(No Model.)

# W. D. GRAY.

## SUPPORT FOR SHAKING SCREENS.

No. 454,130. Patented June 16, 1891.

Fig. 1.
on line x-x.

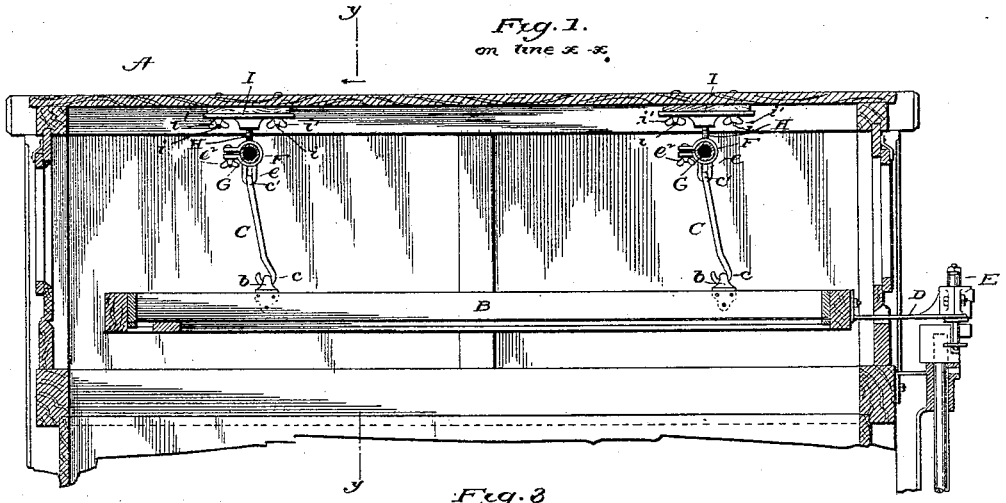



Fig. 3
on line 3-3

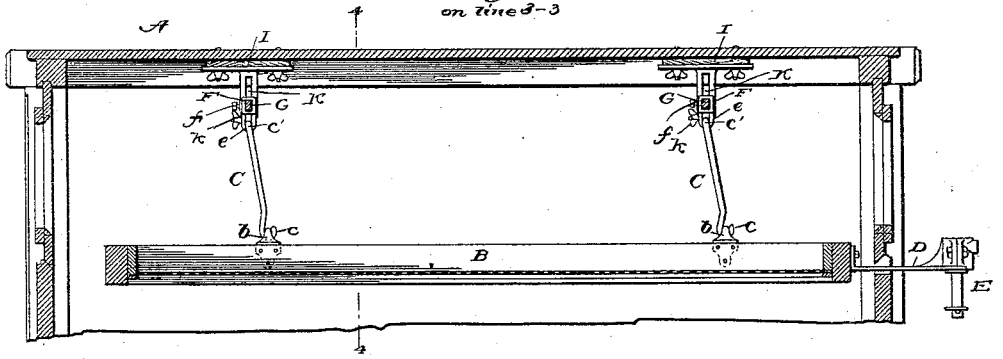



Fig. 2.
on line y-y

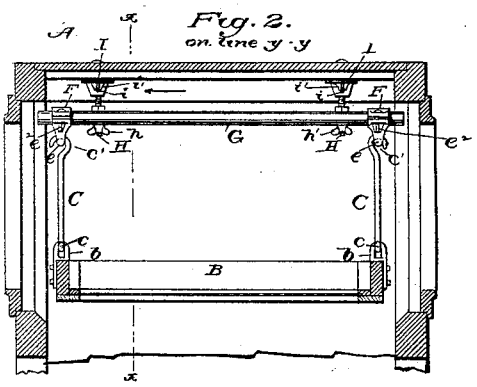
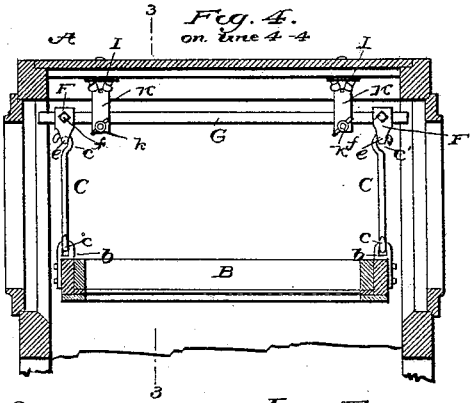



Fig. 4.
on line 4-4



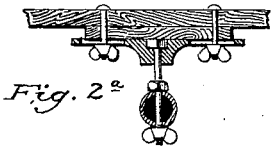



Fig. 2a

Witnesses:

W. W. Mortimer.

W. R. Kennedy.

Inventor:

W. D. Gray

By P. J. Dodge

Atty.

# UNITED STATES PATENT OFFICE.

WILLIAM D. GRAY, OF MILWAUKEE, WISCONSIN, ASSIGNOR TO THE EDWARD P. ALLIS COMPANY, OF SAME PLACE.

## SUPPORT FOR SHAKING-SCREENS.

SPECIFICATION forming part of Letters Patent No. 454,130, dated June 16, 1891.

Application filed March 26, 1890. Renewed November 29, 1890. Serial No. 373,065. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM D. GRAY, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain Improvements in Supports for Shaking-Screens, of which the following is a specification.

This invention relates to that class of machines in which a horizontal screen supported by suspension devices is given a circulatory motion—that is to say, is moved both laterally and longitudinally. In order to secure a proper action of the screen, it is found desirable to provide for the adjustment of the suspending-links at their upper ends both vertically and horizontally, and it is to the means for supporting and adjusting the upper ends of the links that the present invention relates.

As the means for operating the screen and the other parts of the machine may be in all respects of ordinary construction, and form no part of the present invention, it is deemed unnecessary to represent them in the drawings.

In the accompanying drawings, Figure 1 is a longitudinal vertical section through the upper part of a scalping or grading machine with my invention incorporated therein, the section being taken on the line $x\ x$ of Fig. 2. Fig. 2 is a vertical cross-section of the same on the line $y\ y$ of Fig. 1. Fig. $2^a$ is a detail view of a portion of the suspension devices, looking in the direction indicated by the arrow in Fig. 2. Fig. 3 is a longitudinal section of my improvement in a slightly-modified form, the section being taken on the line 3 3 of Fig. 4. Fig. 4 is a cross-section on the line 4 4 of Fig. 3.

Referring to the drawings, A represents the upper part of the main frame or casing; B, the horizontal or practically horizontal screen consisting, as usual, of a rectangular frame provided in the under side with bolting-cloth, wire-gauze, or other suitable pervious material.

C C are the four pendent links by means of which the screen is suspended from the top of the frame in such manner that it may move longitudinally and laterally. The mechanism for thus actuating the screen with a horizontal circulatory motion may be of any suitable character.

As shown in the drawings, the screen is connected at one end by a rigid arm D to a vertical crank-pin E. The links C are formed at the lower end with a hook $c$, passed loosely through an eye-plate $b$, bolted to the screen-frame. Each link is also formed at the upper end with a hook $c'$, passed loosely through an ear $e$ on the under side of a sleeve F, which encircles and is sustained by a horizontal bar G, extending across the interior of the machine. The bar G is preferably made of tubular form and carries at opposite ends the sleeves for the two links. Each of the sleeves in Figs. 1 and 2 is divided on one side and its edges united by a thumb-screw $e^2$, by which it may be contracted so as to tightly clasp the supporting-bar. This arrangement permits the sleeves F to be adjusted transversely of the machine on the bar G, or so as to shift the upper ends of the sustaining-links inward or outward, as required. Each of the cross-bars G is sustained by two threaded rods H, extending downward from the top of the frame through the bar and provided with nuts $h$ and $h'$, which admit of the bar and its adjustments being raised and lowered, so as to vary the height and inclination of the screen. The rods or screws H are fixed at their upper ends with horizontal plates I, which are seated against blocks on the top of the frame and secured by vertical bolts $i$, passing through the top of the frame and through slots in the plate. The bolts are provided in their lower ends with thumb-screws $i'$, which admit of the plate being released, so that it may be shifted horizontally in the direction of the length of the machine. This adjustment admits of the upper ends of the links being thrown forward or backward at will.

It is to be observed that the parts above described admit of the upper end of each link being raised, lowered, and moved horizontally in the direction of the length or of the width of the machine, as required. In brief, provision is made for the universal adjustment of the suspending-links at their upper ends.

Referring to the construction shown in Figs. 3 and 4, the links and their connections to

the screen are precisely the same as in the preceding figures. The links are hooked, as in the first example, at their upper ends through ears on the sleeves F, mounted on opposite ends of horizontal bars G, extending transversely of the machine. The bars in this case are of square form in cross-section and the sleeves F are adjustably secured thereon by the set-screw *f*. The bar G, instead of being sustained, as in the first example, by the vertical rods passing therethrough is sustained by vertically slotted or divided arms K, extending downward from plates I, which latter are constructed and attached to the top of the frame in precisely the same manner as the plates I of the preceding figures. The depending arms K are each provided at the lower end with a transverse contracting-screw *k*, by which the arms may be caused to pinch the bar G, in order to hold the same in position. This construction admits of the bar G being raised or lowered at will.

It will be observed that as concerns the support for the bar G the second construction differs from the first in that this bar is in the one case passed through the sustaining-arms, while in the other case the sustaining arm or rod is passed through the bar, the two arrangements permitting the same adjustment and being in effect mechanical equivalents.

Having thus described my invention, what I claim is—

1. In combination with a main frame, a screen and screen-suspending links C, the sleeves F, to which the upper ends of the links are attached, the transverse bars G, whereon the sleeves are mounted for lateral adjustment, the depending rods or arms by which the transverse bars are sustained and on which they are vertically adjustable, and the plates I, fixed to the top of the frame and adjustable lengthwise thereon.

2. The main frame, the screen, the screen-sustaining links, the sleeves by which said links are sustained, the transverse bar by which the sleeves are sustained and on which they are laterally adjustable, and rods or arms depending from the top of the frame and sustaining the transverse bar.

3. The combination of the main frame, the plates I, fixed to its top and movable lengthwise thereon, arms depending from said plates, a cross-bar sustained by said arms and adjustable vertically thereon, sleeves sustained upon the ends of said cross-bar, links having their upper ends hooked through said sleeves, and a screen attached to the lower end of said links.

4. A main frame, a transverse bar in its top, sleeves mounted on said bar and adjustable lengthwise thereon, and screen-sustaining links connected at their upper ends to said sleeves.

5. In combination with a bar, the screen-sustaining links, and a horizontal bar from which the links are suspended, horizontal plates I, sustaining the bar, said plates slotted and secured to the top of the frame by bolts, whereby the upper ends of the links may be adjusted in the direction of the length of the machine.

In testimony whereof I hereunto set my hand, this 10th day of March, 1890, in the presence of two attesting witnesses.

WILLIAM D. GRAY.

Witnesses:
WM. BANNEN,
EDW. F. BYRON.