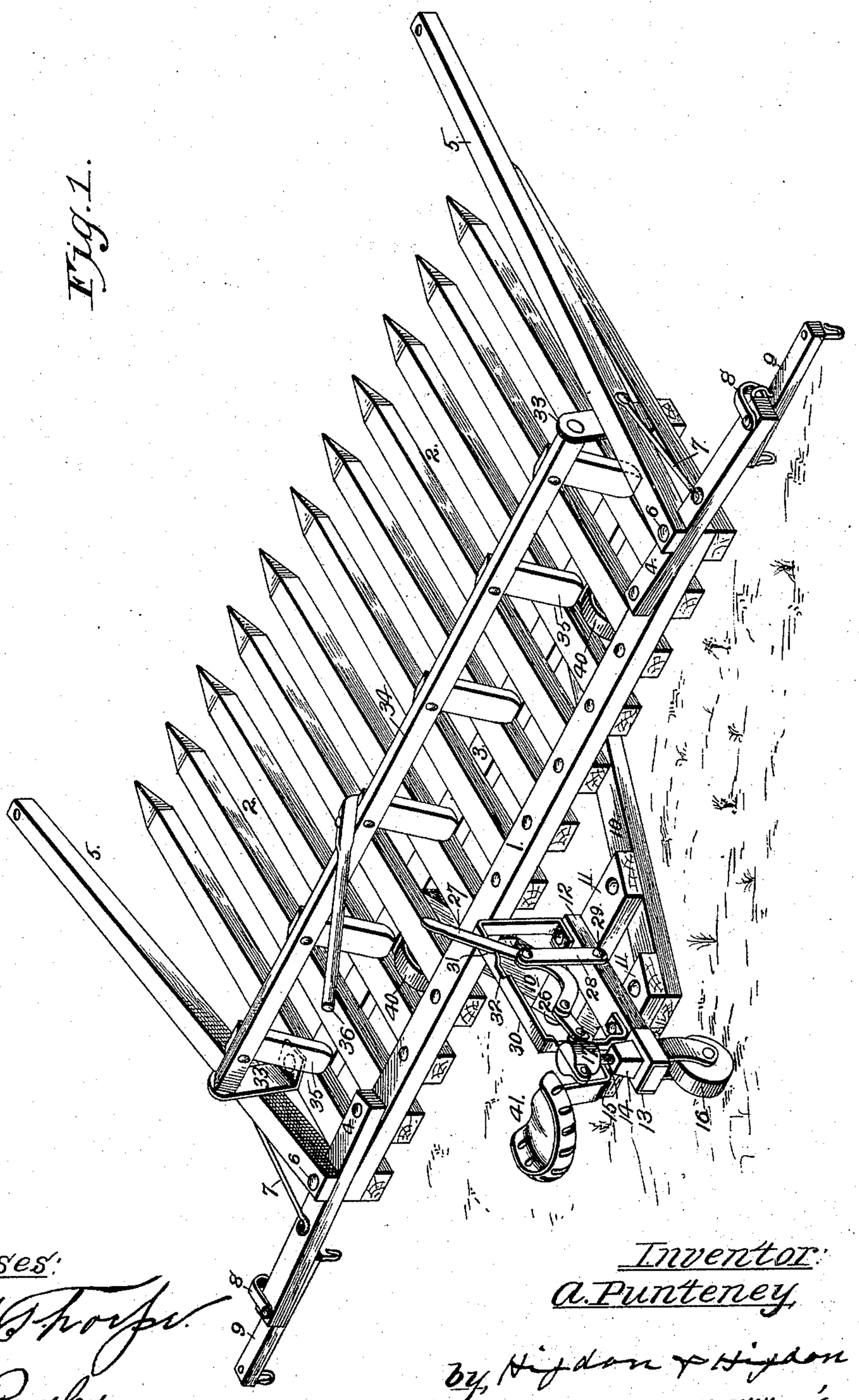
(No Model.) 2 Sheets—Sheet 1.

A. PUNTENEY.

SWEEP RAKE.

No. 567,771. Patented Sept. 15, 1896.

Fig. 1.



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(No Model.) 2 Sheets—Sheet 2.

A. PUNTENEY.

SWEEP RAKE.

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Fig. 2.

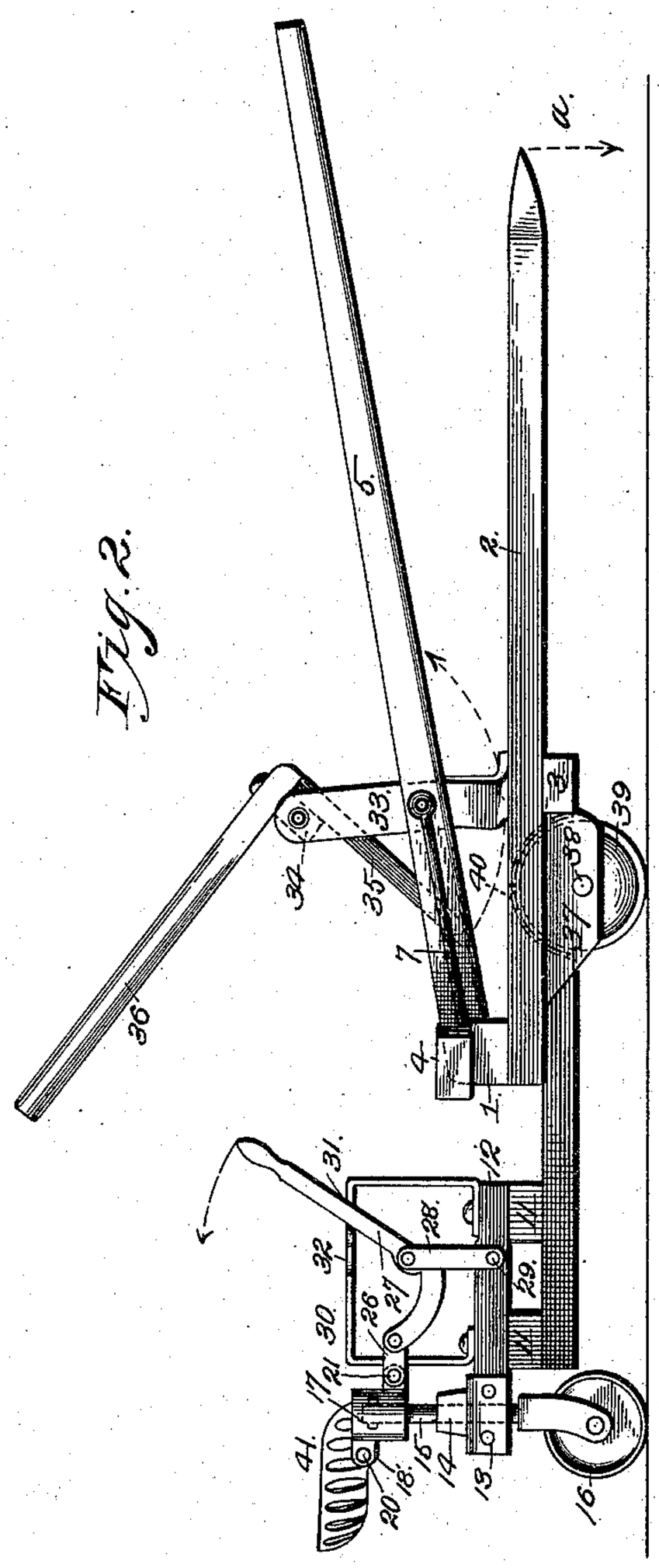


Fig. 5.

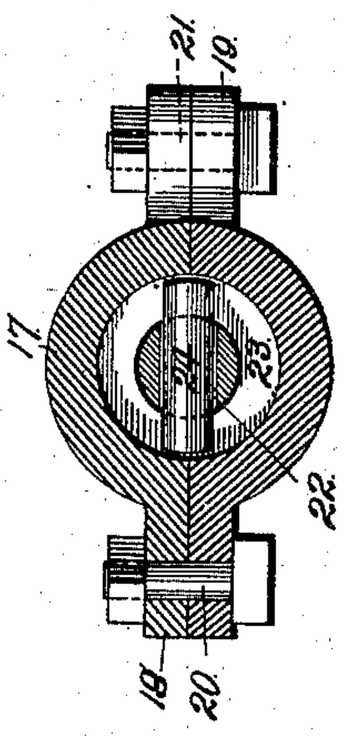


Fig. 4.

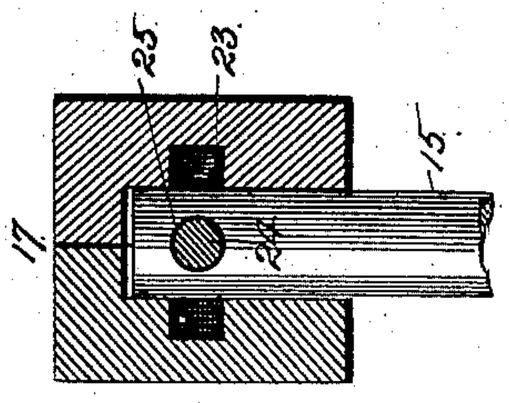
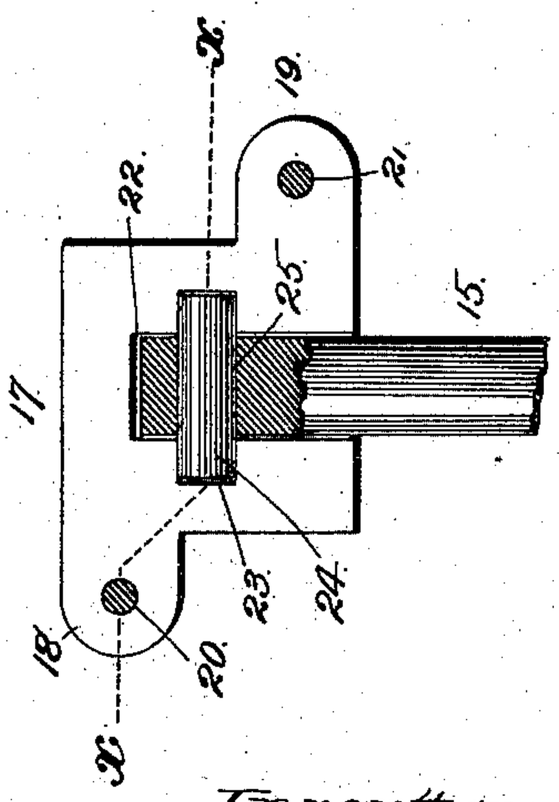


Fig. 3.



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UNITED STATES PATENT OFFICE.

ARCHIBALD PUNTENEY, OF KANSAS CITY, MISSOURI.

SWEEP-RAKE.

SPECIFICATION forming part of Letters Patent No. 567,771, dated September 15, 1896.

Application filed February 17, 1896. Serial No. 579,622. (No model.)

To all whom it may concern:

Be it known that I, ARCHIBALD PUNTENEY, of Kansas City, Jackson county, Missouri, have invented certain new and useful Improvements in Sweep-Rakes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part thereof.

My invention relates to rakes, and more particularly to improvements in that class known as "sweep-rakes;" and the object of the invention is to generally improve the mechanism for raising or lowering the rake.

A still further object of the invention is to produce a rake embodying these improvements which is of light draft and strong, durable, and comparatively inexpensive of manufacture.

To these ends the invention consists in certain novel and peculiar features of construction and arrangement, as hereinafter described and claimed.

In order that the invention may be fully understood, reference is to be had to the accompanying drawings, in which—

Figure 1 represents in perspective a sweep-rake constructed in accordance with my invention. Fig. 2 represents, on a larger scale, a side elevation of the same. Fig. 3 represents in section the upper end of the caster-wheel standard and shows the same embraced by one half or one section of the coupling block or casting, and shows also a bearing-pin journaled loosely in said standard and said coupling-section. Fig. 4 represents a vertical section of the coupling-block and of the pin, taken at right angles to the section shown in Fig. 3; and Fig. 5 is a horizontal section taken on the line $x\ x$ of Fig. 3, these three figures being shown on a much larger scale in Figs. 1 and 2.

In the said drawings, 1 designates a transverse bar, to the under side of which the rear ends of a number of rake-teeth 2 are bolted, said rake-teeth being arranged parallel with each other and at right angles to the bar 1. A suitable distance forward of and parallel with the bar 1 is a second transverse bar 3, which is bolted to the under side of said teeth.

4 designates bars which are bolted to the opposite ends of the bar 1 and project outward and very slightly to the rear, preferably, and 5 designates draft-bars or tongues which diverge slightly to the front and are secured upon bars 4 by bolts 6, which bolts serve also as a means of securing together the bars 1 and 4 and the end teeth of the rake. Said tongues or draft-bars 5 are braced from outward movement by means of the rods 7, which connect them with the bars 4.

8 designates clips which are pivoted to the outer ends of the bars 4 and are coupled loosely to the singletrees 9 in the customary manner. To these singletrees the draft-animals are hitched in the usual manner.

10 designates bars which are bolted rigidly to the under side of the rake-frame and centrally thereof and converge at equal angles to the rear, where they are united by parallel cross-beams 11, and bolted in turn to the upper side of said cross-beams and centrally thereof is the longitudinal bar 12, upon the rear end of which is secured a reinforcing metallic sleeve 13, provided with an upwardly-projecting boss or lug 14, in which is loosely journaled the vertical cylindrical standard 15 of the caster-wheel 16.

17 designates a casting or metallic coupling which is cylindrical in form and comprises two similar halves or sections, from the rear upper ends of which project the lugs 18 and from the front lower ends the similar lugs 19. The sections are secured together by bolts 20 and 21, which extend through the lugs 18 and 19. Each section is formed with a semicylindrical cavity, which conjointly form the cylindrical hole or opening 22, in which the upper end of the caster-standard 15 is loosely journaled, and said sections are also provided with semicircular grooves or channels, which together form the single circular groove or channel 23, into which the opposite end of the hardened-steel pin 24 loosely projects, said pin being loosely journaled also in the opening 25 of said standard, as shown clearly in Figs. 3, 4, and 5.

26 designates a short link which is pivotally mounted at its rear end upon the bolt 21 and is pivotally bolted at its opposite end to one end of the lever 27, which lever is pivotally connected to the upper end of a swinging link 28, pivotally mounted in turn upon the bolt 29, secured to the longitudinal bar 12. Adjacent to said lever and bolted rigidly upon the bar 12 is the frame 30, provided with the notches 31 and 32 for engagement at times

with the lever 27, which lever, it may be observed, is preferably of spring metal, so that when it is thrown into one of said notches it will hold such position until the operator disconnects it, as will be readily understood.

Bolted to the end rack-bars above the bar 3 are standards 33, and said standards brace and are braced in turn by the tongues or draft-bars 5, to which they are bolted. Said standards 33 provide a support for a swinging hay-discharge frame which is constructed as follows: 34 designates a transverse bar which is pivotally connected at its opposite ends to the upper ends of said standards, and 35 a number of depending teeth which are secured at their upper ends to said bar. 36 designates a handle, which is bolted also to said bar near its middle, whereby said hay-discharge frame may be pivotally operated. Depending from the rake a suitable distance from its rear end are the bearing-blocks 37, in which are secured the axles 38 of the supporting-wheels 39, and said supporting-wheels are inclosed at their upper sides by the guards 40, so as to prevent the hay being caught and entangled with the said wheel. The driver's seat 41 is arranged within convenient distance of the levers 27 and 36 and is supported in the customary manner by a standard of the framework.

In the practical operation of the machine as it is drawn across the field the lever 27 is in engagement with the notch 32. In moving to such position, because the rear end of the lever is fulcrumed to the link 26, carried by the substantially-fixed coupling 17, the link 28, together with the rear end of the machine, is lifted until the bearing-lug 14 is adjacent to the lower side of said coupling, and the front end of the rake, which tilts upon the front wheels, is depressed to the position indicated by the head of the arrow *a*. Occupying this downwardly and forwardly inclined position, it is obvious that in the travel of the machine the hay encountered is caused to roll or pile upon the rake, and each fresh charge of hay gathered by the rake forces that already accumulated farther to the rear, until finally, when the machine is fully loaded, the hay is packed thereon to the rear as well as forward of the axis of the wheels, so that the load is practically balanced upon the machine. As it accumulates in such quantity upon the rake its natural tendency is to move rearward and over the rear end of the same, but this is prevented by the swinging frame hereinbefore described. When a sufficient quantity of hay is gathered upon the rake, the driver grasps the lever 27, disengages it from the notch 32, and forces it forward into engagement with the notch 31, thereby lowering the rear end of the machine to the position shown in Figs. 1 and 2 and raising the front end of the rake until the teeth 2 occupy a horizontal plane. The driver needs to exert himself only slightly in this operation, because of the fact of a part of the load being rearward of the axis of the front wheels, which form the pivot or balancing point of the rake, and it is evident that the draft-animals are also relieved in a considerable degree. When the stack is reached, the lever is again thrown rearward to its original position, so as to tilt the front end of the rake downwardly, and the machine is trailed rearwardly, and at the same time the swinging frame is moved in the direction indicated by the arrow, Fig. 2, so as to accelerate the discharge of the hay from the rake, which saves considerable time and inconvenience in that it is delivered at the precise point desired. The hinged frame being located and arranged as described prevents hay from falling over the rake when fully loaded and when traveling to the stack, and as a result cleaner and better work is done.

As a means both for relieving the draft-animals of considerable work and of increasing the durability of the machine I have provided the connection between the operating-lever and the caster-standard illustrated clearly in Figs. 3, 4, and 5. The method of securing said coupling and said standard together provides a simple, strong, and durable, and yet practically an antifriction connection between the coupling and standard, and the pin 24, which bears most of the work and strain at this point, is mounted loosely in the standard and groove of the coupling.

From the above description it is obvious that I have produced a sweep-rake which will be found of great service and by which the work may be expedited and the draft-animals relieved in a considerable degree.

Having thus described the invention, what I claim as new, and desire to secure by Letters Patent, is—

The combination, in a sweep-rake, of a suitable frame mounted upon wheels, rearwardly-converging bars secured to said frame, transverse bars connecting the rear ends of said converging bars, a short longitudinal bar secured upon the transverse bars, a notched or rack frame secured to said bar, a bearing-boss also secured to the same, a caster-carrying standard journaled in the said boss, a cross-pin carried at its upper end, a cylindrical coupling mounted upon the upper end of said caster-carrying standard, and provided with an annular horizontal groove engaged by the projecting ends of said cross-pin, a link pivoted to said coupling, a lever pivoted at its lower end to said link, and adapted to engage said rack-bar, and a link uniting said lever outward of its pivotal point with the said longitudinal bar, substantially as described.

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

ARCHIBALD PUNTENEY.

Witnesses:

M. R. REMLEY,

G. Y. THORPE.