

J. A. SMILLIE.
SIEVE CLEANER.
APPLICATION FILED MAY 27, 1911.

1,009,348.

Patented Nov. 21, 1911.

2 SHEETS—SHEET 1.

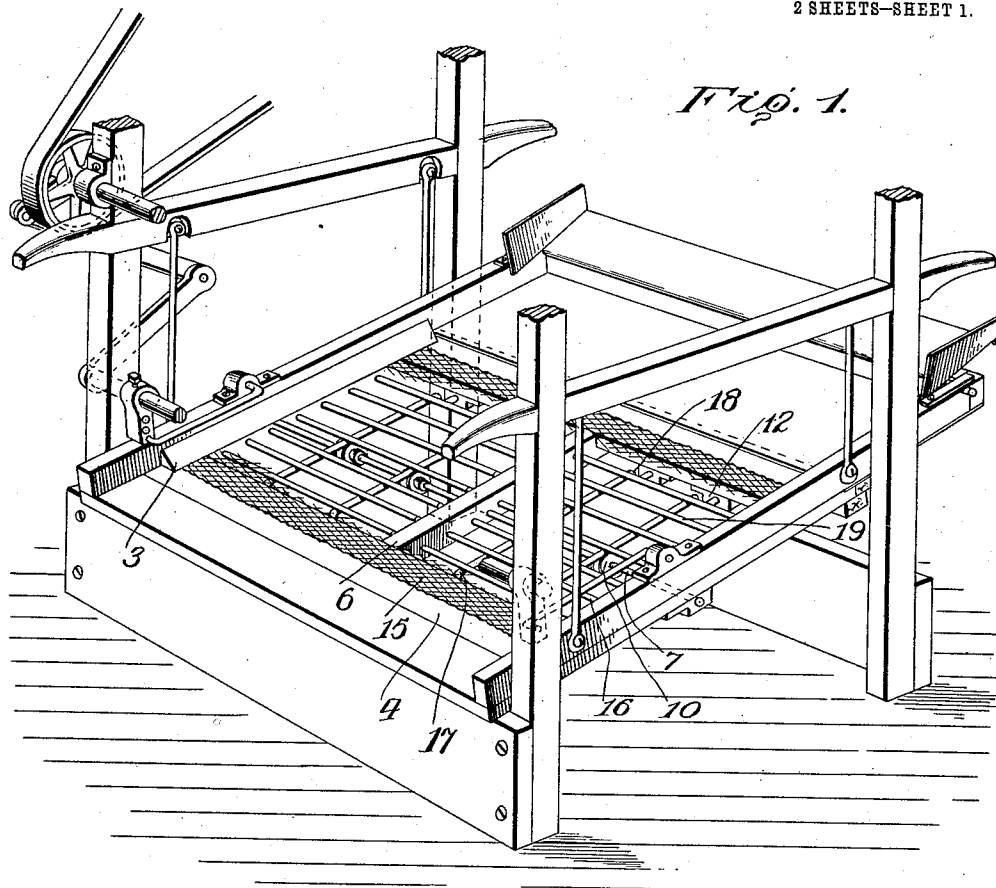
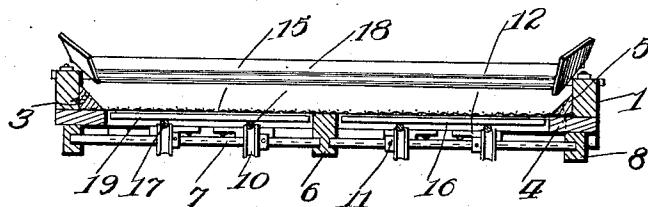


Fig. 4.



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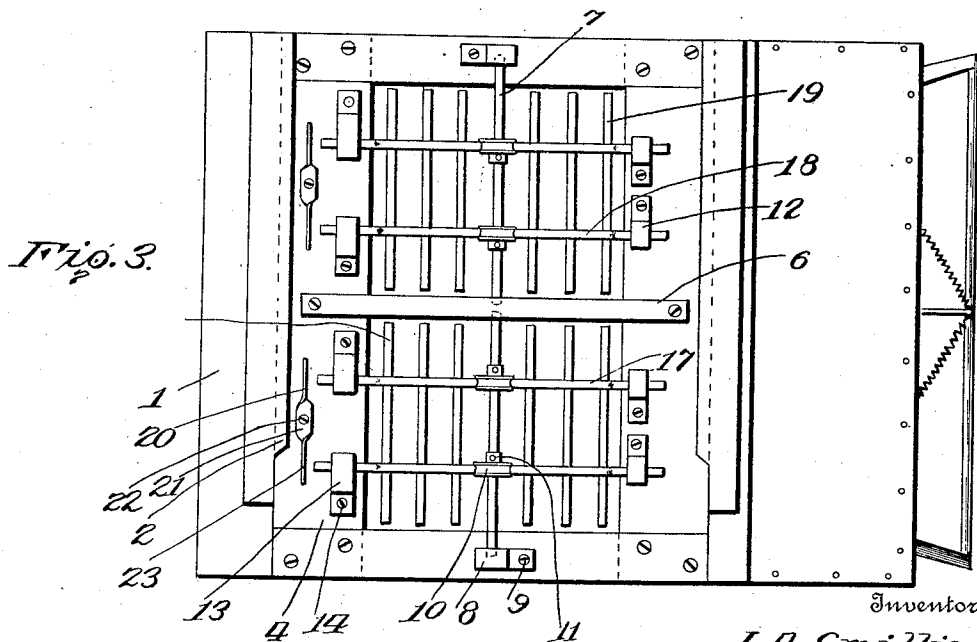
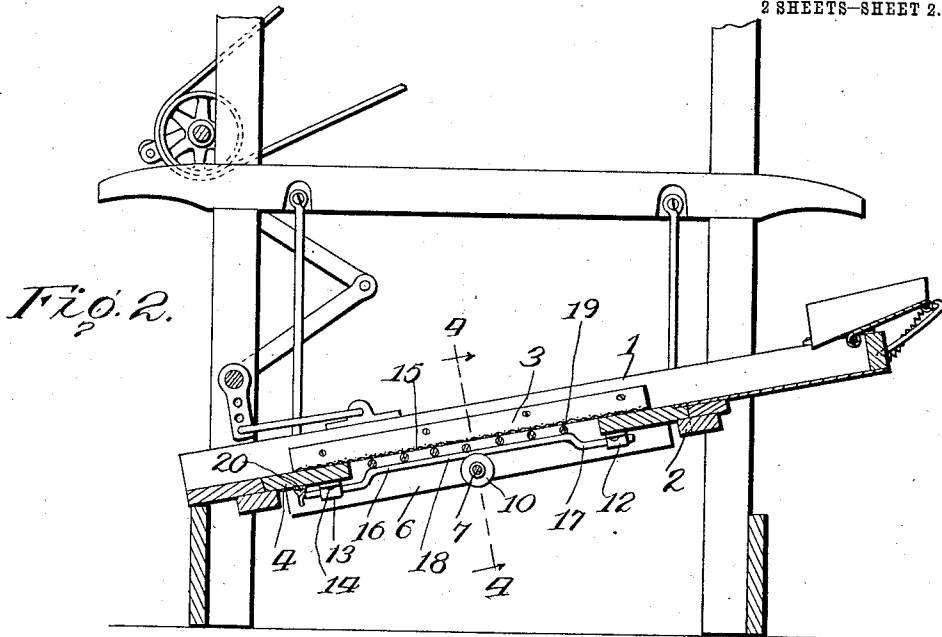
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UNITED STATES PATENT OFFICE.

JAMES A. SMILLIE, OF HAMILTON, NORTH DAKOTA.

SIEVE-CLEANER.

1,009,348.

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Application filed May 27, 1911. Serial No. 629,819.

To all whom it may concern:

Be it known that I, JAMES A. SMILLIE, citizen of the United States, residing at Hamilton, in the county of Pembina and State of North Dakota, have invented certain new and useful Improvements in Sieve-Cleaners, of which the following is a specification.

This invention has relation to sieve cleaners especially adapted to be used upon fanning mills, and has for its object to provide a simple device in the form of an attachment adapted to be applied to the sieve and which is mounted for reciprocation longitudinally of the sieve in the same direction in which the sieve reciprocates, but in unison with the same.

The cleaner is in the form of a grill and is so located below the sieve that as the sieve reverses its movement the cleaner is continuing its movement, whereby its parts pass transversely under the meshes of the sieve and force objects out of the same which may have become lodged therein. These objects are usually wild oats, dirt, sticks, etc.

For a full understanding of the invention reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a perspective view of a portion of a fan frame with a sieve attached thereto and the cleaner applied to the sieve; Fig. 2 is a sectional view of the same; Fig. 3 is an under plan view of the sieve and cleaner; and Fig. 4 is a cross sectional view of the sieve and cleaner cut on the line 4—4 of Fig. 2.

Corresponding and like parts are referred to in the following description and indicated in all the views of the accompanying drawings by the same reference characters.

As indicated in the accompanying drawings, 1 represents a shoe which is mounted for reciprocation upon the frame of a fanning mill in any usual or appropriate manner. The shoe in plan is rectangular and is provided with a central opening the upper and lower edges of which are provided with ledges 2 which extend transversely across the shoe but terminate short at their ends or on one side thereof. A bead 3 is attached to the inner surface of that side of the shoe 1 which is spaced from the ends of the ledges 2.

The sieve to which the cleaner is to be applied may be of any desired pattern, and

that shown consists of an open frame 4 rectangular in shape and provided in the vicinity of one edge portion and upon its upper side with a bead 5 which is adapted to bear against the side of the shoe 1 devoid of a bead. The opening in the frame 4 is divided longitudinally by a bar 6 into two openings of greater length than breadth and which have their long dimensions in alignment with the direction in which the shoe 1 reciprocates.

Transversely disposed shafts 7 are journaled at their inner ends in the bar 6 approximately midway between the ends thereof and at their outer ends the said shafts 7 are journaled in bearings 8 which are held in secured positions at the side edges of the frame 4 and upon the under surface of the same by means of securing devices 9. Bearing rollers 10 are mounted upon the intermediate portions of the shafts 7 and are held in adjusted positions thereon by means of set screws 11. Bearings 12 are fixed to the under side of the frame 4 at the upper portion thereof, and bearings 13 somewhat longer than the bearings 12 are fixed to the under side of the frame 4 at the lower portion thereof. The bearings 13 are held in fixed positions by means of securing devices 14, but by loosening these devices the said bearings 13 may be swung upon the devices as pivots for a purpose which will be hereinafter explained.

The opening or openings in the frame 4 are covered by a sieve 15 in the usual manner. Grills 16 are supported by the bearings 12 and 13 for sliding movement longitudinally with relation to the frame 4. These grills consist of longitudinally disposed supporting rods 17 which have their end portions slidably received in the bearings 12 and 13. The intermediate portions of the rods 17 are arched up toward the under side of the sieve 15 as at 18. Cross rods 19 are mounted upon the supporting rods 17 and are spaced a slight distance from the lower surface of the sieve 15. Springs 20, of peculiar configuration, are attached to the under side of the frame 4 below the bearings 13 and have end portions which extend transversely across the openings through the said bearings but spaced from the same and which are adapted to be engaged by the lower ends of the rods 17 at times. These springs are formed from single strips of metal having inter-

mediate portions 21 which lie flat against the under surface of the frame 4 and which are held by securing devices 22. The end portions of the said springs are twisted at right angles to the intermediate portions 21, as at 23, and these are the portions that extend transversely across the openings provided in the bearings 13. The intermediate portions of the supporting rods 17 bear upon the peripheries of the rollers 10 mounted upon the shafts 7.

When it is desired to remove a grill 16 from the frame 4, the securing device 9 of that bearing 8 under the grill intended to be removed is loosened and the said bearing is swung on the said securing device so that it releases its shaft 7 and the said shaft 7 together with its rollers 10 are removed from the bar 6. The securing devices 14 of the bearings 13 are then loosened and the said bearings are swung so that they release the lower ends of the supporting rods 17. Then the upper ends of the said rods are slipped longitudinally out of the bearings 12. To place a grill in position upon the frame 4 the operation just above described is reversed. The grills are of the same shape and arrangement at their opposite ends and consequently they may be taken out and reversed in their positions in the frame should the upper surfaces of the cross rods become worn more at one side than at the other.

When the grills are in position and the frame is in the shoe 1 and the shoe is reciprocated, as is usual in fanning mills, the grills 16 will be carried by the shoe as the shoe moves in one direction, but when the shoe changes its direction of movement the said grills will have a tendency to remain inert and consequently the upper sides of the cross rods 19 will wipe under the sieve 15 and any bodies sticking in the mesh thereof and projecting down below the same will be pushed up and dislodged, thus giving the same a chance to roll down the sieve and making it possible to keep the mesh of the sieve clear.

The shoe and frame 1 are held in inclined position in the frame of the fan, as is usual, and consequently when the shoe is moved in a downward direction the grills 16 are carried down, but when the shoe begins to move in an upward direction the lower ends of the supporting rods 17 come in contact

with the end portions 23 of the springs 20 which at this time serve as buffers to check the downward movement of the grills, but when the shoe begins to move downward from an upward direction the tension in the end portions 23 of the springs 20 comes into play and has a tendency to continue the upward movement of the grills during the initial downward movement of the shoe. Therefore the rods 19 are again wiped across the mesh of the sieve and any lodged particles are dislodged therefrom as above described. During the reciprocation of the grills 16 with relation to the frame 4 as above indicated the rods 17 pass along the rollers 10 and thus the grills are supported without undue friction in the bearings 12 and 13 and the intermediate cross rods 19 are held in proper relation to the under surface of the sieve 15.

The arched portions 18 of the rods 17 are of such length that the grills 16 may reciprocate between the upper and lower side pieces of the frame 4 and the end portions 23 of the springs 20 prevent the lower ends of the said arched portions 18 of the rods 17 from striking the inner edge of the lower piece of the frame 4 and mutilating the same.

Having thus described the invention, what is claimed as new is:—

1. In combination with a sieve, bearings located at the under side thereof, longitudinally disposed rods having their end portions slidably received in said bearings and provided with intermediate arched portions, cross rods carried by the first mentioned rods and located under the sieve, and a shaft extending transversely of the grill and having rollers upon which the arched portions of the first mentioned rods bear.

2. In combination with a sieve, bearings located on the under side thereof, longitudinally disposed rods slidably mounted in the bearings, cross rods carried by the first mentioned rods, and a spring mounted upon the under side of the sieve and having free end portions located in the paths of movement of the first mentioned rods.

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

JAMES A. SMILLIE. [L. s.]

Witnesses:

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