M. SOWER.

Middlings-Purifiers.

No. 146,844. Patented Jan. 27, 1874.

Fig. 1

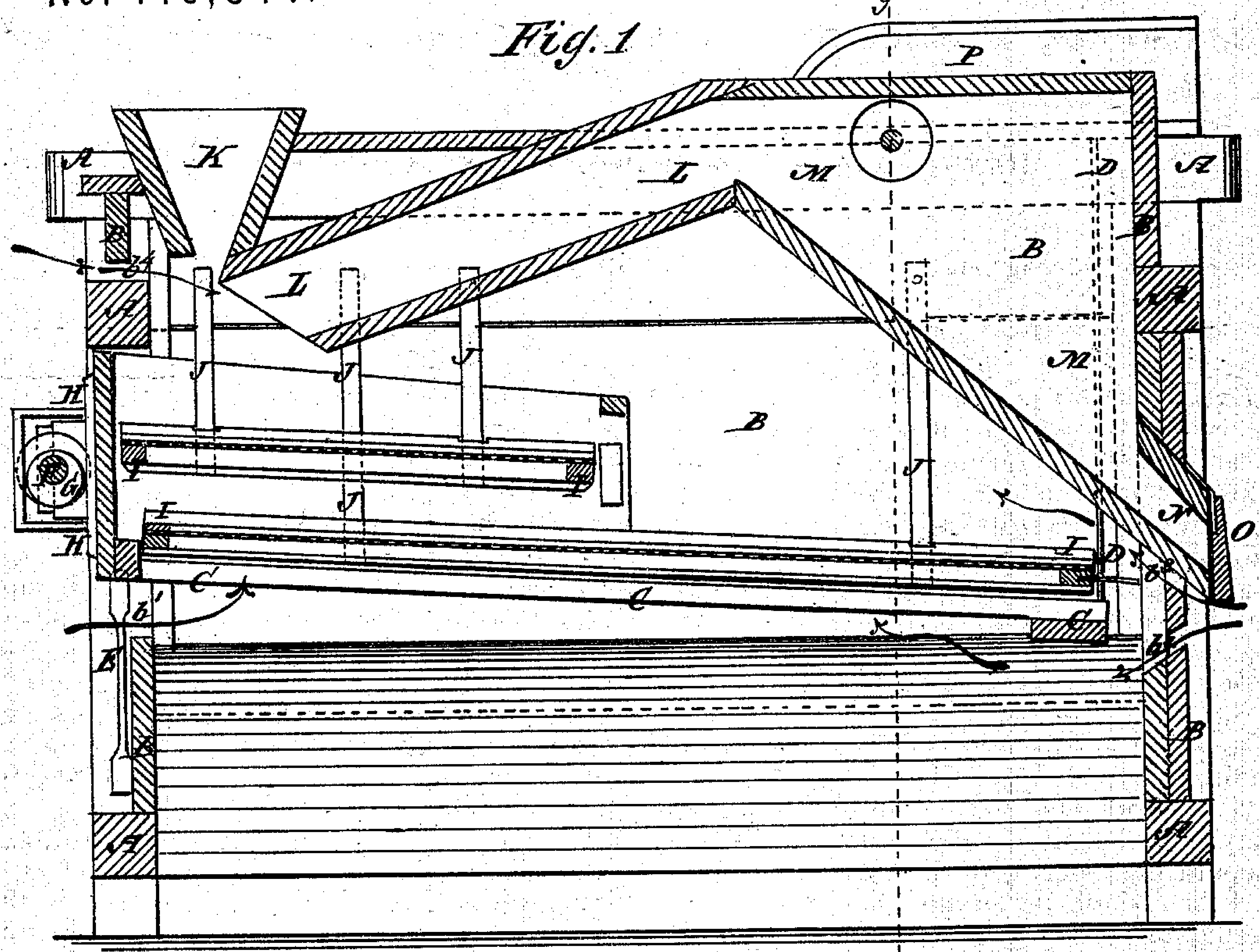
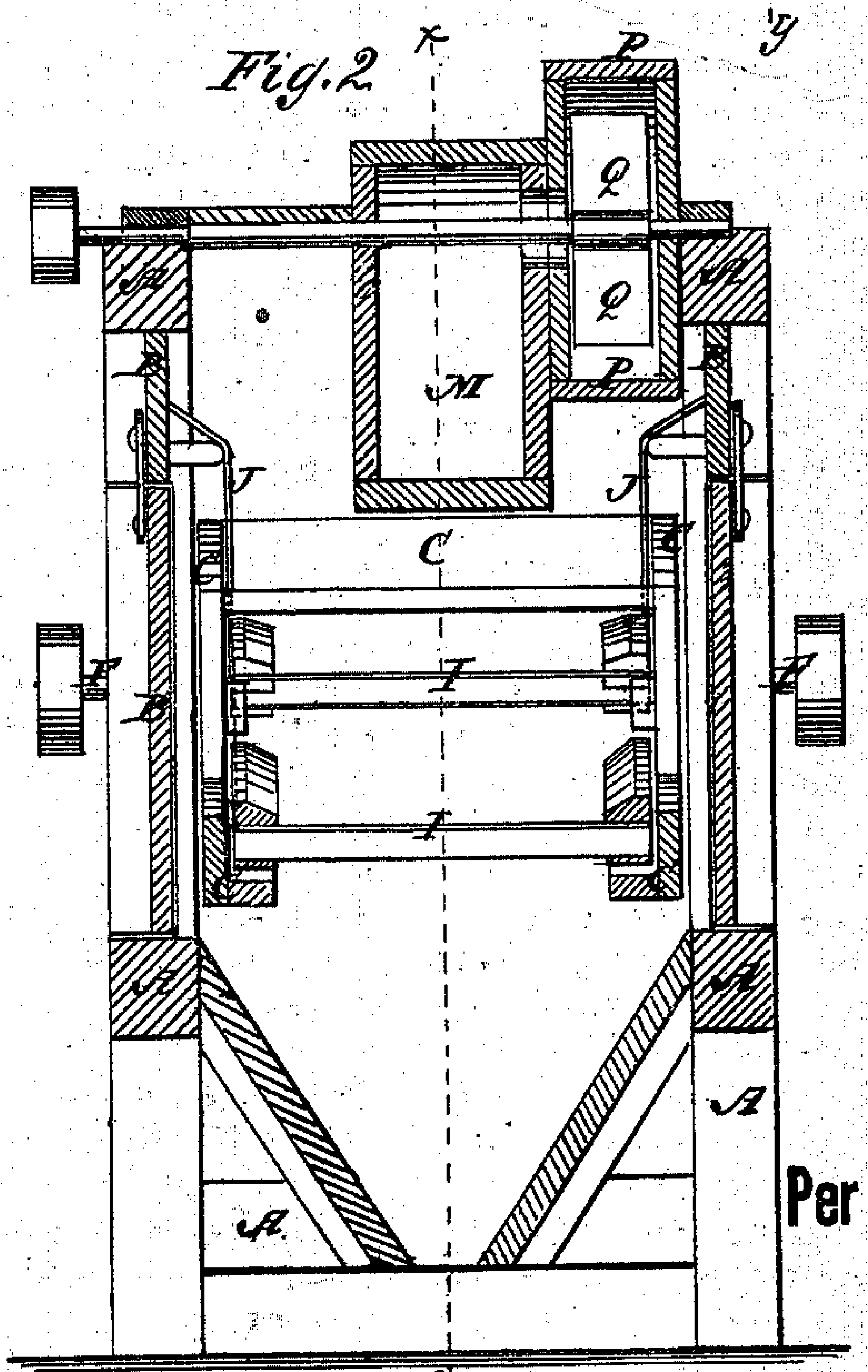


Fig. 2



Witnesses:

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UNITED STATES PATENT OFFICE.

MORRIS SOWER, OF PRINCETON, ILLINOIS, ASSIGNOR TO SOWER BROTHERS, OF SAME PLACE.

IMPROVEMENT IN MIDDLINGS-PURIFIERS.

Specification forming part of Letters Patent No. **146,844**, dated January 27, 1874; application filed July 19, 1873.

To all whom it may concern:

Be it known that I, MORRIS SOWER, of Princeton, in the county of Bureau and State of Illinois, have invented a new and useful Improvement in Middlings-Purifier, of which the following is a specification:

Figure 1 is a vertical longitudinal section of my improved machine, taken through the line *x x*, Fig. 2. Fig. 2 is a vertical cross-section of the same, taken through the line *y y*, Fig. 1.

Similar letters of reference indicate corresponding parts.

My invention has for its object to furnish an improved machine for purifying middlings by separating from them the light impurities, and which shall be simple in construction, convenient in use, and effective in operation. The invention consists in the suspended cloth-frame, one or more, in combination with the surrounding frame agitated by an eccentric or other means, and in the arrangement of the spout, the expansion-chamber, and the fan-chamber, with respect to the hopper and the bolt-frames, as hereinafter fully described.

A is the frame of the machine, which is provided with a casing, B, the sides of which are made detachable, to give convenient access to the bolts, when desired. C is an inclined frame, placed within the frame A, and which is made a little shorter than said frame, so that it may have a longitudinal movement. The inner and lower end of the frame C is supported by spring or flexible rods D, and its forward and higher end is supported by springs E. The outer end of the frame C forms a portion of the end casing of the machine. F is a shaft, which revolves in bearings attached to the end part of the frame A, and to which motion may be given by a belt or other convenient means. To the shaft F is attached an eccentric, G, which revolves in a keeper, H, attached to the end of the frame C, so that the frame C may be moved by the said eccentric in one or both directions, the supporting-springs always bringing the said frame back promptly when released from the eccentric G. I is the frame to which the bolt-cloth is attached, and which is suspended within the frame C by the flexible straps J, the upper ends of which are secured to the sides of the box A B.

If desired, one, two, or more of the cloth-frames I may be suspended one above the other, in which case each upper frame should be about half the length of the next lower one. In the drawings two of the frames I are shown. By this arrangement each movement of the frame C gives a sudden jar to the frame I, which keeps the cloth clean without the use of brushes or other means that would wear the cloth. Each of the frames I is supported by its own flexible straps J.

K is the hopper, from which the middlings are fed to the cloth-frame I by a roller or other suitable feed, and which is placed above the upper end of the frame I. L is a spout, the open mouth of which is placed just below the discharge-opening of the hopper K, and above the upper end of the cloth-frame I. The spout L leads into an expansion-chamber, M, from the lower part of which a short spout, N, leads out through the rear end of the box A B, and which is provided with a trap or other door, O. From the chamber M an opening is formed into the chamber P, in which the fan Q is placed. The air to supply the fan Q passes in through the openings b^1 b^2 in the end parts of the casing B, below the ends of the frames C I, through the openings b^3 in the end of the casing B, below the spout N, and through the opening b^4, in the end of the casing B, nearly opposite the discharge-opening of the hopper K. The air from the openings b^1 b^2 passes up through the bolt-cloth, the air from the openings b^3 passes along above the bolt-cloth, and the air from the opening b^4 passes through the middlings as they fall from the hopper K.

By this construction, the air drawn through the machine by the fan Q carries the light impurities with it. Any of the middlings that may pass through the spout L with the air settles in the chamber M, and may be drawn off through the spout N, when desired.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In combination with the sieve-frame C,

the bolting-screens I, suspended within and independently thereof by means of straps J, as shown and described, to receive a succession of sudden shocks from the reciprocating movement of the frame, as and for the purpose specified.

2. The arrangement of the spout L, expansion-chamber M, fan-chamber P, and air-openings b^1 b^2 b^3 b^4, hopper K, frame C, and screens I, substantially as herein shown and described.

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Witnesses:

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