

No. 847,068.

PATENTED MAR. 12, 1907.

A. D. HARRIS.  
HARROW.

APPLICATION FILED JULY 7, 1906.

2 SHEETS—SHEET 1.

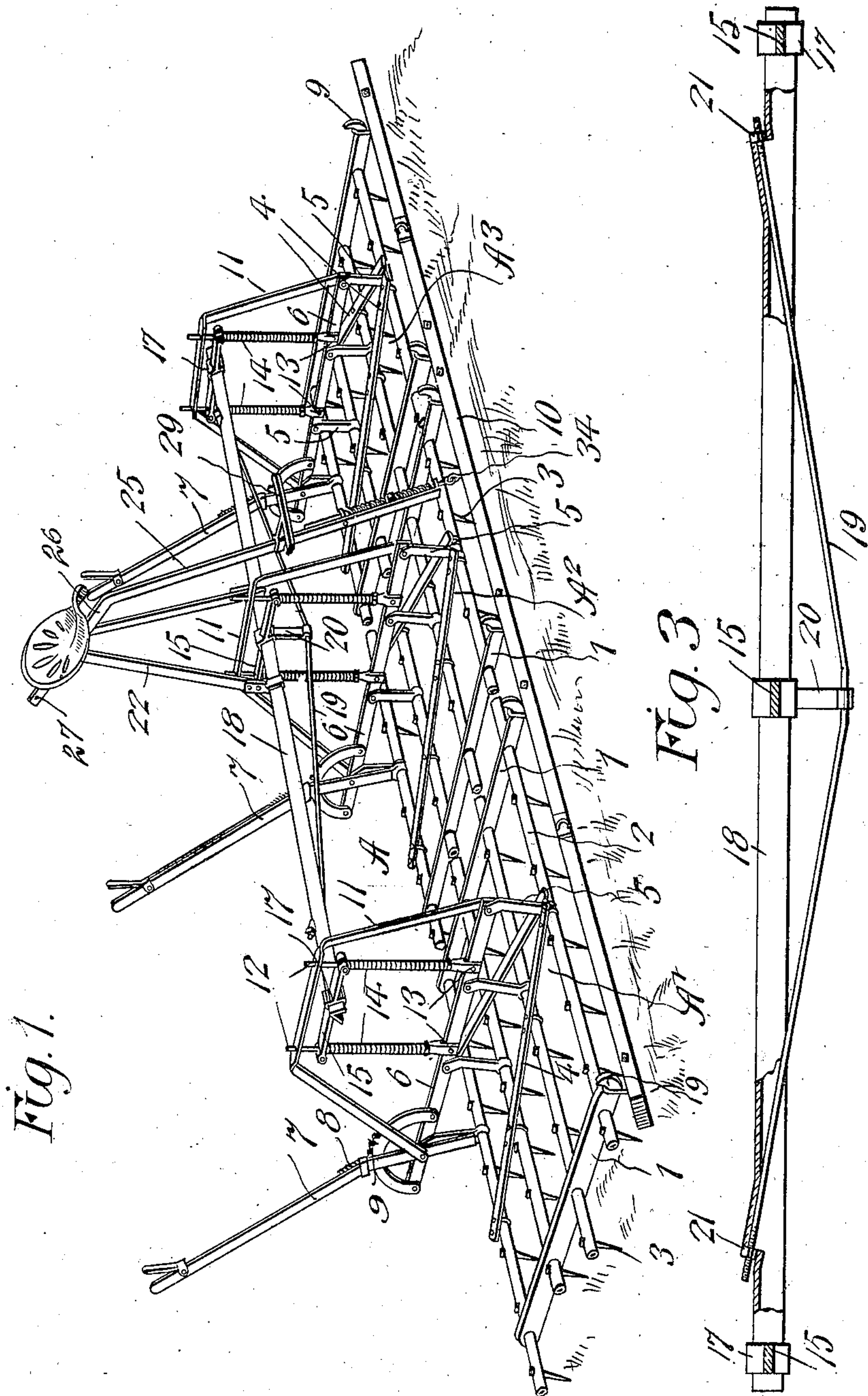


Fig. 1.

Fig. 3.

Witnesses

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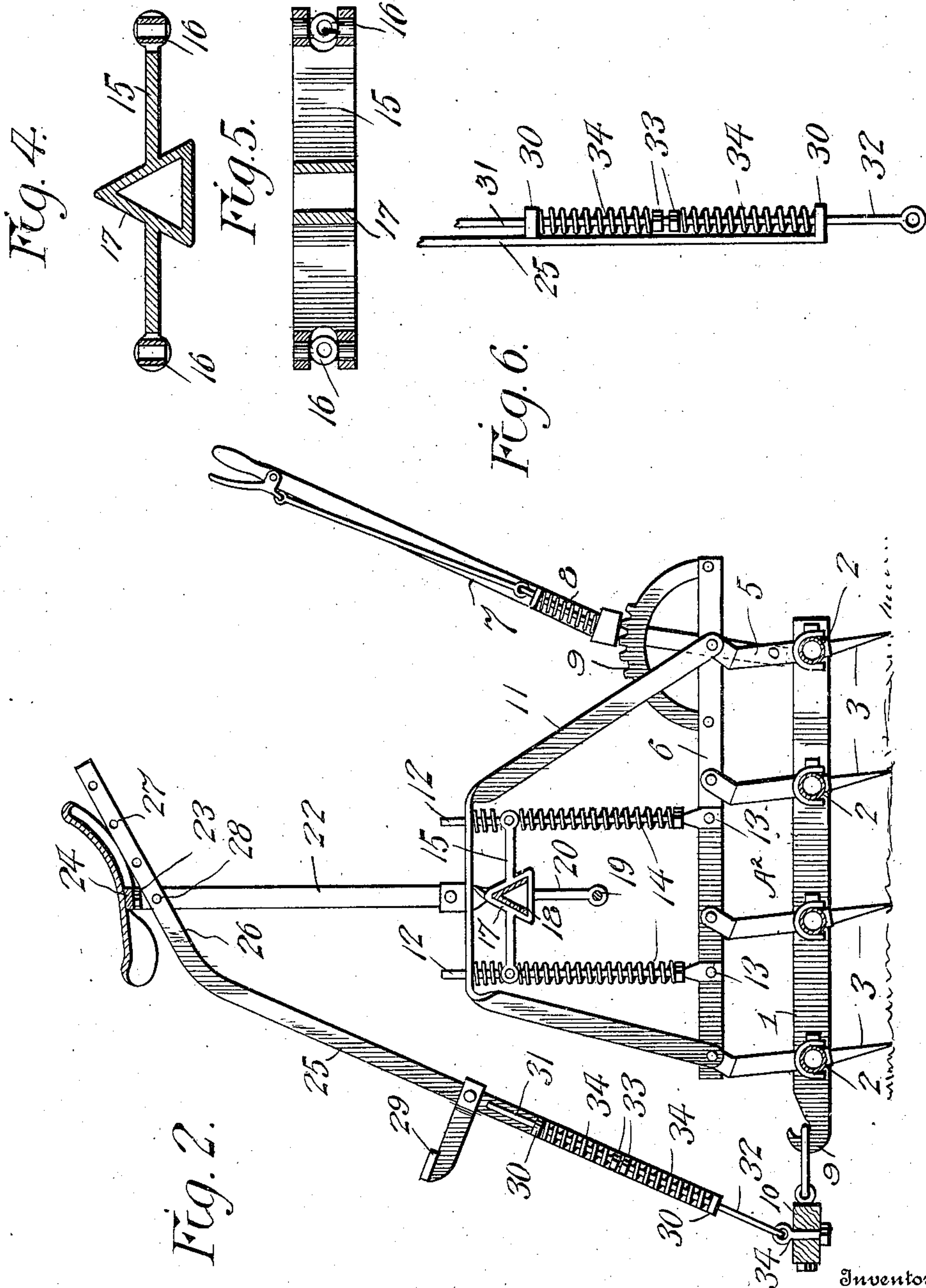
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# UNITED STATES PATENT OFFICE.

ALFRED D. HARRIS, OF CALDWELL, KANSAS.

## HARROW.

No. 847,068.

Specification of Letters Patent.

Patented March 12, 1907.

Application filed July 7, 1906. Serial No. 325,170.

*To all whom it may concern:*

Be it known that I, ALFRED D. HARRIS, a citizen of the United States of America, residing at Caldwell, in the county of Sumner and State of Kansas, have invented new and useful Improvements in Harrows, of which the following is a specification.

This invention relates to improvements in harrows, and particularly to seat-supports therefor, the object of the invention being to provide simple and efficient means for yieldingly supporting the seat upon the harrow in such a manner as to take up all shocks and jars and relieve the driver from the strain and fatigue incident to and arising from the jolting of the seat under the vibrations of the harrow in passing over irregularities of ground surface.

In the accompanying drawings, Figure 1 is a perspective view of a harrow embodying my invention. Fig. 2 is a central vertical front to rear section of the same. Fig. 3 is a longitudinal section of the seat-supporting bar. Fig. 4 is a vertical longitudinal section of one of the hanger-arms thereof. Fig. 5 is a sectional plan view of the hanger-arm. Fig. 6 is a detail view of the seat-brace.

Referring to the drawings, A designates a harrow of that type comprising a plurality of harrow frames or sections. Any number of these sections may be employed, three, designated, respectively, A', A<sup>2</sup>, and A<sup>3</sup>, being shown in the present instance. Each section comprises a pair of parallel end bars 1, in which are journaled a series of rods 2, carrying harrow-teeth 3 and united by angularly-arranged or forwardly-converging braces 4, which are attached to the bars in such manner as to permit the latter to have free rotation. The rods of each section are provided with crank-arms 5, connected by a link 6. An adjusting-lever 7 is connected with the crank of the rear rod and is provided with an ordinary form of locking-pawl 8 to engage a rack 9, carried by the link, whereby the parts may be locked in adjusted position. Through the medium of this adjusting mechanism the rods may be turned to adjust the teeth 3 to regulate their working angle. The end bars 1 of the several harrow-sections are provided with hooked forward ends 9, upon which is pivotally hung the draft-bar 10, to which the draft-animals are attached in any suitable manner.

Arranged above each harrow-section is an

arched seat-supporting frame or bracket 11, the arms of which are pivotally connected at their lower ends to the link and adjusting-lever. The crown of this frame or bracket is horizontally disposed and provided with guide-apertures through which project the upper ends of guide-rods 12, which are pivotally connected at their lower ends with the link 6, as at 13, to provide for a proper relative motion of the parts in their adjusting movements. Surrounding these rods are coiled cushioning-springs 14, arranged to yieldingly support a hanger arm or bracket 15, the ends of which are provided with eyes 16, pivotally mounted therein and engaging the rods 12, thus adapting the hanger-arms to slide vertically on said rods and to have a pivotal movement therewith through the eyes 16, which allow the rods to assume different angles to the vertical without disturbing the horizontal position of the hanger-arms.

The respective hanger-arms 15 are provided with angular sockets 17 for the passage and reception of a seat-supporting bar 18, preferably formed of angle-iron, said bar being stayed by a truss-rod 19, centrally secured to a hanger 20, fixed to and depending from said supporting-bar, the ends of the rod thence being extended diagonally upward in opposite directions beneath and through the supporting-bar and threaded at their extremities for the reception of retaining-nuts 21 to fasten them in applied position, the supporting-bar being thus rigidly braced against all vertical strains.

An arched or substantially V-shaped seat-bracket 22 is suitably secured at the lower or free ends of its limbs to the supporting-bar 18, the limbs being fastened thereto on opposite sides of hanger 20 and is provided at its upper end with a horizontal cross-piece 23, to which the driver's seat 24 is suitably secured. By this construction it will be seen that the seat is carried by the rod 18, which is slidably mounted upon the guide-rods 12 of the supporting-frames 11 through the medium of the hanger-arms 15, which are yieldingly sustained by the springs 14, which take up and absorb all jolts and vibrations transmitted to the harrow in the passage of the latter over the ground surface, thus relieving the driver from the strain and fatigue ordinarily induced thereby. Furthermore, the described mode of mounting the parts



permits of the ready adjustment of the harrow-teeth and rods and the adjustment of the seat-supporting means to accord therewith.

The seat is stayed by a brace-bar 25, having an angular upper end 26, which extends beneath the crown portion 23 and between the arms of the seat-supporting frame 22 and is provided with a series of apertures 27 for the passage of a bolt 28, connecting the same with said frame, whereby the bar is adjustably connected therewith to compensate for variations in the arrangement of the seat. The brace-bar is provided with a foot-rest 29, which may be adjustably mounted thereon and below the rest is formed with guides 30 for the passage of a pair of bolts or rods 31 and 32, having abutting heads 33 at their meeting ends, the lower end of the rod or bolt 32 being pivotally connected with an eyebolt 34 on the draft bar or beam 10. This construction allows the brace-bar to have sliding movement on the bolts or rods 31 and 32, about which are coiled cushioning-springs 34, which allow the draft-beam to have proper movement without transferring motion to the bar 25 and throwing strain upon it and its supports.

It will of course be understood that the harrow may embrace any preferred number of sections and that the novel mode of mounting the seat insures ease and comfort and effectually prevents the strain and fatigue falling upon the operator under the ordinary constructions in which the seat is rigidly supported on the implement.

Having thus described my invention, I claim—

1. In combination, a harrow, supporting-frames carried by the harrow, a seat-supporting bar yieldingly mounted upon said supporting-frames, and a seat mounted on said bar.

2. In combination, a harrow, seat-supporting frames mounted thereon, said frames having guide-rods provided with cushioning-springs, a seat-supporting bar having hanger-arms slidably mounted on said guide-rods and supported by said springs, and a seat carried by the supporting-bar.

3. In combination, a harrow, seat-supporting frames mounted thereon, said frames having guide-rods provided with cushioning-springs, bracket-arms slidably mounted on said guide-rods and supported by the springs, a seat-supporting bar carried by the bracket-arms, and a seat carried by said bar.

4. In combination, a harrow having rotary teeth-carrying members provided with crank-arms, links connecting the crank-arms, means for communicating motion to the links to adjust the teeth-carrying members, brackets movable with the links, guide-rods pivotally attached at their lower ends to the links and slidably engaging the brackets at their up-

per ends, cushioning-springs on the rods, bracket-arms slidably and pivotally engaging the rods and supported by said springs, a seat-supporting bar carried by the bracket-arms, and a seat mounted on said bar.

5. In combination, a harrow having rotary teeth-carrying members provided with crank-arms, links connecting the crank-arms, means for communicating motion to the links to adjust the teeth-carrying members, brackets movable with the links, guide-rods pivotally attached at their lower ends to the links and slidably connected at their upper ends with the brackets, cushioning-springs on the rods, bracket-arms slidably and pivotally engaging the rods and supported by said springs, a seat-supporting bar carried by the bracket-arms, a seat mounted on said bar, a brace adjustably connected with the seat, a draft-beam pivotally hung at the front of the harrow, and a yielding connection between said beam and brace.

6. In a seat-support for harrows, the combination of a harrow having a plurality of rotary teeth-carrying members, means for adjusting said members, brackets adjustable with said supporting means and provided with spring-guides, a seat-supporting bar slidably and pivotally adjustable on said guides and yieldingly sustained by the springs thereof, and a seat carried by said support.

7. In a seat-support for harrows, the combination with a harrow having a plurality of rotary teeth-carrying members, and adjusting means therefor having a swinging action, of brackets carried by and movable with said adjusting means, a draft element pivotally hung upon the harrow, guides associated with the adjusting means and brackets and provided with cushioning-springs, a seat-supporting bar having members slidably and pivotally engaging said guides and yieldingly sustained by the springs, a seat supported by said bar, and a brace adjustably connected with the bar and having a yielding spring connection with the draft element.

8. A harrow provided with rocking elements for adjusting the teeth thereof, supporting-frames pivotally connected with the rocking elements and adjustable therewith, guide members associated with and carried by said rocking elements and supporting-frames and provided with cushioning-springs, a seat-supporting bar carrying bracket members slidably and pivotally engaging the guide members and yieldingly supported by said springs, and a seat carried by said bar.

In testimony whereof I affix my signature in presence of two witnesses.

ALFRED D. HARRIS.

Witnesses:

F. A. DINSMOOR,  
G. H. EXLINE.