

No. 631,204.

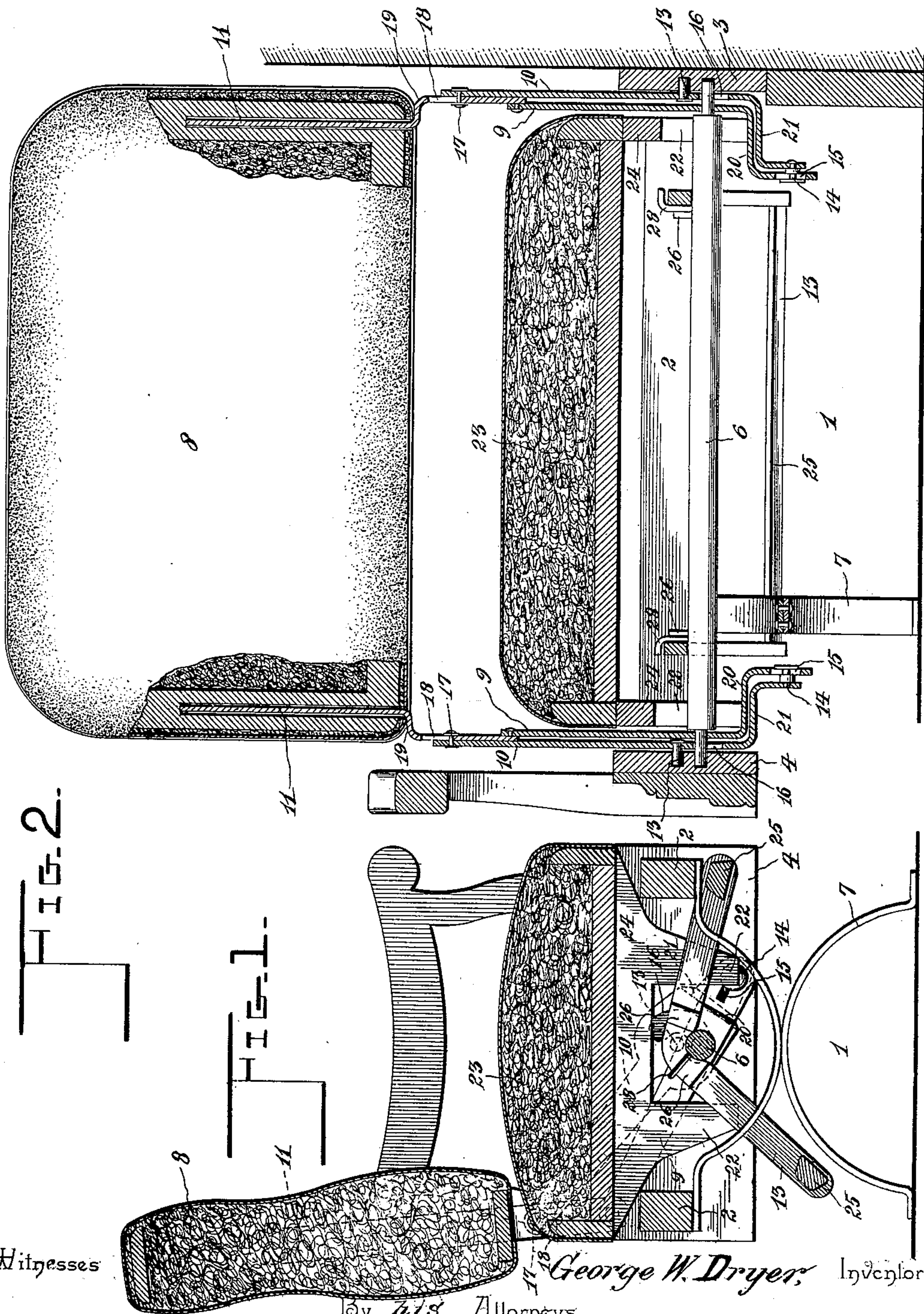
Patented Aug. 15, 1899.

G. W. DRYER.  
CAR SEAT.

(Application filed Aug. 13, 1898.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses

John F. Deffenbach  
J. H. Piley

George W. Dryer, Inventor  
by his Attorneys.

Cashnow & Co.



No. 631,204.

Patented Aug. 15, 1899.

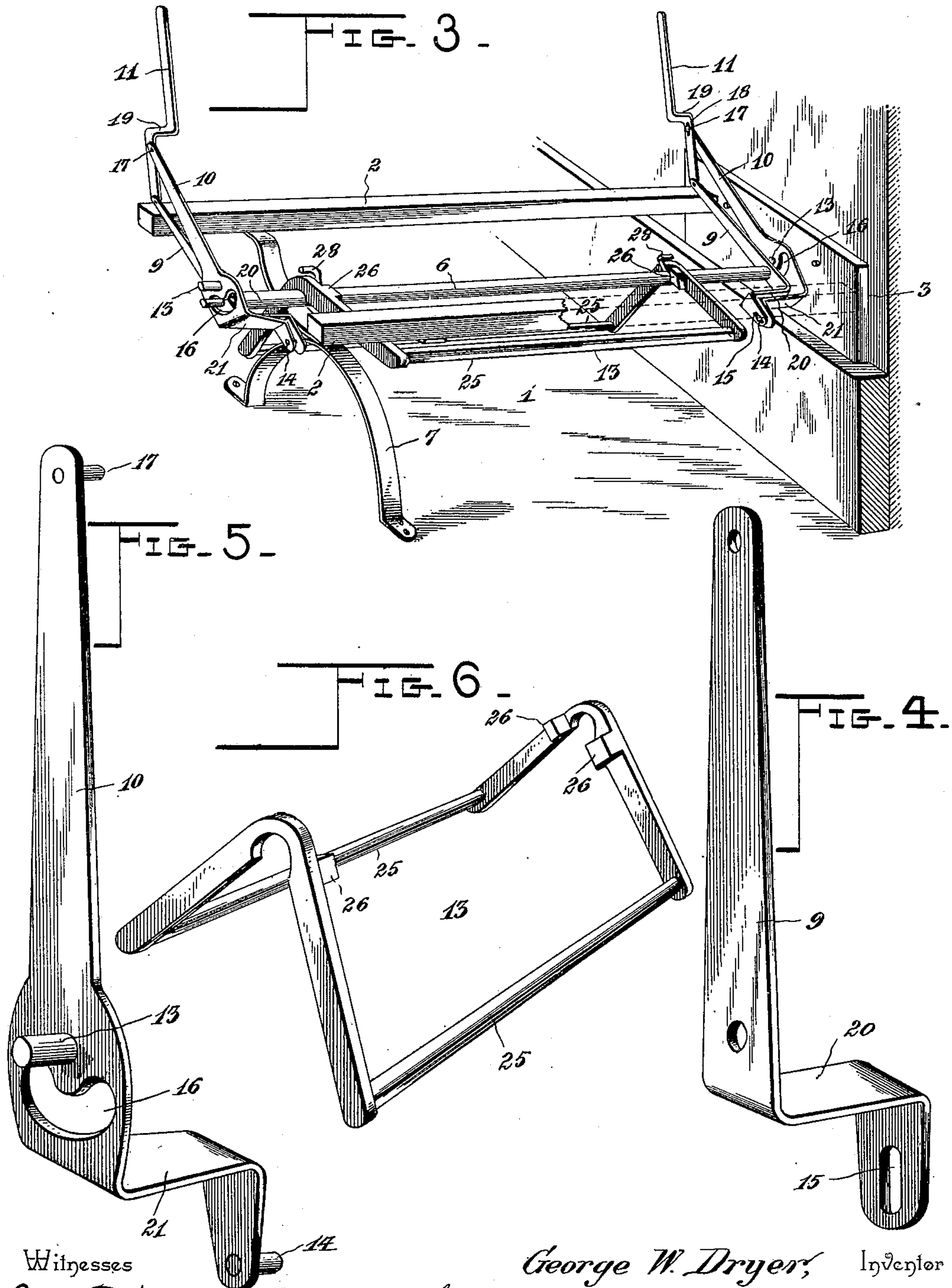
G. W. DRYER.

CAR SEAT.

(Application filed Aug. 13, 1898.)

(No Model.)

3 Sheets—Sheet 2.



Witnesses  
*John F. Deufferwiel*  
*J. F. Riley*

*George W. Dryer,* Inventor  
By *his* Attorneys.

*C. A. Snow & Co.*

No. 631,204.

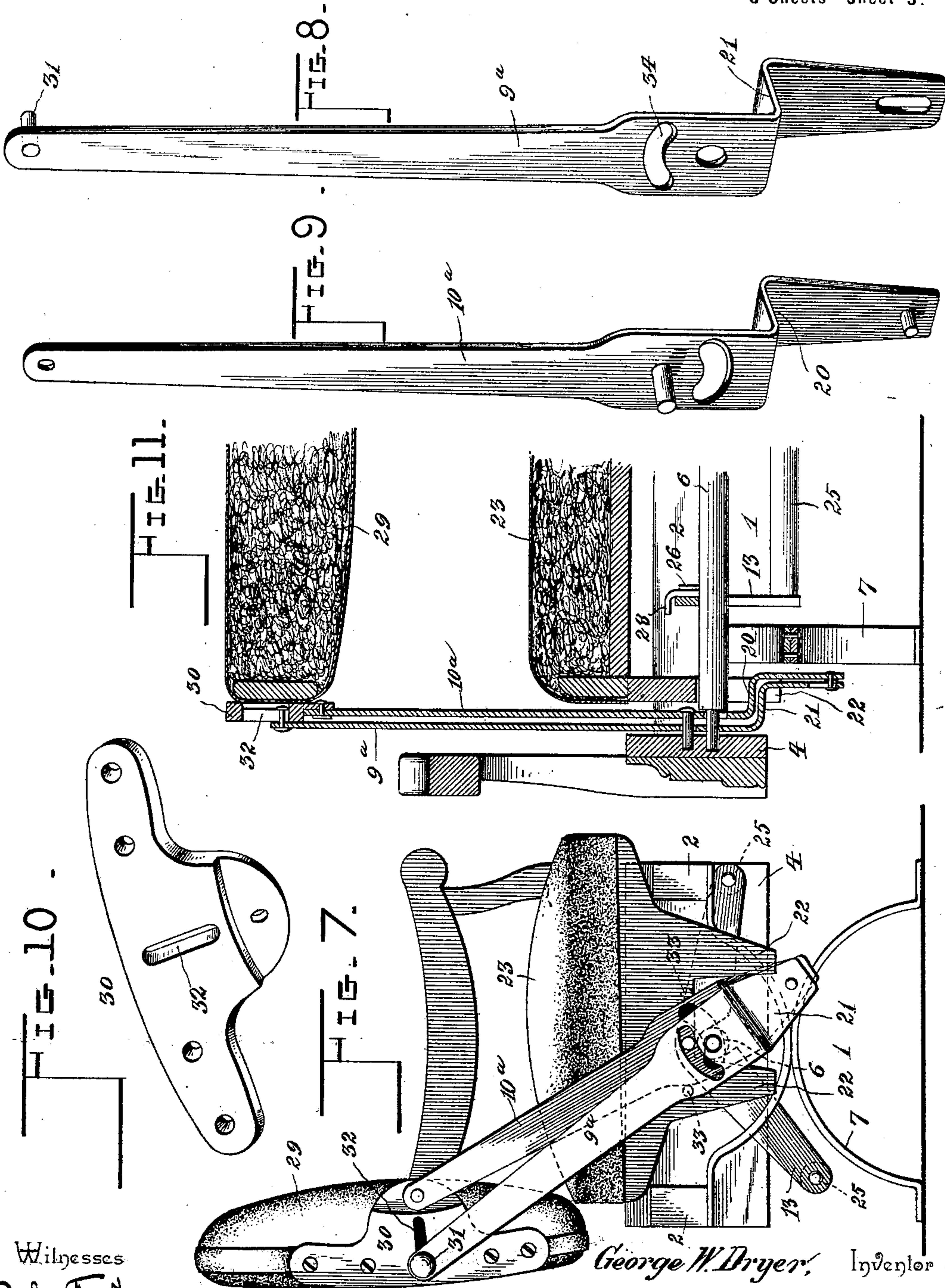
Patented Aug. 15, 1899.

G. W. DRYER.  
CAR SEAT.

(Application filed Aug. 13, 1898.)

(No Model.)

3 Sheets—Sheet 3.



Witnesses  
John F. Deufferwiel  
J. F. Deufferwiel  
By his Attorneys,  
C. A. Snow & Co.

George W. Dryer, Inventor



# UNITED STATES PATENT OFFICE.

GEORGE WORDEN DRYER, OF EASTON, PENNSYLVANIA.

## CAR-SEAT.

SPECIFICATION forming part of Letters Patent No. 631,204, dated August 15, 1899.

Application filed August 13, 1898. Serial No. 688,523. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE WORDEN DRYER, a citizen of the United States, residing at Easton, in the county of Northampton and State of Pennsylvania, have invented a new and useful Car-Seat, of which the following is a specification.

The invention relates to improvements in car-seats.

10 The object of the present invention is to improve the construction of car-seats, to lessen their cost of manufacture, to increase their strength and durability, and to enable them to be operated with greater ease and to occupy less space.

15 A further object of the invention is to enable the foot-rest to be automatically shifted simultaneously with the back of the seat in order to provide a space under the front of a seat for grips and bundles.

20 The invention consists in the construction and novel combination and arrangement of parts, as hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

25 In the drawings, Figure 1 is a transverse sectional view of a car-seat constructed in accordance with this invention. Fig. 2 is a longitudinal sectional view, the levers being arranged in a vertical position. Fig. 3 is a perspective view, the back and the seat being removed. Figs. 4 and 5 are detail views of the levers. Fig. 6 is a detail perspective view of the foot-rest frame. Fig. 7 is a vertical sectional view illustrating a modification of the invention. Figs. 8 and 9 are detail views of the levers of the same. Fig. 10 is a detail perspective view of the seat-plate. Fig. 11 is a longitudinal sectional view of one end of the modified form of car-seat, the levers being vertical.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

45 1 designates a seat-frame composed of parallel side bars 2 and inner and outer ends 3 and 4, consisting of suitable plates or bars and provided with bearings for a longitudinal rock-shaft 6. The inner end plate 3 is mounted upon the adjacent truss-bar of the frame of the car, and the other end of the

seat-frame is supported by a suitable leg 7, of the ordinary construction.

The back 8 of the seat is cushioned at both sides and is adapted to move from one side 55 of the seat-frame to the other, and it is connected with the same by levers 9 and 10, arranged in pairs and located at the ends of the car-seat. The levers 9 of the two pairs are rigid with the rock-shaft 6 and extend above 60 and below the same, their upper ends being connected with plates 11 of the back. When the back is moved from one side of the seat-frame to the other, the levers 9 shift the rock-shaft 6, which adjusts a foot-rest frame 12 to 65 lower a foot-rest bar at the back of the car-seat and raise one at the front in order to provide a space beneath the front of the seat for the reception of bundles and the like.

The shifting-levers 9 are connected at their 70 lower ends with the lower ends of the levers 10, and the latter are fulcrumed between their ends at 13 on the seat-frame, being provided with projecting studs or pivots, which are arranged in suitable bearings of the said 75 frame. The levers 9 and 10 are fulcrumed at different points in order to arrange them at an angle to each other for supporting the back at the proper inclination. The pivots 13 of the levers 10 are located above the journals or gudgeons of the rock-shaft, and the 80 lower ends of the levers 10 are provided with projections or studs 14, which are arranged in longitudinal slots 15 of the lower terminals of the shifting-levers 9, and the said studs 14 85 preferably consist of rivets or bolts. The levers 10 are provided between their ends with curved slots 16, which receive the ends of the rock-shaft, and the central portions of the levers 10 are enlarged to provide a sufficient 90 space for the curved slots and at the same time to obtain the necessary strength.

The upper ends of the levers 10 are provided with studs 17, which are arranged in slots of the plates 11. The slots 18 are located at points between the ends of the plates 11, and they, together with the slots 15, permit the necessary longitudinal movement of the parts to enable the levers 9 and the plates 11, which are arranged at an angle to each 100 other, normally to straighten and swing from one side of the levers 10 to the other. The



plates, which may be secured to the back in any suitable manner, extend downward from the lower edge of the same and are inwardly offset at 19 and have their upper portions arranged within the back, although they can be fastened to the exterior of the same.

The lower portions of the levers 9 and 10 are inwardly offset at 20 and 21 to clear the truss-bar of the car and also to provide horizontal arms for engaging depending projections 22 of a seat 23, which is shifted simultaneously with the back and is arranged at a slight inclination. The seat is provided at its ends with rockers 24, consisting of transverse bars having lower curved edges and provided with the said projections 22, which are arranged in pairs at opposite sides of the arms formed by the angular bends or offsets of the levers 9 and 10.

The foot-rest frame is composed of two parallel substantially V-shaped side bars provided at their centers or apexes with bearing-recesses and connected at their ends by foot-rest bars 25. The foot-rest frame, which is arranged upon the rock-shaft, is provided at the inner faces of its sides with lugs 26, forming recesses for the reception of arms 28 of the rock-shaft, which has a limited movement independent of the foot-rest frame. The arms 28 of the rock-shaft are substantially L-shaped and project over the upper edges of the side bars of the foot-rest frame, and the latter is rigidly held in operative position by the arms of the rock-shaft and by the seat-frame. The upper foot-rest bar at the front of the car-seat bears against the seat-frame, and the lugs adjacent to the lower foot-rest bar are engaged by the arm 28.

The seat is shifted simultaneously with the foot-rest frame by the movement of the back, which is carried bodily across the seat and is not rotated, and its faces are both upholstered and are alternately brought into position for use; but the shifting and supporting levers, together with the means for adjusting the seat and the foot-rest frame, may be applied to reversible backs 29, as illustrated in Fig. 7 of the accompanying drawings. The back of the seat is provided at its ends with plates 30, to which the levers 9<sup>a</sup> and 10<sup>a</sup> are connected. The lever 9<sup>a</sup>, which is rigid with the rock-shaft, is located between the lever 10<sup>a</sup> and the adjacent end of the seat-frame, and its upper end is provided with a stud 31, which is pivoted in a slot 32 of the plate 30, and the upper terminal of the lever 10<sup>a</sup> is pivoted to the plate 30, in line with the slot 32. The plate is provided with a central enlargement or arm in which the slot is formed and to which the levers are pivoted, and when the said levers oscillate to carry the back from one side of the seat-frame to the other the said back turns on the pivots of the levers 9<sup>a</sup>, so as to bring its upholstered side in position for use. The oscillation of the levers is limited by stops 33, which are mounted on the ends of the seat-frame; but in the construction be-

fore described the parallel side bars of the seat-frame operate as stops, as clearly illustrated in Fig. 1 of the accompanying drawings. As the lever 9<sup>a</sup> is reversed with relation to the lever 9 of the other seat it is provided with a curved slot 34 to clear the pivot of the lever 10<sup>a</sup>.

The invention has the following advantages: The car-seat, which is simple and comparatively inexpensive in construction, is easily operated and the seat and the foot-rest are adjusted simultaneously with the back. The levers are arranged in a manner which secures the greatest strength and economy of space, and the shifting-levers, by being rigid with the rock-shaft, move at a uniform speed and prevent any twisting of the parts due to the unequal operation of the devices at the ends of the seat. The foot-rest at the front of the seat is raised to provide a space beneath the seat for a satchel and various bundles. As the arms of the levers 9 and 10 do not extend beyond the ends of the seat-frame the car-seat consumes about six inches less space than the ordinary car-seat, thereby providing a greater aisle-space and enabling the seating capacity of a given area to be increased.

Changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

What is claimed is—

1. In a device of the class described, the combination of a seat-frame, a rock-shaft journaled thereon, a back adapted to be moved from one side of the seat-frame to the other to reverse the seat, and a pair of levers pivoted together at their lower ends and having their upper ends supporting the back, one of the levers being fulcrumed on the rock-shaft and the other lever being fulcrumed on the seat-frame, said levers being normally arranged at an angle to each other, substantially as described.

2. In a device of the class described, the combination with a seat-frame, of a back provided with a plate having a slot, and a pair of levers fulcrumed at different points and having a slotted connection at their lower ends, one of the levers being pivoted at its upper end to the said plate and the other lever being provided with a stud or projection arranged in the slot of the plate, substantially as described.

3. In a device of the class described, the combination of a seat-frame, a back, a rock-shaft journaled on the frame, a pair of shifting-levers rigid with the rock-shaft, a pair of supporting-levers fulcrumed on the frame and provided with slots receiving the rock-shaft, said levers being pivoted together at their lower ends and having a limited movement on each other, and plates connecting the upper terminals of the levers with the back, substantially as described.

4. In a device of the class described, the



combination of a seat-frame, a movable seat, a back, a rock-shaft provided between its ends with an arm, a lever fixed to the rock-shaft and connected with the seat and the back, and a shifting foot-rest frame mounted on the rock-shaft, extending from opposite sides of the same and having projecting portions arranged to be alternately engaged by the arm of the rock-shaft, whereby the foot-rest frame is tilted, substantially as described.

5. In a device of the class described, the combination of a seat-frame, a rock-shaft provided between its ends with an arm, a foot-rest frame mounted on the rock-shaft and having projecting portions arranged to be alternately engaged by the arm of the rock-shaft, whereby the foot-rest frame will be shifted, and a movable back connected with and adapted to rotate the rock-shaft partially, substantially as described.

6. In a device of the class described, the combination of a seat-frame, a rock-shaft, an oscillating foot-rest frame loosely hung on the rock-shaft and projecting from opposite sides thereof, arms carried by the shaft, and means on the foot-rest for engaging the said arms, whereby the latter are adapted to retain the foot-rest in position and also to shift the same, substantially as described.

7. In a device of the class described, the combination of a seat-frame, a foot-rest frame composed of substantially V-shaped sides provided with lugs, foot-rest bars connecting the terminals of the sides, a rock-shaft supporting the foot-rest frame, arms mounted on the rock-shaft and engaging the foot-rest frame between the lugs, and means for operating the rock-shaft, substantially as described.

8. In a device of the class described, the combination, of a seat-frame, a rock-shaft, means for automatically operating said shaft as the seat-back is shifted, a substantially V-shaped foot-rest frame loosely hung on the rock-shaft, the L-shaped arms carried by the rock-shaft, and means on the foot-rest for engaging the said arms, whereby the latter are adapted to retain the foot-rest in position and

also to shift the same, substantially as described.

9. In a device of the class described, the combination with a seat-frame, of a shifting back provided with a transverse slot at its end, and a pair of levers fulcrumed at their lower portion on suitable supports and pivotally connected at their upper portions with the back at different points and supporting the same, one of the levers having its pivot arranged in the said slot, whereby the back is adapted to be shifted, substantially as described.

10. In a device of the class described, the combination with a seat-frame, of a back provided at its end with a transverse slot, and a pair of levers normally arranged at an angle to each other and pivotally connected with the back at different points, the pivot of one of the levers operating in the transverse slot, said levers being fulcrumed at different points, and each lever being provided with a curved slot receiving the fulcrum of the other lever, substantially as described.

11. In a device of the class described, the combination of a seat-frame, a movable seat having dependingspaced projections, a back, a shaft extending between the said projections, a plate carried by the back and provided with a slot, and a pair of levers fulcrumed respectively on the frame and the shaft, and each provided with a curved slot receiving the fulcrum of the other, said levers having their lower portions bent at an angle to clear the side truss of the car and to engage the said projections of the seat and pivoted together, the upper ends of the levers supporting the back and pivoted respectively to the plate and engaging the slot, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

GEORGE WORDEN DRYER.

Witnesses:

JOHN BRUNNER,

GEORGE J. VAN KEUREN.