

S. W. CRANE.
SEAT ATTACHMENT FOR RIDING HARROWS.
APPLICATION FILED DEC. 21, 1916.

1,244,295.

Patented Oct. 23, 1917.
2 SHEETS—SHEET 1.

Fig. 1.

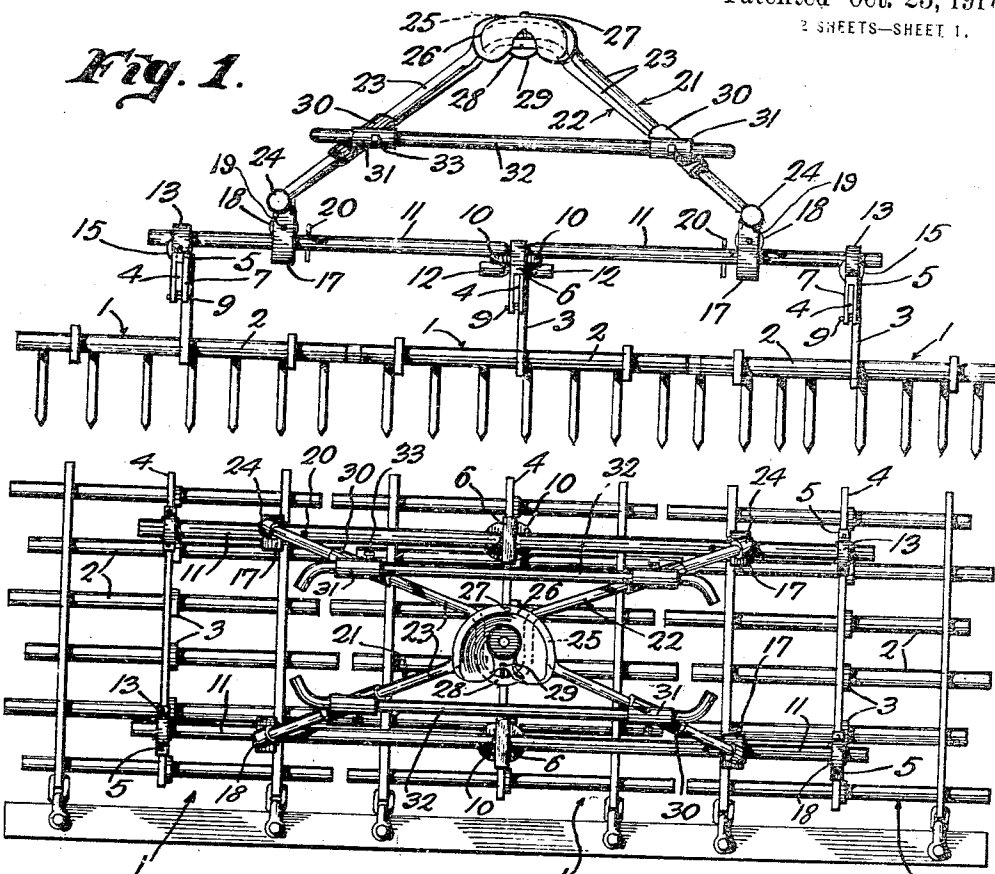


Fig. 2.

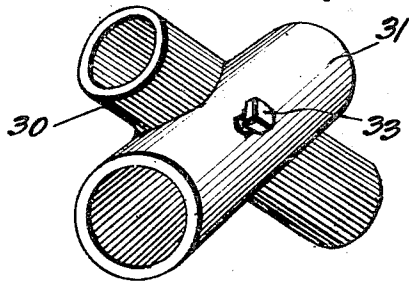
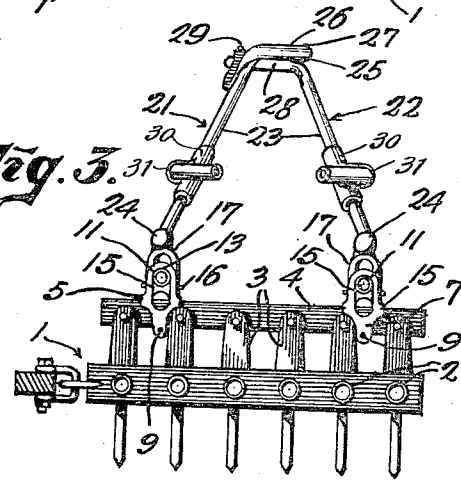


Fig. 4.

Fig. 3.



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Fig. 6.

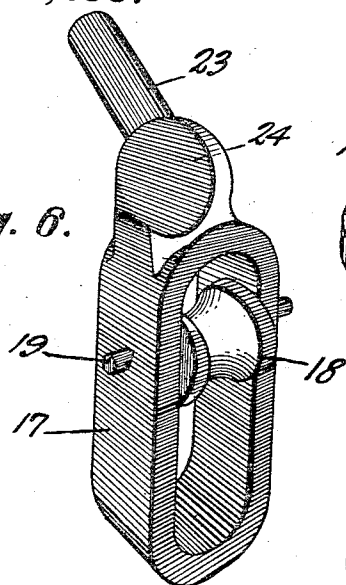


Fig. 5.

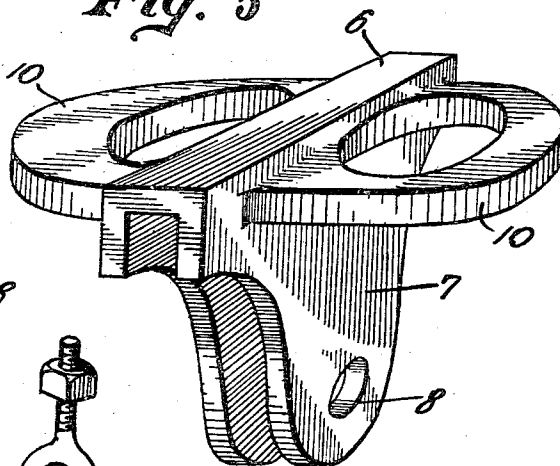


Fig. 10.

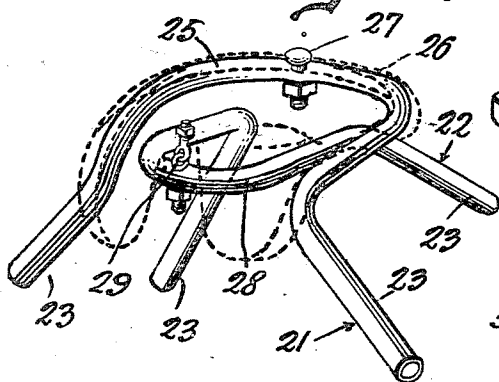


Fig. 7.

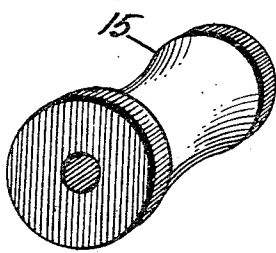
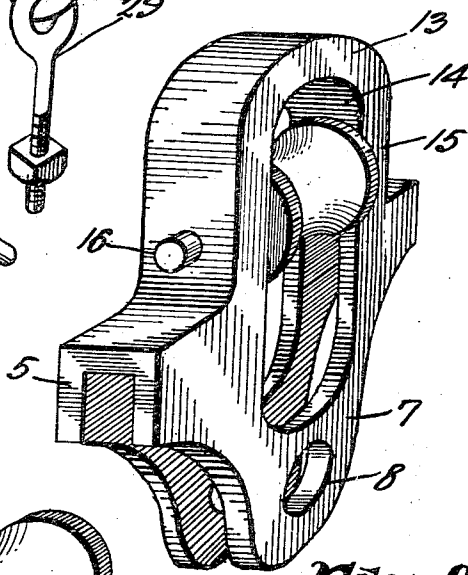


Fig. 9.

Fig. 8.

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UNITED STATES PATENT OFFICE.

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SEAT ATTACHMENT FOR RIDING-HARROWS.

1,244,295.

Specification of Letters Patent.

Patented Oct. 23, 1917.

Application filed December 21, 1916. Serial No. 138,234.

To all whom it may concern:

Be it known that I, SAMUEL W. CRANE, a citizen of the United States, residing at Lone Wolf, in the county of Kiowa and State of Oklahoma, have invented a new and useful Seat Attachment for Riding-Harrows, of which the following is a specification.

This invention appertains generally to harrows, and aims to provide a novel and improved riding device for harrows, which will enable the operator to ride the harrow with the weight of the operator imposed on the harrow itself.

It is the object of the invention to provide a seat attachment applicable to various harrows, without involving prohibitive trouble or expense, the attachment being applicable without taking the harrow apart, and the device being applicable to various harrows.

Another object of the invention is the provision of a device of the nature indicated which is of such construction that the weight of the operator will be equalized between the several sections of the harrow, when the device is used on a harrow comprising two or more sections, the sections being free to move relative to one another when the ground is uneven, without materially changing the distribution of the weight between the harrow sections.

A still further object of the invention is the provision of a seat attachment having novel adjustable means for applying it to the harrow, and novel means for resiliently supporting the seat for the comfort of the operator.

It is also within the scope of the invention to provide a seat attachment for riding harrows which is comparatively simple and inexpensive in construction, and which will be convenient, practical and efficacious in use.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the in-

vention herein disclosed, can be made within the scope of what is claimed, without departing from the spirit of the invention.

The invention is illustrated in the accompanying drawings, wherein:—

Figure 1 is a front view of the attachment as applied to a harrow.

Fig. 2 is a plan view thereof.

Fig. 3 is an end view of the harrow and attachment.

Fig. 4 is an enlarged perspective view of one of the supporting members of the foot rods.

Fig. 5 is an enlarged perspective view of one of the intermediate saddles.

Fig. 6 is a perspective view of one of the slides.

Fig. 7 is a perspective view of the upper portions of the seat supporting springs.

Fig. 8 is a perspective view of one of the anti-frictional rollers.

Fig. 9 is an enlarged perspective view of one of the end saddles.

Fig. 10 is a perspective view of the connection between the rear spring and seat.

A conventional type of harrow is depicted in the drawings, it being understood that the present device can be applied to various harrows of common construction. The harrow illustrated embodies three sections 1 each having a longitudinal series of transverse rock shafts 2 carrying the harrow teeth, and provided with upstanding arms 3 connected by a longitudinal link bar 4.

The present attachment is applied to the bars 4 or other suitable members of the harrow sections. As a convenient and effective means for applying the attachment to the harrow, there are provided two pairs of end saddles 5 and a pair of intermediate saddles 6 adapted to snugly straddle the bars 4 of the end and intermediate harrow sections. The saddles have depending wings 7 to overlap and extend across the sides of the bars 4, and said wings have lower apertures 8 for the reception of suitable retaining elements 9 for holding the saddles in place removably.

The saddles 5 and 6 support the remainder of the attachment, and for this purpose,

each intermediate saddle 6 is provided with outstanding loops 10 at its opposite sides, and front and rear supporting rods or rails 11 are provided at their adjacent ends with hooks 12 pivotally engaging the loops 10, whereby said rods can swing relative to the saddles 6. The rods 11 at the front and rear project laterally away from one another, and their free terminals project through arches 13 with which the saddles 5 are provided, said arches and saddles having openings 14 for the rods 11. Rollers 15 are mounted for rotation within the arches 13, being carried by pins 16 engaged through the arches, and the rods 11 are supported by the rollers 15. This permits free movement between the rods 11 and saddles 5, said rods swinging freely relative to the intermediate saddles 6, and as a result the harrow sections can move freely relative to one another on uneven ground, notwithstanding the fact that the present attachment is applied to an ordinary harrow. The saddles 5 can be placed at different distances from the intermediate saddles 6 in applying the attachment to various harrows.

A loop-shaped slide 17 is mounted for movement on each rod or rail 11, having journaled for rotation therein a grooved roller 18 mounted on a pin 19 engaged through the slide. The rollers 18 are movable on the rods 11 whereby to enable the slides to reciprocate freely on the rods transversely of the harrow. Suitable stops 20 are carried by the rods 11 for limiting the inward movement of the slides, whereby to hold the seat centered, although the slides 17 can move outwardly away from the stops to provide for the desired resiliency.

The seat is carried by a pair of inverted V-shaped springs 21 and 22 at the front and rear, respectively, which are formed of tubular or other suitable resilient stock. Each spring has the downwardly diverging limbs 23 whose terminals are connected, as at 24, with the forward or rear slides 17. The joints 24 can be of any suitable sort, and may be ball and socket or universal joints which are well understood, whereby to enable the springs to oscillate relative to the slides 17 as the parts move relatively. The forward spring 21 is inclined rearwardly and the rear spring 22 is inclined forwardly so that they converge upwardly, and the upper crotch portion of the spring 21 has a rearwardly bent U-shaped portion or loop 25 on which the rim of the seat 26 fits snugly, the rear portion of the seat 26 being secured upon the intermediate portion of the loop 25 by means of a bolt 27 or otherwise. The upper crotch portion of the rear spring 22 has a forwardly bent U-shaped portion or loop 28 narrower than and located partially within the loop 25 underneath the

seat 26. The forward portion of the seat 26 is connected to the intermediate portion of the loop 28 by means of eye bolts 29 having their eyes interengaged and having their shanks engaged with the loop 28 and seat, whereby to provide a loose joint between said parts, thus enabling the rear spring 22 and seat to move relatively, while the seat is carried in a substantial manner by the forward spring 21. This also enables the front and rear springs to swing relative to one another when they are flexed.

Sleeves 30 are slidable upon the limbs 23 of the springs and are provided with oblique sleeves 31 integral therewith and receiving transverse foot rods or rungs 32. Set screws 33, carried by the sleeves 31, engage the rods 32 for holding the rods and sleeves 31 in position although the limbs 23 and sleeves 30 can slide relative to one another if necessary. By loosening the screws 33, the sleeves 30 can be adjusted along the limbs 23, to raise or lower the rods 32. The forward rod 32 can be used as a foot rest, while the rear rod 32 can be used as a step or rung to enable the operator to readily ascend the attachment from the rear and step over the seat.

In operation, as above pointed out, the rods 11 are swingable to enable the harrow sections to move freely relative to one another in the ordinary manner, when moving over uneven ground, and the slides 17 are slidable upon the rods 11 in the various positions thereof, the stops 20 preventing the springs 21 and 22 from shifting sidewise out of a central position to any appreciable extent. The weight of the operator seated upon the seat 26 is imposed upon the springs 21 and 22, thereby tending to separate the limbs thereof, and the resiliency of the limbs 23 enables them to vibrate or oscillate slightly, the slides 17 reciprocating on the rods 11, whereby to take up the shocks, the springs also flexing forwardly and rearwardly.

Having thus described the invention, what is claimed as new is:—

1. A device of the character described embodying supporting members, means for mounting them loosely upon the sections of a harrow, and resilient seat supporting means carried loosely by said members jointly.

2. A device of the character described embodying transverse members, means for pivotally and slidably connecting them with the sections of a harrow, and a resilient seat supporting means mounted on said members.

3. A device of the character described embodying transverse members, means for pivotally and slidably connecting them with the sections of a harrow, and resilient seat supporting means having portions slidably engaging said members.

4. A device of the character described embodying transverse rods, means for pivotally connecting their adjacent ends to a harrow, means for slidably connecting the free portions of said rods with the harrow, and seat supporting means mounted upon said rods.
5. A device of the character described embodying transverse rods, means for pivotally connecting their adjacent ends to a harrow, means for slidably connecting the free portions of said rods with the harrow, and a resilient seat supporting means mounted on and having portions slidably engaging said rods.
6. A device of the character described embodying members attachable to a harrow, rods loosely connected with said members, and seat supporting means mounted on said rods.
7. A device of the character described embodying members attachable to a harrow, rods pivotally connected to some of said members and slidably engaging the others, and seat supporting means mounted upon said rods.
8. A device of the character described embodying end and intermediate saddles attachable to a harrow, transverse rods having their adjacent ends pivotally connected with the intermediate saddles and having their free terminals slidably engaging the end saddles, and seat supporting means mounted on said rods.
9. A device of the character described embodying end and intermediate saddles attachable to a harrow, transverse rods having their adjacent ends pivotally connected with the intermediate saddles and having their free terminals slidably engaging the end saddles, and resilient seat supporting means mounted on said rods and having portions slidably engaging them.
10. A device of the character described embodying intermediate and end saddles adapted to fit astride certain parts of a harrow, the intermediate saddles having opposite loops, rollers carried by the end saddles, transverse rods having hooks at their adjacent ends pivotally engaging said loops, the free terminals of said rods being mounted slidably upon said rollers, and seat supporting means mounted on said rods.
11. A device of the character described embodying a pair of inverted V-shaped springs, and a seat mounted upon the upper crotch portions thereof.
12. A device of the character described embodying a pair of inverted V-shaped springs, a seat mounted upon the upper crotch portions thereof, and means for mounting the terminals of said springs for sliding movement.
13. A device of the character described embodying inverted V-shaped springs inclined toward one another, and a seat mounted upon the upper crotch portions of said springs.
14. A device of the character described embodying inverted V-shaped springs inclined toward one another, a seat mounted upon the upper crotch portions of said springs, and means for mounting the terminals of each spring for movement toward and away from one another.
15. A device of the character described embodying a pair of inverted V-shaped springs, the upper crotch portion of one spring having a U-shaped loop, a seat fitted upon said loop, and means connecting the crotch portion of the other spring and seat.
16. A device of the character described embodying a pair of inverted V-shaped springs, one spring having a U-shaped loop at its upper crotch portion, a seat fitted upon said loop, the upper crotch portion of the other spring having a smaller U-shaped loop below the seat, and means loosely connecting the second mentioned loop and seat.
17. A device of the character described embodying a pair of inverted V-shaped springs inclined toward one another, means for mounting the terminals of each spring for sliding movement toward and away from one another, the upper crotch portion of one spring having a U-shaped loop extending in one direction, a seat secured upon said loop, the upper crotch portion of the other spring having a U-shaped loop smaller than the aforesaid loop and projecting in the opposite direction under the seat, and means loosely connecting the seat and the intermediate portion of the second mentioned loop.
18. A device of the character described embodying an inverted V-shaped spring, a seat carried by the upper crotch portion thereof, members slidable upon the limbs of said spring, and a rod adjustably engaged with said members.
19. A device of the character described embodying an inverted V-shaped spring, a seat mounted upon the upper crotch portion thereof, sleeves slidable upon the limbs of said spring and having other sleeves arranged obliquely thereof, and a rod adjustable in the second mentioned sleeves.
20. A device of the character described embodying relatively movable rods to be carried by a harrow, slides movable upon said rods, spring means connected to said slides, and a seat supported by said spring means.
21. A device of the character described embodying rods movable relative to one another, slides movable upon said rods, springs having their terminals connected to said slides, and a seat supported by said springs.
22. A device of the character described embodying transverse rods, means for pivot-

ally connecting adjacent ends thereof to a harrow, means for slidably connecting the free terminals of said rods with the harrow, slides movable upon said rods, springs having their terminals connected to said slides, and a seat supported by said springs.

In testimony that I claim the foregoing

as my own, I have hereto affixed my signature in the presence of two witnesses.

SAMUEL W. CRANE.

Witnesses:

IVY E. SIMPSON,

MONROE E. MILLER.

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