

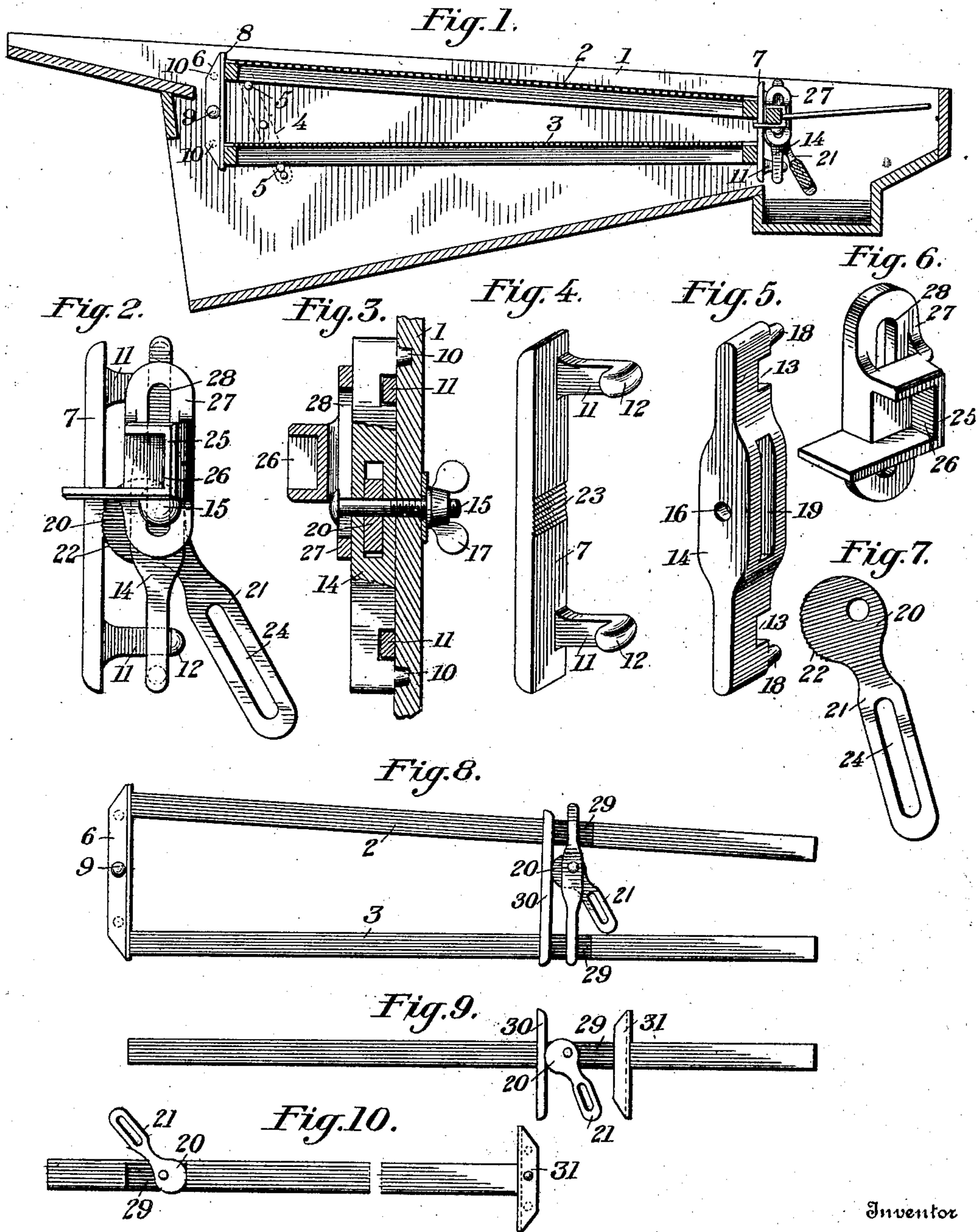
No. 688,062.

Patented Dec. 3, 1901.

O. A. BUTTERFIELD.
SIEVE HOLDER.

(Application filed Apr. 17, 1901.)

(No Model.)



Witnesses

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SIEVE-HOLDER.

SPECIFICATION forming part of Letters Patent No. 688,062, dated December 3, 1901.

Application filed April 17, 1901. Serial No. 56,255. (No model.)

To all whom it may concern:

Be it known that I, OSCAR A. BUTTERFIELD, a citizen of the United States, residing at Battlecreek, in the county of Calhoun and State of Michigan, have invented a certain new and useful Sieve-Holder, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to sieve-holders, and is designed with special reference to the shoes or separators of grain-threshing machines, the principal object of the invention being to provide simple, effective, and convenient means for firmly holding in place the sieves by means of which the chaff, weeds, straw, and other refuse material is separated from the grain and the latter thoroughly cleaned.

The sieve-holder is constructed with special reference to engaging and firmly retaining in place a plurality of sieves and for holding said sieves under various inclinations, so that the inclinations of the sieves may be readily changed, according to the nature of the work required, and removed and replaced at will, thus providing for the use of an interchangeable series of sieves.

With the above and other objects in view the invention consists in certain novel features and details of construction and arrangement of parts, as hereinafter fully described, illustrated in the drawings, and incorporated in the claims.

In the accompanying drawings, Figure 1 is a vertical longitudinal section through a shoe or separator, showing the novel means for holding and adjusting the sieves. Fig. 2 is an enlarged side elevation of the movable stop or clamping bar, supporting-bracket, and contiguous parts. Fig. 3 is a vertical section through the same, taken in line with the fulcrum-bolt. Fig. 4 is a detail perspective view of the movable stop or clamping bar. Fig. 5 is a similar view of the supporting-bracket. Fig. 6 is a similar view of one of the caps for the head or bar of the tailings-rake. Fig. 7 is a detail elevation of the operating-cam. Fig. 8 is a diagrammatic elevation illustrating a modified application of the sieve-holding device. Figs. 9 and 10

illustrate other methods of using the holding device.

Like numerals of reference denote corresponding parts in all the figures of the drawings.

In illustrating the application of the present invention I have shown a shoe 1 of the ordinary construction, the said shoe being illustrated in Fig. 1 and having arranged therein upper and lower sieves 2 and 3, respectively, the upper sieve 2 being ordinarily of larger or coarser mesh than the lower sieve 3. The said sieves are also ordinarily arranged at an angle to each other and are supported at one or both ends by means of stud-plates 4, preferably secured to the outer sides of the shoe-casing and provided with inwardly-projecting studs 5, which extend through the sides of the shoe, as shown in Fig. 1, and form supports for the sieve-frames.

In carrying out the present invention I employ a pair of fixed stops 6, preferably arranged at one end of the shoe to form an abutment for the adjacent ends of the sieves 2 and 3, and a movable stop or clamping bar 7, preferably arranged to engage the opposite ends of the sieves, the preferred arrangement being best illustrated in Fig. 1. Each of the fixed stops 6 comprises an angular flange 8, forming a seat for the ends of the screen-frames, and is held in place by means of a bolt or other suitable fastener 9, connected with the frame of the shoe or separator, and the stop is prevented from turning or twisting by providing the same with a plurality of studs 10, which enter corresponding sockets or mortises in the side portions of the frame of the shoe or separator.

The movable stop or clamping-bar (illustrated at 7) is provided at one side with guide-lugs 11, arranged, preferably, near the opposite ends thereof, and provided with terminal limiting-shoulders 12. The lugs 11 are slidably received in guide-slots 13, formed in a bracket 14, secured to one of the inner walls of the shoe or separator 1. It will be understood that two of such movable stops or clamping-bars are arranged at the same end of the sieves and with their supporting-brackets con-

nected to the opposite inner walls of the shoe. Each of the brackets is secured in place by means of a bolt 15, which passes through a hole 16 in the bracket and through the adjacent side of the shoe, the said bolt being provided with a thumb-nut 17. The bracket is prevented from twisting out of position by means of studs 18 projecting therefrom into sockets in the adjacent side of the shoe.

Mounted in a slot 19 extending lengthwise of the bracket is a cam 20, having a lever or handle extension 21, by means of which it may be operated. The said cam is mounted upon the bolt 15, which therefore forms the fulcrum of the cam, and said cam is adapted to operate against the adjacent face of the movable stop or clamping-bar 7, the cooperating faces of the cam and clamping-bar being preferably roughened or serrated, as shown at 22 and 23, to prevent relative slipping between said parts when the proper adjustment has been effected. The limiting-shoulders 12 cooperate with the bracket 14 to prevent dislocation and escape of the movable stop or clamping-bar. The oppositely-arranged handle extensions 21 of the cams are connected by a cross-bar or rail, which has its ends fitted in slots 24 in said handle extensions, thus enabling both cams to be simultaneously operated for releasing or clamping the sieves.

In order to support the tailings-rake, I provide in connection with the head or supporting-bar of said rake a pair of end caps 25, recessed, as shown at 26, to receive the ends of the rake-bar and further provided with portions 27, having slots 28 to receive the bolts 15, which hold the brackets 14 in place and which also form the fulcrums for the operating-cams. By providing the rake-head caps with the slotted portions, as shown and described, the tailings-rake may be adjusted up or down and brought to any desired elevation for carrying off the straw, chaff, weeds, and other refuse material.

While it is preferred to arrange fixed and movable stops so as to engage the ends of the sieves, it is within the scope of this invention to provide the side bars of the sieves with notches 29 and to mount the movable stop or clamping-bar and its bracket, &c., so as to lie within the notches 29 and operate against one end of the notch, as illustrated in Fig. 8. For holding a single sieve in place the cam 20 may be mounted on a stud-bolt connected directly with the frame of the shoe or separator and may bear against the movable stop or clamping-bar, (designated at 30 in Fig. 9,) while the fixed stop (shown at 31) may be arranged in the same notch 29 in the side bar of the sieve-frame. It is also practical to arrange the cam, as shown in Fig. 10, so as to operate directly against one of the end walls of the notch 29 and locate the fixed stop 31 at the end of the sieve-frame. Under any of the arrangements described the holding device employs, essen-

tially, a fixed stop or abutment and an operating-cam which acts either directly or indirectly on the sieve to force the same firmly into engagement with the fixed stop.

From the foregoing description it will be seen that a plurality of sieves may be firmly held at any desired elevation and at any required inclination with respect to each other or to a horizontal plane. It will further be seen that any variation in the length of sieves, due either to manufacture or to wear, will be compensated for, as the movable stop or clamping-bar 7 has a loose sliding engagement with its supporting-bracket, so that it will automatically adjust itself and change its angle, so as to bear firmly against the adjacent ends of both of the sieves clamped thereby. It will further be appreciated that the operations of clamping, releasing, and adjusting the sieves can be rapidly performed, and when the adjustment is made the sieves will be firmly held in place and prevented from rattling or working loose.

I do not desire to be limited to the exact arrangement and manner of carrying out the details of arrangement hereinabove particularly set forth, and accordingly reserve the right to change, modify, or vary the construction within the scope of the appended claims.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. The combination with a sieve and a shoe or like support therefor, of sieve-holding means comprising a fixed stop, a movable stop, a supporting-bracket for the movable stop, and a cam mounted on the bracket and operating against the movable stop, to press the sieve firmly and immovably against the fixed stop.

2. The combination with a sieve, and a shoe or like support therefor, of sieve-holding means comprising a fixed stop, a movable stop having a plane abutting face for the sieve, a supporting-bracket having guide-notches, guide-lugs on the movable stop working in said notches, and a cam on the bracket cooperating with the movable stop.

3. The combination with a sieve and a shoe or like support therefor, of sieve-holding means comprising a fixed stop, a movable stop, a supporting-bracket for the movable stop having guide-notches, guide-lugs on the movable stop playing in said notches and provided with limiting-shoulders, and a cam mounted on the bracket and operating against the movable stop.

4. The combination with a sieve and a shoe or like support therefor, of sieve-holding means comprising a pair of fixed stops, a pair of movable stops, supporting-brackets for the movable stops, cams on the brackets operating against the movable stops, tailings rake-caps having slotted portions adjustably con-

ned to the brackets, and clamping devices associated with the slotted portions of said caps.

5 The combination with a sieve and a shoe or like support therefor, of sieve - holding means comprising fixed stops, movable stops, supporting-brackets for the movable stops, cams on the brackets operating against the movable stops, tailings rake-caps each pro-

vided with a slotted portion, and a clamping- id bolt therefor passing through the bracket and also forming a bearing for the cam.

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

OSCAR A. BUTTERFIELD.

Witnesses:

C. P. ALDRICH,
CHAS. E. ROAT.