

(No Model.)

R. WALKER.

SPRING SEAT.

No. 312,775.

Patented Feb. 24, 1885.

FIG. 1.

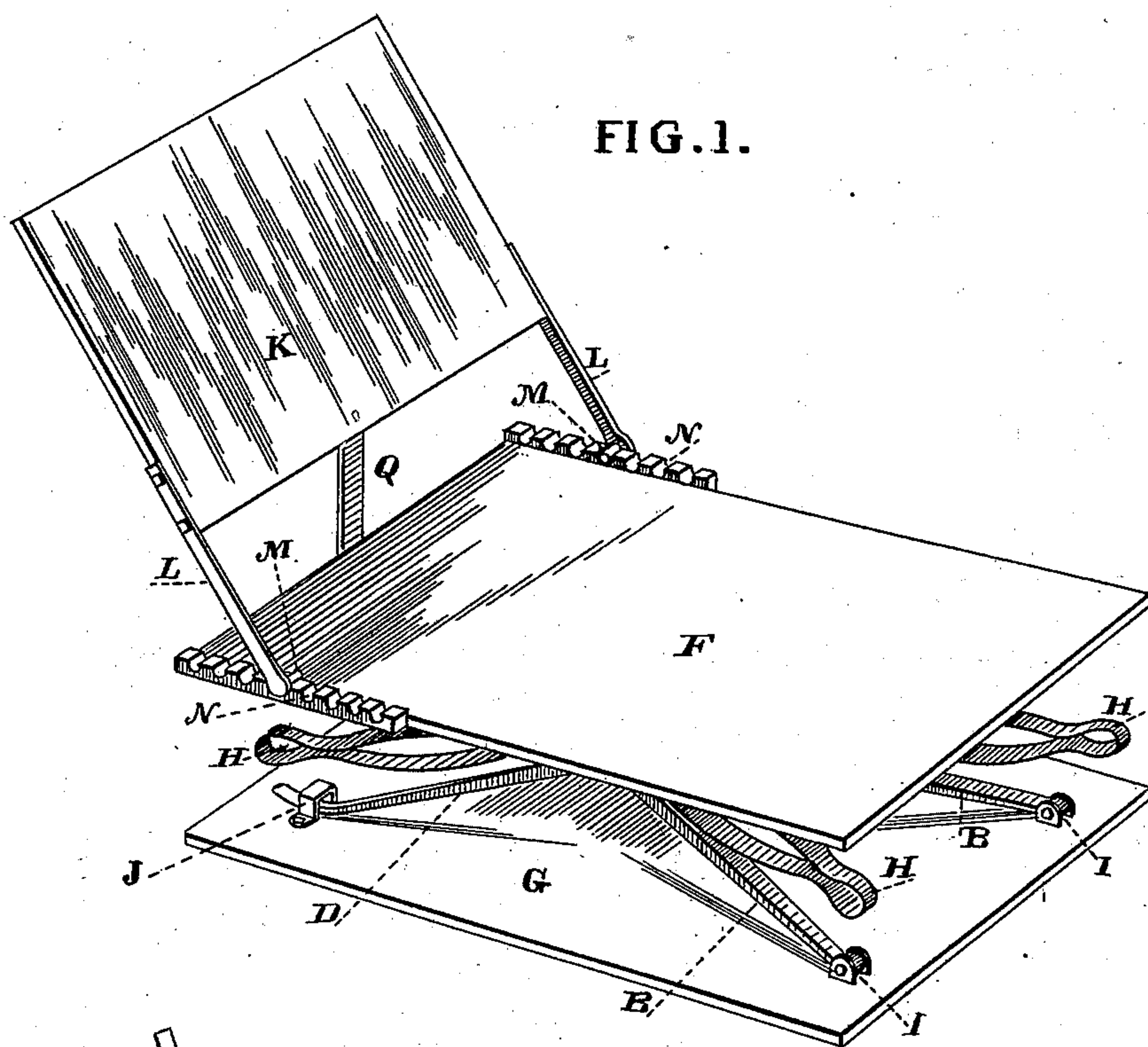


FIG. 2.

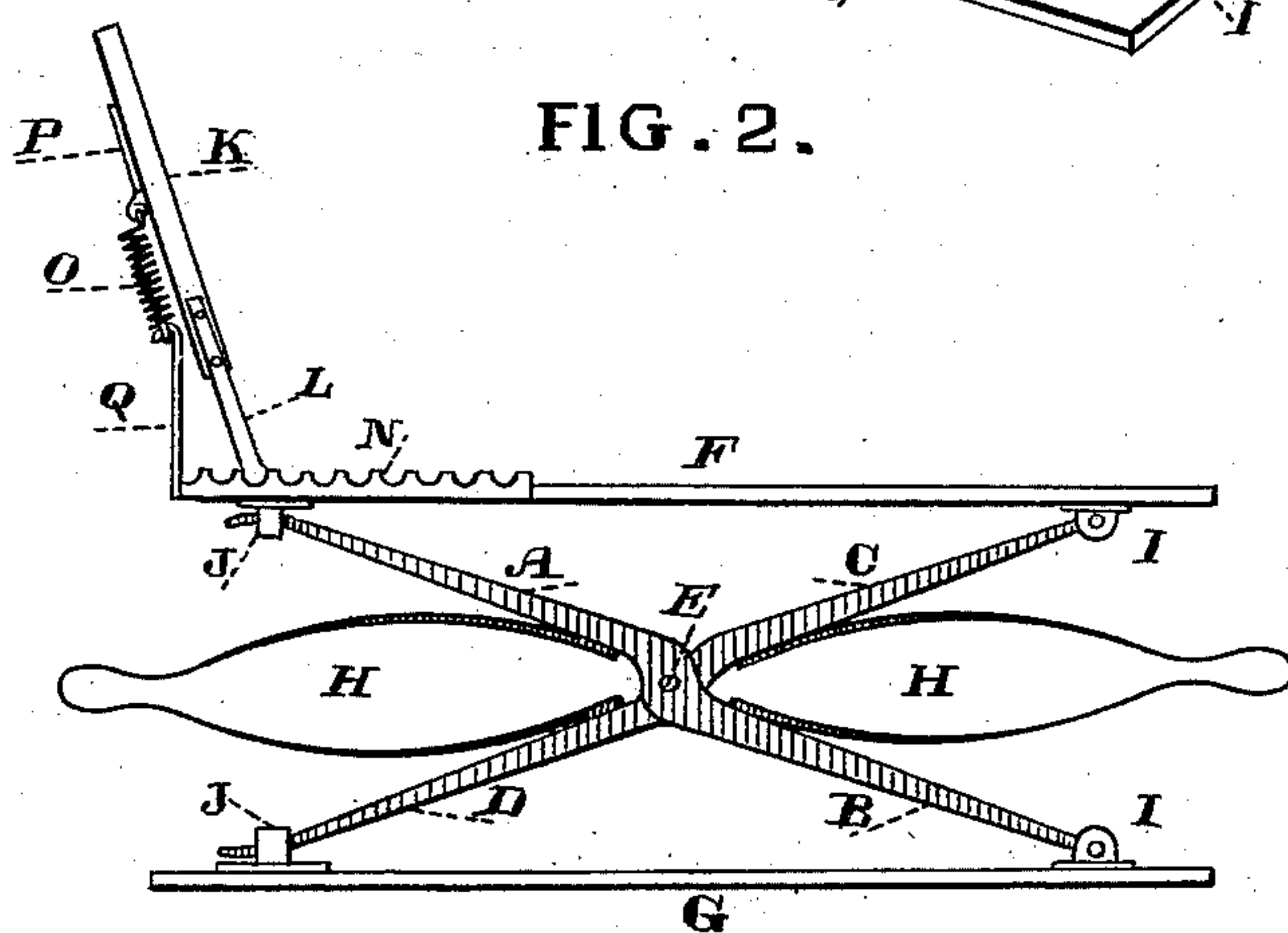
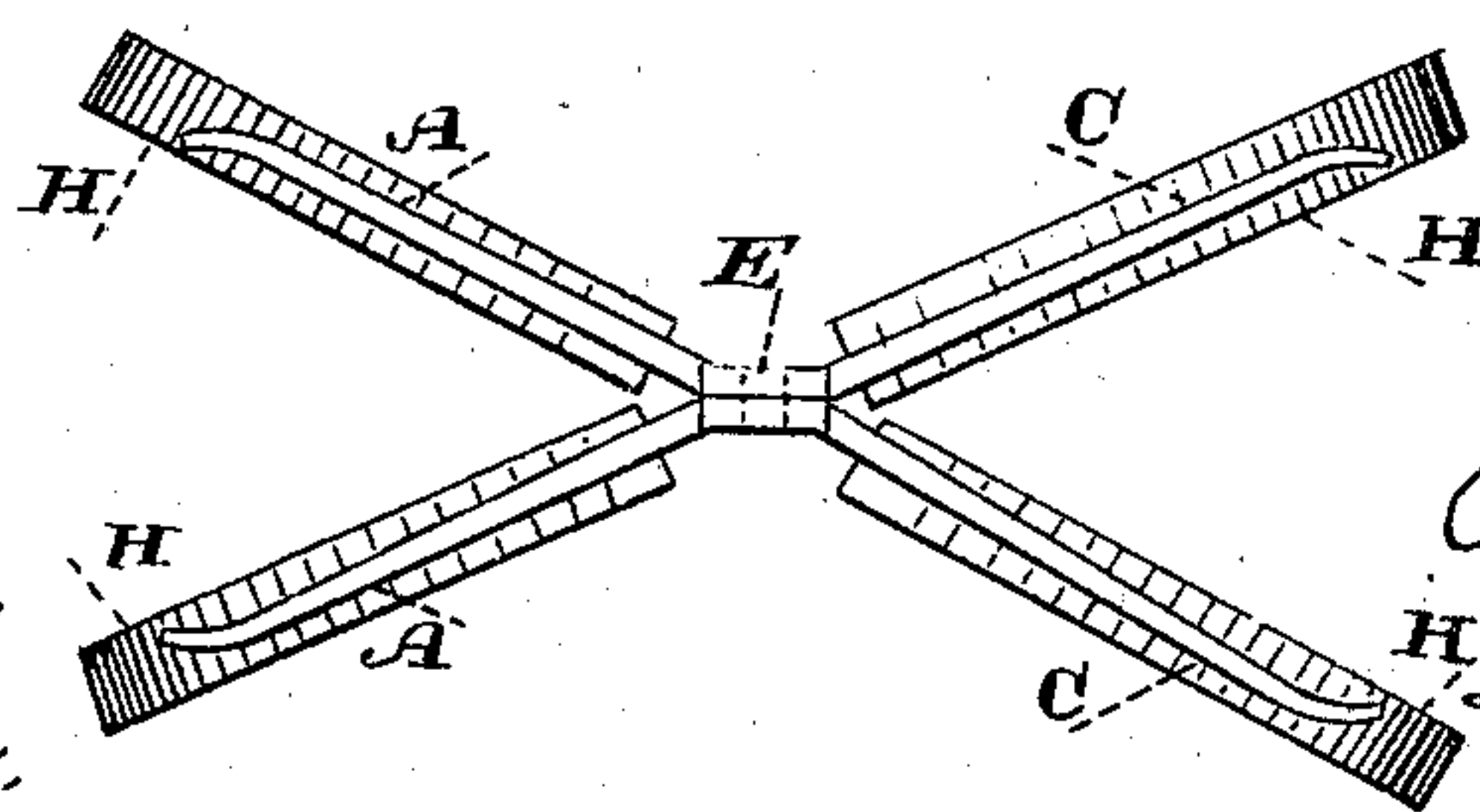


FIG. 3.



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# UNITED STATES PATENT OFFICE.

ROBERT WALKER, OF OAKLAND, CALIFORNIA.

## SPRING-SEAT.

SPECIFICATION forming part of Letters Patent No. 312,775, dated February 24, 1885.

Application filed October 9, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT WALKER, of Oakland, in the county of Alameda and State of California, have invented an Improvement in Seat and Vehicle Springs; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to a combination of springs and levers which is especially applicable in the construction of seats.

My present invention is an improvement upon one patented to me September 28, 1875, in which levers were united at the center in pairs, so that one pair of levers might be placed under each side or each end.

In the present case my improvement consists of eight levers or arms, which may extend from each corner of the seat or surface supported by them to a central point, where a single joint similar to that of a tongs is made, so that all eight arms branch outwardly from this joint, four being above and four below the joint. Between each upper and lower pair of arms a spring is inserted, whereby the vertical movements of the seat are equalized without reference to the position of the weight upon the seat.

It further consists of an adjustable back piece for the seat, and in certain details of construction, all of which will be more fully explained by reference to the accompanying drawings.

Figure 1 is a perspective view. Fig. 2 is a side elevation. Fig. 3 is a top or plan view, showing the arrangement of levers and springs.

A A and B B are the arms of one set of levers, and C C and D D are the arms of the other set. The upper arms, A A, and the lower arms, B B, diverge from the joint E, so as to extend outward, the upper ones beneath two of the corners of the upper board, F, of the seat or other structure supported by them, and the lower arms, B B, diverge outwardly from the joint to a point of attachment, which may be the lower part, G, of the seat-frame or other structure. The upper arms, C, of the other lever diverge outward in the same manner as the arms A, and are attached beneath the opposite end of the supported surface F, and the lower arms of this lever in like manner diverge outwardly to their points of support beneath the arms A of the other lever. The

joint E between these two four-armed levers is made similar to that of a pair of tongs, so that a single pin or rivet serves to unite the whole frame-work and causes it to act as a single lever.

Between the upper and lower arms, A D and C B, are fixed the springs H, which in the present case are in the form of elliptic springs, their inner ends being bolted respectively to the upper and lower arms, which are in a vertical plane, and their outer ends may either be united by a pin in the manner of ordinary elliptic or carriage springs, or they may be curved so as to return upon themselves and form continuous springs, as shown in Fig. 2. The outer ends of the arms C and B are pivoted in lugs I, which are fixed to the upper and lower parts, F G, while the outer ends of A B pass through slotted guides J, so that, as the springs are compressed and the parts F and G are brought nearer together, the ends A D will slide through the guides J, so as to allow the levers to extend as the springs are compressed and to draw back again as they are released and the parts F and G separated. If this device is used upon the vehicle as a vehicle-spring, both ends of the lower levers, D and B, may be rigidly connected with the axles and bolster, and there will be no need of the reach between the front and rear axle, these levers acting in its stead, and when the weight presses the levers down so as to separate their ends the axles will be slightly separated, and they will be drawn together as the levers again rise. When employed as a seat, as shown in the present case, the sides may be inclosed, so as to conceal the levers and springs, if desired, and the upper board, F, will be properly upholstered so as to form a comfortable seat. These seats are especially useful for locomotive-engineers, as the constant jar of the heavy machinery produces serious kidney troubles if no such protection is employed. In order to provide a back for this seat which may be adjustable and at the same time partake of the movements of the upper board, F, I have a back-board, K, which may be upholstered. Links or shackles may be used instead of slides at J. From the lower end of each side are arms L, projecting downward and having inwardly-projecting lugs M, which rest in grooves formed on rack-bars N, which



are secured to each side of the top board, F. Upon the back of the board K is a spiral spring or springs, O, the upper end being attached to the upper part of the back-board by means of a plate, P, while the lower end hooks into the top of the standard Q, which is secured to the rear of the seat F, and extends upward to a suitable height for this purpose. The tendency of the spring will be to pull the back K downward, and so keep lugs M in their place in the rack-bar N and hold the back in its proper position. The back may be set at any incline by lifting it up against the tension of the spring O, and setting lugs M into any of the grooves in the rack-bars N to give the desired angle. This seat will be placed upon a stationary seat in the cab of the locomotive and a roller at the upper end of the back-board will then rest against the vertical rear portion of the cab, as they are usually constructed, thus forming a support for this part of the back. By this construction the weight may be placed upon any portion of the surface F which is supported by the levers A C, and the action through the single central hinge, E, distributes the weight over all the arms B and D, and the depression of the upper arm acting upon the springs H compresses them all equally, and the weight is thus equally distributed over the whole supporting frame-work. It will be manifest, as before stated, that this arrangement of levers and springs is equally applicable to the supporting of vehicle-bodies, and the action will be similar to that heretofore described. This construction makes the

device self-supporting without other framework.

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

1. An improved seat comprising an upper and lower set of arms united by a single central joint, springs fixed between said arms, a seat-surface with racks upon its edges, a back-board with arms having lugs to engage the racks, and a spring attached to the rear of the back-board and connected with a standard on the seat-surface, substantially as herein described.

2. The seat-surface F, provided with racks N upon its edges, in combination with a back-board, K, having arms L, with lugs adapted to engage the racks, a standard, Q, plate P, and a spring interposed between the standard and plate, substantially as described.

3. In a seat, the upper and lower boards, F and G, each provided at one end with lugs I and at the opposite end with slotted guides J, in combination with the arms A, B, C, and D, united by a central hinge, with one of each pair of arms passing loosely through the slotted guides, and the elliptical continuous springs placed between the arms and in the same vertical plane, as herein set forth.

In witness whereof I have hereunto set my hand.

ROBERT WALKER.

Witnesses:

S. H. NOURSE,

H. B. APPLEWHITE.