May 27, 1930. F. A. DONALDSON 1,759,978

SPRING IMPLEMENT SEAT

Filed July 16, 1928

Fig. 1

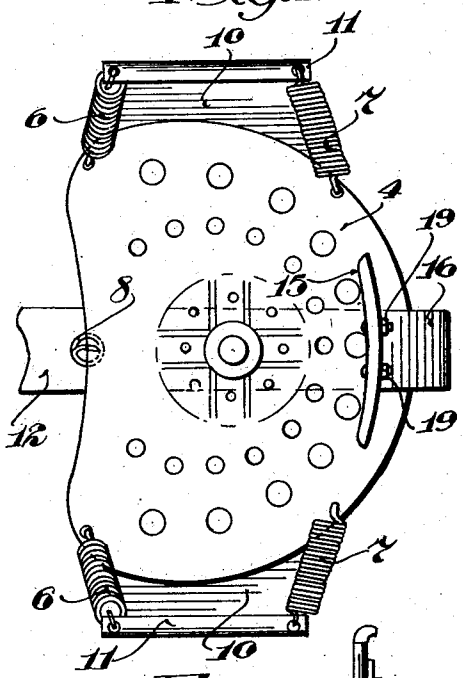



Fig. 2

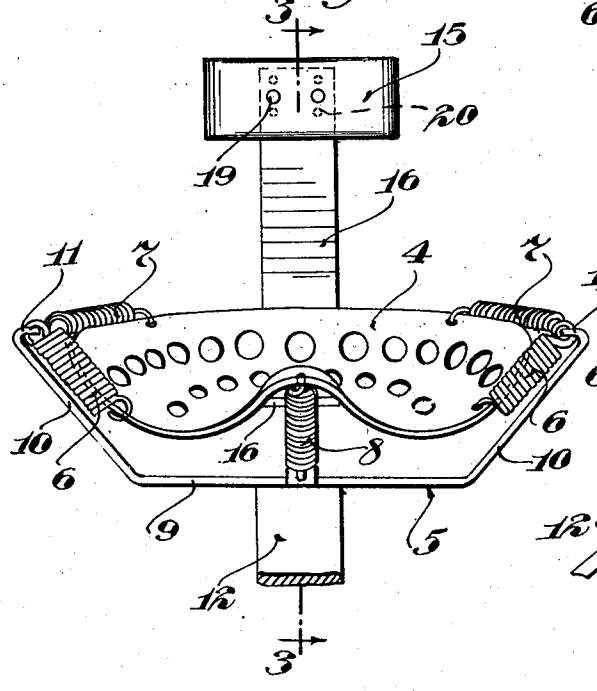
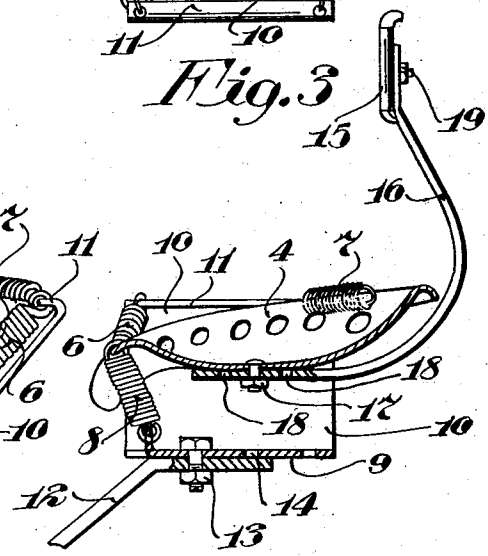



Fig. 3




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# UNITED STATES PATENT OFFICE

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## SPRING IMPLEMENT SEAT

Application filed July 16, 1928. Serial No. 292,940.

My present invention relates to spring seats for use on implements such as tractors, farm machinery, road machinery and the like, and has for its main object to provide a highly efficient and extremely simple seat of the character described. Generally stated, the invention consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

In the accompanying drawings, which illustrate the invention, like characters indicate like parts throughout the several views.

Referring to the drawings:

Fig. 1 is a plan view of the seat;

Fig. 2 is a front view of the seat; and

Fig. 3 is a section taken on the line 3—3 of Fig. 2.

The numeral 4 indicates a standard commercial type of implement seat that is connected to a relatively stationary frame 5 by forward side springs 6, rearward side springs 7, and a downwardly pulling front spring 8. As illustrated, and in its preferred form, the frame 5 includes a lower portion 9 that underlies the seat 4, upwardly extended side portions 10, and inwardly turned upper edges 11, to which side springs 6 and 7 are attached.

The forward and rearward side springs 6 and 7 support the seat, and a downwardly pulling front spring 8 holds the same against rearward tipping movements. In their normal positions, the rearward side springs 7 are horizontally disposed and the forward springs 6 are inwardly inclined from their points of attachment with the frame 5. It is also important to note that the side springs 6 and 7 converge outwardly from their points of attachment with the seat 4.

With the above arrangement of springs, the seat proper 4 will be readily depressed by the weight of the occupant when a bump is encountered, but will be returned to a normal operative position relatively slowly and without tendency to throw the occupant upward therefrom. When the machine encounters a succession of ruts, furrows or the like, the seat will be free for vertical movements, but the arrangement of springs will hold said seat against annoying swaying and tipping movements.

The seat frame 5 may be mounted in any suitable manner, but as shown, it is connected to the upper portion of a seat-mounting bar 12, of the usual type, by a nut-equipped bolt 13 that is passed through one of several holes 14 in the frame 4 and an aligned hole in the bar 12. Forward and rearward adjustments of the seat may be readily obtained by aligning any one of the several bolt holes 14 in the lower portion of the frame 4 with the bolt hole in the bar 12.

The seat 4 is provided with a back rest or support 15 that is secured to the upper portion of a curved back member 16 that is carried by the seat 4 for common movements therewith. The back member 16 is rigidly but adjustably connected to the seat 4 for forward and rearward movements in respect thereto by means of a nut-equipped bolt 17 that is insertable through any one of several holes 18 in the back member 16, and the back rest or support 15 is adjustably secured to the back member 16 for vertical movements thereon by a bolt 19 that is insertable through any one of several holes 20 in the upper portion of the back member 16.

What I claim is:

1. In combination with an implement seat, a frame including a portion underlying the seat and upwardly extended side portions spaced from the sides of said seat, upwardly and outwardly pulling tension springs between the forward side portions of the seat and the side portions of the frame, tension springs between the rearward side portions of the seat and the side portions of said frame, and a downwardly pulling intermediate tension spring attached to said seat near the front thereof and to a relatively stationary member below the plane of said seat.

2. In combination wth an implement seat, and a frame including a portion underlying the seat and upwardly extended side portions spaced from the sides of the seat, of upwardly and outwardly pulling tension springs between the forward side portions of said seat and the side portions of the frame, tension springs between the rearward side portions of said seat and the sides of said frame, and a centrally located downwardly pulling ten-

sion spring connected to the central front portion of said seat and to the underlying portion of said frame, said rearward side springs being disposed normally in a substantially horizontal plane, said forward springs being disposed in an inwardly inclined plane and said forward and rearward side springs converging outward from their point of attachment with said seat.

3. A spring seat for vehicles adapted for attachment on one end of a seat mounting bar, comprising a seat supporting frame having upwardly extending side members, a seat disposed between said side members, suspension means depending from the forward portions of said side members and connected to the forward side portions of said seat, seat centering means connecting the rear side portions of said seat to said side members and permitting limited unrestrained vertical movements of said seat, and movement restraining means connecting the forward end portions of said seat to a point on said frame below the seat, whereby said seat is resiliently supported centered and stabilized under load.

4. A suspension means for seats comprising a supporting frame, a seat disposed in said supporting frame, resilient means connecting transversely spaced forward portions of said seat to the base and sides of said frame, and centering means permitting limited unrestrained vertical movement of the rear portion of said seat relative to said frame during operating conditions.

5. Means for supporting a seat comprising a supporting frame, springs engaging the frame and the sides of said seat forward of the center thereof and holding the seat suspended, and a spring equalizing means engaging the frame and the front of the seat and cooperating with said seat and springs to maintain said seat on even keel.

6. Supporting means for a seat comprising a supporting frame, suspension spring members engaging said frame and opposite front side portions of said seat and supporting said seat suspended therebetween, substantially horizontally disposed spring members engaging opposite rear side portions of the seat and assisting in the suspending and support-action, and a spring member engaging the forward portion of the seat and tending to pull the seat downward against the action of the other spring members under operating conditions.

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