

(No Model.)

A. W. HAAG.
GRAIN SCALPER.

No. 543,768.

Patented July 30, 1895.

Fig. 1,

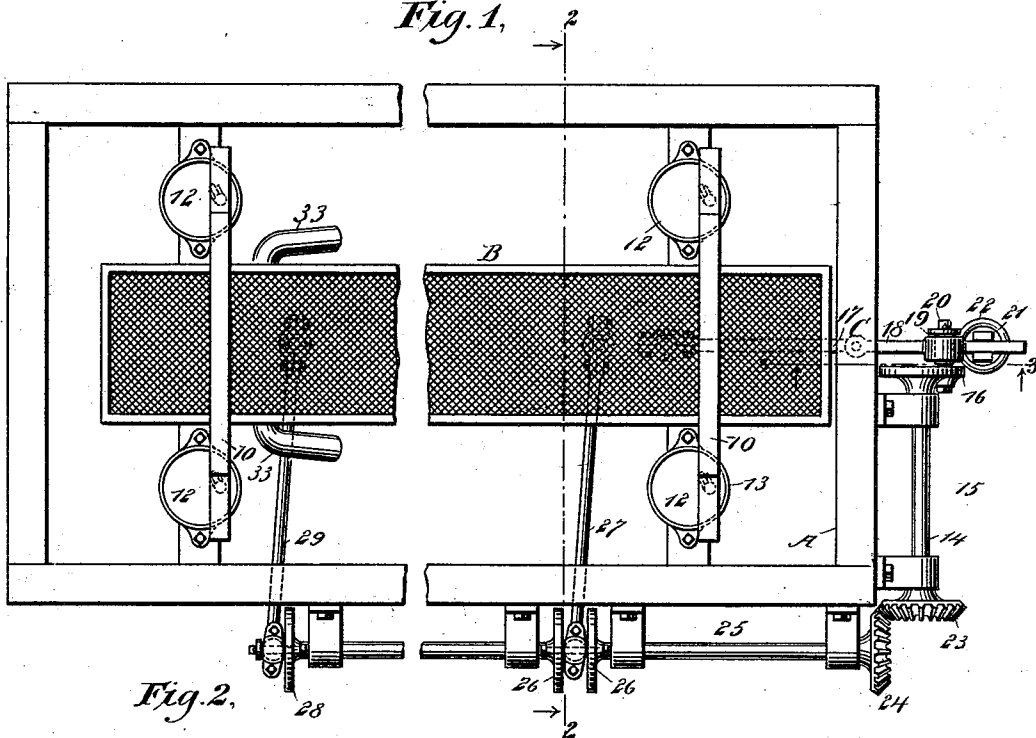


Fig. 2,

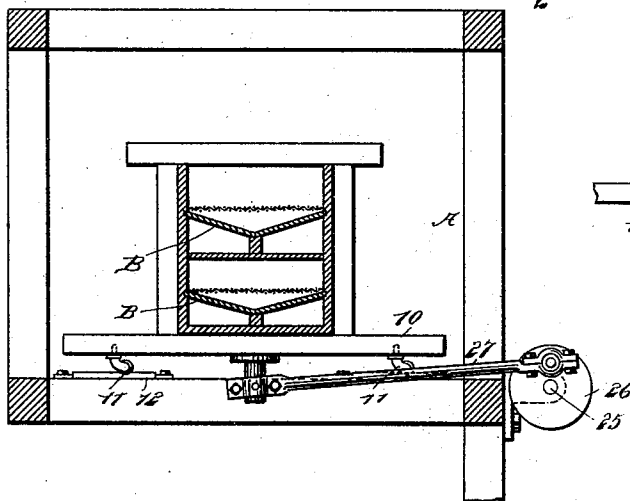


Fig. 3,

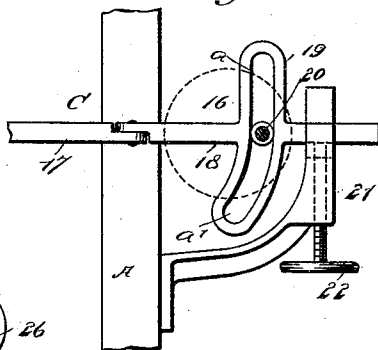
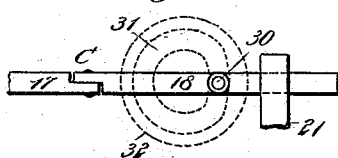


Fig. 4.



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GRAIN-SCALPER.

SPECIFICATION forming part of Letters Patent No. 543,768, dated July 30, 1895.

Application filed April 11, 1895. Serial No. 545,391. (No model.)

To all whom it may concern:

Be it known that I, ADAM W. HAAG, of Fleetwood, in the county of Berks and State of Pennsylvania, have invented a new and useful Improvement in Grain-Scalpers, of which the following is a full, clear, and exact description.

My invention relates to an improvement in grain scalpers or screens for bolting flour or like material; and it has for its object to provide a screen capable of being placed or supported in a horizontal position and means for imparting a gyratory motion to the said screen or screens, and furthermore providing for a quick return of the screens, whereby with an uninterrupted motion the screens will be rotarily reciprocated in a lateral direction, the movement of the screen rearward or in direction of its head being much greater than the movement in direction of its tail, causing the material on the return movement of the screen or screens to move in direction of the tail, thus obtaining all of the capabilities and advantages of a gyratory motion, and at the same time providing a feed for the screened material or the material being screened.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of a screen constructed in accordance with my invention. Fig. 2 is a vertical section taken substantially on the line 2 2 of Fig. 1. Fig. 3 is a detail sectional view substantially on the line 3 3 of Fig. 1, illustrating the link by means of which the quick-return movement is obtained; and Fig. 4 illustrates a cam mechanism for obtaining the same quick return.

In carrying out the invention any form of frame A may be constructed, and the screen or screens B, two of them being shown in the drawings, may be of any approved type. These two screens are illustrated as being placed in the same box and are horizontally supported—that is to say, the screens are preferably leveled as near as possible. The

frame supporting the screens B has a cross-bar 10 secured to each end projecting beyond the sides.

At each end of each cross-bar 10 a castor-wheel 11 is mounted, and these wheels are held to travel upon wear-plates 12, secured to the main frame, as shown in Fig. 1, the said plates being preferably of circular formation, and they are provided with a marginal rib 13.

At one end of the frame a drive-shaft 14 is journaled in suitable bearings, being provided with a suitable driving-pulley 15, and the said crank-shaft, at what may be termed its "inner end," is provided with a crank-disk 16, and a pitman C, constructed in two pivotally-connected sections 17 and 18, has a swivel or universal connection at the inner end of its inner section with the bottom of the screen-frame or with the bottom of the lower screen at or near the head end. The outer section 18 of the pitman C is provided preferably intermediate with its ends with a vertically-located link 19, one portion of which link is straight and the other portion curved to a greater or less extent, the straight section being designated as *a* and the curved section of the link as *a'*. The crank-pin 20 of the crank-disk 16 is provided with a friction-roller, which travels in the link in engagement with its inner walls, and the link may be adjusted so as to bring more or less of the curved portion thereof in the path of the crank-pin 20 by any suitable means—as, for example, the outer end of the pitman-sections carrying the link may be made to rest in a bracket 21, the said bracket being secured to the frame, as shown in Fig. 3, and a set-screw 22 is provided for raising or lowering the link as occasion may demand.

It is evident that as the shaft 14 is revolved the throw of the pitman will be regular while the crank-pin 20 is in the straight portion of the slot, and will be more or less shortened or quickened while the pin is traveling in the curved portion of the slot.

At the outer end of the crank-shaft a gear, preferably a miter-gear 23, is secured, which meshes with a similar gear 24 fast upon one end of a line-shaft 25 journaled at one side of the main frame A. The said line-shaft 25 is provided at or near its center with a crank-arm 26. In the drawings the said crank-arm

is shown as comprising two disks, connected by an eccentric-pin, and on this said crank-arm the outer end of a pitman 27 is mounted with a ball-and-socket connection or a universal connection, the opposite or inner end of the pitman being similarly attached to the lower screen or the frame or boxing carrying the same at one side of the center thereof, and at the opposite end of the line-shaft 25 a crank-disk 28 is secured, to the crank-pin of which the outer end of a second pitman 29 is connected by a ball-and-socket or equivalent connection, the inner end of the latter pitman being attached in similar manner to the lower portion of the screen between the center and tail end thereof. It is evident that under this arrangement of driving mechanism the two reciprocating movements—namely, the end and side movements—will combinedly form a rotary or gyratory motion especially while the crank-pin 20 on the drive-shaft has movement in the straight portion of the link of the end pitman; but when, as heretofore stated, the pin enters the curved portion of this link, the motion will be greatly accelerated yet not interrupted, and the accelerated movement will be in direction of the screen or on its return stroke; therefore a gyratory motion is obtained with a quick return, the speed of the return being under the control of the operator by means of the adjusting mechanism connected with the link, as heretofore specified.

In Fig. 4 I have illustrated another means of producing this quick return, together with the gyratory motion, and it consists in placing a pin 30 on the outer portion of the end pitman C, the pin being adapted to travel in a cam-slot 31 made in a suitable disk or wheel 32, the cam slot or race being mainly circular, but more or less flattened at one of its sides, at which point the quick motion is produced. Under this construction the grain will be screened perfectly and all of the advantages of a rotary screen will be obtained, while at the same time the feed will be perfect, since the quick return movement in direction of the head of the screen will cause the material being screened to shift in direction of the tail of said screens. The screens are provided with the usual outlets 33.

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

1. In a screen or scalper, a screen mounted

to have gyratory reciprocating movement, a drive-shaft, a line-shaft driven thereby, pitmen connecting the line-shaft with the screen, and pitmen likewise connecting the drive shaft with the screen, the two sets of pitmen being at right angles to each other, and means for guiding the end pitman partially in a straight and partially in a curved course or race, whereby the screen will have a gyratory motion and a quick return, as and for the purpose specified.

2. In a screen or scalper, a screen mounted to have gyratory reciprocating movement, a drive shaft, a line shaft driven thereby, pitmen connecting the line shaft with the screen and pitmen likewise connecting the drive shaft with the screen, the two sets of pitmen being at right angles to each other, means for guiding the end pitman partially in a straight and partially in a curved course or race, whereby the screen will have a gyratory motion and a quick return, and means, substantially as described, for adjusting the controlling device for the end pitman, whereby the return motion may be made more or less rapid, as and for the purpose specified.

3. A screen or scalper mounted to have gyratory motion and a driving mechanism comprising a drive shaft, a pitman constructed in two pivotally connected sections, and connecting the drive shaft with the said screen near one end thereof, a shaft arranged at right angles to the drive shaft and driven thereby, the said shaft being also connected by pitmen with the said screen, and means for guiding the pitman connected with the drive shaft, as and for the purpose set forth.

4. In a screen or scalper, a main frame, a screen frame mounted upon wheels or rollers, the said wheels being held to turn upon wear plates secured to the main frame, a drive shaft located at one end of the main frame, a pitman constructed in two pivotally connected sections, the inner section being connected with the screen frame and the outer section with the drive shaft, a line shaft journaled at one side of the main frame and driven from the said drive shaft, pitmen connecting the line shaft with the screen, and means for guiding the pitman connected with the drive shaft, as and for the purpose specified.

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Witnesses:

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