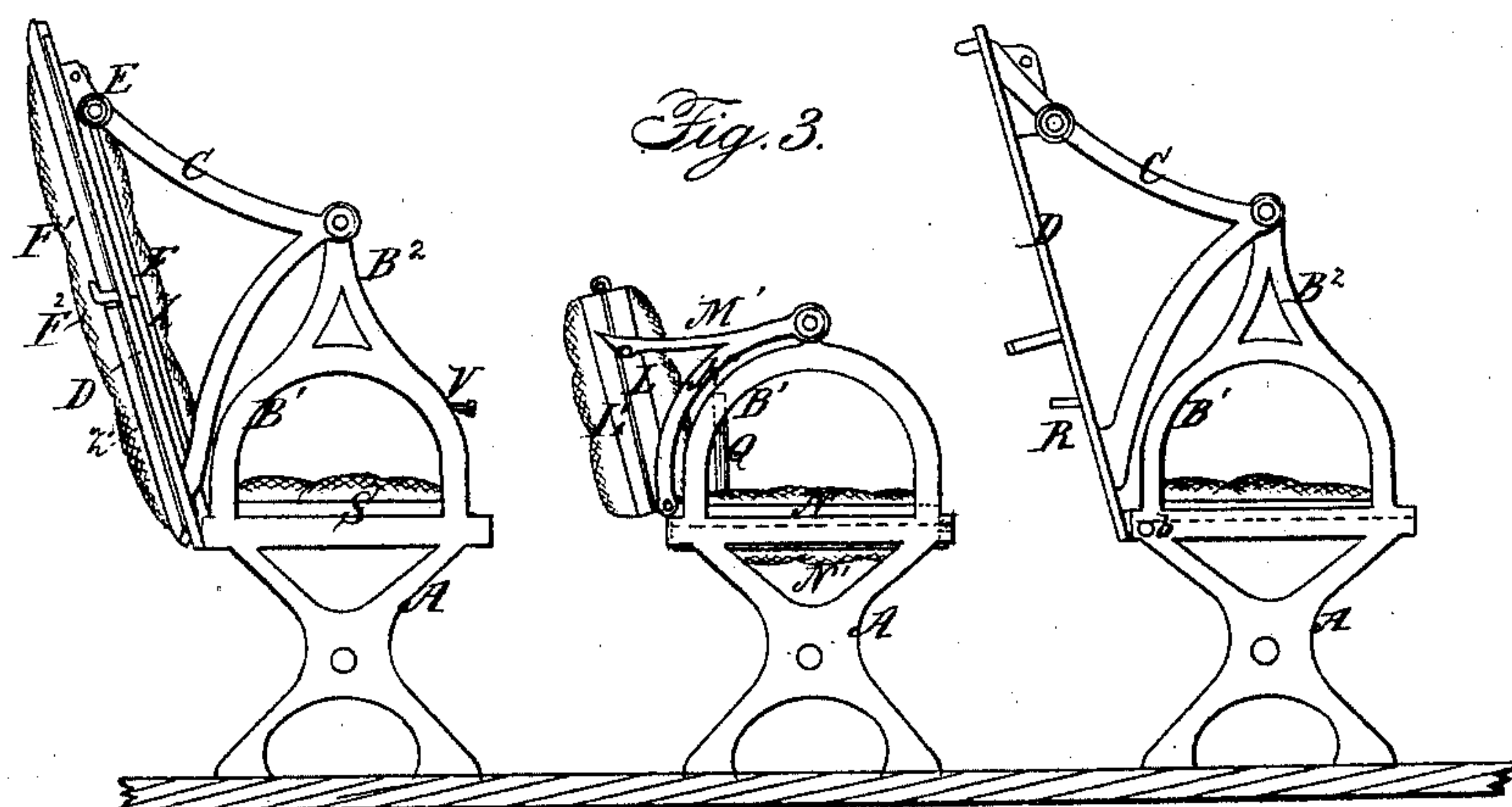
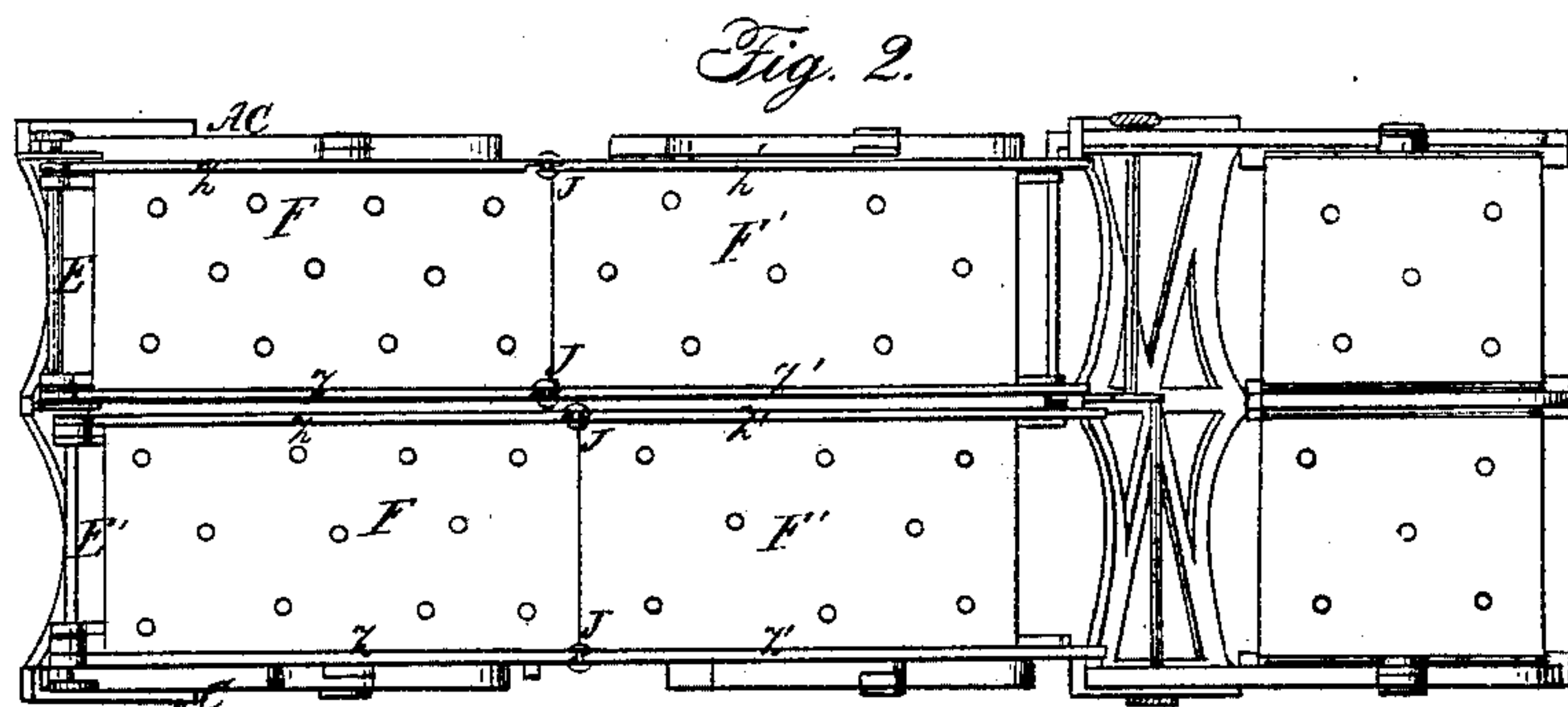
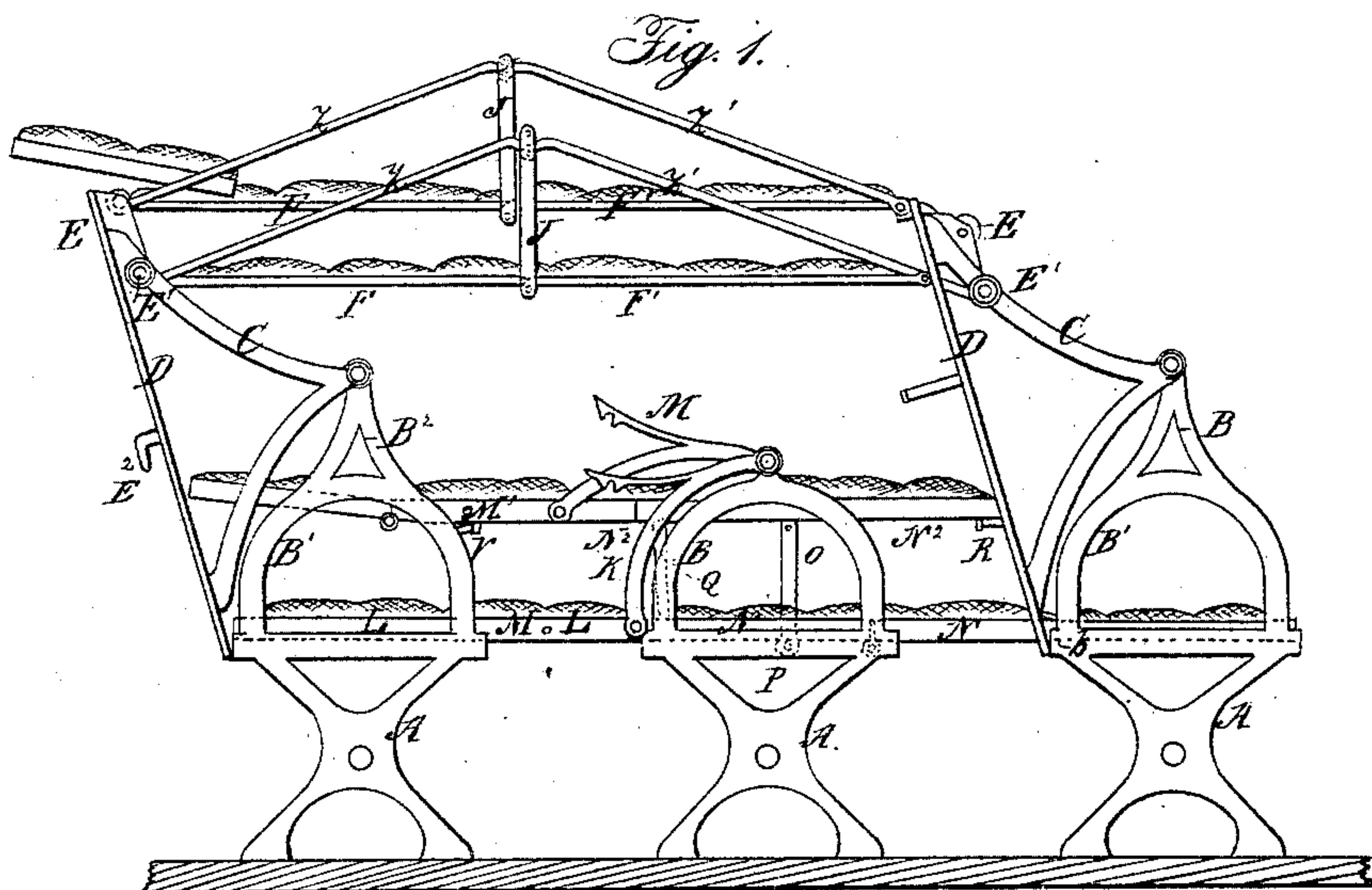


D. STONE.
Car Seat and Couch.

No. 21,727.

Patented Oct. 5, 1858.



UNITED STATES PATENT OFFICE.

DRAPER STONE, OF MILWAUKEE, WISCONSIN, ASSIGNOR TO HIMSELF, AND E. S. TURNER,
OF GRAFTON, WISCONSIN.

RAILROAD-CAR SEAT.

Specification of Letters Patent No. 21,727, dated October 5, 1858.

To all whom it may concern:

Be it known that I, DRAPER STONE, of the city and county of Milwaukee and State of Wisconsin, have invented a new and useful
5 Improvement in Railroad-Car Seats for Enabling Them to be Readily Converted into Distinct Sleeping Couches or Berths; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making part of this specification.

Figure 1, is a longitudinal section through the longitudinal passage way at the center of the car, showing an end elevation of three
15 seat frames with the cushioned backs and bottoms of two of them converted into four sleeping couches or berths. Fig. 2, is a top or bird's eye view of the same. Fig. 3, is a longitudinal section of the same showing an end elevation of the said seats with their bottoms and backs in the position to form ordinary seats to accommodate the passengers in a sitting posture.

Similar letters in the figures refer to corresponding parts.

The nature of this invention and improvement consists in, constructing the reversible back frames of every alternate seat in the car, of a greater elevation than the intermediate ones, and so jointing and bracing their cushioned frames, as to enable said cushioned frames to be raised forward, and extended in a horizontal position over the low seat back frames in advance and to be converted into distinct sleeping couches or
35 berths, at different heights, and in so forming and jointing the lower cushioned double backs, and double bottoms, of the intermediate seats, as to enable them to be opened, and so extended and arranged in relation to each other, as to convert them into two other distinct sleeping couches or berths, also on different planes of elevation, and in this manner; and by a slight exertion, to
45 form four distinct and comfortable sleeping couches or berths, out of every pair of seats in the car.

To enable others skilled in the art to make and use my invention I will proceed
50 to describe its construction and operation.

Each of the seat frames, consists of three uprights A, formed of cross pieces below, connected by horizontal bars at their upper ends, from the ends of which spring semi-

circular or arched pieces B, B', and connected together by a horizontal bar below.

From each of the upper portions or apex of the semicircular or arched pieces B', of the end uprights A, of the high backed seats, that is, every other one, extends curved bars
60 B², which join each other and form a circular ear, a short distance above, to which, is jointed by a pin or bolt, the connected ends of curved bars C whose opposite ends are secured to near the upper and lower ends of
65 inclined frames, D, extending in width the full length of the seats, and in height, the required distance to enable their upper portions to form rests for couches or sleeping berths, above the heads of the passengers, 70 when in a sitting posture below.

To lugs or projections on the upper end of the inclined bars of the frames D, next the side of the car, and the central parallel bar of the same, is secured a horizontal rod
75 E, and to the lug or projection on the said central bar, and the end of one of the curved bars C, and a short distance below the plane on which the rod E, is arranged, is secured another horizontal rod E', and to each of
80 these rods E, E', is jointed the upper end of the cushioned frame E, of the seat back, which frames F, are jointed at their lower ends, at the same relative distances one above the other, as their top jointed ends are situated apart, to other cushioned frames F',
85 corresponding in size and form with the frames F. The cushioned frames F, and F', when the several parts of the seat are arranged in a position to be occupied in a
90 sitting posture, are folded parallel or nearly so with each other, one in the front and the other in the rear of the back frame D, those in the rear being held against the said back frame D by a button or cleat F², or in any
95 other convenient manner.

To the horizontal rods E, E', outside the jointed ends of the side bars, of the cushioned frames F, F', are jointed the ends of parallel bars Z, a little greater in length
100 than said cushioned frames F, F', which bars Z, are bent or curved and jointed by pins at their opposite ends, to the corresponding ends of similar parallel bars Z' also jointed at their opposite ends by pins, to
105 near the ends of the side bars of the cushioned frame F'. The bent or curved ends of the bars Z, Z', where they are jointed

together, are situated in slots formed in arms J, jointed at one end to the pins securing the ends of the two cushioned frames together, and extending therefrom under the seats, when the said cushioned frames are in the position to form a seat back, as represented in Fig. 3, and at right angles thereto, when they are employed to form couches or berths, as represented in Figs. 1 and 2.

To the apex or upper parts of the curved portions B', of the uprights A, of the frames, of the seats between the high backed ones, are cast or otherwise secured ears, to which are jointed by bolts or pins the ends of curved bars K, which are jointed at their opposite ends by bolts or pins, to the lower part of the edges of cushioned back frames L, extending upward at the proper angle of inclination to form back rests, only about half the distance of the height of the more elevated back frames, and hinged at their upper edges to other cushioned frames L', corresponding in every respect with the cushioned back frames L, against the rear surface of which they are folded parallel, when the said cushioned frames L, are supported in the position represented in Fig. 3 by the notches at the ends of spring bars or catches M, hooking over the pins or studs M', projecting from the edges of the cushioned frames L, the opposite ends of said spring catches or bars M, being fastened to the curved bars K.

The bottoms of the seats, next the longitudinal passage way through the car, consist of two cushioned frames N, N', hinged together at their edges, and capable of being folded parallel together, or extended, as occasion may require, the upper one N', being wider than the lower one N, and resting on ledges or ribs I, formed on the sides of the uprights A of the frames. The bottoms N², of the seats, next the sides of the car, are made, hinged together, and supported, in precisely the same manner as the cushioned seat bottom frames N, N', and their hinged portions are jointed or hinged to the ends of levers, arms or bars O, jointed at their opposite ends to horizontal transverse rods or shafts P, extending from the horizontal piece of the central upright of the frame A, to the horizontal piece of the upright next the side of the car, for elevating and supporting the said cushioned frames N² in connection with the spring bars Q, and projections or lugs R, after being made to form a portion of a single sleeping couch, as will be hereafter described.

In Fig. 3, the seats are represented in the position they are designed to occupy when sat upon by the passengers, with their cushioned back F, F', L, L', and bottom frames N, N', N², folded together. When it is desired to change the position of the cushioned back frames F, F', of the high back seats

and convert them into sleeping couches or berths, the cushioned bottom frames S, which rest upon ledges or ribs I, projecting from the horizontal pieces of the uprights A of the frames, are removed from their positions, and the hinged cushioned back frames F', in the rear are released, by turning the buttons or cleats F², and are swung under the back frames D and the two cushioned frames F, F', are raised and extended to a horizontal position. When thus raised and extended to a horizontal position, the ends of the parallel bars Z, at the sides of the cushioned frames F, F', rest upon transverse rods and bars, at the upper portions of the back frames D of the next high back seats in advance, and the hinged portions of the said cushioned frames F, F', are suspended and supported by the slotted arms or bars J, resting against the bent jointed ends of the bars or rods Z, which incline upward from the supports at the back frames of the high back seats, and are thus made to assume the same position in relation to the suspended cushioned back frames F, F', as the twyers do to the girders of truss bridges. When the cushioned back frames F, F', are thus raised, their bottom cushioned frames S, are placed in an inclined position at one of their ends, in order to form raised supports for the heads of the passengers and they are thus made to form distinct and comfortable sleeping couches at different elevations.

The cushioned back frames L, L', and double cushioned bottom frames N, N', of the low backed seats next the longitudinal passage way in the car are converted into similar distinct horizontal sleeping couches or berths, by detaching the spring notched bars M or catches from the pins or studs M', projecting from the edges of the cushioned frames L, and lowering and extending the two hinged cushioned frames L, L', one to a horizontal position with the hinged portion of the two resting upon the horizontal ledges or projections I on the sides of the uprights A of the frame, and the other at a slightly inclined position upon lugs or other supports to form a raised support for the head of the passenger to rest upon. The narrow cushioned frames N', under the bottom ones designed for the passengers to sit upon, are then raised on their hinges to a horizontal position and their ends brought upon transverse bars b extending from one upright A of the frame, to the other when these distinct berths next the passage way through the car are completed. The additional series of berths or couches next the sides of the car are formed by opening and extending the cushioned back frames L, L', similarly cushioned bottom frames N², in precisely the same manner as that observed in opening and extending the

frames just mentioned, and supporting them a short distance above the horizontal plane on which the berths or couches next the passage way are situated, by resting the hinged portions of the cushions and bottom frames or bars, or arms, O when raised to a vertical position, and resting the opposite edge of the narrow frames, upon lugs or projections R on the back D of the high backed seats, immediately in advance. The wider hinged cushioned bottom frames N², upon which the passengers sit, are supported by their edges resting on notches or the tops of spring bars Q, secured at their lower ends to the semicircular or arch formed parts B' of the uprights A. The back cushioned frames L, L', are supported immediately in advance by the pins or studs projecting from the edges of one of them resting on lugs or projections on the semi-circular top portions of the uprights of the high back frames, and the raised ends of the other resting against the high back seat frame. In this manner a series of single, distinct and comfortable sleeping couches or berths at different points of elevation, so as to enable a thorough ventilation between them, are readily formed, which are as readily capable of being again transformed into the usual reversible seats, a distinguishing and important feature in the formation, arrangement, and operation of the several parts for producing these effects being that seats allotted to each individual can be made to either form a seat or couch, without reference to or in the slightest manner interfering with the comfort or position of the other passengers.

Instead of making the seat bottoms and backs for each individual distinct and arranging and operating them as described so as to form distinct berths or couches at different points of elevation they may be made in one piece to extend the whole extent of the seat between the uprights A next the side of the car and the passage way through the same in which case the uprights between those mentioned and the other at-

tachments necessary to this distinct character of berth or couch and seat will be dispensed with.

What I claim as new and desire to secure by Letters Patent is—

1. Providing the back frame D of the high back seats, with hinged cushioned frames F, F', at different or the same points of elevation and jointing the front ones F of them to horizontal bars E, E', secured to the back frame D, and attaching and combining therewith bracing or supporting bars Z, and slotted bars J, in which their curved ends move, in such a manner as to enable the said cushioned back frames F, F', to be folded together with the back frame D between them to form comfortable and distinct reversible seats as represented in Fig. 3, or raised and extended to the high backed seat-frame next in advance to form sleeping berths or couches on different horizontal planes as represented in Figs. 1 and 2, as before described.

2. I also claim the combination and arrangement of the double hinged cushioned back frames L, L', of the low back seats, with and in the relation to the double hinged cushioned bottoms N, N', curved bars K and spring notched bars, M attached thereto, and horizontal ledges or ribs I on the sides of the uprights A of the frame, substantially in the manner and for the purpose herein set forth.

3. I also claim giving a greater elevation to the hinged cushioned double back and bottoms N², of the low back seats by combining therewith the pins or studs on the edges of the former, lugs or projections in which they rest and rockshaft P and bars or arms O, attached thereto, and spring notch bars Q and lugs or projections R on the high back seat frame next in advance, the whole of these parts being operated and arranged as described.

DRAPER STONE.

Witnesses:

O. D. MUNN,
E. S. TURNER.