No. 681,124. Patented Aug. 20, 1901.

# M. LALLY.

## SPRING SEAT.

(Application filed July 2, 1900.)

(No Model.)

Fig. 1.

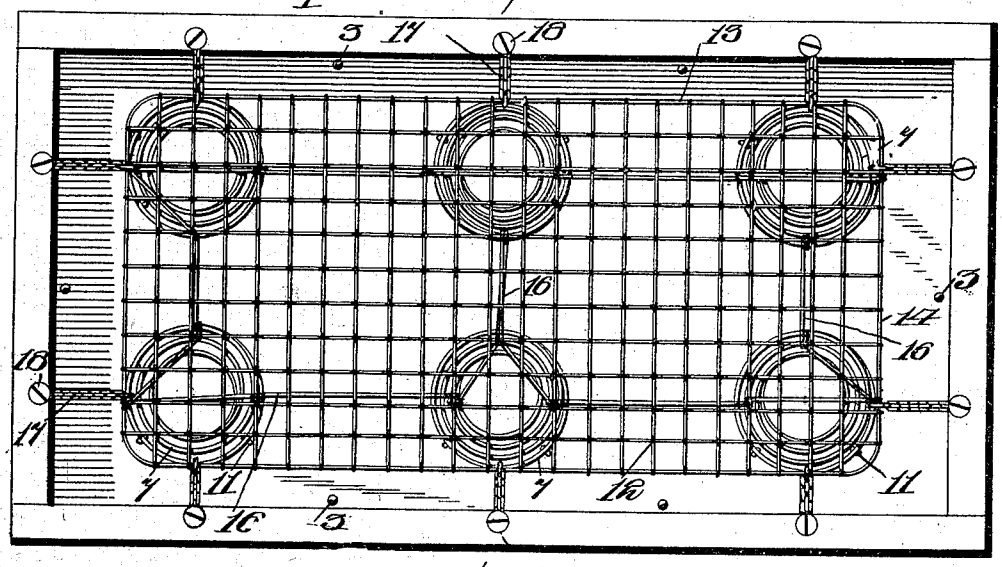



Fig. 2.

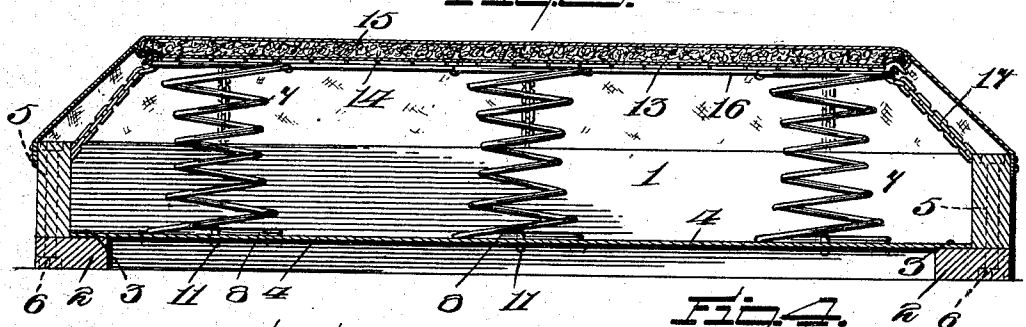



Fig. 4.

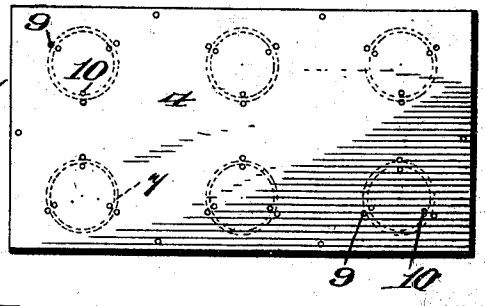
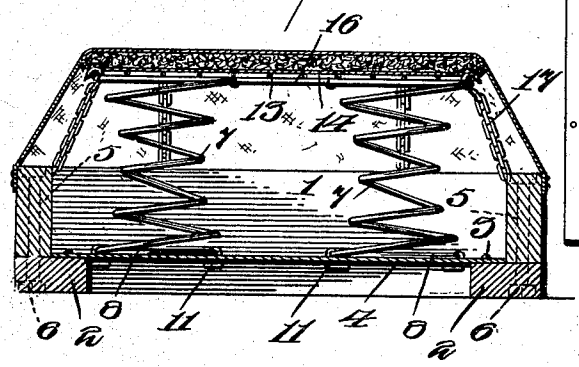



Fig. 3.




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# UNITED STATES PATENT OFFICE.

MICHAEL LALLY, OF NORTH LAWRENCE, OHIO.

## SPRING-SEAT.

SPECIFICATION forming part of Letters Patent No. 681,124, dated August 20, 1901.

Application filed July 2, 1900. Serial No. 22,330. (No model.)

*To all whom it may concern:*

Be it known that I, MICHAEL LALLY, a citizen of the United States, residing at North Lawrence, in the county of Stark and State of Ohio, have invented a new and useful Spring-Seat, of which the following is a specification.

My present invention relates to a novel spring-seat; and the object in view is to provide a light durable support for the springs, which will preclude the possibility of their sagging, and to provide a light upholstery-supporting frame arranged to cover the springs and to retain them against displacement without depriving the upholstery or seat-covering of that degree of elasticity necessary to the comfort of the occupant of the seat.

Further and subordinate objects of the invention are the provision of simple means for holding the springs upon the spring-support and the retention of the springs relative to each other and of the upholstery-frame relative to the springs by securing devices serving both purposes.

To these ends the invention consists in providing a light metal plate as a base or support for a series of spiral springs, which are surmounted by a light open-work upholstery-supporting frame having sufficient inherent flexibility to yield with one or more of the springs upon the superimposition of a weight—as, for instance, the body of an occupant of the seat.

The invention further consists in the provision of staples for connecting the springs to the support, retaining-wires preventing relative lateral movement of the springs and connecting the upholstery support or frame to the springs, and flexible devices—as, for instance, chains—for restraining the movement of the upholstery-supporting frame with respect to the spring-support under the impulse of the interposed springs, all as will appear more fully hereinafter and as will be illustrated in the accompanying drawings and defined in the appended claims.

Referring to said drawings, Figure 1 is a plan view of a car-seat constructed in accordance with my invention with the upholstery removed. Fig. 2 is a central longitudinal section through the subject-matter of Fig. 1. Fig. 3 is a transverse sectional view thereof. Fig. 4 is a view of the spring-support detached.

Referring to the numerals of reference employed to designate corresponding parts in the several views, 1 indicates the frame of a car-seat, which, as usual, is of rectangular form and is provided around its edges with inwardly-extending flanges 2, secured to the frame by bolts 3. The flanges 2 are designed to support the edges of a light metal plate 4, which I have chosen to term the "spring" support or plate, having a number of holes 5 adjacent to its edges for the reception of securing-bolts 6, which serve to rigidly retain the plate 4 upon the flanges 2. The plate 4 is designed to support a number of spiral springs 7 of the form usually employed in spring-seat constructions and distinguished by approximately circular base-coils 8, which are seated upon the plate 4 between concentric circular series of openings 9 and 10, the holes of the series being paired to facilitate the retention of the springs 7 by pliable fastenings 11, which span or straddle the base-coil 8 and have their opposite ends passed through an opening of each series and bent in opposite directions against the under side of the plate 4. Supported upon the several springs is a light inherently-resilient wire upholstery-supporting frame 12, composed of longitudinal and transverse bars or wires 13 and 14 and of a size just sufficient to cover all of the springs 7 carried by the seat-support. This frame is designed to carry the cushion or upholstery 15 of the seat and serves to prevent the individual springs from working into the cushion, and thereby causing it to become uneven by reason of the protrusion of the springs or by the sagging of the cushion intermediate of the springs.

Various ways of connecting the upholstery-supporting frame to the springs may be devised; but I prefer to employ a continuous strand of wire 16, looped around the upper convolutions of each spring and around adjacent bars of the frame 12 and extending directly between the springs, both longitudinally and transversely with respect to the seat, to perform the dual function of securing means retaining the upholstery-supporting frame upon the springs and retaining the several springs against relative lateral movement.

In the illustrated embodiment of the invention I first wrap the end of the wire 16 around the end wire of the frame 12 and around the contiguous portion of the upper convolution of the adjacent spring 7, as shown in Fig. 1. I then carry said wire across said spring to the adjacent spring at the same side of the frame, which spring is in turn connected to the frame 12 in the manner stated, and the wire is then led in similar manner and secured to one of the end springs, from whence it is carried across to the adjacent end spring, thence along the opposite side of the frame to the middle spring at that side, thence across to the middle spring at the first side, thence back again to the middle spring to the side opposite the beginning of the strand, thence to the end spring adjacent to the spring first secured, and thence across to the last-named spring, where its second end is wrapped in a manner similar to the first. By this means the several springs at each side of the frame are secured in series and are likewise secured to the corresponding spring at the opposite side of the frame.

For the purpose of rendering uniform the movement of the frame 12 under the expansion of the several springs I restrain said springs by means of flexible restraining devices—as, for instance, the chains 17, having terminal hooks engaging the edge of the frame 12 and the upper convolution of each spring and having their opposite ends permanently retained upon the frame 1, as by screws 18 or other suitable means.

It will be obvious from the foregoing that I have produced a spring-seat in which the springs are supported upon a rigid unyielding base and in which a light open-work resilient frame is interposed between the springs and the upholstery, and, further, that I have produced efficient means for retaining the springs upon the supporting-plate, for connecting the springs to each other and to the upholstery-supporting frame, and for restaining the springs to secure uniformity of action thereof; but while the present embodiment of my invention appears at this time to be preferable, I do not wish to limit myself to the structural details defined, as it is obvious that many changes of form and arrangement may be effected in order to adapt the invention to various forms of seats, the car-seat illustrated being shown merely for the purpose of rendering the foregoing description more comprehensive. I therefore reserve the right to effect such changes, modifications, and variations as may come properly within the scope of the protection prayed.

It may be stated, in conclusion, that while various forms of devices may be employed for clenching the fastenings 11 beneath the plate 4, I prefer to employ a tool having a groove in one end and designed to be presented to the exposed ends of the fastenings and to be struck a light blow for the purpose of bending or clenching the ends of the fastenings against the plate.

What I claim is—

1. In a spring-seat, the combination with a frame and spring-support, of a series of springs secured upon the support, an open-work upholstery-frame mounted upon the springs, and a single wire strand connecting all of the springs to the upholstery-supporting frame and to each other, said single strand extending between the springs in both longitudinal and transverse directions with respect to the frame.

2. In a spring-seat, the combination with a seat-frame and a spring-supporting plate carried thereby, of a series of springs secured upon the supporting-plate, an open-work, inherently-resilient upholstery-frame mounted upon the springs, a wire strand serving to connect the upholstery-frame to the springs, and flexible restraining devices secured at one end to the seat-frame and provided at their opposite ends with engaging devices detachably engaging the edge of the upholstery-frame and the adjacent convolution of each spring.

3. In a spring-seat, the combination with a seat-frame, and a spring-supporting plate carried thereby, of a series of springs secured upon the supporting-plate, an open-work, inherently-resilient upholstery supporting-frame mounted upon the springs, a wire strand serving to connect the upholstery-frame to the springs and to connect said springs against relative lateral movement, and flexible restraining devices secured at one end to the seat-frame and provided at their opposite ends with hooks engaging the edge of the upholstery-frame and the uppermost convolution of each spring.

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

MICHAEL LALLY.

Witnesses:
CHARLES M. WISE,
LOUIS H. BAMBERGER.