

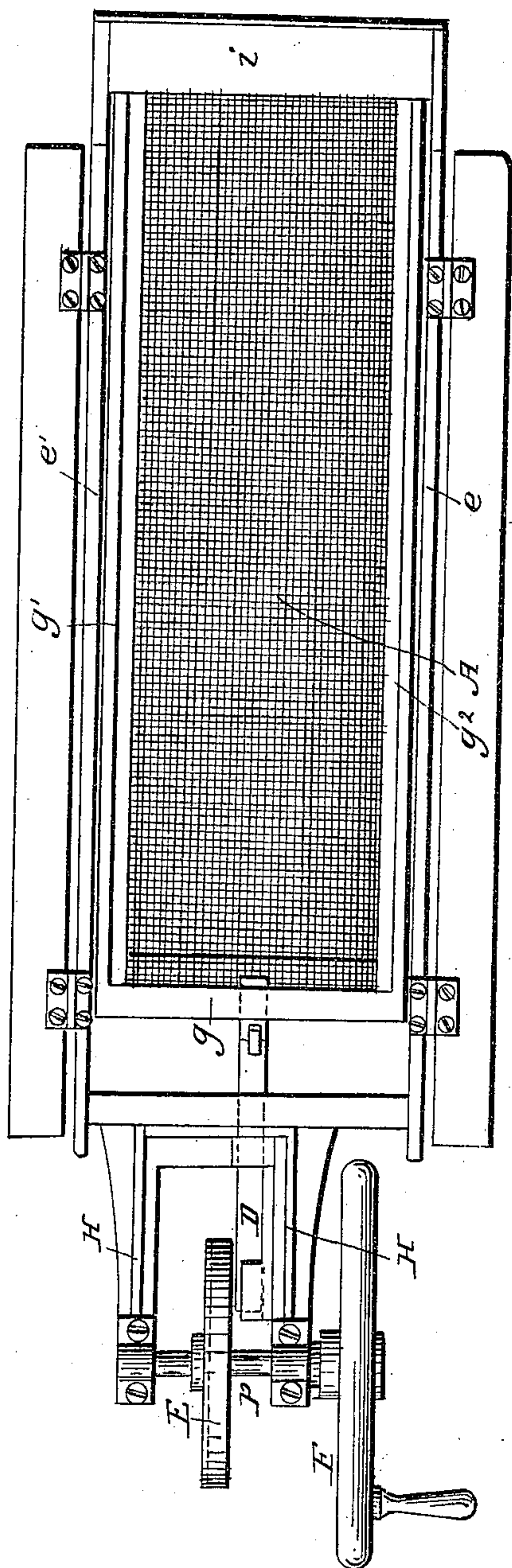
G. L. & S. HARRIS.

Seed Separator.

No. 36,296.

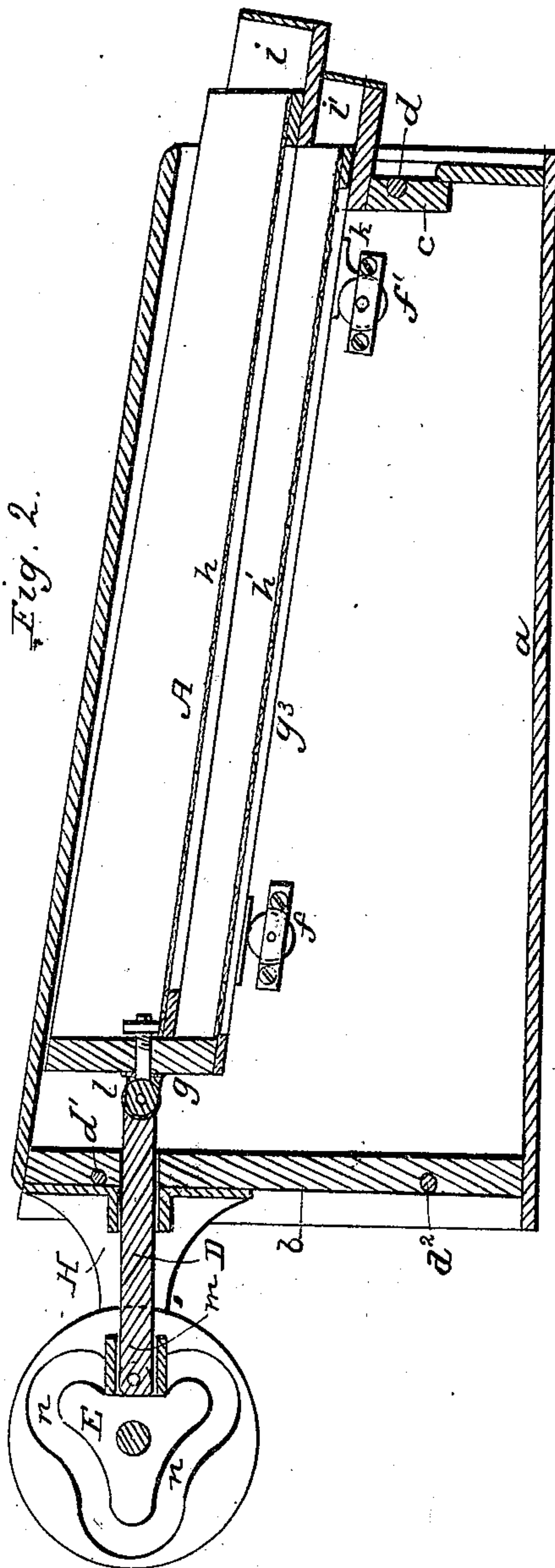
Patented Aug. 26, 1862.

Fig. 1.



Witnesses:  
Gustavus Dieterich  
Edwin S. Jacob.

Fig. 2.



Inventors:  
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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN SIFTING-MACHINES.

Specification forming part of Letters Patent No. 36,296, dated August 26, 1862.

*To all whom it may concern:*

Be it known that we, GEORGE L. HARRIS, of Mobile, in the county of Mobile, in the State of Alabama, and SAMUEL HARRIS, of Springfield, county of Hampden, State of Massachusetts, have invented certain new and useful Improvements in Sifting-Machines for Sifting Drugs, Meal, Sand, Coal-Ashes, and various other Articles; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings and letters of reference marked thereon, forming part of this specification.

The corresponding letters in the two views have reference to the same parts of the machine.

The nature of our invention consists in so organizing a power machine for sifting drugs that the sifting-box which immediately supports the matter being sifted shall, while in the act of sifting, have an undulating up-and-down motion as well as a movement in the path of an inclined plane longitudinal of the machine, such motion being analogous to that imparted to an ordinary hand-sieve when manipulated for a like purpose.

Figure 1 is a plan view of our improved machine, and Fig. 2 a vertical longitudinal section of the same.

The main frame of our machine consists of a closed foundation or bottom, *a*, front upright, *b*, rear cross-piece, *c*, held in place by a transverse bolt or rod, *d*, let into said cross-piece and passing through the side uprights, *e* and *e'*, and secured by screw-nuts which abut against the outside of said uprights *e* and *e'*. Like bolts or rods, *d'* *d''*, pass through the upright *b* and the front ends of the sides *e* and *e'*, and in like manner are provided with screw-nuts to hold the parts in position. To the sides *e* and *e'* of a box thus constructed we attach friction-rollers *f* and *f'*, as clearly shown in Fig. 2, and in such relation to the bottom *a* that when the "sifter" *A* is allowed to rest thereon said sifter will incline from front to rear, as indicated in said figure.

The sifter *A* is composed of a frame, *g g' g'' g'''*, as shown, and supports two wire sieves, *h* and *h'*, the former having coarse and the latter fine reticulations, and discharges at its rear end into hoppers *i* and *i'*, as represented in the figures. Below these hoppers is a sliding door, *j*, which may be elevated for the removal of the sifted matter from the body of

the machine. The rear end of the sifter *A* is provided at its bottom with double-incline agitators *k*, which rest upon the friction rollers *f'* and rise and fall over said rollers with an undulating movement when longitudinal motion is imparted to the sifter.

*D* is a drawing-bar, jointed as at *l*, and connecting the sifter with a triangular propelling-cam, *E*, by means of a friction-pulley, *m*, attached to the driving-bar and traveling in the groove *n* of the cam *E*, said bar and cam, as well as cam-shaft *p* and balance-wheel *F*, being supported in a metallic frame, *H*, secured to the front of the machine, as indicated.

In order to quickly and efficiently cause a separation of the fine from the coarse matter placed in a sifter, it is necessary to impart to it a quick, short, undulating movement, so to speak, which, to be most effectual, should be in the line of an inclined plane. Thus the matter acted upon, while it is agitated under a movement in the line of short curves which causes it to constantly and suddenly change its contact with the reticulated wire and roll over and over, is also at the same time caused to gradually descend from the front to the rear of the sifter, meantime passing the fine particles through the sieve, while the coarser ones are, at the close of the operation, accumulated at its rear portion. To this end we employ a triangular cam, as shown at *E*, in connection with a sifter in operative position, as shown in Fig. 2, so that by a single turn of the cam-shaft *p* from its position, as shown in said figure, the sifter will be caused to make three back-and-forth movements of the character described.

The peculiar agitation which we have set forth is specially adapted to that class of drugs in which fine stems and fibers form a part and are liable in the ordinary movement of machines to clog up the sieves.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent of the United States, is—

The inclined sifter *A*, in combination with the triangular cam *E* and double-inclined agitator *k*, in the manner and for the purpose substantially as described.

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Witnesses:

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