(No Model.)

H. SECK.

SIFTING APPARATUS.

No. 403,863. Patented May 21 1889.

Fig. 1.

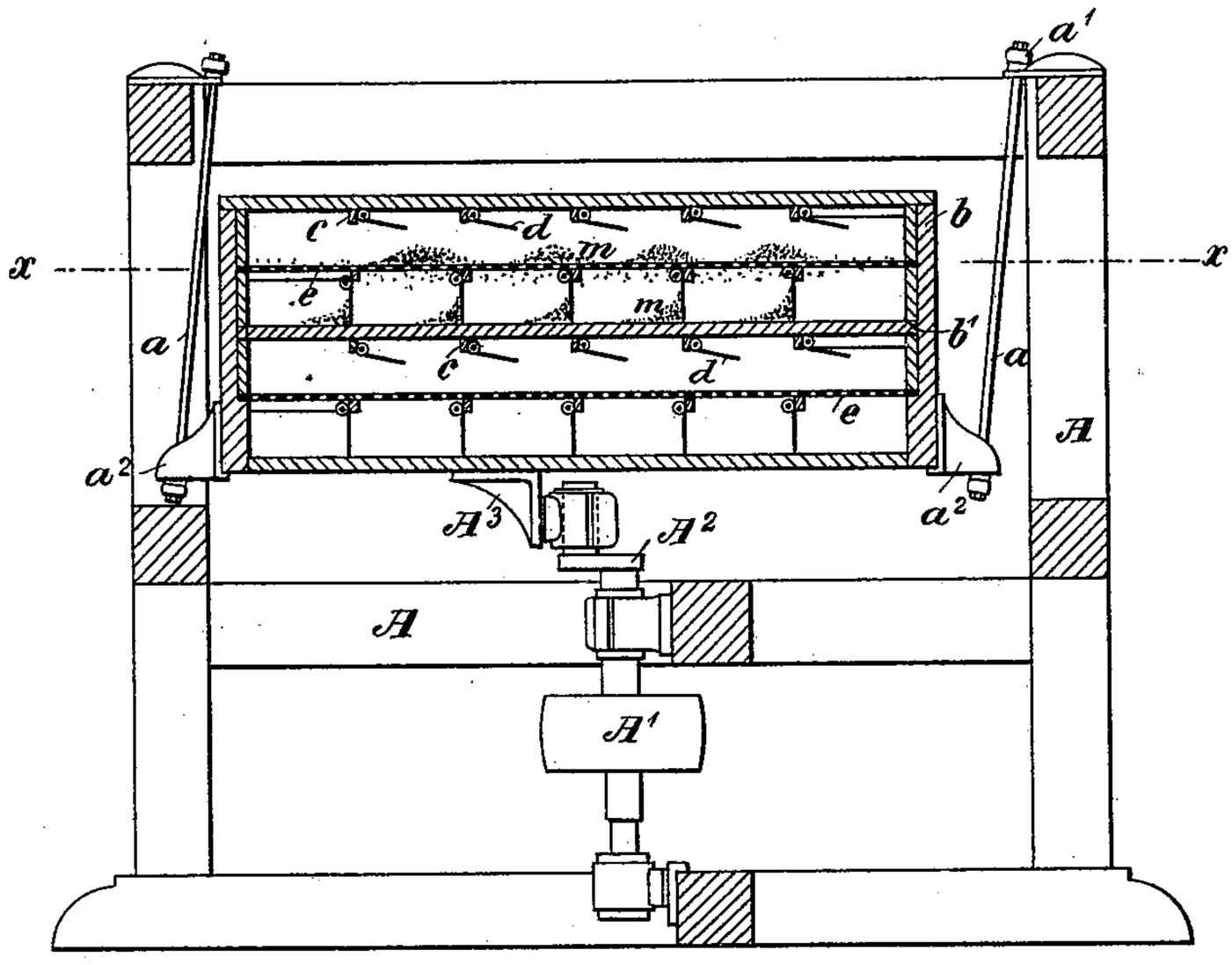
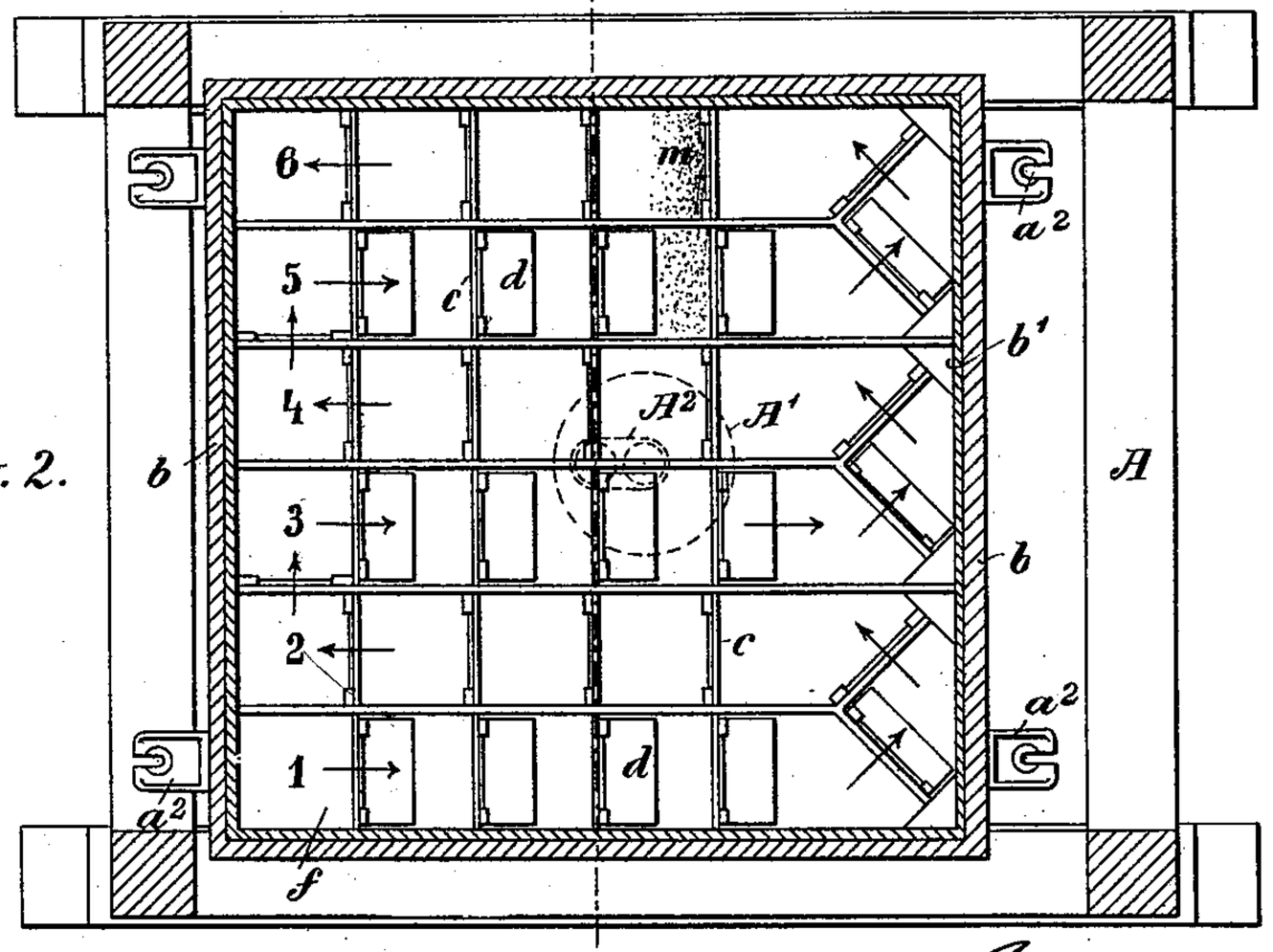


Fig. 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

HEINRICH SECK, OF DRESDEN, SAXONY, GERMANY.

SIFTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 403,863, dated May 21, 1889.

Application filed July 11, 1888. Serial No. 279,688. (No model.)

To all whom it may concern:

Be it known that I, HEINRICH SECK, of the city of Dresden, in the Kingdom of Saxony and German Empire, have invented certain new and useful Improvements in Sifting Apparatus, of which the following is a specification.

In sifting apparatus heretofore employed (shaking sifters or rotary sifters) the passage of the material to be sifted is dependent on the position of the sieve, which, for example, in shaking sifters has to be inclined toward the discharge end, or in oscillating or rotary sifters is dependent either on the inclined position, or, if special means for conveying the material to be sifted are combined with the sieve, on the direction of rotation or movement.

The present invention, consisting in the novel combination of a sieve with a system of flaps or doors, enables the sifting operation to be carried out without regard either to the position of the sieve (which may be vertical or rising or descending toward the discharge end) or to the direction of movement of the sieve, which can be a rectilinear reciprocating movement or a rotary movement from right to left, or vice versa. It is immaterial what position the sieve has or how the latter is moved, the effect will always be the same, and no injury can be caused should the sieve be turned in the wrong direction by the incautious use of a crossed belt.

In the accompanying drawings, Figure 1 represents a vertical section on the line *y y*, Fig. 2; and Fig. 2 is a horizontal section on the line *x x*, Fig. 1.

Above the sifting-surface or sieve *e*, on the transverse slats *c*, are secured the flaps or doors *d*, which can swing freely from their normal vertical position to one side.

The drawings represent a rotary sifter in which two sieves are arranged one above the other. Each sieve is inclosed by walls *b b'*, and between the walls swing the doors or flaps *d*. Each sifting-surface may consist of a number of single sieves, (in the apparatus shown in drawings there are six,) the surface of which can be continuous.

In the arrangement shown the entire sieve or sieve-box is suspended through the medium of the supporting-arms a^2 by the rods *a*, which are provided with nuts *a'*, screwed thereon, and which have play in the supporting-arms a^2 and in the upper part of the frame A, in order to permit a rotary movement of the sieve-box in every direction. This movement is caused by means of the crank-shaft A^2, provided with the driving-pulley A' and applied to the supporting-arm A^3, fixed to the sieve-box.

In the motion of the sifter, which in the apparatus shown is rotary, but which, as stated, may be a rectilinear reciprocating motion, the doors open and close—that is to say, they are closed when the sieve is moved in the direction in which the doors open, and they are opened in the reverse movement. The latter movement may, for the sake of brevity, be termed "backward" movement and the reverse movement "forward" movement. In the backward movement, for example, the doors or flaps *d* fly open, and they close in the forward movement. The material which is to be sifted and lies behind the door *d* passes, when the said door opens, through the same by reason of its inertia, but it cannot in the reverse motion pass back through the door which is being closed. It now bears against the same from the other side in order to be thrown in the succeeding backward movement through the next door, and so on.

In the drawings, where several compartments of the sieve are arranged side by side, the doors *d* always open and close in two contiguous compartments in reverse succession, as shown in Fig. 2, where in the forward movement that has taken place 1, 3, and 5 are opened and 2, 4, and 6 are closed.

The contiguous compartments 1 2 3, and so forth, are connected with each other at the ends by similar doors or flaps, *d*, which, in case the movement of the sieve is rectilinear, are preferably arranged on the incline, as indicated on the right-hand side of Fig. 2.

Fig. 1 shows how the material to be sifted in the movement of the sieve (which for one compartment of the apparatus is a forward movement and for another a backward movement) is thrown through the open doors *d*, and also how it takes its place before the

closed doors through which it cannot pass back to its place.

Fig. 2 shows in one of the compartments the movement of the material to be sifted, which receives a constrained transport in the direction of the arrows by the opening and closing doors, it being, as above stated, immaterial in which direction the sieve is moved or what position it occupies.

If the doors *d* are arranged between the walls *b'* in such a manner that they can be reversed by adapting them to be swung to both sides and placing on one side a bolt which prevents its motion, the material to be sifted, after the displacement of the bolt and the consequent reverse swinging of the doors, can be caused to pass the reverse way over the sifting-surface—that is to say, in Fig. 2, from 6 to 1—without changing the movement of the sieve itself.

The grain or other material is in this manner progressively sifted in the energetic forward and backward movement, the danger of the closing up of the sifting-surface is decreased, and uniform sifting is insured.

What I claim is—

The combination, with a sieve divided into compartments, of flaps or doors opened and closed by movement of the sieve for propelling the material along the sieve, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HEINRICH SECK.

Witnesses:
EMIL DOMSCH,
PAUL DRUCKMÜLLER.