

No. 731,980.

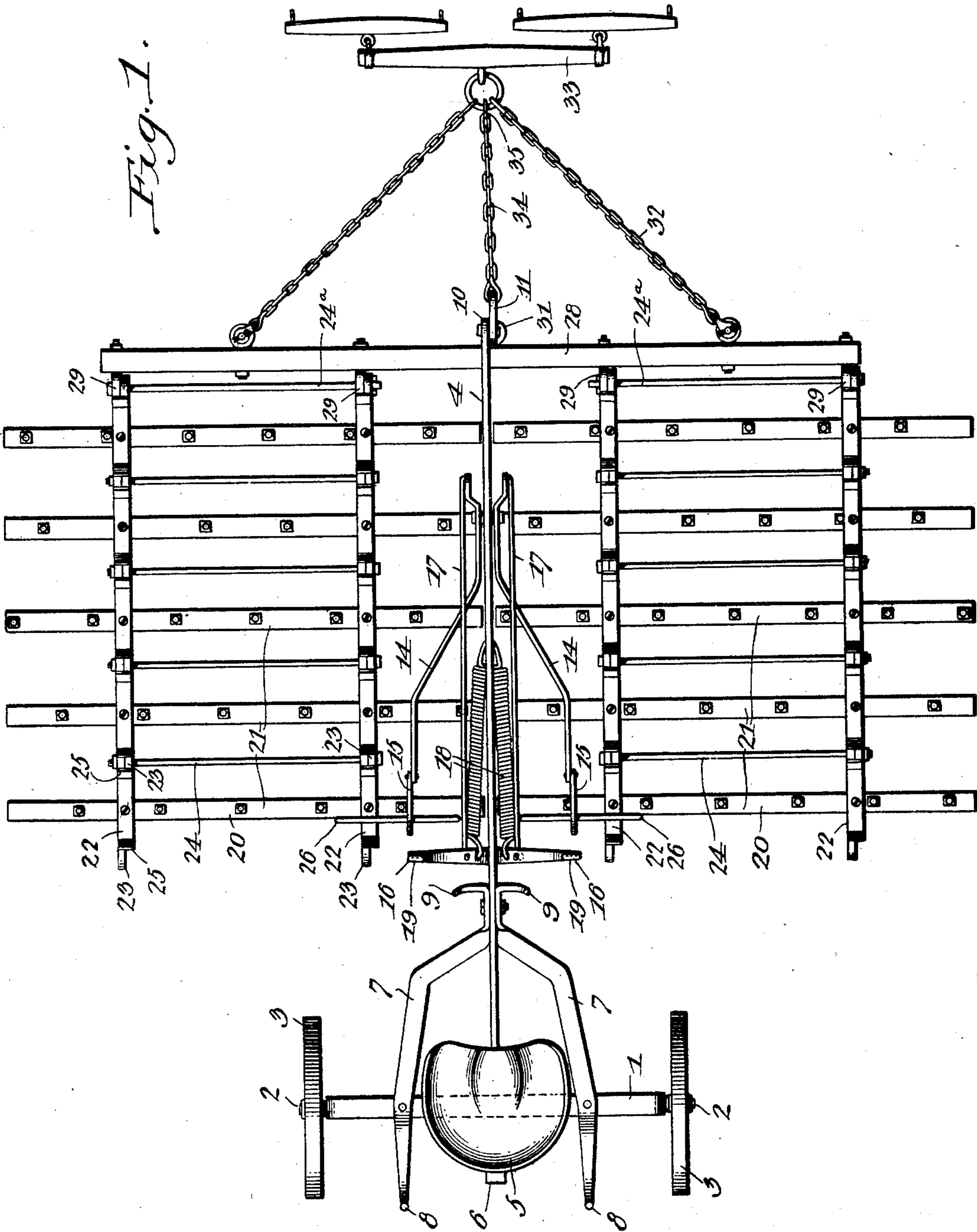
PATENTED JUNE 23, 1903.

A. T. UPTON.
RIDING HARROW.

APPLICATION FILED MAR. 9, 1903.

NO MODEL.

3 SHEETS—SHEET 1.



Witnesses
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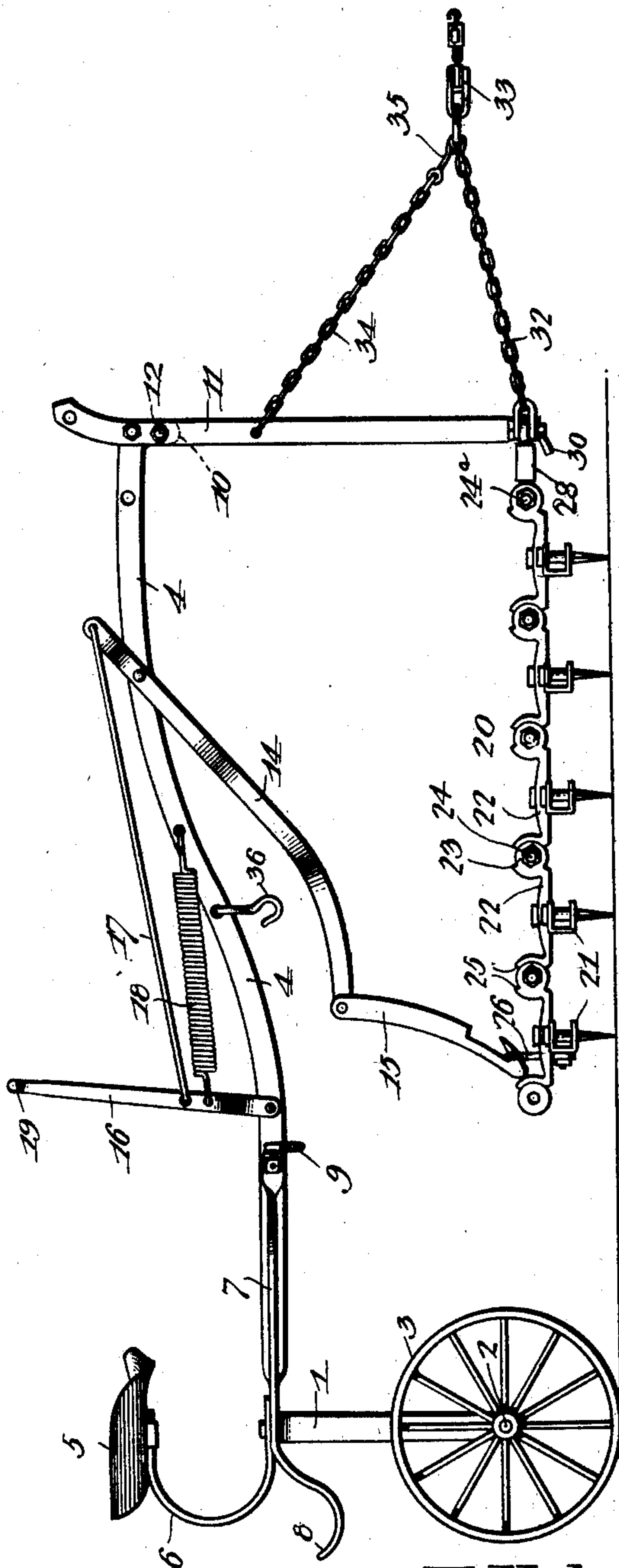
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3 SHEETS.—SHEET 2.

Fig. 2.



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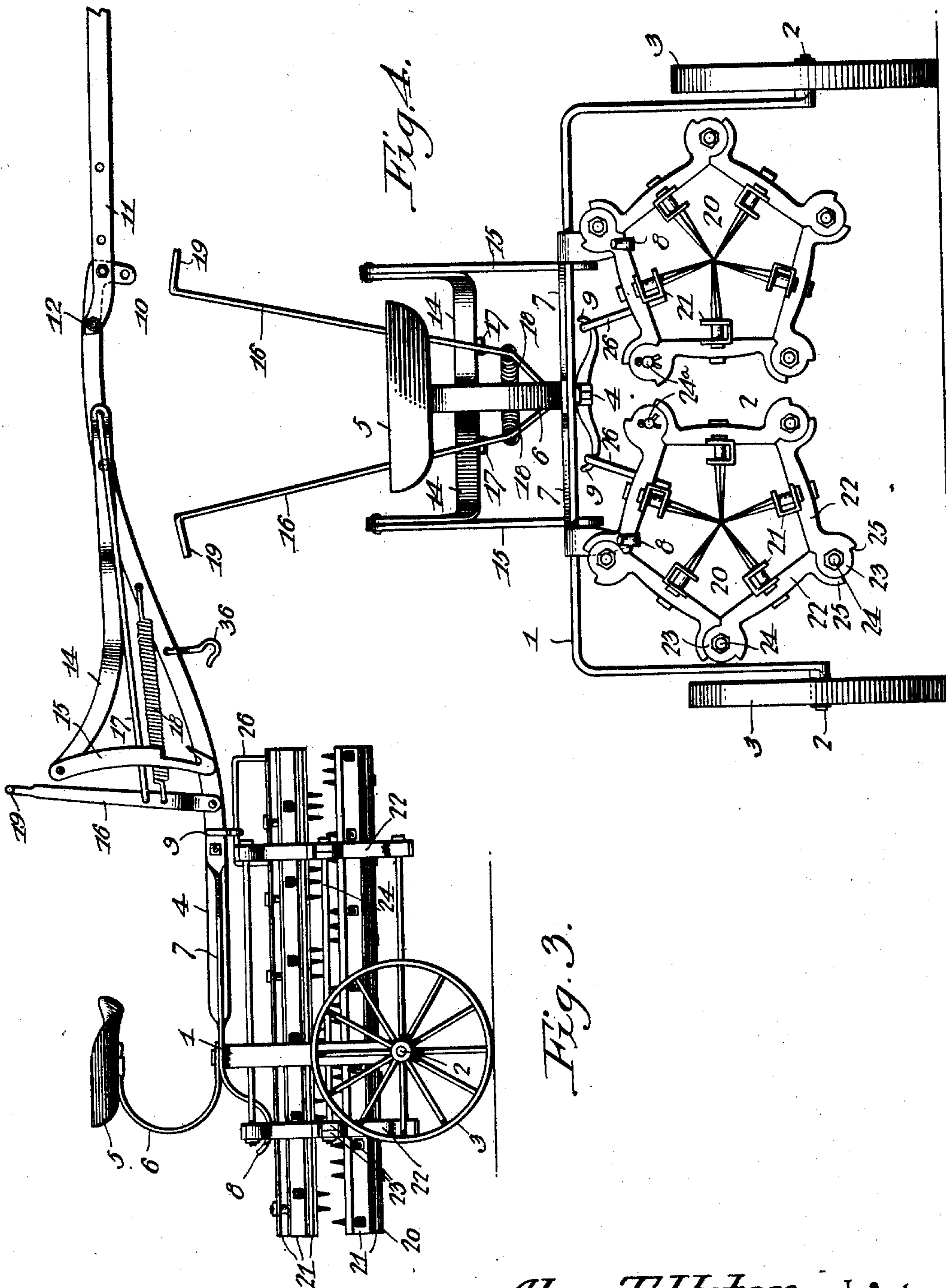
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3 SHEETS—SHEET 3.

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UNITED STATES PATENT OFFICE.

ALVA T. UPTON, OF MOUNT VERNON, ILLINOIS.

RIDING-HARROW.

SPECIFICATION forming part of Letters Patent No. 731,980, dated June 23, 1903.

Application filed March 9, 1903. Serial No. 146,991. (No model.)

To all whom it may concern:

Be it known that I, ALVA T. UPTON, a citizen of the United States, residing at Mount Vernon, in the county of Jefferson and State of Illinois, have invented a new and useful Riding-Harrow, of which the following is a specification.

This invention relates to riding-harrows; and it has for its object to provide a device of this class which shall possess superior advantages in point of simplicity, durability, and general efficiency.

My invention may to some extent be described as being an improvement upon the folding harrow for which Letters Patent of the United States No. 709,589 were granted to myself on the 23d day of September, 1902, inasmuch as a folding harrow embodying many of the characteristic features for which Letters Patent were granted to myself on the above-mentioned date is used in connection with my present invention. My present invention, however, is especially directed to the construction of a riding-frame by means of which the folding harrow-sections may be carried for transportation from one place to another and with which the said folding sections when unfolded may be connected for operation.

My invention then consists in certain improvements in the construction of the said riding-frame, in means for connecting the same with the folding harrow-sections to support the latter either in operation or in transit, and in the general construction, arrangement, and combination of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a top plan view of my improved riding-harrow, showing the same in position for operation. Fig. 2 is a side elevation of the same. Fig. 3 is a side view showing the riding-frame and the folding sections rolled and supported by the riding-frame in position for transportation. Fig. 4 is a rear elevation showing the riding-frame and the folding sections rolled and supported in position for transportation.

Corresponding parts in the several figures are indicated by similar numerals of reference.

1 designates an arched axle, which is pro-

vided with spindles 2 2, upon which the transporting-wheels 3 3 are revolubly mounted. A tongue 4 is bolted or otherwise secured centrally to the axle, and the latter likewise supports a seat 5, which is mounted upon a spring-support 6. Braces 7 7 connect the arched axle with the tongue, said braces being extended rearwardly to form hooks 8. The front ends of said braces are extended laterally to form supporting-hooks 9.

The front end of the tongue 4 is bent or curved upwardly, and it is provided at its front end with a downwardly-extending nose-piece or bracket 10. At the angle formed by said bracket and its connection with the tongue is pivotally mounted a tongue extension 11. Said tongue extension is provided with suitably-disposed perforations for the reception of a bolt 12, adapted to engage said perforations and corresponding perforations in the brackets 10 and in the tongue 4, thereby enabling said tongue extension to be connected with the tongue in the approximately vertical position shown in Fig. 2 or in a forwardly-extending position, as shown in Fig. 3, the former position being occupied when the harrow is in operation and the latter when the harrow-sections are folded for transportation. It is obvious that the connecting-bolt 12 may also be removed and disposed in an idle perforation, when the tongue extension will be simply pivotally connected with the tongue.

Pivotally connected with the tongue are a pair of levers 14, diverging rearwardly and provided at their rear ends with pivoted hook members 15. Operating-levers 16, which are pivotally connected with the tongue, are connected by means of rods 17 with the upper front ends of the levers 14, which may thus be manipulated to raise or lower the hook members 15 at the rear ends of said levers 14. Springs 18 are disposed to normally draw the operating-levers 16 in a forward direction with a degree of tension which will be merely sufficient to sustain the said levers in an upright position, where the handles 19 at their upper ends may be readily grasped by the driver.

The harrow proper consists of two folding sections 20 20, each of which is composed of a plurality of toothed bars 21, hingedly con-

nected, as will be seen in the figures of the drawings. These folding sections are practically constructed in the manner shown and claimed in my Letters Patent No. 709,589, above referred to, with the exception that I now prefer to construct the toothed bars of flanged or U-shaped steel instead of wood, as in my former patent. Each of the toothed bars 21 is provided with a pair of hinge-links 22, provided at their ends with upstanding ears 23, the respective ears of the hinge-links overlapping each other and being connected together pivotally by rods 24, and the said ears are provided with laterally-extending stop-flanges 25. The length of the hinge-links is such as to dispose the harrow-bars 21 at the required distance apart, and the height of the laterally-extending stop-flanges 25 is such as to cause the same by engagement with one another to support the harrow-bars when the harrow is folded, as shown in Fig. 3. The harrow-bars 21, which when the harrow is in position for operation are the rearmost ones, are provided near their inner ends with permanently-attached upstanding links 26.

The hinge-rods 24, by means of which the individual toothed harrow-bars are connected, preferably extend from one hinge-link to the other, and they may be permanently secured in position, with the exception of one, (specially designated 24^a,) which when the harrow-section is folded is utilized to connect the end bars of said section, and thus retain the harrow-section in a rolled or folded position. These detachable connecting-rods or hinge-rods 24^a are furthermore utilized for the purpose of connecting the harrow-sections in operative position with a draw-bar, as shown at 28 in Figs. 1 and 2 of the drawings. This draw-bar is provided with eyes 29, adapted to fit adjacent to the front ends of the hinge-links of the two harrow-sections, which may thus be connected flexibly with the said draw-bar by means of the said hinge-rods 24^a. When the harrow is thus extended for operation, the upstanding links 26 upon the rear harrow-bars are engaged by the hook members 15, depending from the levers 14.

The extension member 11, which is connected to the tongue, is provided at its outer end with a hook 30, adapted to engage an eye 31, extending forwardly from the draw-bar. The latter is also provided with a draft-chain 32 to which draft may be applied in the ordinary manner, as by means of a doubletree 33. The extension member of the tongue also has suitably attached thereto a chain 34, terminating in a hook 35, which may be suitably connected with the draft-chain 32 at the point of attachment of the draft. When the device is adjusted for transportation, as illustrated in Fig. 3, the doubletree is preferably connected with a hook 36, depending from the tongue, as will be readily seen.

The operation and advantages of this invention will be readily understood from the foregoing description, taken in connection

with the drawings thereto annexed. When the harrow is placed in position for operation, the draft may be readily applied thereto and will drag the harrow over the ground in the usual manner. Roots, stalks, and other trash that become entangled with the harrow-teeth may be discharged from the latter by lifting the rear ends of the harrow-sections, which may be conveniently done by proper manipulation of the operating-levers 16, the handles of which are conveniently exposed to the driver.

When the device is to be folded for transportation, the draw-bar is to be disconnected from the harrow-sections and from the lower end of the tongue extension, which latter until this time has occupied an approximately vertical position. Said tongue extension is now shifted to the position shown in Fig. 3, which is accomplished by simply removing the connecting-bolt 12 and inserting the latter in the perforations provided for its reception in the tongue and in the rear end of the extension member, which is thus caused to extend in a forward direction from the tongue. The harrow-sections are now folded or rolled with their teeth pointing inward, and the front and rear bars of each section are connected by means of detachable hinge-rods 24^a. The supporting-levers 14, with their pivoted hook members, are now swung downwardly, forwardly, upwardly, and rearwardly until they rest upon the connecting-rods 17, as will be clearly seen in Fig. 3, this change of position being readily effected owing to the disposition of the connecting-springs 18. It will be observed that in this position the supporting-levers do not interfere with the attachment of the draft or with the progress of the machine. The rolled harrow-sections are now suspended by means of the links 26 and by means of the connecting-hinges upon the hooks 9 and 8 of the brace-rods 7, thus suspending the said harrow-sections under the arched axle between the wheels in a position which is exceedingly convenient for transportation. The hooks 9 additionally serve as foot-rests for the driver.

When the harrow is in operation as such, the tongue extension 11, as already described, occupies an approximately vertical position, thus supporting the front end of the tongue of the machine at the necessary elevation to prevent it from dropping and thereby interfering with the progress of the harrow, as will be readily understood. At the same time the application in a forward direction of the draft prevents the lower end of said tongue extension, as well as the draft-bar, from sagging upon the ground.

I have in the foregoing described what I consider to be a simple and preferred form of my invention; but I desire to have it understood that I do not limit myself to the structural details herein shown and described, but reserve the right to any changes, modifications, and alterations which may be re-

sorted to without departing from the spirit and scope of my invention and without sacrificing the utility of the same.

Having thus described my invention, I claim—

1. In a device of the class described, a carrying-frame comprising an arched axle, a tongue, and braces connecting said tongue with said axle, said braces being provided at their front ends with laterally-extending hooks and at their rear ends with rearwardly-extending hooks.

2. In a device of the class described, a carrying-frame comprising an arched axle, a tongue, braces having supporting-hooks, and an extension-tongue pivotally connected with the main tongue.

3. In a device of the class described, a carrying-frame comprising an axle, a tongue, braces having supporting-hooks, an extension-tongue pivotally connected with the main tongue, and means for connecting the said extension-tongue with the main tongue, in a forwardly-extending and in a downwardly-extending position.

4. In a device of the class described, a carrying-frame comprising an arched axle, a tongue, and braces provided with hooks, the front hooks extending laterally from said braces and forming supporting-hooks and foot-rests.

5. In a device of the class described, a carrying-frame comprising an arched axle, a forwardly-extending tongue having a downwardly-extending bracket at the front end thereof, an extension pivotally connected with the front end of said tongue, and means for securing said extension at various adjustments.

6. In a device of the class described, a carrying-frame comprising an arched axle, a tongue, braces provided with supporting-hooks, levers having pivoted supporting-hooks, operating-levers connected with the tongue, and rods connecting the latter with the supporting-levers.

7. In a device of the class described, a supporting-frame comprising an arched axle, a tongue, braces having supporting foot-rests, supporting-levers pivotally connected with the tongue and having pivoted supporting-hooks, operating-levers connected with the tongue, connecting means between the latter and the supporting-levers, and traction-springs disposed to force the operating-levers normally in a forward direction.

8. In a device of the class described, a supporting-frame comprising an arched axle, a tongue, and braces having supporting-hooks, supporting-levers connected with the tongue having pivoted hooks, and means for operat-

ing said supporting-levers, in combination with harrow-sections having upstanding supporting-links.

9. The combination with harrow-sections having detachable connecting-rods and upstanding links, of a riding attachment comprising an arched axle, a tongue, braces connecting the tongue with the axle and having rearwardly and laterally extending hooks, supporting-levers connected with the tongue having hinged hook members, means for manipulating said supporting-levers, a hinged extension at the front end of the tongue, and means for securing said extension at various adjustments.

10. In a device of the class described, the combination of harrow-sections, a riding attachment comprising an arched axle and forwardly-extending tongue having braces provided with supporting-hooks, operating-levers pivoted to the tongue, supporting-hooks, levers connected with the tongue and carrying said supporting-hooks, connecting means between the hook-carrying levers and the operating-levers, a hinged tongue extension having a hook member at its lower end, a draw-bar having an eye engaged by said hook, means for connecting the harrow-sections with said draw-bar, and means for attaching draft to the latter.

11. In a device of the class described, a riding-frame comprising an arched axle, a forwardly-extending tongue having a downward-extending bracket at its front end, an extension pivotally connected with the front end of said tongue and provided with a hook at its outer end, means for securing said tongue extension at various adjustments, a draw-bar having a draft attachment and an eye connected with the hook at the outer end of the tongue extension, and a chain connected with the tongue extension and connected with the draft attachment.

12. In a device of the class described, a riding-frame having a tongue, supporting-levers pivotally connected with said tongue and having hinged supporting-hooks, operating-levers pivotally connected with the tongue, rods connecting said operating-levers with said supporting-levers, and springs connecting said operating-levers with the tongue whereby said supporting-levers may be turned upon their pivots to be suspended from or supported upon the connecting-rods.

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

ALVA T. UPTON.

Witnesses:

NORMAN A. PIERCY,
JOHN K. MOSS.