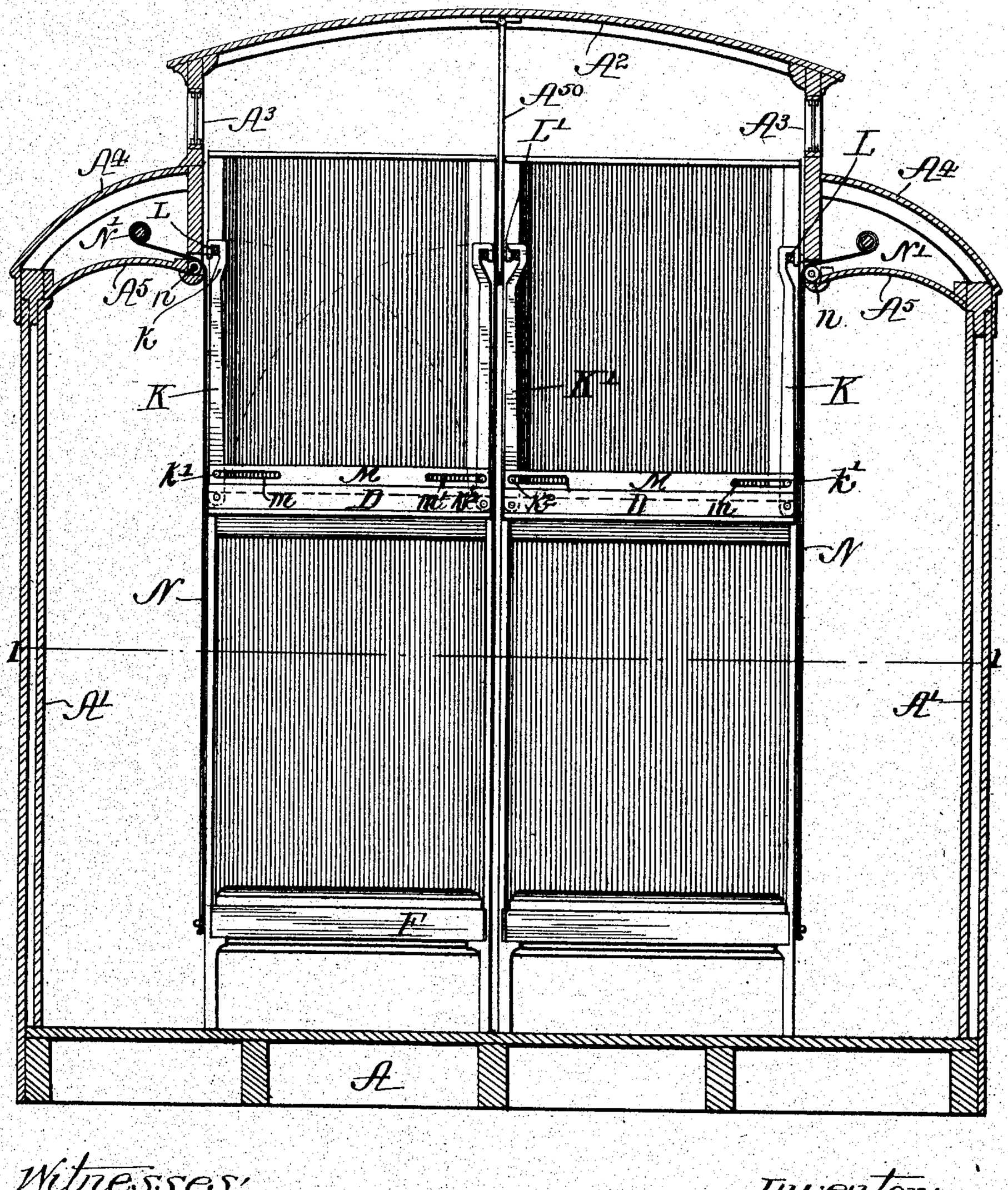
6 SHEETS—SHEET 2.

Fig. 2



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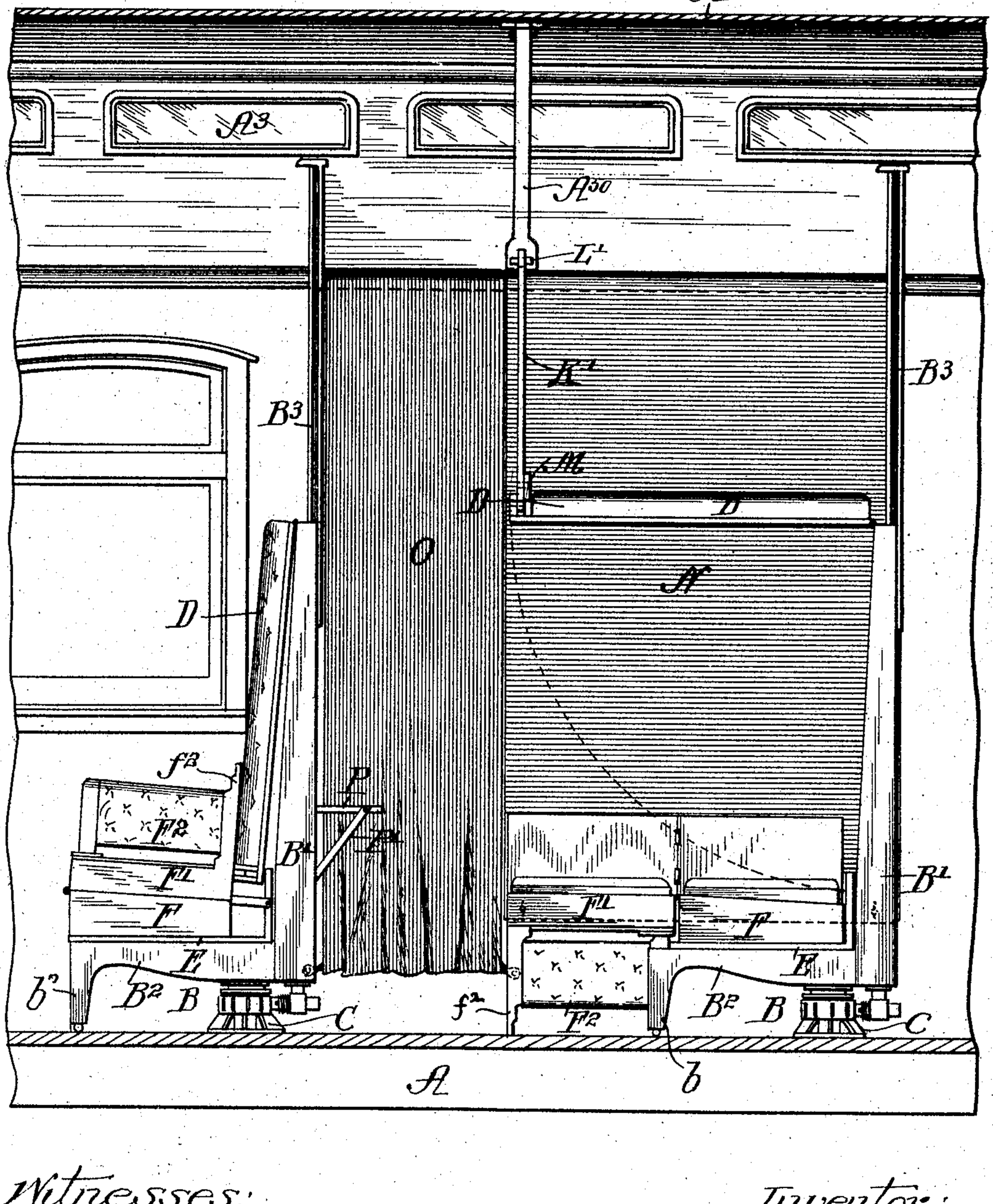
6 SHEETS—SHEET 3.

Fig. 3



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No. 781,294. PATENTED JAN. 31, 1905.

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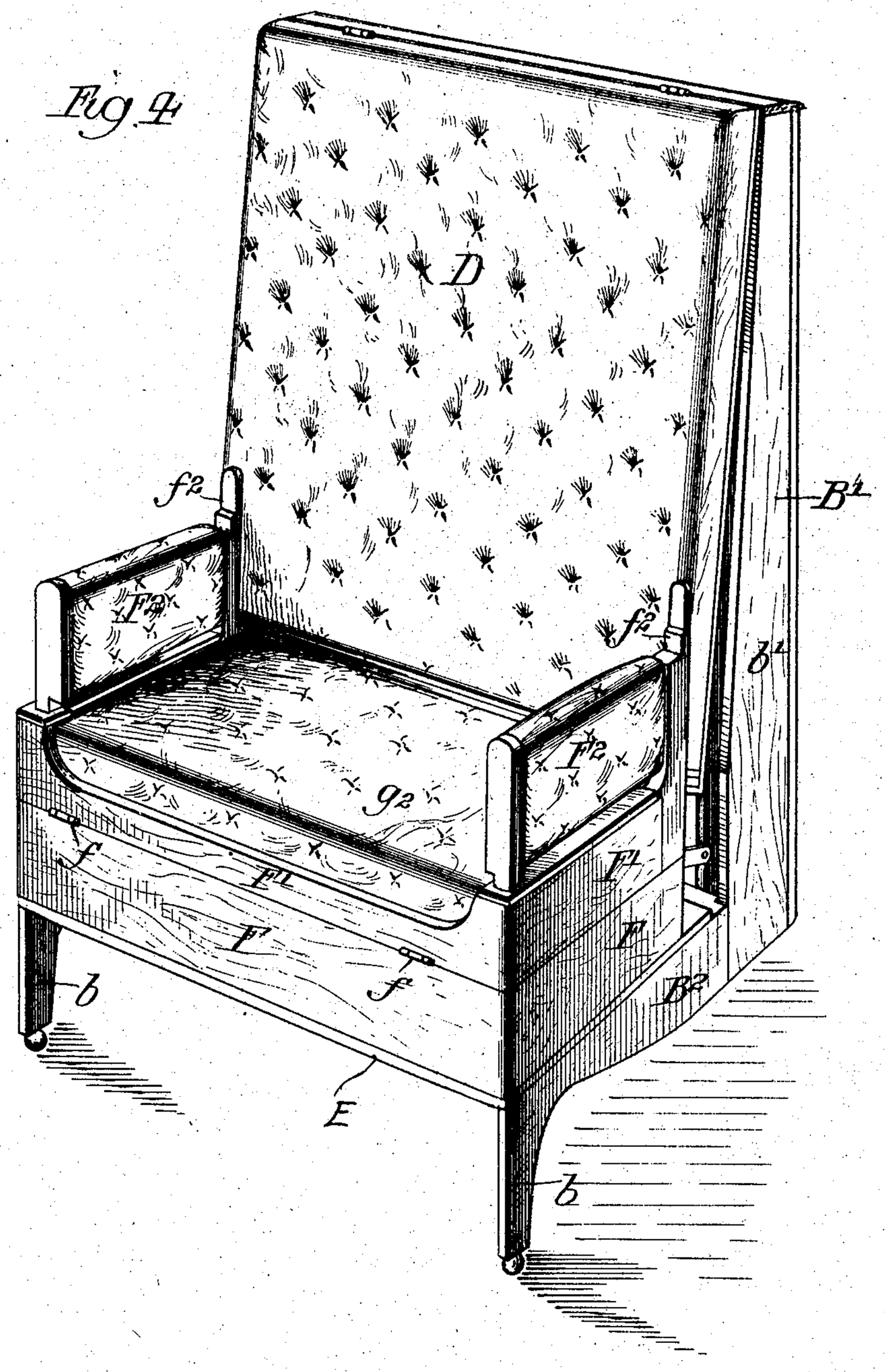
6 SHEETS—SHEET 4.

Fig 4



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6 SHEETS—SHEET 5.

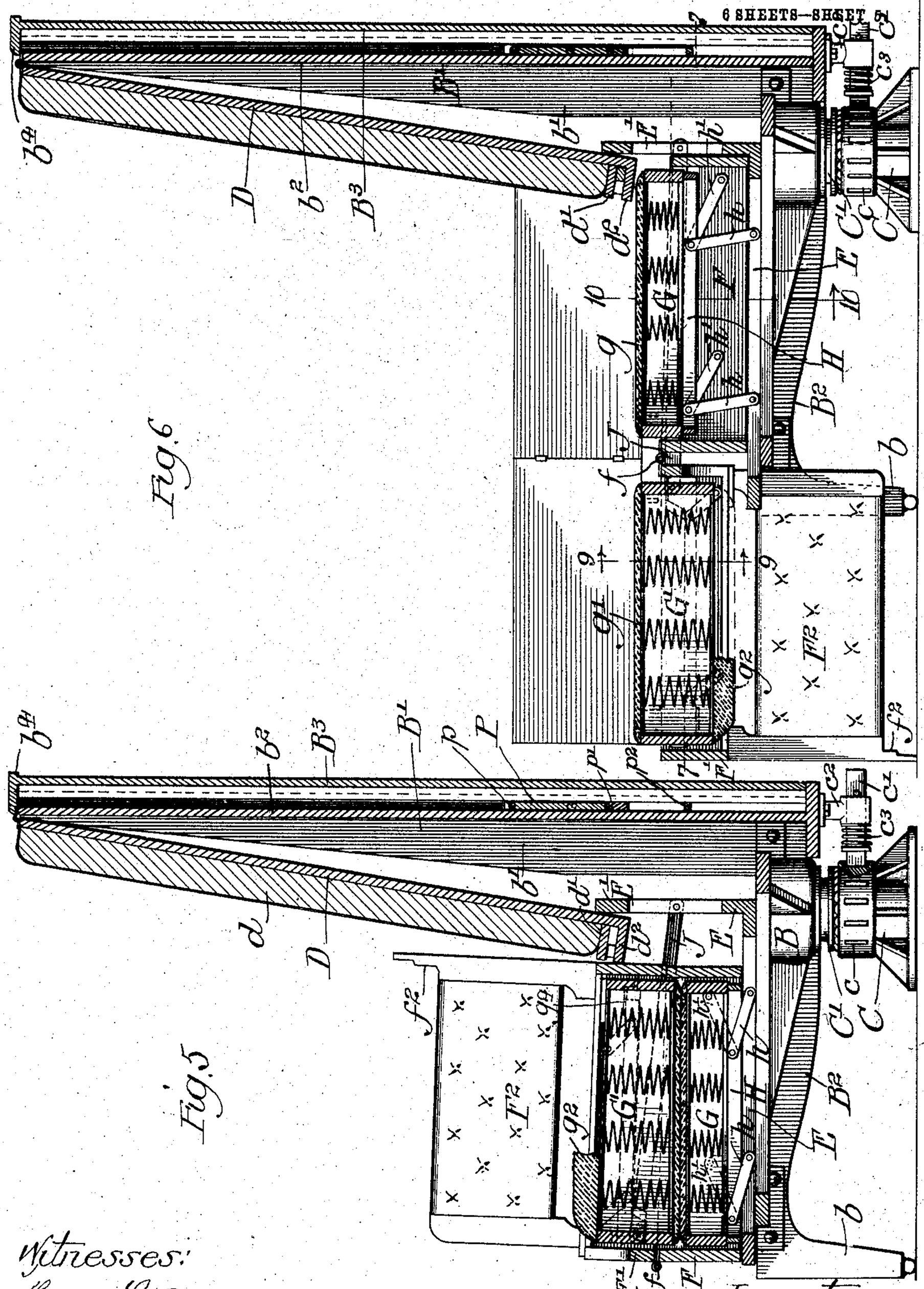

Fig. 6

Fig. 5

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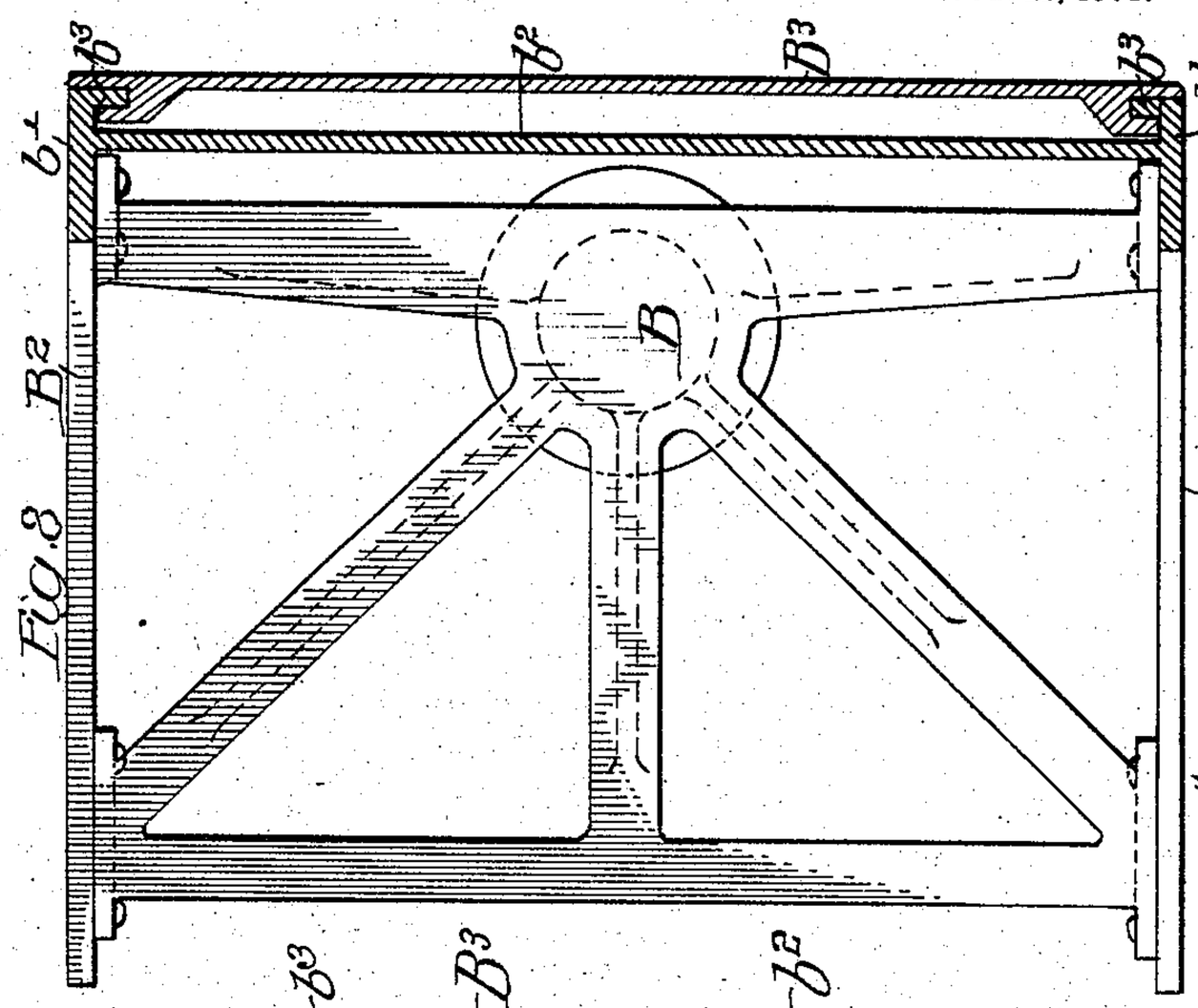
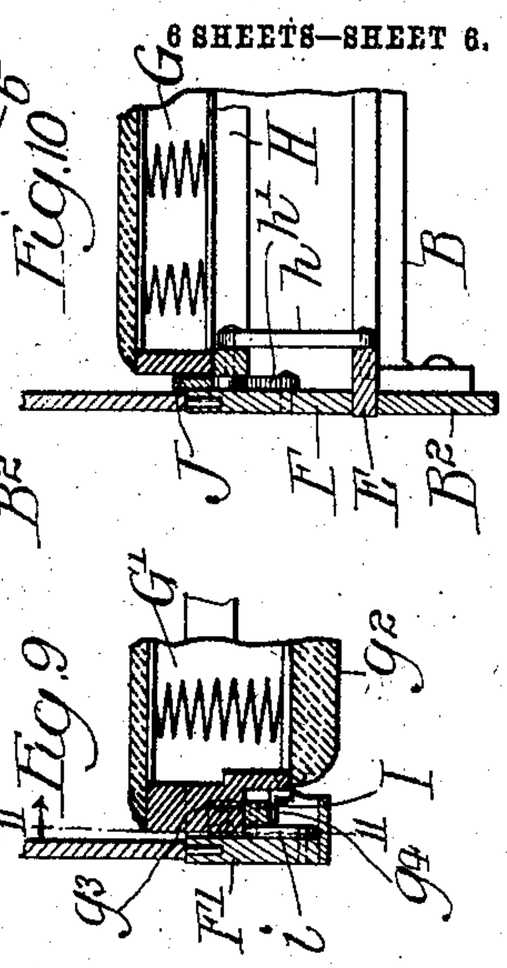
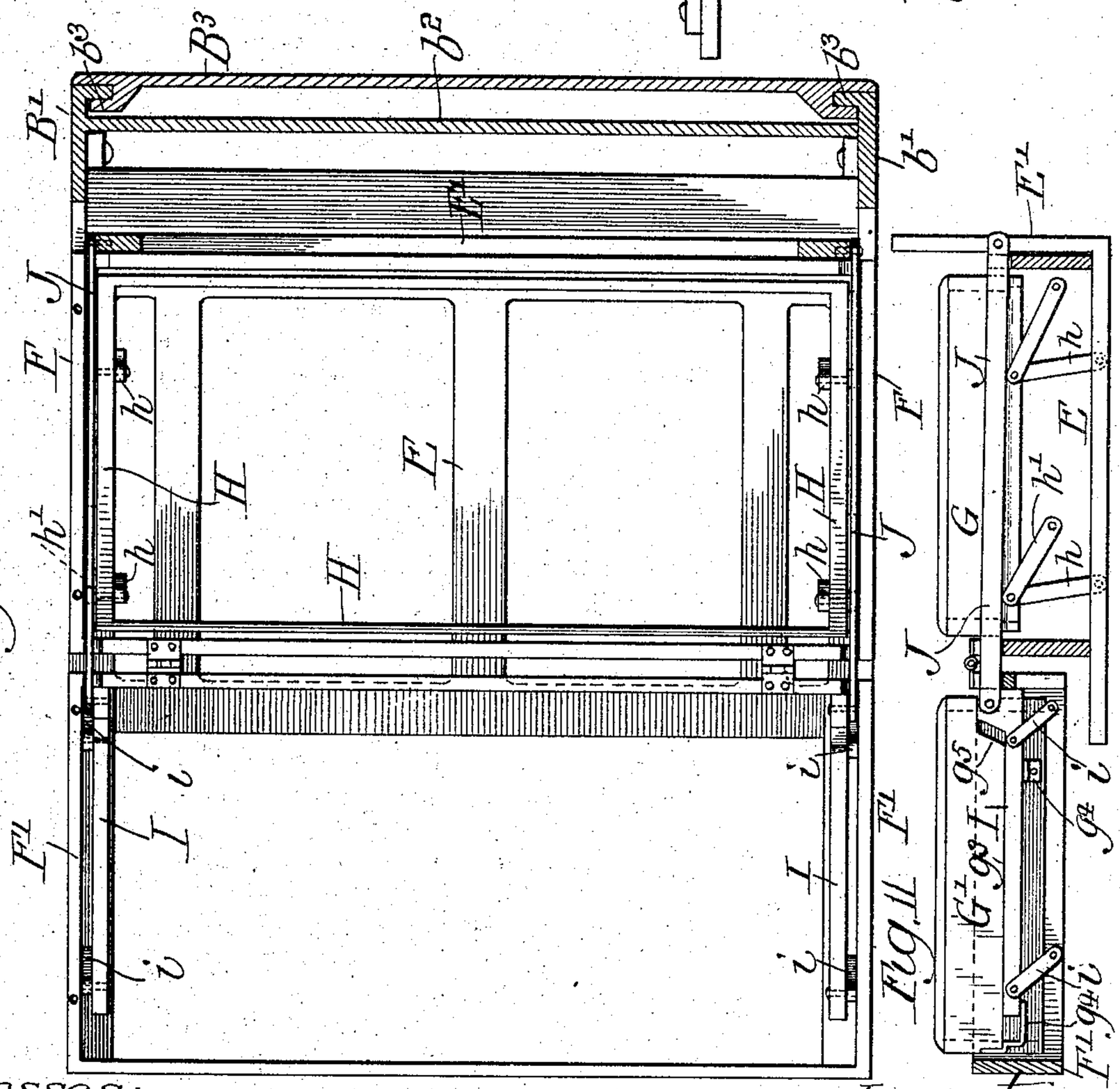
6 SHEETS—SHEET 6.







Witnesses:
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By Poole & Brown
His Att'ys

No. 781,294. Patented January 31, 1905.

UNITED STATES PATENT OFFICE.

DUNCAN S. McEWING, OF CHICAGO, ILLINOIS.

SLEEPING-CAR.

SPECIFICATION forming part of Letters Patent No. 781,294, dated January 31, 1905.

Application filed October 12, 1904. Serial No. 228,204.

To all whom it may concern:

Be it known that I, DUNCAN S. McEWING, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Sleeping-Cars; and I do hereby declare that the following is a full, clear, and exact description of the invention, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in sleeping-cars, and includes both a convertible chair and berth and means for forming compartments in a sleeping-car within which the berths are contained when adjusted for use.

The invention consists in the matters hereinafter described, and pointed out in the appended claims.

As shown in the accompanying drawings, Figure 1 is a plan view of a part of a railway-car, showing two chairs arranged side by side and made up to form a berth and two other chairs in condition for use as seats, the said plan section being taken upon horizontal plane above the level of the lower berth on line 1 1 of Fig. 2. Fig. 2 is a cross-section of the car, taken on line 2 2 of Fig. 1. Fig. 3 is a longitudinal vertical section through part of a car, taken upon line 3 3 of Fig. 1. Fig. 4 is a perspective view of one of the chairs in its folded condition. Fig. 5 is a view in central vertical section of one of the chairs when in its folded condition. Fig. 6 is a like section illustrating one of the chairs with its seat extended to form the lower berth, but with the back-section, which forms the upper berth, lowered. Fig. 7 is a plan section taken upon line 7 7 of Fig. 6. Fig. 8 is a plan view of the metal base of the chair-frame, showing the parts attached thereto in horizontal section. Fig. 9 is a detail section taken upon line 9 9 of Fig. 6. Fig. 10 is a detail section taken upon line 10 10 of Fig. 6. Fig. 11 is a detail section taken on line 11 11 of Fig. 9. Fig. 12 is a detail face view of a folding step mounted on the chair-back.

As illustrated in said drawings, A indicates the car-floor, A′ A′, the side walls of the car; A^2, the turret-roof; A^3 A^3, the side walls of the turret, and A^4 the lateral portions of the car-roof, which connect the upper margins of the side walls A′ A′ with the side walls A^3 A^3 of the turret. Said side walls A^3 A^3 of the turret are shown as extending downwardly below the inner margins of the side portions A^4 A^4 of the car-roof and connected with lateral ceiling-sections A^5 A^5, so as to form inclosed spaces beneath said lateral parts A^4 A^4 of the car-roof for a purpose hereinafter set forth.

The convertible chairs, which constitute a principal feature of my invention, are arranged in pairs along the center line of the car-floor, with the two chairs constituting a pair opposite each other or side by side. The two chairs constituting each pair of chairs so arranged side by side serve to form an upper and lower berth, the seat portions of the two chairs when extended side by side forming a lower berth, and the back portions when brought into a horizontal position side by side forming an upper berth. Now referring to the construction of one of the chairs, the frame thereof, as herein shown, consists of a horizontally-disposed metal base B and an upright back-frame B′. The chair-frame as a whole is supported by means of a pivotal support located centrally between the sides thereof, but adjacent to the rear margin or nearly beneath the back-frame B′. By this location of the pivotal supports the chairs constituting each pair are adapted to be revolved in a direction away from each other, so that they may be faced in either direction endwise of the car or outwardly toward the sides of the car, while at the same time when the chairs are brought together with their sides parallel they will be close together or practically in contact, as seen in Fig. 1. The said pivotal support, as shown, consists of a flanged casting C, which is secured to the floor of the car, and a bearing-stud C′, which is affixed to the base-frame B and enters a bearing-socket in the casting C. Provision is made for rigidly holding or locking the chair from turning, consisting, as shown in the drawings, of a notched collar *c* on the casting C and a spring-actuated detent *c′*, formed by a sliding bar mounted in a bracket c^2, which is attached to

the bottom of the back-frame B′ and is provided with an actuated spring c^3, which tends to hold said detent in engagement with the notches of the collar *c*.

Referring to the details of construction in the chair-frame illustrated, horizontal wooden side pieces B^2 are attached to the sides of the base-frame B, and said side pieces are provided with depending legs *b*. adapted to rest upon the car-floor, and thereby afford a rigid support for the forward edge of the seat. The back-frame B′ consists of side uprights *b*′, which reach to the top of the chair-back and between which extends an upright rear wall b^2, Figs. 5, 6, 7, and 8. The side margins of the uprights *b*′ *b*′ extend rearwardly past the wall b^2 and are provided with inwardly-extending guide-flanges b^3 b^3, which engage guide-grooves in the side margins of a vertically-sliding partition-section B^3. Said partition-section B^3 when the device is in use as a seat is lowered to the position shown in Figs. 5 and 6 and extends at the rear of the back wall b^2, said partition-section having at its upper edge a forwardly-extending horizontal top piece b^4, which rests on the top of the wall b^2 and closes the space, the partition, and wall, while making a neat finish at the top of the chair-back. When the partition B^3 is lifted upwardly to bring its lower edge in position near the top of the chair-back, said partition-section forms a portion of one wall of an inclosure or compartment within which the upper and lower berths are inclosed.

D indicates a back-section consisting of a frame which is hinged at its upper margin to the top of the chair-back and provided with a cushion *d*, which forms the back of the seat, but which may be swung upwardly so as to form one part or end portion of an upper berth, means being employed to support the free edge of said back-section, as hereinafter described.

The seat portion of the chair is made extensible by the employment of two bed-bottom sections adapted to be folded one upon the other to form a seat for use in the day-time and to be unfolded and brought in the same horizontal plane to form a lower berth, the upper bed-bottom section being provided on its side which is uppermost when the parts are folded with a cushion which forms the chair-seat.

As a separate feature of the invention the bed-bottom sections are adapted to be drawn outwardly and the back-cushion thrown into a rearwardly-inclined position to form a reclining-chair. These parts are constructed as follows: On the top of the horizontal base-frame B is mounted a horizontally-arranged forwardly and rearwardly shifting frame E, which serves as a support for a lower rectangular frame F, which is hinged at the forward margin thereof to a like upper rectangular frame F′. The upper and lower frames F and F′ are connected at their adjacent margins by hinges *f*, so that the upper frame F′ may be folded inwardly over the lower frame F to the position shown in Fig. 5 and so that said frame F′ may be folded outwardly and downwardly, so as to bring its upper or top surface in the same horizontal plane with the top of the frame F when the parts are extended as shown in Fig. 6.

Within the frames F and F′ are located bed-bottom sections G and G′, said frames F and F′ constituting supporting-frames for said bed-bottom sections. The bed-bottom sections are shown as consisting of rectangular frames and suitable spring-upholstering, (indicated by *g* and *g*′,) which may itself form the bed-bottom or on which a mattress may be placed. Each bed-bottom section G and G′ is made vertically movable within the supporting-frame within which it is located. The said bed-bottom section G has its upholstered surface *g* at its top. The cushion-frame G′ has its upholstering *g*′ at its side that comes uppermost when it is unfolded, while at its opposite side or that which is uppermost when the parts are folded it is provided with an upholstered part or cushion g^2, constituting the seat-cushion when the parts are folded for use as a seat in the day-time, Fig. 5. When the supporting-frames F F′ are unfolded or in their extended positions, the top surfaces of the bed-bottom sections G and G′ stand considerably above the level of the upper margins of the frames F and F′, which are then uppermost, as seen in Fig. 6. Such elevated position of the said sections when the device is used as a berth is desirable in order to bring the supporting-surfaces of the sections at a level above the intervening margins of the frames F and F′. The said sections are made vertically movable in the supporting-frames F and F′ in order that the said sections may be shifted inwardly or withdrawn into the interior of said frames F and F′ when the latter are folded together by the swinging inwardly of the frame F′ over frame F, the sections being thereby brought into such position that they will not interfere with such folding of the supporting-frames.

Devices are provided for automatically moving or shifting the sections G G′ in the frames F and F′ when the frame F′ is folded inwardly over the frame F, as follows: In the lower supporting-frame F are located two rising and falling supporting-bars H, located inside of and parallel with the end pieces of said frame F and preferably connected at their ends by cross-pieces, so as to form a rectangular frame, as clearly seen in Figs. 6 and 7. Said section G rests at its ends upon the bars H and is supported thereby. The supporting-bars H are each connected with the corresponding end pieces of the frame E by means of two pivoted links *h h* and are also connected with the corresponding end pieces of the frame F

by means of two pivoted links h' h'. Said lower supporting-frame F is adapted to slide inwardly and outwardly on the frame E, as shown in Figs. 5 and 6, Fig. 5 showing the frame in its outward position and Fig. 6 showing the frame in its inward position. The links h' h', connecting the bars H H with the frame F, are arranged horizontally or in such manner that when the bars are elevated the links are inclined upwardly from their pivots connecting them with the frame F, and when the bars H are depressed they will be inclined downwardly from said pivots. Said links h' h' merely serve to hold the rising and falling bars H from a horizontal movement relatively to the frame F, except so far as said bars are so moved by reason of the curved paths of the moving ends of the links h' h', such horizontal movement being, however, very slight. The links h h are so arranged that they stand in a nearly upright position when the frame F is at the rearward limit of its movement on the frame E, and thereby sustain said rising and falling bars H at the upward limit of their movement when the frame F is in said rearward position, as seen in Fig. 6. When, however, the frame F is shifted forwardly on the frame E, as shown in Fig. 5, then the links h h assume an inclined position and the rising and falling bars H will be depressed and rest upon the top of the said frame E, while the section G is at this time lowered into the frame F far enough to bring the top of the same at or below the top margin of said frame F. Inside of the end cross-pieces of the upper cushion-supporting frame F′ and parallel with the said end pieces are located rising and falling supporting-bars I, which constitute supports for the bed-bottom section G′, which latter is provided at its ends with horizontal shoulders g^3, Figs. 9 and 11, for contact with said bars. Said bars are adapted for endwise movement and are connected with the inner faces of the end pieces of said upper frame F′ by means of links i i. These links are so arranged that when the upper frame F′ is in its extended position and the bars I are moved to the limit of their endwise movement toward the inner or hinged side of said frame F′ the links will support said bars in their elevated positions; but when the said bars are moved toward the outer sides of the frame F′ or away from the hinged margin thereof the links will be thrown into a position of greater inclination and the supporting-bars I thereby shifted downwardly or inwardly from the side of the frame F′ which is uppermost when the same is extended. Fig. 5 of the drawings shows in dotted lines the position of said bar I when the frame is folded over the frame F, the bed-bottom section G′ at this time being drawn into the said frame F′. Said bars I are connected with the ends of the section G′ in such manner that the bars may slide endwise with respect to the same, but will be held in contact with the shoulders g^3 thereof. Devices for so holding the section G′ to the bars I, as shown in the drawings Figs. 9 and 11, consist of lugs g^4 g^4, which are attached to the said end pieces of the section G′ and project over the said bars to confine the same in contact with said shoulders or ledges g^3 g^3.

From the above it will be understood that vertical movement of the rising and falling bars H in the supporting-frame F is produced by movement of said frame F upon or with respect to the frame E, while vertical movement of the bars I I in the frame F′ is produced by endwise movement of said bars in said frame.

In connection with the parts constructed and arranged as described I provide means for automatically operating said parts through the movement of the upper frame F′ when the same is swung or moved on the hinges f f in folding and unfolding the seat as follows: J J are two actuating-bars arranged generally in a horizontal position and pivotally connected at their inner ends with an upwardly-projecting rear part E′ of the frame E and at their opposite ends with the bars I I. Said rods J J, as shown in the drawing Fig. 7, extend through notches in the side bars of the frames F F′. Said connecting-rods J J are so arranged that when the lower supporting-frame F is at the inward limit of its movement on the frame E and the upper frame F′ is extended, as shown in Fig. 6, the pivotal connections between the outer ends of said rods J J and the bars I are located outside of the hinges f f, by which the upper frame F′ is connected with the lower frame F. The parts being thus arranged when the frame F′ is swung on its hinges f f from its extended position, as shown in Fig. 6, to its folded position, as shown in Fig. 5, said rods J J, through their connection with the frame E and bars I I, will effect the shifting or moving of the frame F and frame F′ outwardly on the said frame E, and thus carry the bed-bottom sections bodily away from the seat-back B′. When said frame F is thus shifted outwardly, the movement of the links h h will have the effect of lowering into the lower frame F the section G, while at the same time the endwise movement of the bars I I in the frame F′ will draw the section G′ inwardly or upwardly into the upper frame F′. The endwise movement of said bars I I relatively to the upper frame F′ is limited by suitable stops, so that as the frame F′ is lifted and swung inwardly from its extended position when the bars I I have been moved endwise far enough to shift the section G′ inwardly their further endwise movement will be arrested by such stops, and as said bars will then have no further movement on the frame F′ the inward-swinging movement of the frame F′ will result in the frame F being shifted outwardly, as well as in the

bars I I being moved endwise, as hereinbefore described. Similarly, when the frame F′ is unfolded a preliminary endwise movement of the bars I I will take place until such movement is arrested by stops provided for this purpose, after which further movement of said frame F′ to its extended position will result in the frame and also said frame F′ being moved or shifted inwardly to the position shown in Fig. 6. Said stops for limiting the movement of the bars I I are, as shown in the drawings, formed in one instance by the side piece of the frame F′ at the hinged side of the same, against which the ends of said bars I I come in contact, and in another instance by shoulders g^5 g^5, Fig. 11, on the end pieces of the section G′, which are arranged in position for contact with corresponding shoulders on the bars I I. The upper supporting-frame F′ is in the instance shown provided with rigidly-attached arm-rests F^2 F^2 and, as parts of said arm-rests, with rigid standards or extensions f^2, which when the parts are in their folded position extend upwardly adjacent to the back of the seat, but which when the frame F′ is unfolded or extended are adapted to rest upon the floor of the car and form legs to sustain the outer margins of the said frame F′.

As hereinbefore stated, the frame E, by which the supporting-frames F and F′ are directly sustained, is itself made to slide inwardly and outwardly on the base-frame of the chair. This sliding construction in said frame E is to enable the chair to be converted into a reclining-chair by shifting or drawing outwardly the said frame E, with the parts supported on or carried thereby, the lower edge of the hinged back-section D being engaged with said frame E in such manner that the lower edge of the back-section will be swung outwardly with the seat, and thus kept in proper relation to the seat-cushion g^2, while at the same time it will be so much inclined as to form an inclined rest for the occupant of the seat. In the particular construction shown the rear upward extension E′ of said frame E rises high enough to come behind the lower part of the back-section D, which latter rests against the same, so that said extension E′ serves to support the lower part of said back-section D in proper position relatively to the seat both when the frame E is in its normal position and when drawn forward, as hereinbefore described. In connection with the above, however, it is to be noted that so far as the features of construction in the folding or extensible seat are concerned the frame E need not be made to slide on the base B, or said frame E may, as a separate feature or element, be omitted, in which case the supporting-frame F′ may rest and slide directly on the base-frame of the chair, it being understood that said sliding frame E is provided only for the purpose of enabling the chair to be converted from an ordinary chair with a nearly upright back to a reclining-chair having an inclined back.

Now referring to the means illustrated for supporting or sustaining the free end of the hinged back-sections E of two adjacent seats made as above described, when said back-sections are swung upwardly to form the two end portions of a single upper berth these parts are constructed as follows: As hereinbefore described, the chairs are placed side by side along the center line of the car in such manner that the seats and backs of the chairs of each pair constitute an upper and a lower berth, and in connection with the chairs thus arranged I so construct the roof of the car that the central elevated or turret portion of the same is substantially of the same width as the combined widths of the chair-seats, or as the length of the berths formed by the two chairs. The side walls A^3 A^3 of the central elevated or curved portion of the roof are thus brought above the exterior side margins of said back-sections D, as clearly seen in Fig. 2. Supporting means for the free end of said hinged back-sections D are provided by means of hinged supporting-rods K K, which are pivotally connected with the outer or free ends of said sections D at the corners thereof in such manner that they may be swung or folded to an upright position when the section is horizontal and may be folded downwardly or inwardly and brought parallel with the free edges of the back-sections, as clearly seen in Figs. 5 and 6. Each back-section is provided at its outer or free margins with two parallel strips d' d^2, which are separated by a space affording a groove or recess into which the supporting-rods K K enter when they are in their folded positions. Said supporting-rods K K are provided at their outer or free ends with hooks k k, adapted to engage supporting-brackets L L L′ L′, attached to the structure of the car-roof. In the case of the brackets L L, which engage the exterior bars J J, said brackets are attached to the inner faces of the side walls A^3 A^3 of the turret. In the case of the brackets L′ L′, which are arranged for engagement with the supporting-bars K K at the inner corners of the back-sections, said brackets are located adjacent to each other and supported from the central elevated part of the car-roof by means of a vertical hanger A^5, attached to the center of the elevated part of the turret and depending centrally thereof in position to sustain said brackets L′ L′ horizontally opposite the brackes L L.

The outer margins of the two seat-back sections D D constitute the front edge of the upper berth, and in order to hold in place a mattress when the same is used on the upper berth horizontal guard-rails M M are connected at their ends with the supporting-rods K K in such manner that when the said supporting-rods are folded upwardly the rails will be lifted above the level of the top of the

cushions $d\,d$, and when they are folded downwardly or inwardly said rails will be lowered or depressed and brought into the groove between the strips $d'\,d^2$. The connecting means for this purpose illustrated consist of longitudinal slots $m\,m$ in the end portions of the said rails, which slots are engaged by pins $k'\,k^2$ on the said supporting-rods K K'.

Now referring to the means illustrated for inclosing and separating from each other the berths formed by means of the chairs arranged as described these parts are made as follows: Partition-walls extending transversely of the car to constitute a series of compartments along the center of the car are formed by the back walls $b^2\,b^2$ of the two adjacent chairs and by the sliding partitions B^3 B^3, which when lifted extend upwardly above the upper berths, said partition-sections B^3 B^3 for this purpose being adapted to reach upwardly into the space between the side walls A^3 A^3 of the turret portion of the car-roof, as clearly seen in Fig. 2. For closing the sides of the said compartments I employ side curtains N and O, which are arranged in the same vertical planes with and are adapted to form downward continuations of the side walls A^3 A^3 of the turret and which form longitudinal passages extending along the sides of the car, from either of which access may be had to the said compartments. Said curtains are flexible in structure and preferably are adapted to be wound on spring-actuated rollers located in the spaces above the lateral ceiling-sections A^5 A^5 outside of said walls A^3 A^3. The drawings illustrate in Fig. 2 rollers N' N' for the curtains N, said rollers being located exterior to the walls A^3. The said curtains extend from the rollers N' over guide-rollers n, which are mounted in slots or openings formed in the lower parts of the said walls A^3. Said curtains N will preferably be made of such width as to cover the ends of the upper and lower berths, while the curtains O will be narrower and cover the spaces or openings between the berths formed by one pair of chairs and the partition formed by the chair-backs and sliding-partition sections B^3 of the next adjacent pair of chairs, as clearly seen in Fig. 1. The said narrower curtains O will be arranged to roll upon rollers in the same manner as in the case of the rollers N' for the curtains N. When the berths are made up for use, the curtains N will be drawn down and preferably secured at their lower ends to the outer sides of the chairs, and said curtains N will remain in this position so long as the berths are in use. The curtains O O are adapted to be operated separately and arranged to be raised and lowered at any time, as desired by the occupants of the berths, in entering and leaving the compartments.

To aid the occupant of the upper berth in entering and leaving the same, a device is provided as follows: P is a hinged step attached to the rear face of the wall b^2 of each seat-back by pivots $p\,p$, located at its inner edge, so that said step may be either dropped and allowed to rest in a vertical position against the said wall b^2 or swung outwardly and upwardly into a horizontal position. To support the said step P, braces P' P' are pivoted to the sides of the step near the outer edge of the same and are connected at their lower ends, Fig. 12, by a horizontal bar p', adapted for engagement with a horizontal cleat p^2, attached to the said wall b^2. When the step P is thrown upwardly into position for use, the cross-bar p' engages the cleat-stop p^2 and the braces P' P' support the step in its horizontal position; but by disengaging the said cross-bar from the cleat the step may be lowered against the wall b^2 and the braces and cross-bar allowed to hang against the face of said wall b^2. The step P will be placed in its horizontal position only when the sliding partition-sections B^3 are elevated, and when the said step is lowered or in its folded position it will not interfere with the descent of said partition-section B^3 and will be covered by the latter.

Q and Q' indicate two boards joined by hinges at their ends and adapted for attachment to the upper edges of the ends of the supporting-frames F F' to form head and foot boards for the lower berth. Said headboards Q and Q' are shown in the drawings as provided at their lower edges with dowel-pins $q\,q'$, Figs. 9 and 10, which are adapted to enter sockets in the upper edges of the end pieces of the frames F and F' and whereby the said boards are detachably secured in place on the said frames.

The employment of locking devices for holding the chairs from turning, as hereinbefore described, when employed in connection with two chairs having extensible seats which are brought together to form a lower berth constitutes an important feature of my invention, inasmuch as said locking devices serve to hold the chairs rigidly in parallel relation when the parts of the extensible seats thereof are arranged to form a lower berth.

I claim as my invention—

1. A sleeping-car provided with two chairs which are pivotally supported on pivots located near the rear margins of the seats thereof, said chairs being arranged in such relative position that the said seats meet each other side by side when brought into parallel relation, said chairs having seats which are extensible to form a lower berth and movable seat-back sections adapted to be placed in a horizontal position to form an upper berth.

2. A sleeping-car provided with two chairs which are pivotally supported on pivots located near the rear margins of the seats thereof, and are arranged in such relative position that the said seats meet each other side by side

when brought into parallel relation, said chairs having seats which are extensible to form a lower berth, and movable seat-back sections adapted to be placed in a horizontal position to form an upper berth, and the backs of the said chairs being provided with vertically-sliding partition-sections.

3. A sleeping-car provided with chairs which are supported on pivots located near the rear margins of the seats thereof, and are arranged in pairs along the center line of the cars, with the chairs of each pair side by side, and in such relative position that the said seats meet each other side by side when brought into parallel relation, said chairs having extensible seats adapted to form lower berths and movable seat-back sections adapted to form upper berths.

4. A sleeping-car provided with two chairs which are pivotally supported on pivots located near the rear margins of the seats thereof, said chairs being arranged in such relative position that the said seats meet each other when brought into parallel relation, said chairs having seats which are extensible to form lower berths, seat-back sections hinged to the upper margins of the seat-backs, and means for supporting the free edges of said seat-back sections from the roof of the car.

5. A sleeping-car provided with two chairs which are pivotally supported on pivots located near the rear margins of the seats thereof, said chairs being arranged in such relative position that the said seats meet each other when brought into parallel relation, said chairs having seats which are extensible to form a lower berth, and seat-back sections hinged to the chair-backs, supporting-rods pivotally connected with said seat-back sections and means on the car-roof adapted to be engaged by said supporting-rods.

6. A sleeping-car provided with two pivotally-supported chairs having seats which are extensible to form a lower berth and seat-back sections hinged to the chair-backs, supporting-rods pivotally connected with the outer corners of the seat-back sections, means on the lower, lateral portions of the car-roof for engagement with the two outermost supporting-rods, and a hanger attached to the central, elevated part of the car-roof adapted for engagement with the two inner supporting-rods.

7. A sleeping-car chair the seat portion of which comprises upper and lower folding bed-bottom sections, the upper bed-bottom section being upholstered at its side which is uppermost when the parts are folded to form the chair-seat and provided with standards forming supporting-legs for the same when unfolded.

8. A sleeping-car chair, the seat portion of which comprises folding bed-bottom sections, of which the upper bed-bottom section is upholstered on its side which is uppermost when the sections are folded, and the back of the chair being provided with a hinged seat-back section which is disconnected at its lower edge from said bed-bottom sections and is hinged to the top of the seat-back so that it may be swung upwardly on its hinges to a horizontal position.

9. A sleeping-car chair embracing a seat portion and a back portion, the seat portion comprising folding bed-bottom sections which are movable horizontally toward and from the chair-back, and the back portion comprises a hinged seat-back section, the lower or free margin of which is movable outwardly with said bed-bottom sections to form a reclining-chair.

10. A sleeping-car chair, the seat portion of which comprises two folding bed-bottom sections, and two supporting-frames which are joined by hinges at their forward edges, and within which said bed-bottom sections are located, and means for movably supporting said bed-bottom sections in said frames affording rising-and-falling movement of the bed-bottom sections in the frames.

11. A sleeping-car chair, the seat portion of which comprises upper and lower bed-bottom sections, and two supporting-frames for the bed-bottom sections in which the latter are located, said frames being joined by a hinged connection at their forward edges, said frames being movable horizontally toward and from the chair-back, and means for supporting the said bed-bottom sections in the said supporting-frames embracing actuating connections between said frames and the chair-frame adapted to give rising-and-falling movement to the bed-bottom sections in said frames and to effect the shifting of said frames on the chair-frame when the upper supporting-frame is moved for throwing it into its folded and unfolded position.

12. A sleeping-car chair, the seat portion of which comprises two folding bed-bottom sections, upper and lower supporting-frames in which said sections are located, said frames being joined by a hinged connection at their forward margins and being adapted for bodily movement on the chair-frame toward and from the seat-back, and means for movably supporting said lower bed-bottom section in the lower supporting-frame, embracing pivoted links connected at their lower ends with the seat-frame and so arranged as to effect the lowering of the lower bed-bottom section when the lower supporting-frame is drawn forward on the chair-frame.

13. A sleeping-car chair, the seat portion of which comprises two folding bed-bottom sections, two supporting-frames for said sections which are joined by a hinged connection at their forward edges, said supporting-frames being horizontally movable toward and from the seat-back, rising and falling supporting-bars in the lower supporting-frame by which the said bed-bottom section therein is sus-

tained, and pivoted links connecting said rising and falling bars with the chair-frame, said links being so arranged that when the said lowermost supporting-frame is drawn forward on the seat-frame, the rising and falling frame will be lowered and permit the descent of the said bed-bottom section resting thereon.

14. A sleeping-car chair, the seat portion of which comprises upper and lower bed-bottom sections, supporting-frames for the bed-bottom sections in which the same are located, said supporting-frames being joined by a hinged connection at their forward edges, and means for movably supporting the upper bed-bottom section in the upper supporting-frame, comprising endwise-movable supporting-bars in said upper supporting-frame and links connecting said supporting-bars with the supporting-frame, arranged to give rising-and-falling movement to said supporting-bars when the latter are moved endwise in the said upper supporting-frame.

15. A sleeping-car chair, the seat portion of which comprises upper and lower bed-bottom sections, supporting-frames for said bed-bottom sections which are joined by a hinged connection at their forward edges and are adapted to move bodily on the seat-frame toward and from the back-frame, means for supporting the lower bed-bottom section in the lower supporting-frame comprising rising and falling supporting-bars, and links connecting said bars with the chair-frame, means for supporting the upper bed-bottom section in the upper supporting-frame comprising supporting-bars which are movable endwise in said upper supporting-frame, and links connecting said supporting-bars with said upper supporting-frame, and horizontally-arranged actuating-bars pivotally connected with the chair-frame and with the said endwise-movable supporting-bars in the upper supporting-frame.

16. A sleeping-car chair, the seat portion of which comprises a sliding frame which rests on the chair-frame, and two folding bed-bottom sections which are supported upon said sliding frame and the upper one of which forms the chair-seat.

17. A sleeping-car chair the seat portion of which comprises a sliding frame which rests on the chair-frame, two folding bed-bottom sections and two supporting-frames which are joined at their forward edges by a hinged connection, and which rest and are adapted to slide on said sliding frames.

18. A sleeping-car chair the back portion of which comprises a seat-back section which is hinged to the top of said back portion, and the seat portion of which embraces a forwardly and rearwardly sliding frame which rests on the chair-frame, two folding bed-bottom sections, and two supporting-frames for the bed-bottom sections which are joined by a hinged connection at their outer edges and which rest and are adapted to slide on said sliding frame, said sliding frame having at its inner margin an upwardly-extending part which extends behind and engages the free edge of said seat-back section.

19. A sleeping-car chair having a hinged seat-back section provided with a pivoted supporting-rod and with a groove or recess extending along its free edge to receive said supporting-rod when in its folded position.

20. A sleeping-car chair having a hinged seat-back section, provided with pivoted supporting-rods and with a shifting guard-rail which is connected with and moved by the said supporting-rods.

21. A sleeping-car chair having a hinged seat-back section provided with two pivoted supporting-rods and with a guard-rail connected with the said rods by slot-and-pin connections, by which the guard-rail is shifted toward and from the outer edge of the section when the supporting-rods are swung on their pivots.

22. A sleeping-car chair, the seat portion of which comprises two folding bed-bottom sections, and two supporting-frames which are joined by a hinged connection at their outer edges, the uppermost supporting-frame being provided with rigid standards forming supporting-legs when the said upper supporting-frame is in its extended position.

23. A sleeping-car chair, the seat portion of which comprises two folding bed-bottom sections, and two supporting-frames which are joined at their forward edges by hinged connections; the upper supporting-frame being provided with arm-rests having extensions adapted to form supporting-legs when the said upper supporting-frame is in its extended position.

24. A sleeping-car provided with pivotally-supported chairs arranged in pairs with the seats of each pair side by side, said chairs having seats which are extensible to form lower berths, and being provided with hinged seat-back sections adapted to be placed in a horizontal position to form upper berths, and the backs of the chairs being provided with vertically-sliding partition-sections, and curtains suspended from the roof of the car at both sides of each pair of the chairs and forming with the chair-backs and partition-sections, compartments or inclosures for the berths.

25. A sleeping-car provided with pivotally-supported chairs arranged in pairs along the center line of the car, with the chairs of each pair side by side, said chairs being provided with extensible seat portions adapted when extended to form lower berths, and with hinged seat-back sections adapted to form upper berths and the backs of said chairs being provided with vertically-sliding partition-sections, the roof of the car being provided with a central elevated or turret portion having vertical side walls and curtains for inclosing the ends of the berths adapted to depend from

and forming downward continuations of the said side walls of the said turret portion of the car-roof.

26. A sleeping-car provided with chairs which are arranged along its center line and are convertible into berths, the car-roof having a central elevated or turret portion, having vertical side walls, and lateral ceiling-sections which form with the said side walls and the lateral parts of the car-roof inclosed spaces or chambers, curtain-rollers located in said spaces or chambers and flexible curtains on said rollers adapted to depend from the sides of the turret portion at the sides of the berths.

27. A convertible sleeping-car chair, the back of which is provided with a vertically-sliding partition-section and a folding step on the chair-back adapted to rest flat against the same when not in use and to be covered by the sliding partition-section when the latter is lowered.

28. The combination with an extensible chair-seat, embracing two bed-bottom sections and supporting-frames therefor which are joined at their outer edges by hinged connections, of two folding boards, provided with attaching means by which they may be secured to the ends of the said supporting-frames, and which are adapted to form a head-board or footboard for a berth.

29. A sleeping-car provided with two pivoted chairs, the seats of which are extensible to form a lower berth when the chairs are in position parallel with each other, and means associated with the chair-pivots for locking the chairs from turning on said pivots.

30. A sleeping-car chair provided with a pivotal support, said pivotal support embracing a part attached to the car-floor, a part attached to the seat, and a detent on one of said parts adapted to engage the other part to hold the chair from turning.

In testimony that I claim the foregoing as my invention I affix my signature, in presence of two witnesses, this 10th day of October, A. D. 1904.

DUNCAN S. McEWING.

Witnesses:

C. CLARENCE POOLE,

GEORGE RAYMOND WILKINS.