

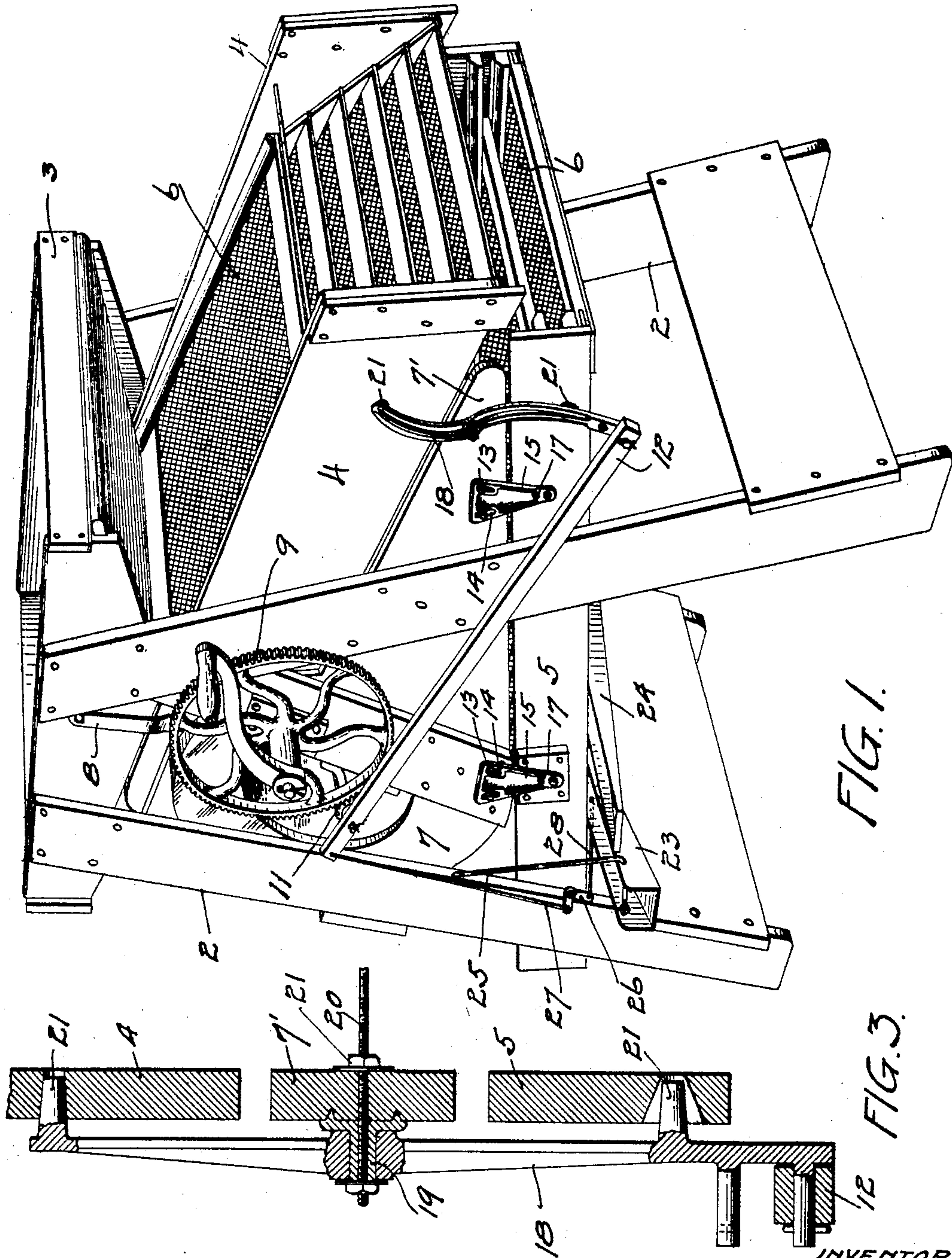
No. 803,558.

PATENTED NOV. 7, 1905.

A. V. CLELAND.
FANNING MILL.

APPLICATION FILED AUG. 23, 1904.

2 SHEETS—SHEET 1.



WITNESSES
M. M. Davis
C. B. Hanson

INVENTOR
ANDREW V. CLELAND
BY *Paul Paul*
HIS ATTORNEYS

No. 803,558.

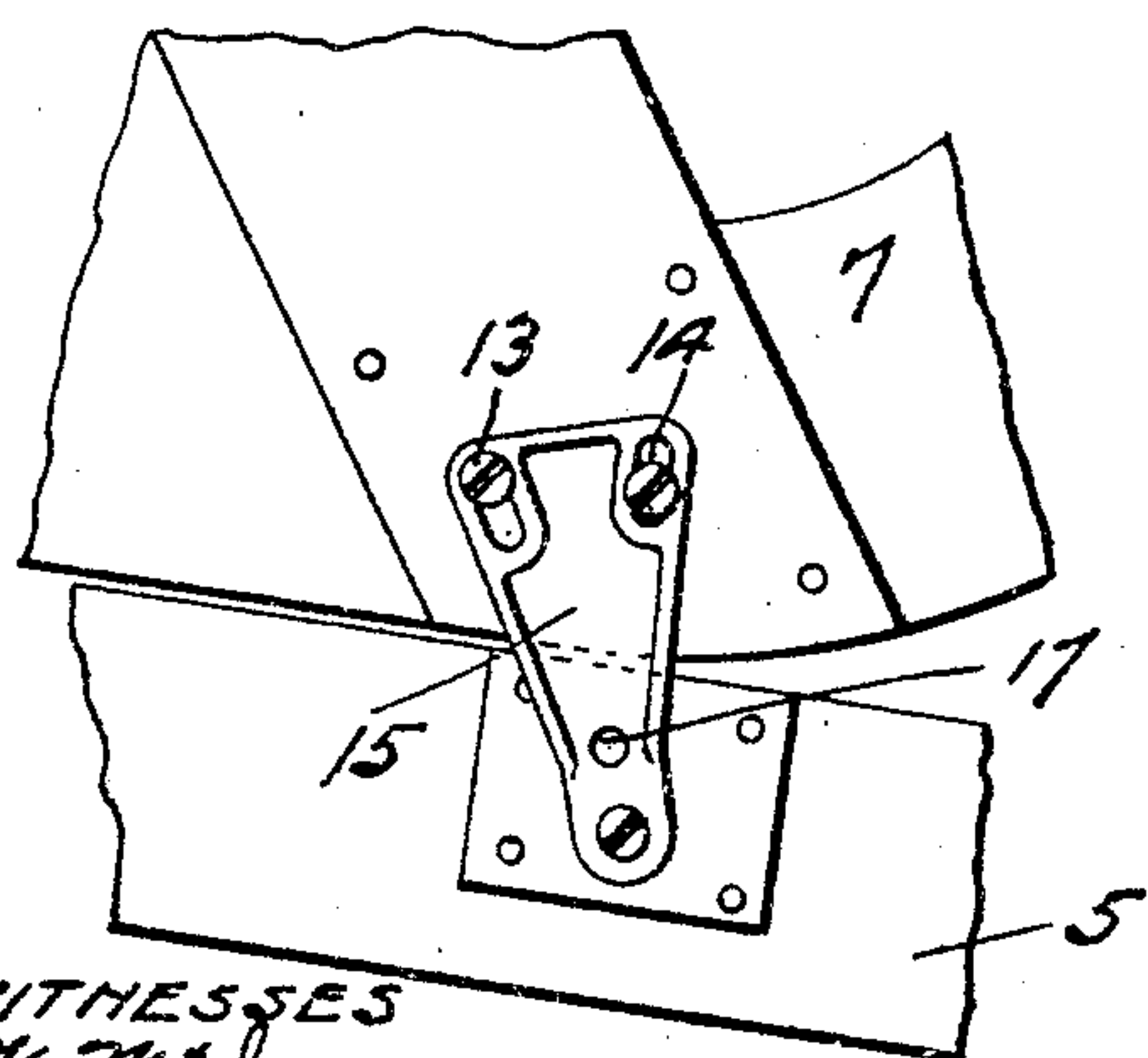
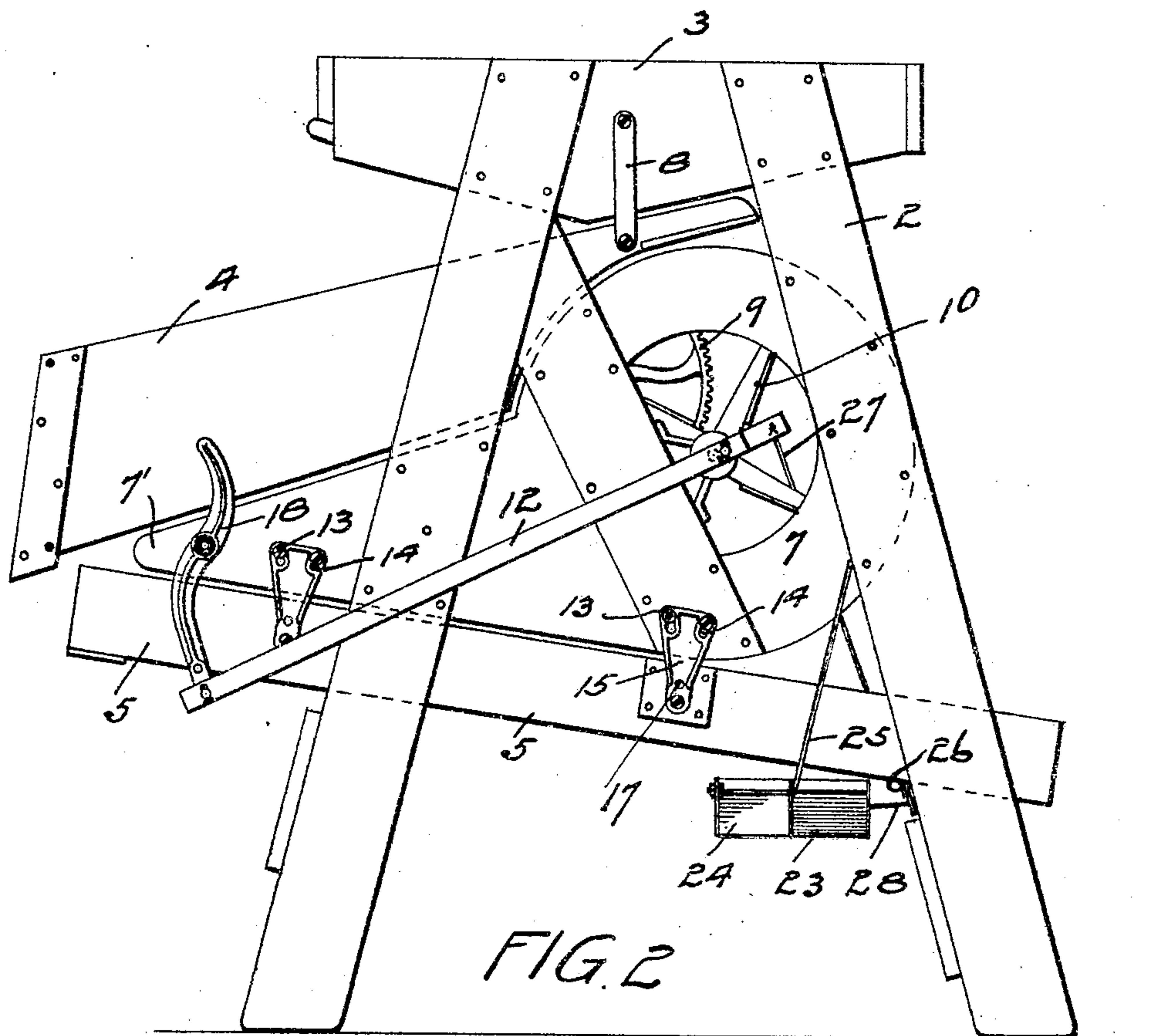
PATENTED NOV. 7, 1905.

A. V. CLELAND.

FANNING MILL.

APPLICATION FILED AUG. 23, 1904.

2 SHEETS—SHEET 2.



WITNESSES
M. M. Smith
D. G. Hanson.

FIG. 4.

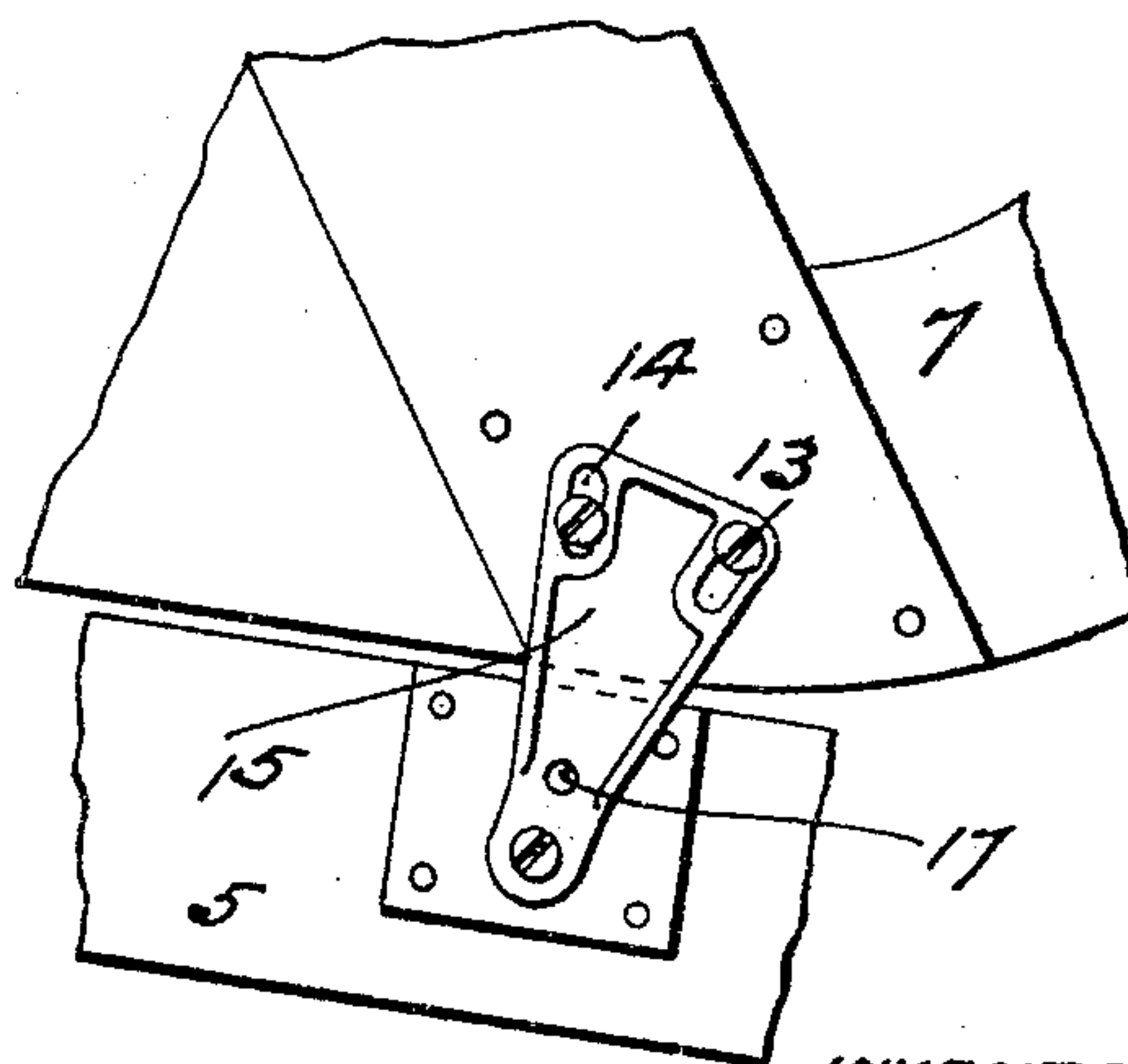


FIG. 5.

INVENTOR
ANDREW V. CLELAND
BY *Paul & Paul*
HIS ATTORNEYS

UNITED STATES PATENT OFFICE.

ANDREW V. CLELAND, OF MINNEAPOLIS, MINNESOTA.

FANNING-MILL.

No. 803,558.

Specification of Letters Patent.

Patented Nov. 7, 1905.

Application filed August 23, 1904. Serial No. 221,829.

To all whom it may concern:

Be it known that I, ANDREW V. CLELAND, of Minneapolis, Hennepin county, Minnesota, have invented certain new and useful Improvements in Fanning-Mills, of which the following is a specification.

The object of my invention is to provide improved means for imparting a jolting or jarring action to the sieve-shoe, to the end that the sieves will be rendered more efficient and the capacity of the machine correspondingly increased.

A further object is to provide improved means for oscillating the sieve-shoes.

The invention consists generally in various constructions and combinations, all as herein-after described, and particularly pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a perspective view of one side of the machine, showing the invention applied thereto. Fig. 2 is a side elevation of the other side of the machine from that shown in Fig. 1. Fig. 3 is a sectional view showing in detail the mechanism for operating the shoes. Figs. 4 and 5 are detailed views showing different positions of the sieve-frame.

In the drawings, 2 represents a fanning-mill frame having the usual hopper 3, sieve-shoes 4 and 5, equipped with sieves 6, and an intermediate fan-casing 7. The shoe 4 is suspended from the hopper by straps 8, and a gear-wheel 9 is provided for operating the fan 10. A pinion 11, driven from the gear 9, has a pitman-rod 12 eccentrically mounted thereon. The side walls of the fan-casing extend forward between the shoes 4 and 5, forming horns 7' upon each side of the machine, provided with pins 13, arranged in pairs and adapted to enter slots 14 in the upper ends of hanger-plates 15, that are pivoted at their lower ends on the shoe 5. When the shoe 5 is oscillated, the hanger-plates will swing on one of the pivot-pins 13 and be raised with respect to the other pins, the slot 14 allowing such movement. Upon the return stroke when the shoe has reached the middle of its movement the plates will swing from one pin to the other and allow the shoe to drop a distance equal to the vertical movement of the plates during the first part of the stroke. In other words, the hanger-plates having been lifted off one of the pivot-pins by the movement

of the shoe in one direction will drop back thereon when the shoe moves in the opposite direction, and the sliding of the plates downward on the pivot-pins and the sudden stopping of the same when the pins reach the upper ends of the slots will cause a jolting or jarring action on the shoe and the sieve therein that will clear the sieves and greatly increase their capacity and efficiency. Two of these jolts or jars will take place with each complete stroke of the shoe, one about midway of its movement in each direction. The hangers therefore serve not only as supports for the shoe, but include in their function a shaking or jarring action on the sieves, which I find to be very effective for the purpose of keeping them clear. I have also found that a combined hanger and jarring device made in this way will be very durable, the wear being uniform and the action remaining the same until the pins wear through the ends of the plates. I prefer to provide a pivot-hole 17 in each hanger-plate above the one at the end to allow the adjustment of the pin 16 for the purpose of increasing the vertical movement of the plates and intensifying the jolting or jarring action.

For oscillating the shoes I prefer to provide a bar 18, mounted on a stud 19, secured to one of the horns 7' and having tapered studs 21, adapted to slip into holes in the shoes 4 and 5. A rod 20 extends across the machine connecting the horns and is threaded at each end and provided with nuts 21, by means of which the horns can be securely held in parallel relation with each other and the wear of the tapered studs 21 in their bearings easily taken up. The lower end of the bar 18 is connected to the pitman 12, through which the oscillating movement is imparted to the sieve-shoes. Beneath the shoe 5 I provide side delivery-spouts 23 and 24, supported by hangers 25 on the frame of the machine and operated lengthwise or laterally with respect to the mill by means of a bell-crank 26, pivoted on the machine-frame and having its arms connected, respectively, by rods 27 and 28 with the pitman 12 and the spout 23. Through this connection the movement of the pitman-rod will oscillate the sieve-shoes in one direction and the spouts 23 and 24 in a direction substantially at right angles to the movement of the shoes. This mechanism is easily applied to a fanning-mill. It is simple in

construction, very strong and durable, and its use will increase to a considerable degree the capacity and efficiency of the machine.

I claim as my invention—

- 5 1. The combination, with a frame and an oscillating sieve-shoe and means for operating the same, of hanger-plates having a plurality of pivot-pin holes at one end and adjustably connected by means of said holes to said shoe, 10 and said plates having a connection at the other end with said frame that is adapted to impart a jolting, jarring action to said shoe when it is oscillated, substantially as described.
- 15 2. The combination, with a fanning-mill, of a sieve-shoe, plates provided with a plurality of pivot-holes at one end, pivot-pins fitting said holes and adjustably connecting said plates to said shoe, the opposite ends of said 20 plates being provided with slots, fixed pins adapted to enter said slots and allow a rocking movement of said plates thereon, and means for oscillating said shoe.
- 25 3. In a fanning-mill, the combination, with the sieve-shoes 4 and 5 and the fan-casing 7 arranged between them, of plates having longitudinal slots in their upper ends adapted to receive fixed pins on said fan-casing, the lower ends of said plates being pivotally at- 30 tached to said shoe 5 whereby when said shoe is oscillated a jarring, jolting action will be imparted thereto, and means for oscillating said shoe.
4. In a fanning-mill, the combination, with

side delivery-spouts, of a bell-crank, a pit- 35 man-rod, rods connecting the arms of said bell-crank with said pitman-rod and said spouts, whereby a longitudinal movement will be imparted to said spouts when said rod is op- 40 erated, sieve-shoes connected with said pitman-rod and operating in a direction substantially at right angles to the movement of said spout.

5. In a fanning-mill, the combination, with pivotally-supported shoes and a fan-casing having horns projecting between said shoes, of 45 bars having tapered studs fitting within sockets in said shoes, and intermediate pivotal supports on said horns, and a rod threaded at each end and provided with nuts and connecting said intermediate pivots through said 50 horns, and means for oscillating said bars, substantially as described.

6. The combination, with a fanning-mill, of a sieve-shoe, plates provided with pivot-holes at one end, pivot-pins fitting said holes and 55 connecting said plates to said shoe, the opposite ends of said plates being provided with slots, fixed pins adapted to enter said slots and allow a rocking movement of said plates thereon, and means for oscillating said shoe. 60

In witness whereof I have hereunto set my hand, this 17th day of August, 1904, at Minneapolis, Minnesota, U. S. A.

ANDREW V. CLELAND.

In presence of—

RICHARD PAUL,
C. G. HANSON.