L. M. REED.

SPRING SEAT.

APPLICATION FILED FEB. 21, 1919.

1,303,962.

Patented May 20, 1919.

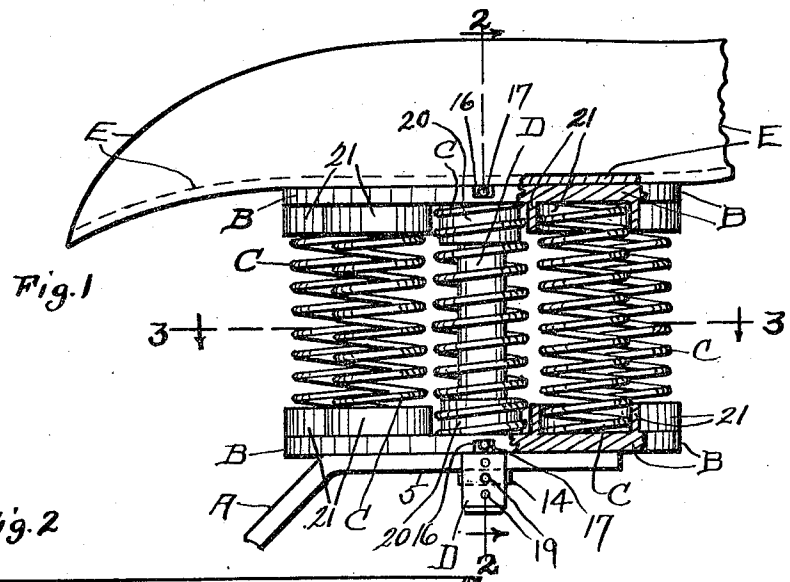


Fig. 1

Fig. 2

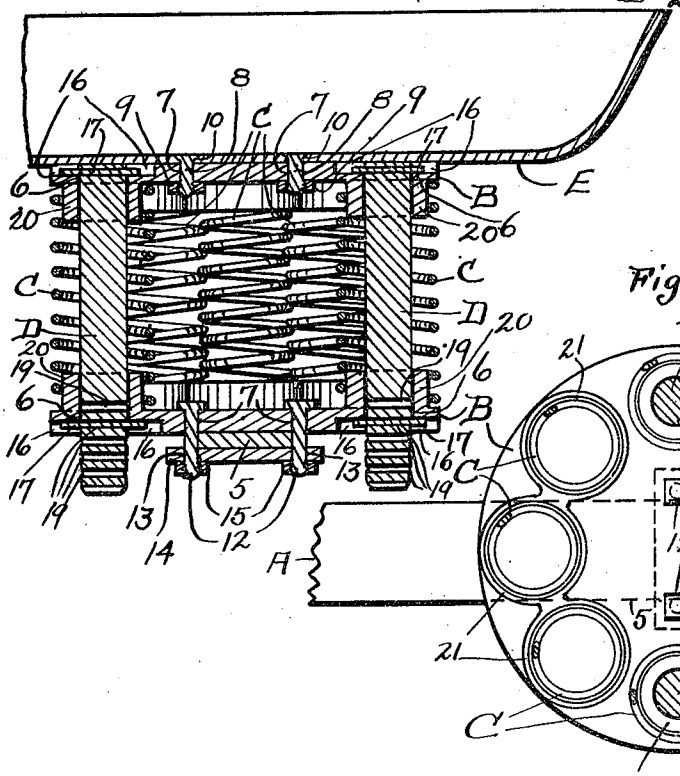
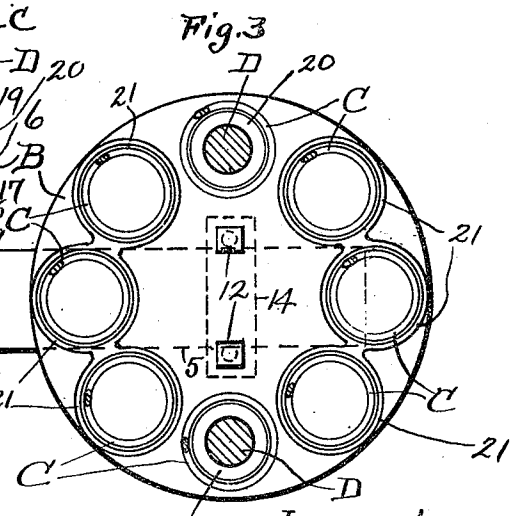


Fig. 3



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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

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SPRING-SEAT.

1,303,962. Specification of Letters Patent. Patented May 20, 1919.

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To all whom it may concern:

Be it known that I, LEMON M. REED, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a new and useful Spring-Seat, of which the following is a specification.

This invention relates to improvements in spring-seats more especially designed for use on tractors and other farming machines.

The primary object of this invention is to produce an adjustable seat of the character indicated which can not only be readily applied but is simple and durable in construction and can be manufactured with facility and readily maintained in good condition.

With this object in view, and to attain any other object hereinafter appearing, this invention consists in certain features of construction, and combinations and relative arrangements of parts, hereinafter described in this specification, pointed out in the claims, and illustrated in the accompanying drawings.

In said drawings, Figure 1 is a side view of a spring-seat embodying my invention, and portions are broken away and in section in this figure to reduce the size of the drawing and to more clearly show the construction. Fig. 2 is a transverse vertical section taken along the line 2—2, Fig. 1, looking rearwardly. Fig. 3 is a horizontal section taken along the line 3—3, Fig. 1, looking downwardly.

Referring to said drawings, A indicates the upper portion of a bracket adapted to be carried by the framework of a tractor or other vehicle or machine at the rear end, and said bracket has a rearwardly projecting arm 5 on which my improved seat is shown mounted.

Said seat comprises two vertically spaced and directly oppositely arranged substantially horizontal interchangeable plates B the lower of which is shown mounted directly on the bracket-arm 5. Each plate B consists preferably of a single iron casting. The seat illustrated comprises an even number of substantially vertically arranged corresponding helical springs C interposed between the plates B. Said springs are preferably eight in number and support the upper plate from the lower plate. Said springs are shown spaced substantially equidistantly circumferentially of the space between the central portions of the plates, and preferably two of the springs are arranged directly forwardly and rearwardly respectively of the center of said space.

Each plate (see Fig. 2) is provided with two holes 6 which are spaced substantially equidistantly from the center of the plate and arranged laterally of opposite sides respectively of said center. Each hole 6 in each plate is arranged in line vertically with a corresponding hole in the other plate, and a vertically arranged guide-pin D extends loosely through said registering holes. Each guide-pin D is encircled by the coils of one of the springs, and each plate is shown provided intermediately of the pin-encircling springs with two bolt-holes 7 which extend vertically through the plate and are spaced preferably equidistantly from the center of the plate but arranged at opposite sides respectively of said center. The bolt-holes 7 of each plate are arranged in line vertically and correspond with the different bolt-holes 7 respectively in the other plate so as not to interfere with the interchangeability of the plates.

E indicates the seat-proper of my improved seat and is shown mounted on and covering the upper plate and removably secured to said plate (see Fig. 2) by bolts 8 and nuts 9. The seat-proper is provided with two bolt-holes 10 arranged in line vertically with the different bolt-holes 7 respectively in the upper plate, and the registering bolt-holes 7 and 10 are engaged by a bolt 8 which has its head countersunk in the seat-proper and has its shank extending below the plate, and a nut 9 is screwed onto said shank at the lower or inner face of said plate.

Each bolt-hole 7 in the lower plate is engaged (see Fig. 2) by the shank of a bolt 12 of a clip employed in securing said plate to the bracket-arm 5. Said bolt 12 has its head overlapping the upper or inner face of the lower plate, and its shank extends through a bolt-hole 13 formed in the bar 14 of said clip. The bar 14 is next below and arranged transversely of the bottom of the bracket-arm 5 which extends between the two bolts 12, and nuts 15 are screwed onto the shanks of said bolts at said bottom. Obviously therefore the lower plate of my improved seat is removably clamped or se-

cured to the bracket-arm 5, and said seat is rendered free to be readjusted endwise of said arm, and consequently forwardly or rearwardly, upon loosening the nuts 15 relative to the bar 14 and secured in the desired adjustment upon tightening said nuts.

Each plate (see Fig. 2) is provided at its outer face, adjacent each hole 6 in the plate, with two recesses 16 which are arranged at opposite sides respectively of said hole and in line endwise and preferably radially of the plate, and the outer of said recesses extends to the outer circumferential edge of the plate. Said recesses are engaged by a stop-forming pin 17 which extends transversely of and through the guide-pin D arranged between said recesses and is removable endwise from said guide-pin. Each guide-pin D is shown flush at its upper end face (see Fig. 2) with the outer face of the upper plate and extends below the lower plate. Obviously the pins 17 seated in the upper plate limit descent of the guide-pins D independently of the upper plate and are instrumental in supporting said guide-pins from said plate, and said pins 17 and the bottoms of the recesses 16 engaged thereby constitute means for preventing disconnection of said plate upwardly from said guide-pins. The pins 17 engaging the recesses 16 in the lower plate are instrumental in preventing displacement of the guide-pins D upwardly out of said plate. The lower end portion of each guide-pin D has five vertically spaced transverse holes 19 adapted to be engaged by the stop-forming pin 17 carried by said portion of said guide-pin, and said pin 17 is shown engaging one of the intermediate of said holes. Obviously therefore the tension of the springs would be increased or decreased according as the lower stop-forming pins 17 were, in relatively readjusting the plates, brought into engagement with higher or lower holes in the guide-pins D.

Preferably each plate is provided, internally of the adjacent end portion of each pin-encircling spring, with a tubular member 20 which surrounds the guide-pin D encircled by the coils of said spring and enlarges the bearing afforded to said pin. Also, each plate (see Figs. 1 and 3) is provided at the adjacent end of each spring, save at the adjacent ends of the springs encircling the guide-pins D, with flanges 21 extending circumferentially of said spring, and each flange-embraced spring is rendered free to be removed from between the plates upon the requisite compression of the spring toward the lower plate. If eight springs were required for a person weighing two hundred pounds obviously two springs, and preferably the most forward spring and the most rearward spring, could be dispensed with for a person weighing only about one hundred and fifty pounds, and the springs next adjacent the guide-pin-encircling springs, or four springs in all, could be removed for an occupant weighing about one hundred pounds. Of vast importance is the simplicity of construction of my improved seat the component parts of which can be assembled with great facility. Also, the seat-proper E covers the upper end faces of the guide-pins D and the recesses 16 in the upper plate and consequently is helpful in excluding dust and dirt from said recesses. Also, the upper stop-forming pins 17 and the side walls of the recesses 16 in the upper plate are arranged to substantially prevent circumferential displacement of the guide pins D, and hence the lower stop-forming pins 17 remain in alinement vertically with the recesses 16 in the lower plate should the guide-pins, during the descent of the upper plate toward the lower plate, be lowered far enough to remove the last-mentioned stop-forming pins from the last-mentioned recesses.

What I claim is—

1. In a spring-seat, two vertically spaced and oppositely arranged substantially horizontal plates the lower of which is adapted to be mounted on a supporting bracket, a seat-proper mounted on and secured to the upper plate, an even number of substantially vertically arranged helical springs interposed between the plates and supporting the upper plate from the lower plate and spaced circumferentially of the space between the central portions of the plates, and means for guiding the upper plate during any movement of said plate toward the lower plate, each plate being provided at the adjacent end of each spring, save at the adjacent ends of two oppositely arranged springs, with flanges extending circumferentially of said spring, and each flange-surrounded spring being removable from between the plates upon requisite compression of the spring toward the lower plate.

2. In a spring-seat, the combination, with two vertically spaced and oppositely arranged substantially horizontal plates the lower of which is adapted to be mounted on a supporting bracket and the upper of which is adapted to carry the seat-proper, and substantially vertically arranged helical springs interposed between the plates and spaced circumferentially of the space between the central portions of the plates, each plate being provided with two holes extending vertically through the plate at opposite sides respectively of the center of the plate, and each of said holes being arranged in line vertically with a corresponding hole in the other plate, of two guide-pins engaging the registering holes in the plates and each encircled by the coils of a spring, means for preventing displacement

of the pins upwardly out of the lower plate and means for preventing disconnection of the upper plate from said pins.

3. In a spring-seat, the combination, with two vertically spaced and oppositely arranged substantially horizontal plates the lower of which is adapted to be mounted on a supporting bracket and the upper of which is adapted to carry the seat-proper, and substantially vertically arranged helical springs interposed between the plates, each plate being provided with spaced holes extending vertically through the plate, and each of said holes being arranged in line vertically with a corresponding hole in the other plate, of guide-pins extending through the registering holes in the plates and supported from the upper plate, two of the springs having their coils encircling said pins, and each plate being provided at the adjacent ends of the other springs with flanges extending circumferentially of the last-mentioned springs.

4. In a spring-seat, the combination, with two vertically spaced and oppositely arranged substantially horizontal plates the upper of which is adapted to carry the seat-proper and the lower of which is adapted to be mounted on a supporting bracket, and substantially vertically arranged helical springs interposed between the plates, each plate having two holes which extend vertically through the plate at opposite sides respectively of the center of the plate and being provided at its outer face, adjacent each hole, with two recesses arranged at opposite sides respectively of said hole and in line endwise, and each of said holes in each plate being arranged in line endwise with a corresponding hole in the other plate, of guide-pins engaging the registering holes in the plates, and each extending substantially to the outer face of the upper plate and below the lower plate, and a pin engaging the aforesaid recesses and extending through the guide-pin arranged between said recesses.

5. In a spring-seat, the combination, with two vertically spaced and oppositely arranged substantially horizontal plates the lower of which is adapted to be mounted on a supporting bracket, and substantially vertically arranged helical springs interposed between the plates, each plate having two holes which extend vertically through the plate at opposite sides respectively of the center of the plate and being provided at its outer face, adjacent each hole, with two recesses which are arranged at opposite sides respectively of the hole and in line endwise, and each of said holes in each plate being arranged in line endwise with a corresponding hole in the other plate, of substantially vertical guide-pins engaging the registering holes in the plates, a pin engaging the aforesaid recesses and extending through the guide-pin arranged between said recesses, and the seat-proper covering the upper end faces of the guide-pins and the recesses in the upper plate and removably secured to said upper plate.

6. In a spring seat, the combination, with a supporting bracket having a rearwardly projecting arm, of two vertically spaced and oppositely arranged substantially horizontal plates the upper of which is adapted to carry the seat-proper and the lower of which is mounted on said arm, substantially vertically arranged helical springs interposed between the plates, the lower plate being adjustable endwise of said arm, and means for securing said lower plate to said arm in the desired adjustment of the plate.

In testimony whereof, I sign the foregoing specification, in the presence of two witnesses.

LEMON M. REED.

Witnesses:
BASIL F. JOHNSON,
W. H. MCDONNELL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents. Washington, D. C."