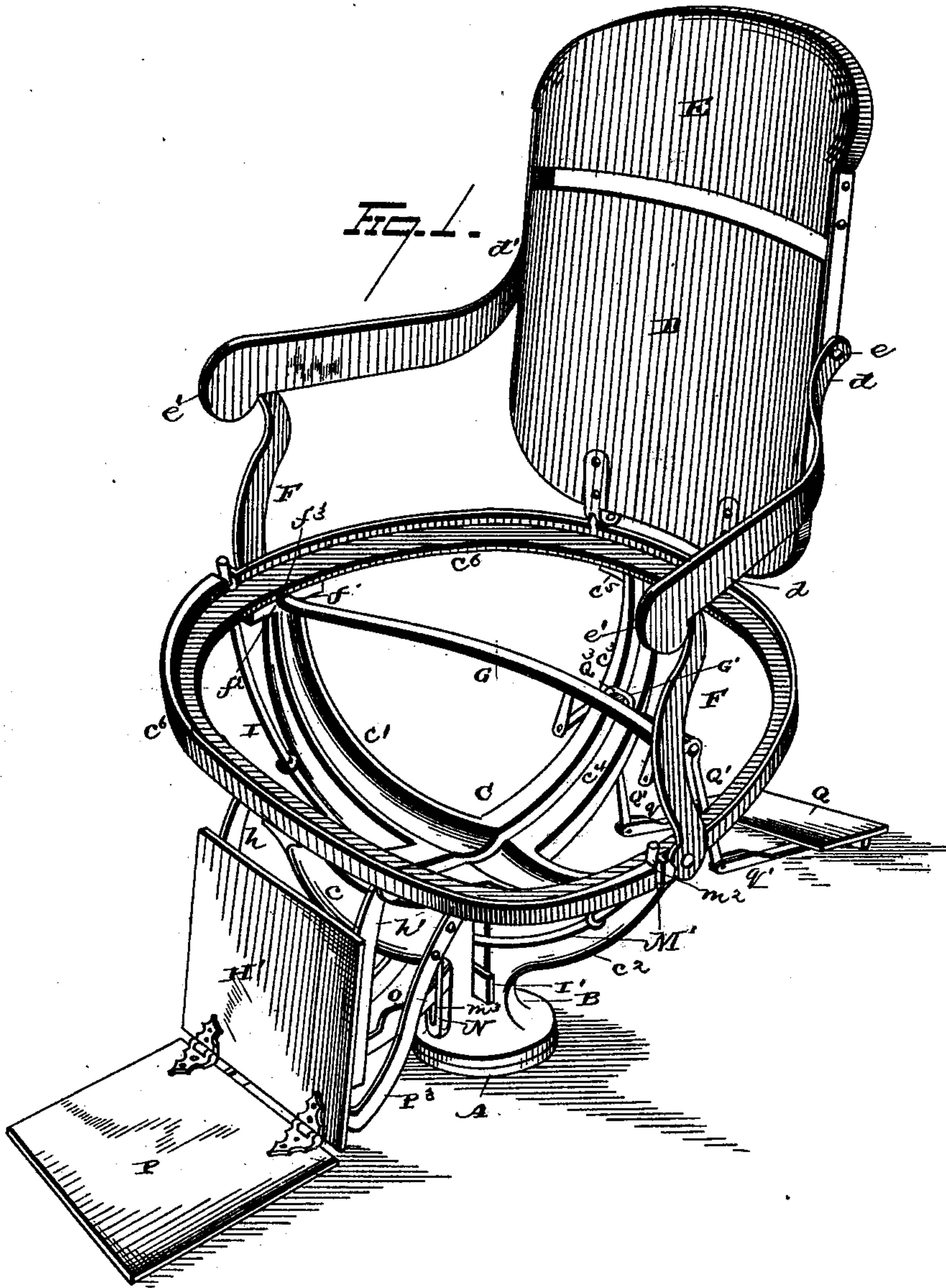


D. B. HARTLEY.
Reclining Chair.

No. 229,701.

Patented July 6, 1880.



WITNESSES:

E. Nottingham,
J. M. Carey.

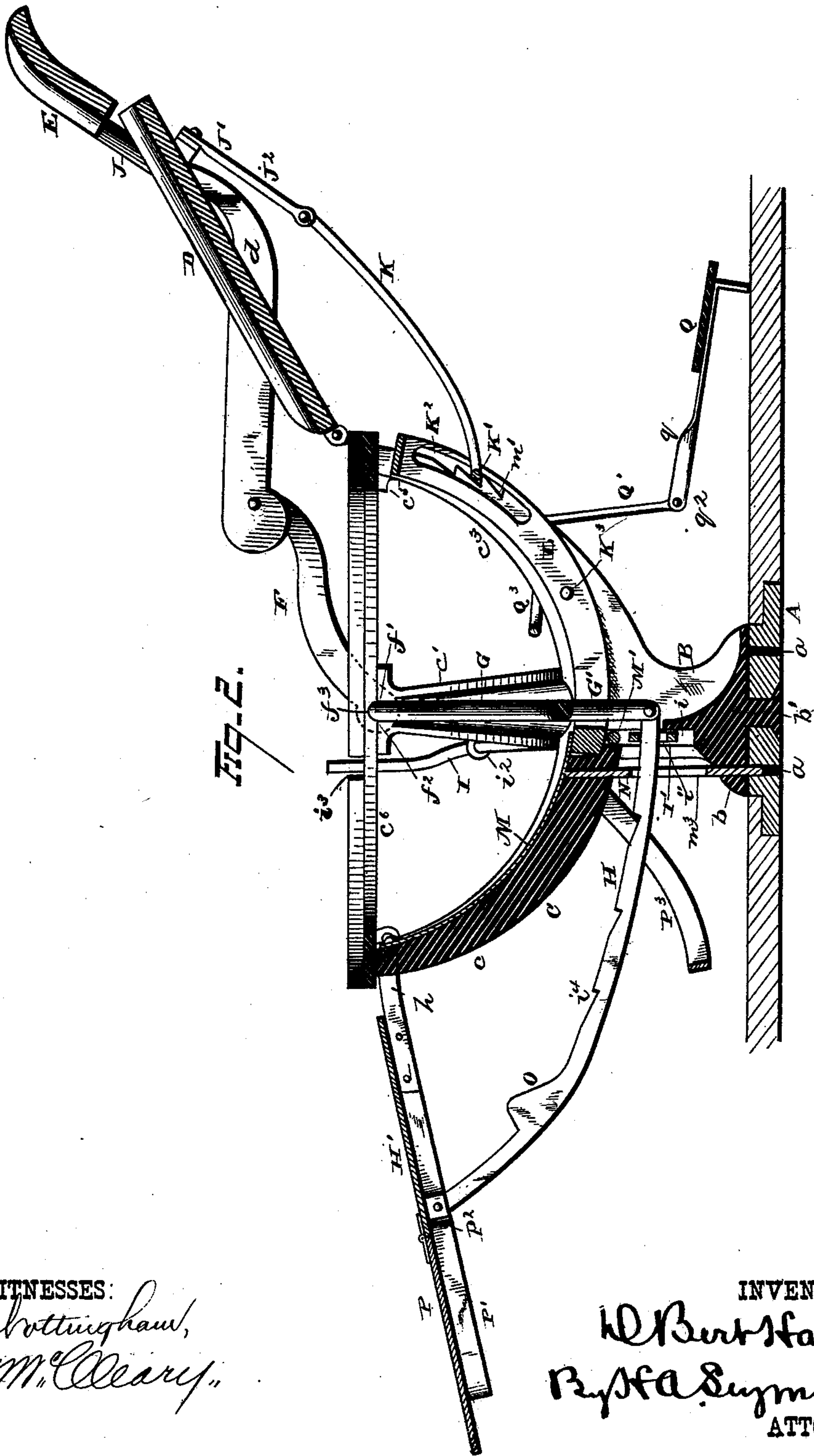
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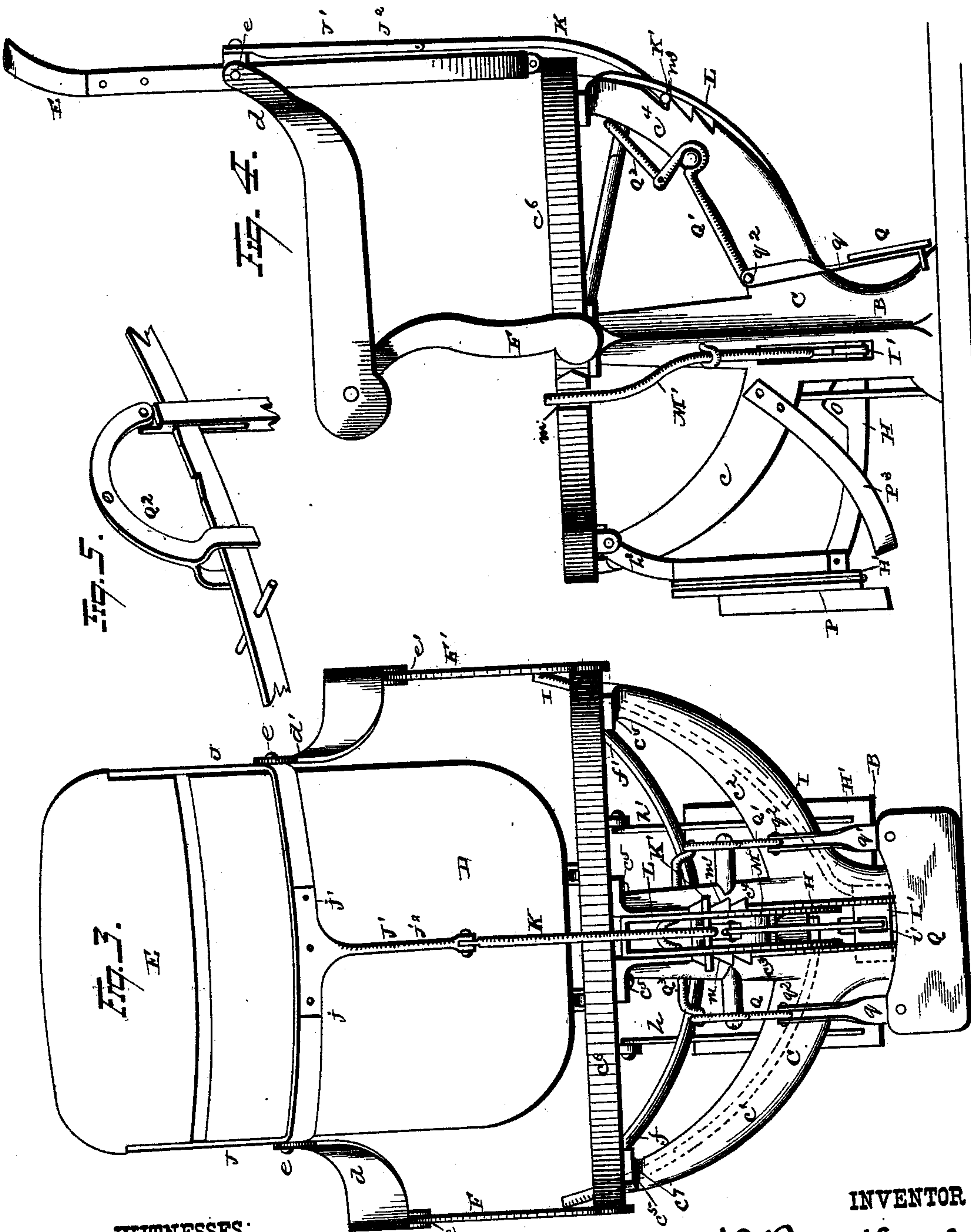
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UNITED STATES PATENT OFFICE.

D. BERT HARTLEY, OF KANSAS CITY, MISSOURI.

RECLINING-CHAIR.

SPECIFICATION forming part of Letters Patent No. 229,701, dated July 6, 1880.

Application filed February 6, 1880.

To all whom it may concern:

Be it known that I, D. BERT HARTLEY, of Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Reclining-Chairs; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in reclining-chairs, the object being to provide a reclining-chair of such construction that it may be readily transformed from an upright into a reclining position by a simple movement being imparted to a lever within easy reach and control of the occupant, the parts of the chair to be so constructed and arranged that the occupant may readily transform the chair from a reclining to an upright position by slight pressure of the legs upon the leg-rest; further, to cause the leg-rest and rear foot-stool to be automatically folded free from the floor by simply pressing the chair-back forward, and at the same time unlock the revolving standard from its base-plate to enable the chair to be revolved; further, to cause the head-rest to be automatically adjusted by the backward movement of the chair-back.

My invention consists in a reclining-chair embodying certain details of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view, in perspective, of my improvement in reclining-chair in its upright position. Fig. 2 is a longitudinal section, showing the chair in its reclining position. Fig. 3 is a rear elevation. Fig. 4 is a side elevation, showing the chair-back pressed forward to automatically fold the foot-rest and leg-rest, to enable the chair to be revolved. Fig. 5 is a modification.

A represents the supporting-base, which is adapted to be securely fastened to the floor of a car, the upper face thereof having two or more holes, *a*, formed therein, for a purpose hereinafter explained.

B is the chair-standard, the lower end, *b*, of which is enlarged and rests upon the base A,

being secured thereto by the pivot or stem *b'*, extending downwardly from the standard through the supporting-base and fastened by a nut or key.

Standard B has formed therewith the spider C, consisting of the arms *c c' c² c³ c⁴*, which are curved outwardly and upwardly, and provided with flanges *c⁵* on their upper ends, to which is secured the seat-frame *c⁶* by rivets or screws *c⁷*. To the rear portion of the seat-frame *c⁶* is hinged the chair-back D, having a head-rest, E.

To the sides of the hinged chair-back are pivoted at *e* the rear ends of the arm-rests *d d'*, the forward ends of which are slotted, as at *e'*, within which slots are pivoted the upper ends of the standards F F', their lower ends being rigidly secured to the arms *f f'*, formed on the opposite ends of the bail G. The arms *f f'* of the bail constitute its journals, and rest in grooves or depressions *f²*, formed in the upper surfaces of the flanges *c⁵*, on the side arms *c c'* of the spider.

The seat-frame *c⁶* is formed with corresponding grooves *f³*, which receive the upper portions of the bail arms or journals; and hence it will be observed that the journals of the bail are each provided with two-part bearings formed in the upper surface of the supporting-flanges of the side arms of the spider and the lower side of the seat-frame. This construction enables the bail to be readily inserted in its place, and provides bearings of sufficient length to prevent undue wearing away of the journals on opposite ends of the bail.

The central portion of the bail G is provided with an arm, *G'*, which extends downwardly between the spider-arms *c³ c⁴*, and has pivoted to its outer end the curved rack-bar H, which latter extends through a slot in the standard, and is pivoted at its forward end to the under side of the leg-rest H', the latter being hinged by the arms *h h'* to the under side of the seat-frame.

I is a lever, having a slotted plate, I', attached to its lower end, which is located in a slot, *i*, formed in the standard. Said slotted plate is provided with an opening, *i'*, within which is located the rack-bar H.

Lever I is secured to one of the spider-arms by a staple, *i²*, or other suitable device, and

its upper end rests within a slot, i^3 , formed in the seat-frame. The upper end of the lever may be provided with a suitable handle or knob, on which may be printed the word "Push," or word synonymous therewith. When the hinged back is in its upright position it is readily lowered by pushing the upper end of lever outwardly, which operates to disengage the slotted plate I' from the teeth i^4 in the rack or ratchet bar H , thereby releasing the latter and allowing the back to fall backward, carrying with it the hinged standards $F F'$, secured to the bail, thus moving the latter, with the rack-bar, forward and simultaneously elevating the hinged leg-rest.

The hinged back may be secured at any desired angle of adjustment by manipulating the lever L .

To the edges of the hinged back, near the upper end thereof, are pivoted the bent levers J , the upper ends of which are secured to the head-rest E , while the lower ends are rigidly secured to the arms $j j'$ of the T-connection J' , the depending arm j^2 of which is hinged or pivoted to the rod K .

The lower end of rod K is provided with a cross bar or pin, K' , the opposite ends of which project through the elongated curved slots K^2 , formed in the upper end of the two-armed lever L , the latter being pivoted to one of the spider-arms at K^3 , and its lower end held in its depressed position by means of a spring, M , which also bears upon the upper end of a vertically-movable standard locking-bolt, N , and retains it against accidental displacement.

In the rear surface of the spider-arms $c^3 c^4$ are formed the series of ratchet-teeth $m m'$, with which engage the opposite ends of the cross bar or pin K' , and the latter, being retained therein by means of the spring-pressed lever L , retains the hinged head-rest in the desired angular adjustment.

M' is a lever for operating the head-rest mechanism, the lower end resting against the under side of the two-armed lever L , and its upper end projecting slightly above the seat-frame and located in a slot, m^2 , formed therein. The upper end of lever M' may be provided with a knob or handle, marked "Head-rest," to denote the fact that its office is to manipulate the mechanism connected with the head-rest.

Locking-bolt N enters one of the holes $a a$ in the face-plate and prevents the chair from being revolved.

The locking-bolt is automatically disengaged from the base-plate by the following means: An elongated vertical slot or opening, m^3 , is formed in the locking-bolt, through which slot passes the rack-bar H . The latter is constructed with a cam or wedge shaped projection, O , on its upper edge. When this wedge-shaped portion of the rack-bar is forced into the slotted locking-bar it serves to raise and disengage the latter from the supporting base-plate and enable the chair to be revolved or

reversed in its position. Instead of employing a wedge-shaped projection on the rack-bar for effecting this result, the locking-bar may be made in the form of a bell-crank lever, Q^2 , as shown in Fig. 5, and the rack-bar be furnished with a cross-bar or shoulders which will engage with said locking-bar and retract it from the supporting-base.

To the forward end of the hinged leg-rest is hinged the foot-rest P , which latter is provided with cleats P' , secured to its under side, which project beneath the joint between the foot and leg rests, and abut against the frame-piece P^2 , secured to the under side of the leg-rest, and relieve the hinges or pivots of any undue strain.

To the under side of the spider-arm c^2 is attached a looped bar or strip, P^3 , which serves as an abutment against which the ends p of the rearwardly-projecting cleats P' strike when the leg-rest is moved backward, and thus fold the foot-rest upwardly against the leg-rest.

Q is a footstool provided with arms $q q'$, which are pivoted to the lower ends, q^2 , of the bell-crank Q' , the upper ends of said lever being pivoted to the opposite ends of a curved connecting-loop, Q^3 .

Having described the construction and relative arrangement of the several parts of my improved chair, I will now briefly describe its mode of operation.

When the chair is in its upright position, as illustrated in Fig. 1, the forward edge of the front foot-rest, P , may rest upon the floor. To reverse the chair, the hinged back is pressed forward, which operates, through the arm-rests and hinged standards, to raise the bail rigidly attached to the lower ends of the standards and raise the short arms of the bell-crank lever Q' , and thus draw the footstool Q inwardly against the chair-standard, as shown in Fig. 4. The raising of the bail also operates to draw the leg-rest toward the standard and fold the forward foot-rest upwardly against the leg-rest, and, as hereinbefore explained, the rearward movement of the rack-bar serves to automatically disengage the locking-bar from the supporting-plate. Thus the chair is automatically transformed into proper position for its being reversed by simply pressing forward on the hinged chair-back. To adjust the chair to a reclining position, the occupant simply presses the lever L outward, which releases the slotted plate from the rack or ratchet bar and allows the back to fall backwardly, and at the same time that the back moves rearward the bail connected with the rear end of the rack-bar moves forward and forces the leg-rest and foot-rest upward to the proper angle for supporting the occupant in a reclining position. As the hinged back is depressed to the desired angle of adjustment the hinged head-rest is moved forward at an angle with the back, and this movement is performed automatically by the rod K' , secured at its lower end to the ratchet bars or surfaces in the spider-arms, and therefore serving to throw the upper ends of the bent levers

J forward, and hence move the hinged head-rest formed therewith. If the hinged head-rest is not in the adjustment when the back has been depressed, the occupant simply presses outwardly on the head-rest lever, which operates to raise the lower end of the two-armed levers and disengage the lower end of the rod K' from the ratchet-teeth on the spider-arms, and allow the hinged head-rest to fall back in line with the back. The head-rest can then be moved forward to any desired angle of adjustment, and will be retained at any desired point by means of the spring-pressed lever forcing the cross bar or pin or rod K' in engagement with the ratchet-teeth on the spider-arms. The chair is transformed from a reclining to an upright position by the occupant pressing slightly upon the leg-rests, as the weight of the occupant upon the leg-rests and hinged back practically balances such parts when in these inclined positions, and hence a slight pressure upon the leg-rest will operate to depress the latter and allow the hinged back to rise and assume its upright position.

It is evident that slight changes in the construction and relative arrangement of parts might be resorted to without departing from the spirit of my invention, and hence I would have it understood that I do not restrict myself to the exact construction and arrangement of parts shown and described; but,

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a reclining-chair, the combination, with a bail located beneath the seat, the opposite ends of the bail being journaled between the seat-frame and spider-arms, of a hinged leg-rest, a ratchet or rack bar pivoted at one end to the under side of the leg-rest and at its opposite end to the central portion of the bail, and a pawl-lever for securing said rack or ratchet bar in any desired adjustment, substantially as set forth.

2. In a reclining-chair, the combination, with the transversely-slotted spider-standard and a bail journaled at opposite ends between the spider-arms and seat-frame, of a rack or ratchet bar pivoted to the bail and leg-rest and extending through one of the slots in the standard, and a lever provided with a slotted plate, the latter located in the transverse slot in the standard, substantially as set forth.

3. The combination, with the revolving standard and supporting base-plate, of the locking-bolt and rack-bar, the latter constructed, substantially as described, to automatically raise said bolt and disengage it from the base-plate, substantially as set forth.

4. The combination, with the hinged chair-back, of a head-rest pivoted to the upper end of the back by bent levers and a jointed rod connected at one end to the bent levers and

at its other end engaging with ratchet-teeth formed on the rear side of the spider-arms, substantially as set forth.

5. The combination, with the jointed rod connecting with the hinged head-rest, of a spring-pressed slotted lever and ratchet-teeth formed on the spider-arms, substantially as set forth.

6. The combination, with the jointed rod connecting with the hinged head-rest and provided at its lower end with a cross bar or pin, of a two-armed lever provided with elongated curved slots, a series of ratchet-teeth formed on the rear surface of the spider-arms, a spring for retaining the cross-bar in engagement with said ratchet-teeth, and a lever for throwing the same out of engagement therewith, substantially as set forth.

7. The combination, with the slotted locking-bolt, of a spring for retaining it in its locked position and a ratchet-bar provided with a cam or wedge shaped projection for raising said bolt, substantially as set forth.

8. The combination, with an oscillating bail rigidly secured at its ends to pivoted arm-rest standards, of a footstool pivotally connected to the spider-arms or seat-frame, and intermediate connections, substantially as described, whereby said footstool may be automatically folded against the standard, substantially as set forth.

9. The combination, with the hinged leg-rest and foot-rest hinged thereto, of cleats secured to the under side of the foot-rest and a stationary loop or frame secured to the chair or spider-arm for folding the foot-rest upon the leg-rest when the latter is depressed, substantially as set forth.

10. In a reclining-chair, the combination, with a hinged back, leg-rest, and footstool, of connecting mechanism, substantially as described, for automatically folding the foot-rest upon the leg-rest, the footstool against the standard, and retracting the locking-bolt by pressing forward upon the seat-back, substantially as set forth.

11. In a reclining-chair, the combination, with a hinged back and hinged head-rest, of a jointed rod, the upper section of which is attached to the arms of levers pivoted to the head-rest and the lower section thereof provided with a pin, K', which engages in ratchet-teeth formed on the rear side of one of the spider-arms, and a slotted lever for disengaging the pin K' from said ratchet-teeth, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 3d day of February, 1880.

D. BERT HARTLEY.

Witnesses:

GEO. D. SEYMOUR,
CHARLES P. WEBSTER.