

(No Model.)

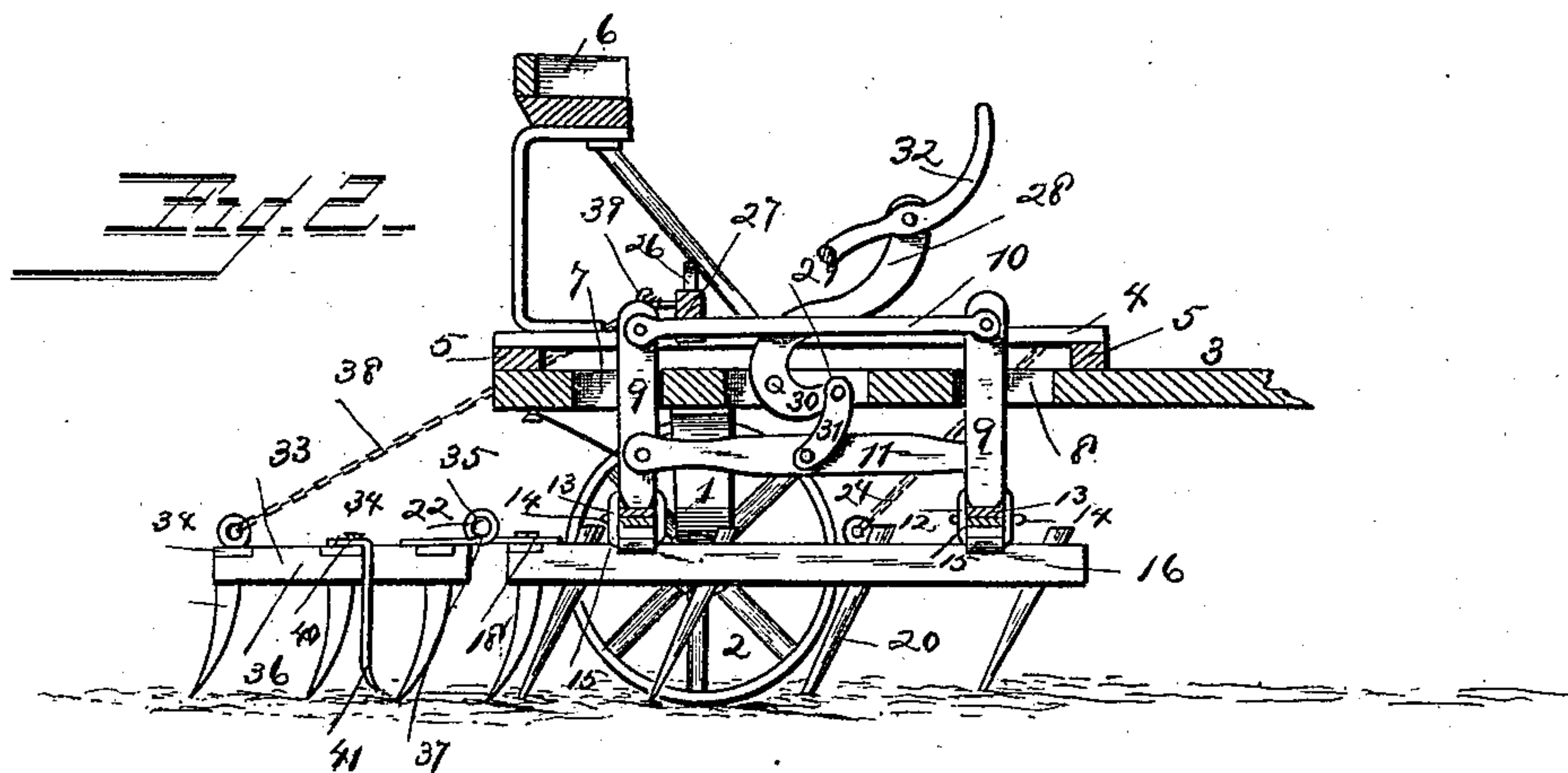
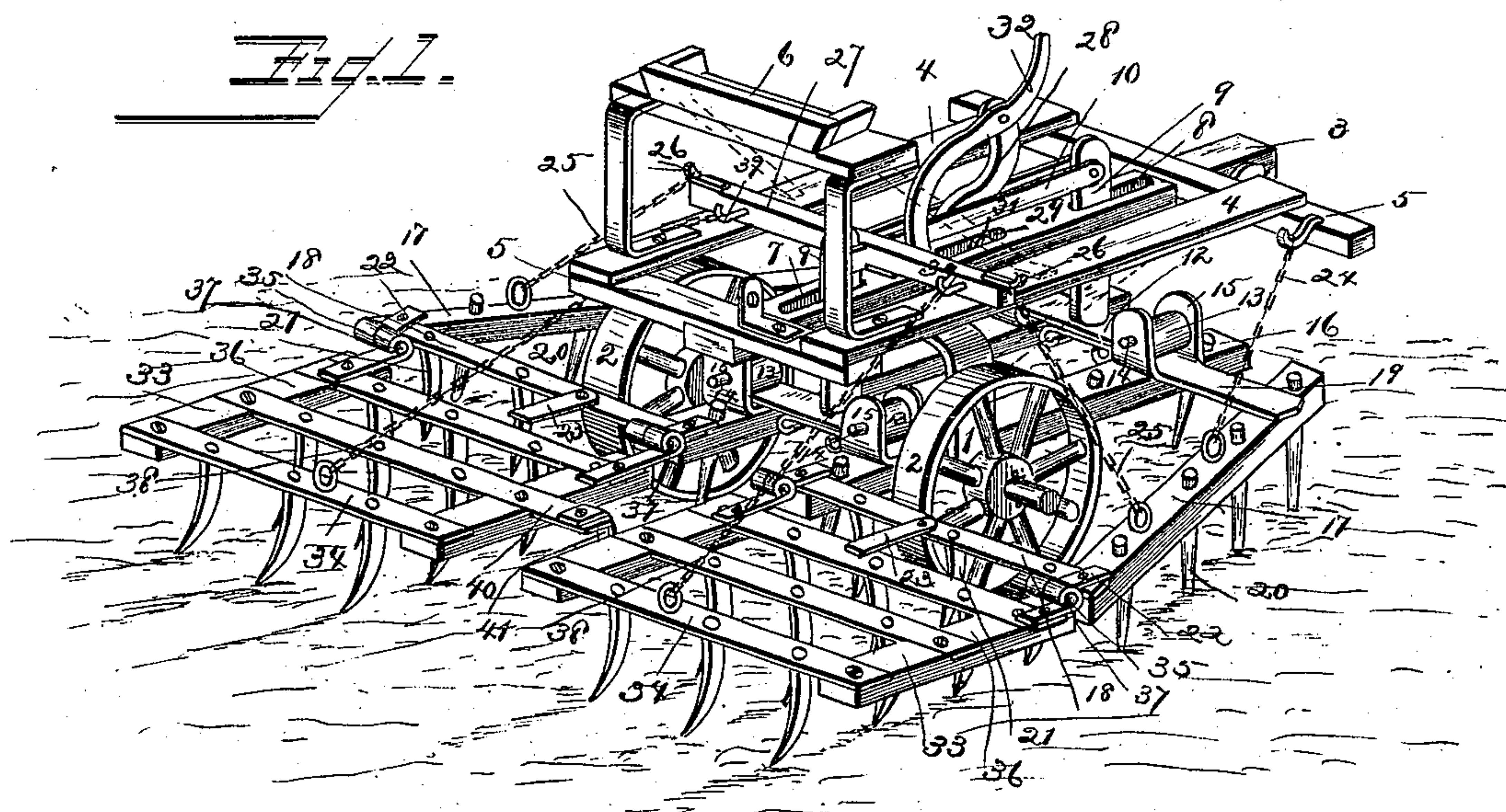
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G. F. CLARK.

HARROW.

No. 354,772.

Patented Dec. 21, 1886.



WITNESSES

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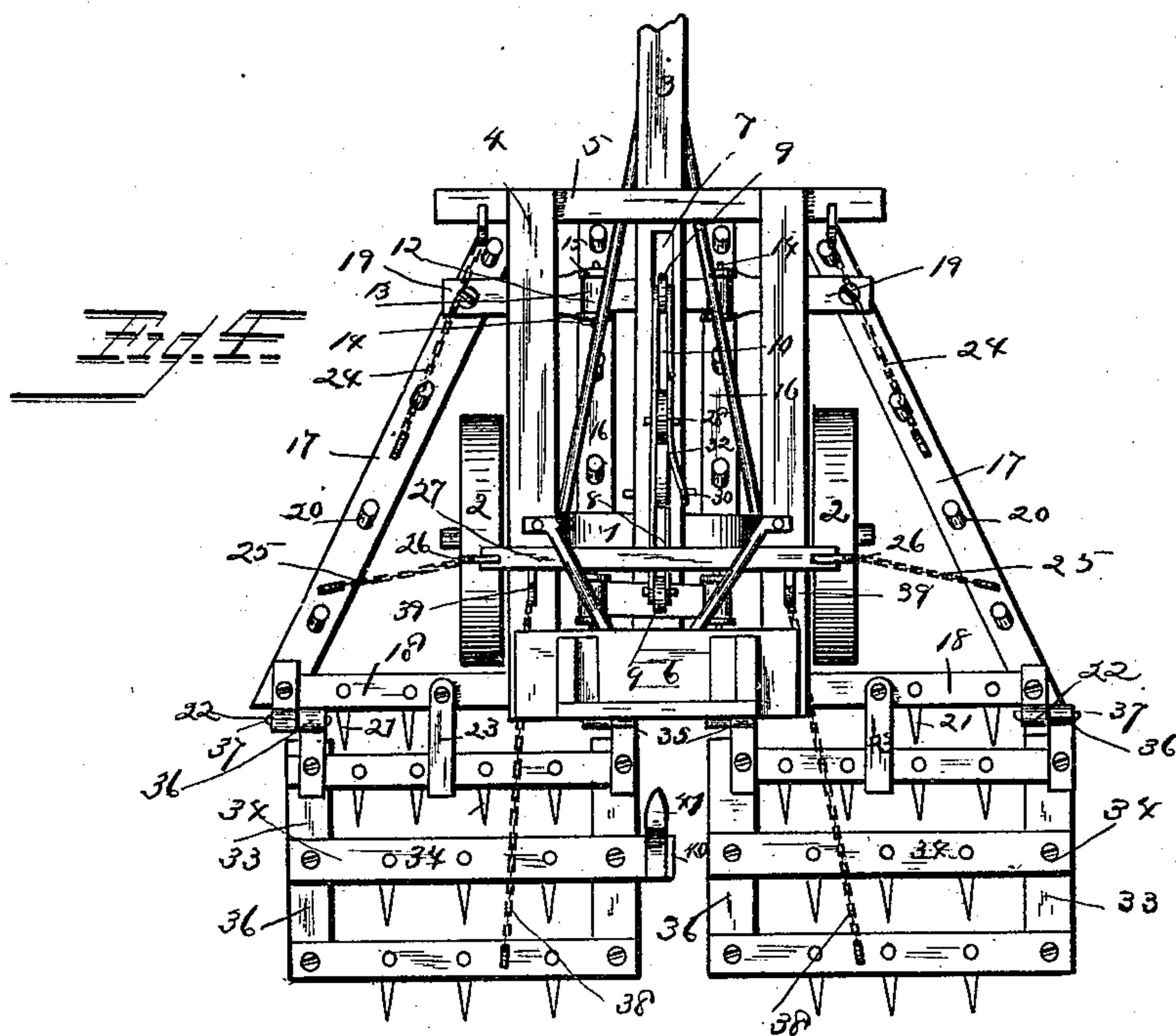
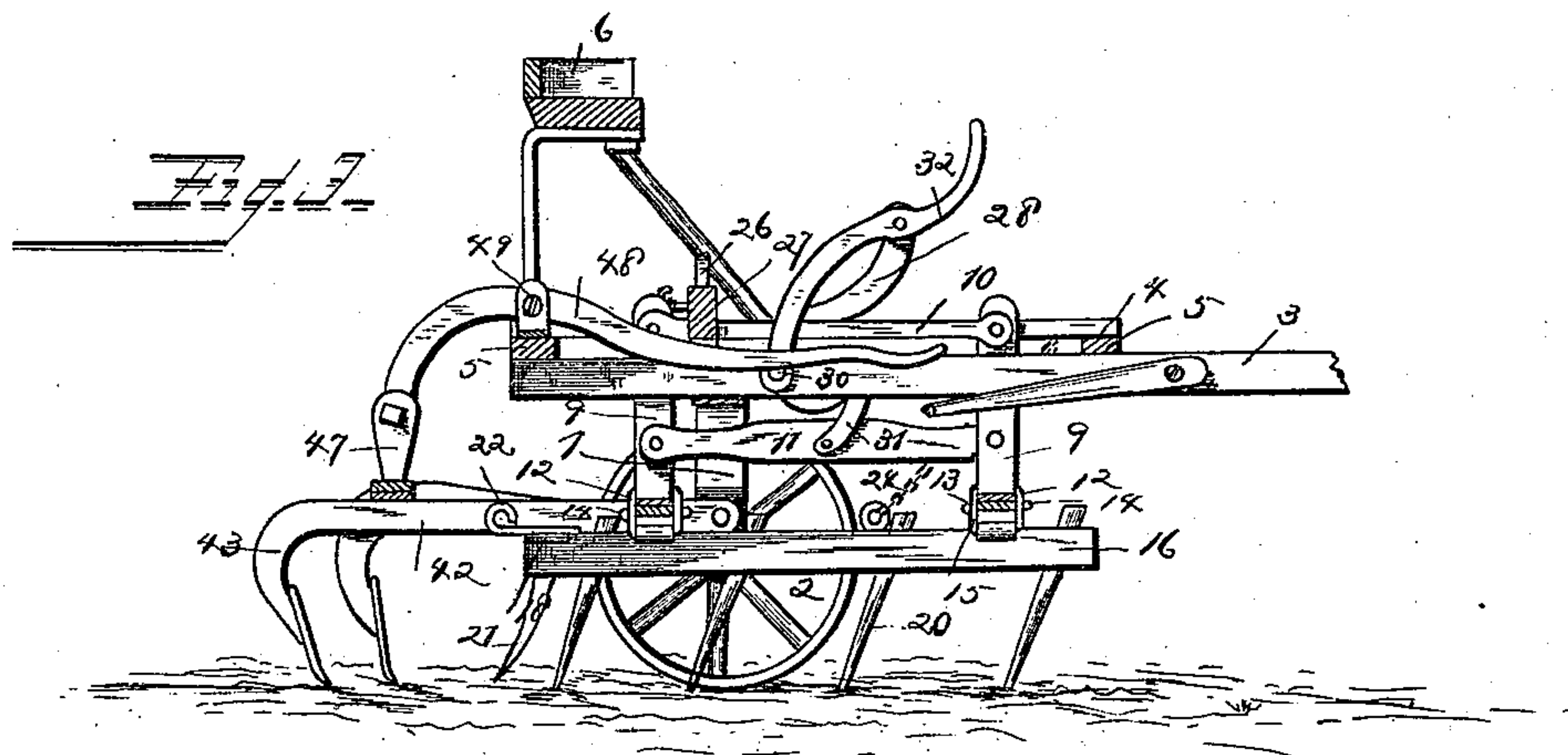
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# UNITED STATES PATENT OFFICE.

GEORGE F. CLARK, OF RAVENSWOOD, WEST VIRGINIA.

## HARROW.

SPECIFICATION forming part of Letters Patent No. 354,772, dated December 21, 1886.

Application filed September 10, 1886. Serial No. 213,221. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE F. CLARK, a citizen of the United States, and a resident of Ravenswood, in the county of Jackson and State of West Virginia, have invented certain new and useful Improvements in Harrows; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a perspective view of my improved harrow and cultivator, showing the cultivator-beams removed. Fig. 2 is a longitudinal vertical sectional view of the same. Fig. 3 is a similar view of the frame, showing the cultivators in place and the rear harrows removed; and Fig. 4 is a top view of the machine with the harrows.

Similar numerals of reference indicate corresponding parts in all the figures.

My invention has relation to harrows and cultivators in which a wheeled sulky-frame is provided with detachable harrows and cultivator-beams which may be raised and lowered at will, and which may be removed and attached, according to the class of work to be done; and it consists in the improved construction and combination of parts of such a harrow, as hereinafter more fully described and claimed.

In the accompanying drawings, the numeral 1 indicates an arched axle having the wheels 2 journaled upon its outwardly-bent ends, and having the tongue 3 secured to its middle, and a rectangular frame, 4, is secured with the middles of its end pieces, 5, to this tongue, having a seat, 6, supported above it upon the rear portions of its side pieces.

The tongue is formed with two longitudinal slots, 7 and 8, near the forward and rear ends of the rectangular frame, and flat bars 9 project downwardly in these slots, and are connected at their upper ends by two flat longitudinal bars, 10, and at their lower ends by a longitudinal bar, 11. The lower ends of the vertical bars are formed with transverse yokes 12, having eyes 13 at the ends, which eyes are pivoted upon bolts 14, passing through

pairs of perforated lips 15 upon the inner longitudinal beams, 16, of two harrows, the said harrows having besides the longitudinal beams side beams, 17, converging with their forward ends, and secured at their forward and rear ends by flat bars 18 and 19.

The harrow-beams are provided with rearwardly-inclined teeth 20, and have rearwardly-curved sharpened teeth 21 upon the rear cross-bars, and the ends of these cross-bars are provided with rearwardly-projecting eyes 22 and with rearwardly-projecting flat springs 23. Chains 24 are secured to the forward portions of the oblique outer side beams and to the forward end piece of the rectangular frame, and chains 25 are secured to the rear portions of the oblique beams and to hooks 26 at the ends of a transverse bar, 27, secured with its middle upon the two flat horizontal bars connecting the upper ends of the vertical bars.

An S-shaped lever, 28, is pivoted at its lower curve in a longitudinal slot, 29, in the tongue, upon a bolt, 30, passing through the tongue, and the forwardly-projecting lower end of this lever has a bar, 31, pivoted to it, the lower end of which bar is pivoted to the middle of the lower horizontal flat bar. A hand-lever, 32, is pivoted upon the pivotal bolt of the S-shaped lever, and has the upper end of the said lever pivoted to it near its upper end, so that the S-shaped lever is tilted by the hand-lever, which is within easy reach from the seat for the driver.

Harrow-frames 33, having rearwardly-curved teeth upon their flat cross-bars 34, are formed with eyes 35 at the forward ends of the longitudinal beams 36, and are pivoted to the eyes at the rear ends of the forward harrow-frames by means of bolts 37, passing through the eyes, the flat springs resting against the forward cross-bars of the rear harrow-frames and serving to hold them down, and chains 38 are secured to the rear cross-bars of the rear harrows and to hooks 39 upon the cross-bar upon the upper horizontal flat bars. The inner end, 40, of one of the cross-bars of one of the rear harrows is extended beyond the beam, and has a marking-tooth, 41, secured upon it.

When the rear harrow-frames are not used, the forward ends of cultivator-beams 42 may be pivoted detachably upon the vertical por-



tions of the arched axle, and these cultivator-beams are provided with inwardly-bent bars 43, having each a series of perforations, 44, into which a bolt, 45, may fit, the bars sliding 5 with their ends upon each other, one bar having downwardly-projecting tongues or lips 46 at its edges, which will serve as guides for the bar sliding below the bar having the lips.

The bar having the lips is provided with an 10 upwardly-projecting flat and perforated stud, 47, to which the rear end of a foot-lever, 48, is pivoted, the said lever being fulcrumed upon a stud, 49, upon the rear end piece of the rectangular frame, and having its forward end 15 projecting under the seat for the driver.

It will thus be seen that the sulky-frame may have the forward and rear harrows attached to it, and may be used for harrowing, the harrows being raised or lowered by means of the 20 hand-lever, and the rear frames may be removed and the cultivators be attached, when the said cultivators may be raised by means of the foot-lever, and, if desired, the forward frames may also be detached, when the frame 25 will be used only with the cultivators.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

In a wheel-harrow, the combination of a

rectangular wheeled frame, flat bars sliding 30 vertically in slots in the tongue within the frame, and having their upper ends connected by flat horizontal bars, and having their lower portions connected by a flat horizontal bar, and provided at the lower ends with transverse 35 yokes formed with eyes at their ends, an S-shaped lever fulcrumed near its lower curved end in a slot in the tongue, and having a bar at its forwardly-curved end, pivoted to it and to the lower horizontal bar, a hand-lever piv- 40 oted upon the fulcrum-bolt of the S-shaped lever, and having the upper end of the said lever pivoted to the hand-lever, a transverse bar upon the rear portions of the upper horizontal bars, and harrow-frames secured to the 45 eyed ends of the yokes with their inner beams, and having chains secured to their outer beams, secured to the forward end of the frame, and chains secured to the rear portions of the said beams and to hooks at the ends of the cross- 50 bar, as and for the purpose shown and set forth.

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

GEORGE F. CLARK.

Witnesses:

W. C. BAILEY,  
I. B. ROBERTS.