2 Sheets--Sheet 1.

A. HERR

Middlings-Purifiers.

No. 150,758. Patented May 12, 1874.

Fig. 1.

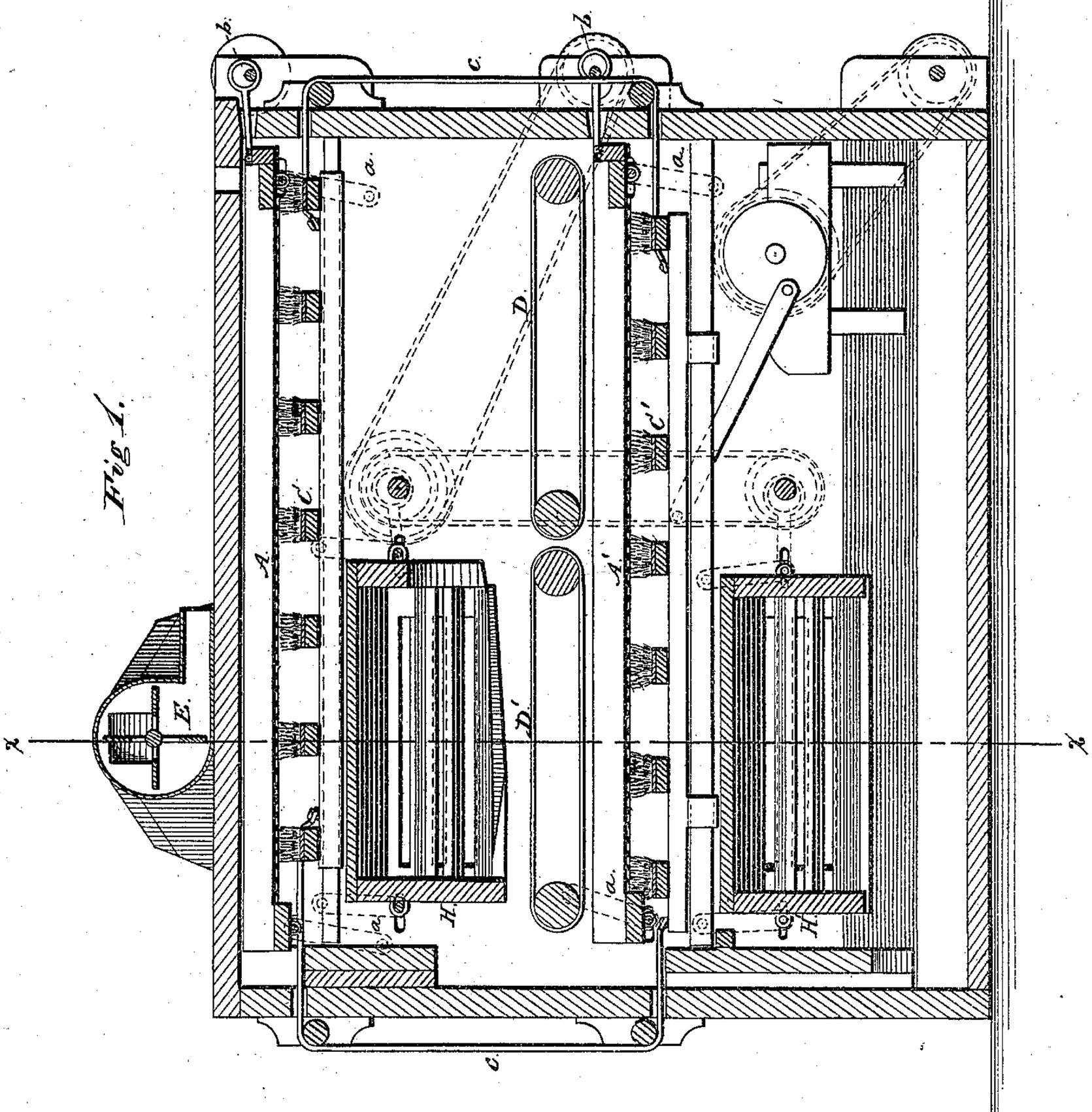
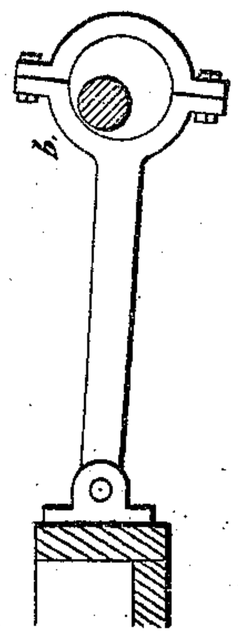


Fig. 4.



WITNESSES

Thomas B. Kennedy.

A E Beecher.

By

INVENTOR

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Attorney

2 Sheets--Sheet 2.

A. HERR

Middlings-Purifiers.

No. 150,758. Patented May 12, 1874.

Fig 3.

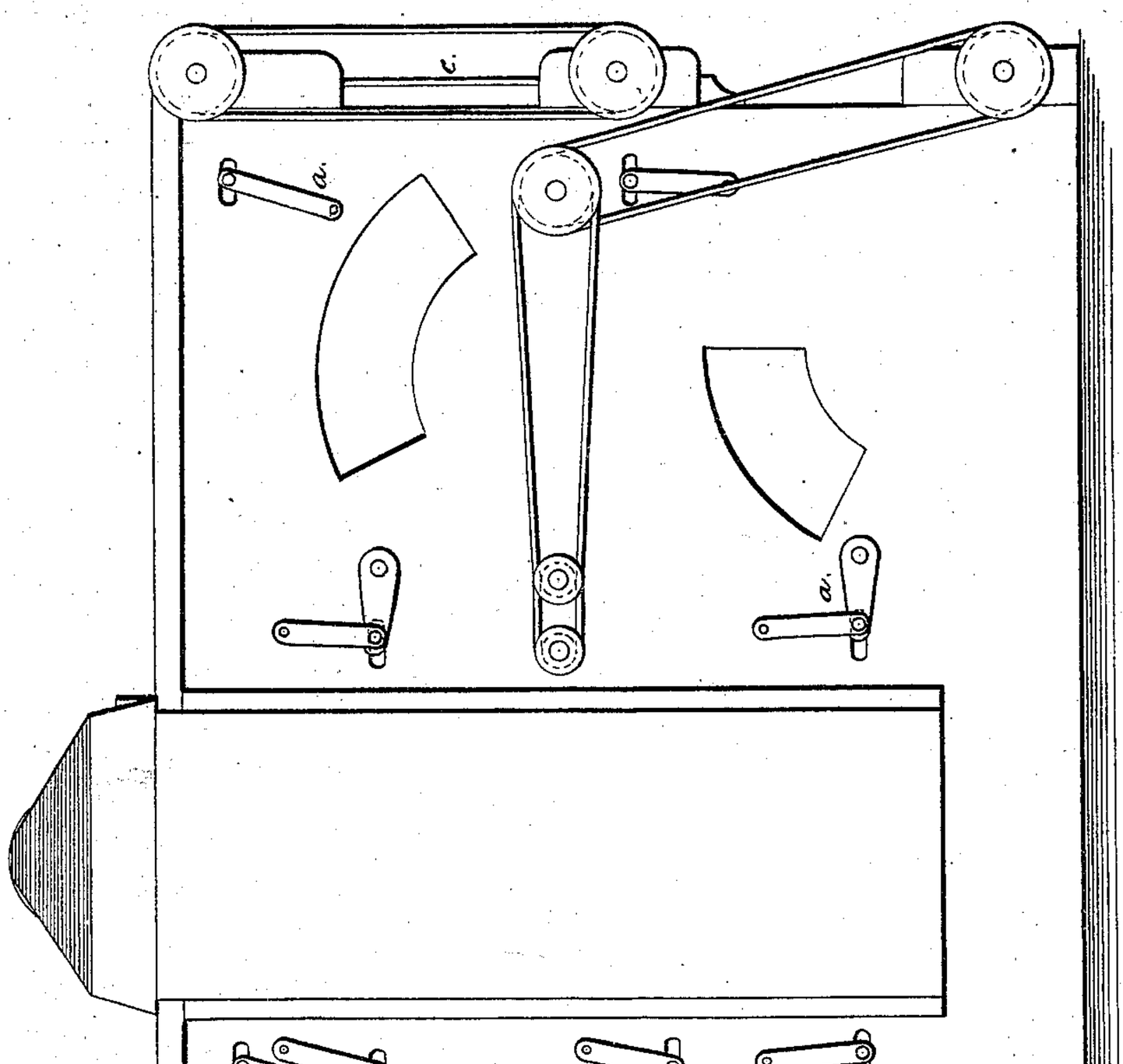
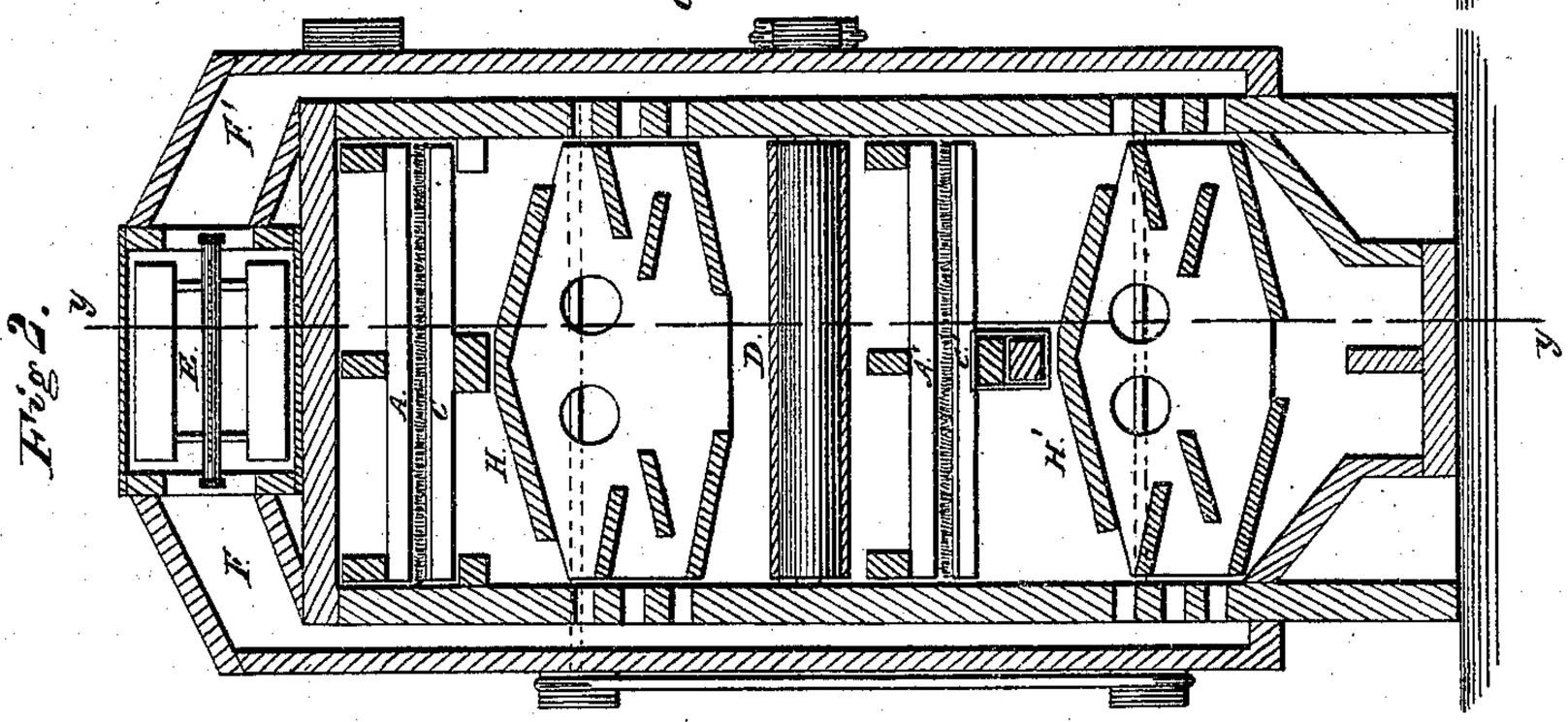


Fig 2.



WITNESSES

Thomas L. Connor.

A. E. Beecher.

By

INVENTOR

Austin Herr

Attorney

UNITED STATES PATENT OFFICE.

AUSTIN HERR, OF GEORGETOWN, DISTRICT OF COLUMBIA.

IMPROVEMENT IN MIDDLINGS-PURIFIERS.

Specification forming part of Letters Patent No. **150,758**, dated May 12, 1874; application filed April 13, 1874.

To all whom it may concern:

Be it known that I, AUSTIN HERR, of Georgetown, in the District of Columbia, have invented certain new and useful Improvements in Machines for Purifying Middlings; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and the letters of reference marked thereon.

In the accompanying drawings, Figure 1, Sheet 1, represents a vertical longitudinal section; Fig. 2, Sheet 2, a vertical transverse section. Fig. 3, Sheet 2, represents a side elevation of the machine; Fig. 4, Sheet 1, a detached view of the eccentric employed.

The construction of the various parts of the machine being well understood by skillful constructors of mill machinery their details need not be particularly described here.

In Fig. 1, Sheet 1, a series of screens are represented by the letters A and A′, and suspended by radius links *a*, and vibrated by an eccentric with a connecting-strap, shown in Fig. 4, which gives an easy motion and prevents the jarring so common to the ordinary adjustable or non-adjustable eccentrics now in use. Beneath these screens, on which are arranged several numbers of cloth, I mount reciprocating brushes, C and C′, longitudinally arranged, for the purpose of keeping the meshes of the cloth open, and actuated by a crank-pin and connecting-rod attached to brush C′, motion being imparted to the upper brush C by means of straps *c* running over pulleys arranged at each end of the machine. Immediately beneath the brushes C and C′, under the screens A and A′, and directly under the fan E, are arranged a series of reciprocating shelves, H and H′, made of wood or metal, or extremely fine cloth. The top shelf under each screen A and A′ forms an apex in the center of the machine, and has a gradual fall toward the sides of the machine within a few inches of which they terminate, and the middlings fall over, presenting to the exhaust-blast a thin sheet, to be acted upon through apertures cut through the sides of the machine into the air-ducts F and F′. The shelves in H are all connected together, as are also those in H′. These shelves or combination of shelves receive a shaking motion from an eccentric, or any device deemed desirable. Beneath the screen A and combination of shelves H are placed endless aprons, D and D′, for the purpose of conveying the meal to distribute it on the next screen A′. These aprons I have shown in a former patent granted to me, and dated August 5, 1873, No. 141,557. E represents an exhaust-fan, which, in this machine, is placed at one end on top. F and F′ are air-ducts, situated on each side of the machine, and connected with the exhaust-fan E.

The operation of this purifier is as follows: The middlings are fed or distributed on the screen A by means of spouts. The finest portion of the middlings is sifted onto apron D, which carries it forward and distributes it on the head of screen A′, through which it is sifted into the conveyer. The coarser meal continues farther down the screen A, and is sifted through a lower grade of cloth on the series of shelves H. The cloth should not be coarse enough to allow bran-specks or large specular matter (which should pass off at the tail or end of the screens) to sift through. After the coarse middlings have been subjected to the first series of blasts they fall upon apron D′, which distributes them toward the center of screen A′, which sifts again upon the series of shelves H′, when they are subjected to a second series of blasts; they then drop into the conveyer, being perfectly purified, and mixed with the fine middlings. They are then conveyed to their proper receptacle.

It will be understood, however, from the foregoing description of the operation of this purifier that the brushes C and C′ and the fan E are not used in a combination to directly produce the result, as the fan E does not receive its air through the meshes of the cloth, but at the end of the machine. The fuzzy fibrous matter is drawn from the middlings as they pass over the wooden or metallic shelves, my object being to separate the fine middlings from the coarse middlings and fibrous matter at the heads of the screens A and A′, as it

would be impossible to wind the fine middlings without blowing them out with the deleterious matter.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the brushes C and C′, straps C C, and eccentric with the reciprocating screens A and A′, substantially as described, and for the purpose specified.

2. The combination of the shaking shelves H H′, air-passages F F, exhaust-fan E, and screens A and A′, when constructed and arranged to operate in the manner and for the purpose specified.

3. The combination of the screens A and A′, shaking shelves H H′, and conveyers D and D′, all constructed and arranged to operate substantially in the manner and for the purpose described.

4. The combination of the screens, brushes, and eccentrics, shaking shelves, the air-ducts, and the exhaust-fan, and the conveyers, these members being constructed and operating substantially as set forth.

In testimony whereof I have hereunto subscribed my name.

AUSTIN HERR.

Witnesses:

THOMAS C. CONNOLLY,

A. E. BEECHER.