3 Sheets--Sheet 1.

A. R. GUILDER.

Middlings-Purifiers.

No. 155,374. Patented Sept. 29, 1874.

Fig. 1.

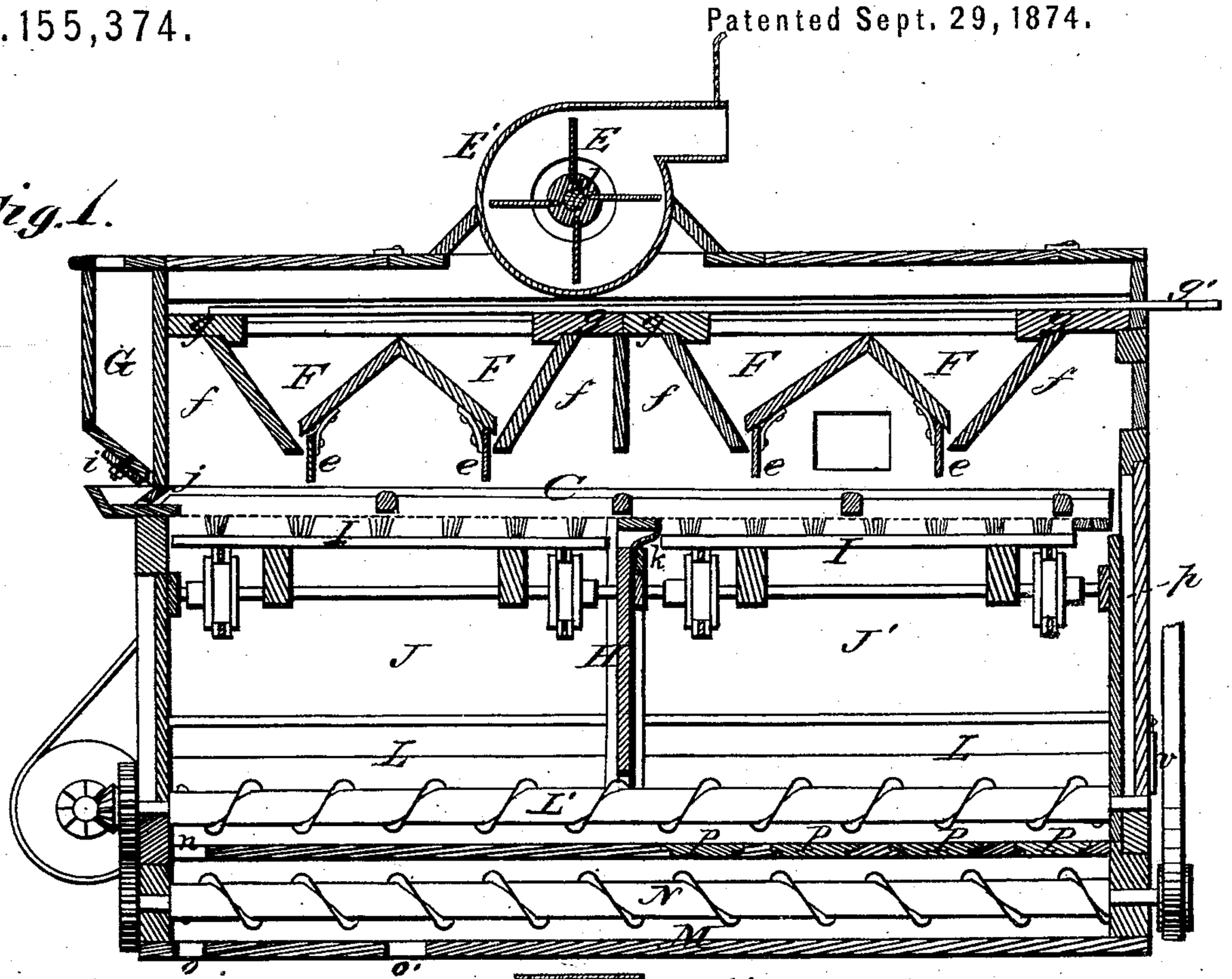

Fig. 2.

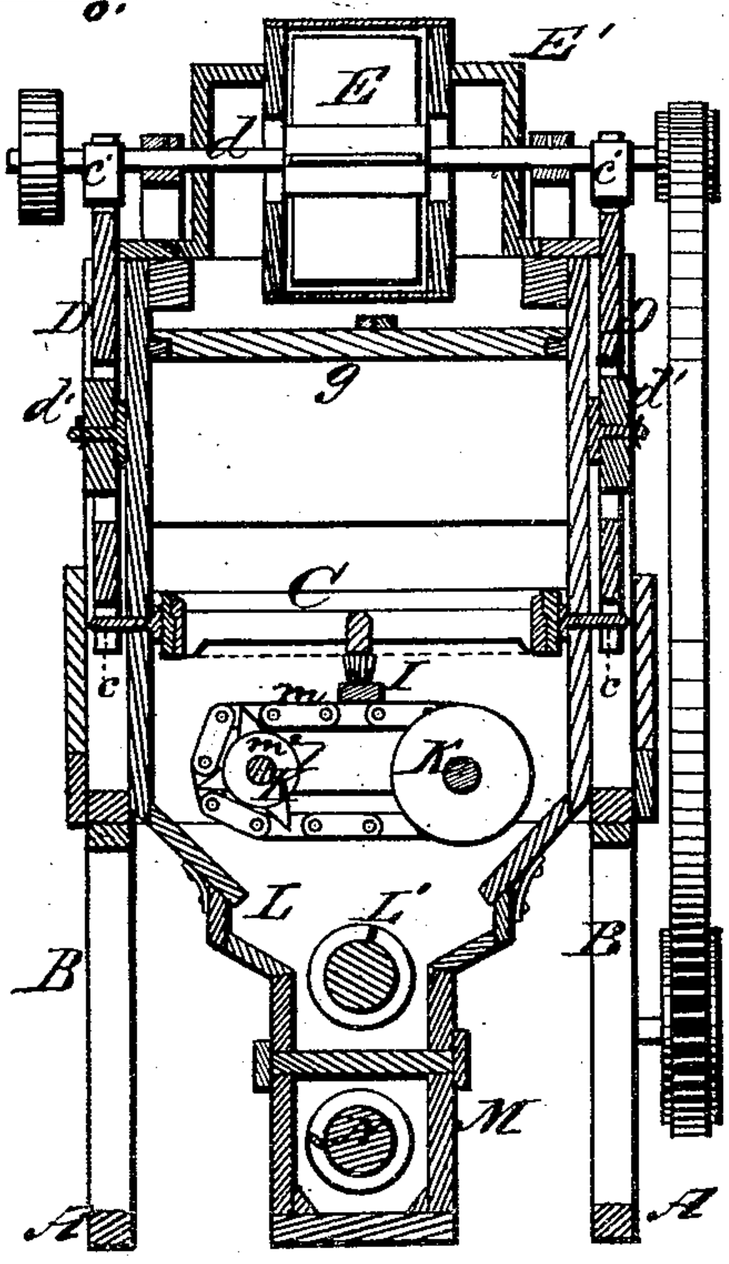

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Fig. 3.

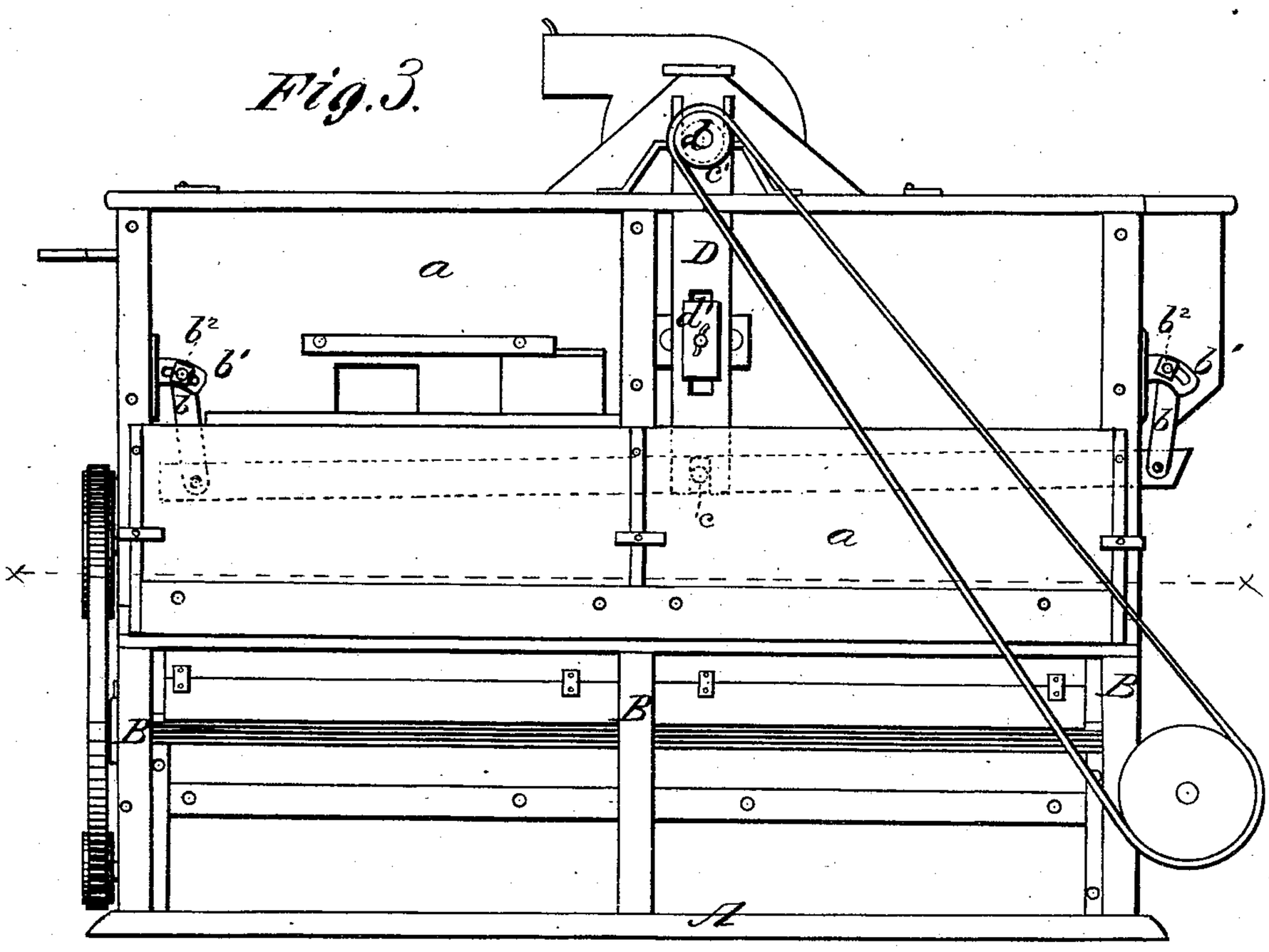
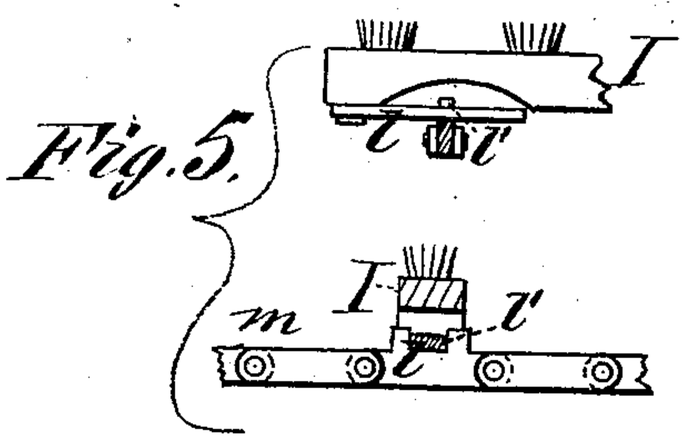


Fig. 5.



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3 Sheets--Sheet 3.

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Middlings-Purifiers.

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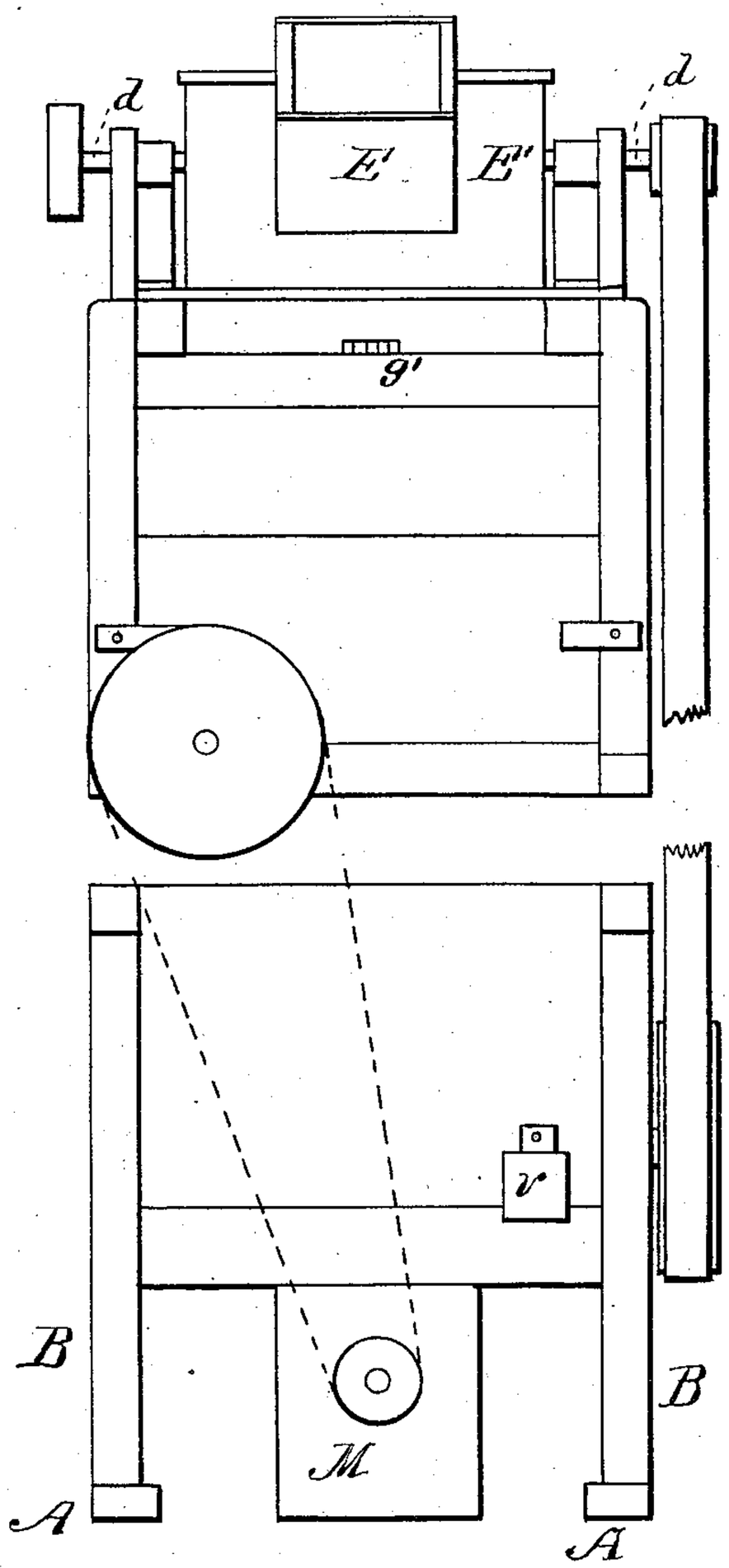
Fig. 4.



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UNITED STATES PATENT OFFICE.

ABSALOM R. GUILDER, OF MINNEAPOLIS, MINNESOTA.

IMPROVEMENT IN MIDDLINGS-PURIFIERS.

Specification forming part of Letters Patent No. **155,374**, dated September 29, 1874; application filed July 3, 1874.

To all whom it may concern:

Be it known that I, ABSALOM R. GUILDER, of Minneapolis, in the county of Hennepin and State of Minnesota, have invented a new and valuable Improvement in Middlings-Purifier; 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 to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a representation of a longitudinal vertical section of middlings-purifier. Fig. 2 is a transverse vertical sectional view, and Fig. 3 is a side view, of the same. Fig. 4 is an end view, and Fig. 5 a detail view.

This invention has relation to machines for purifying flour and middlings, wherein a suction-fan and adjustable suction-spouts are arranged over a riddle, and endless conveyers are arranged beneath the riddle.

The nature of my invention consists in novel means for giving such a velocity to the riddle that the meshes of the cloth will be kept open for uniformly riddling the flour; said means consisting in the construction of slotted levers and adjustable blocks, for the purpose of shortening or lengthening the strokes given to the riddle. It also consists in a novel means of attaching the brush-heads to their endless-chain carriers, whereby these heads can be conveniently detached from the chains without disturbing the riddle.

In the annexed drawings, A designates the sills of the main frame, and B the uprights thereof, which are firmly united by horizontal beams. The walls of the frame are closely housed in by means of boards *a*, which are made removable at such parts as are necessary for affording access to the interior of the machine. This frame is divided horizontally through the dotted line *x x*, and the horizontal beams at the place of division are secured together by means of bolts, by removing which the two sections composing the frame can be separated and conveniently transported. C designates a riddle-frame, which is longitudinally and centrally divided, and which has secured to it cloth of different degrees of fineness. This riddle C is hung by its four corners by means of links *b*, which are pivoted to brackets b^1 of a segmental form by means of pivot-clamps b^2, adjustable in curved slots in said brackets. This adjustment allows the riddle to be raised or depressed, and at the same time to be moved in an endwise direction. I desire to give the riddle C a very rapid motion—say, from six hundred to twelve hundred vibrations per minute—and to this end I employ two levers, D D. The lower long slotted ends receive wrist-pins *c c*, which are fixed into the riddle-frame at or near the middle of its length, and the upper long slotted ends embrace eccentrics *c′ c′*, which are keyed on the shaft *d* of a fan, E, which receives rotation from a driving-shaft by means of a belt and pulleys, shown in Fig. 1. The fulcrums of the levers D D are blocks *d′ d′*, which are applied in long slots in these levers, and which can be adjusted endwise for shortening or lengthening the strokes given to the riddle. Above the riddle is the fan E, working in a box, E′, on top of the machine. Beneath the fan-box are a number of chambers, F, having valves *e* in their bottoms, and adjustable slides *g* applied over them. The valves *e* will open from time to time and discharge any material which may have accumulated in them, as described in my Letters Patent numbered 145,170. The slides *g* are designed for regulating the force of the exhaust, and these slides are adjustable by means of rods *g′* over ascending passages *f*. G designates the hopper, which is provided with an opening through its upper end that will be suitably closed when not feeding into it the material to be treated. The lower end of this hopper is provided with an adjustable strip, *i*, and also an inclined deflecting-board, *j*. The strip *i* is designed for regulating the feed, and the board *j* is designed for preventing a direct influx of air when the hopper-door is opened; also to evenly distribute the material upon the head of the riddle. Beneath the riddle C is a transverse division, H, which is flexibly connected to the riddle by a strip, *k*, and which leaves a space, J, on one side of it for the material which passes first through the riddle, and a space, J′, for the coarser material. In each space or compartment beneath the riddle are brushes I, which are arranged to sweep across the bottom of the riddle-cloth from side to side, so that they

move at right angles to the material in its passage over the riddle, thus avoiding mixing of the different grades of the material, and keeping the cloth clear. The brush-heads are attached by means of fingers *l l* to eyes *l' l'* on endless chains *m m*, applied around sprocket-wheels *m' m'* on horizontal shafts K K.

The finest material falls through the compartment J into a trough, L, and is moved by means of a conveyer, L', through an opening, *n*, into a trough, M, the conveyer N in which discharges the fine material through an opening, *o*. The material which falls through the compartment J' on the opposite side of the partition H is received into that portion of the trough L having a number of slide-valves, P, in its bottom, by means of which any desired grade of flour can be obtained. The material which is drawn off by the valves P falls into the trough M, and is discharged by the conveyer N through the opening *o'*. The refuse material is discharge from the riddle into a vertical passage, *p*, and thereby conducted out of the machine through an opening which is provided with a valve, *v*. The brush-heads I are detachable from their endless chains *m m* by simply sliding the sprocket-wheels *m' m'* to one side, which avoids disturbing the riddle when it is desired to remove the brushes.

I claim—

1. The combination, with the riddle, of the slotted levers D and adjustable blocks *d'*, whereby the blocks can be adjusted endwise for shortening or lengthening the strokes given to the riddle, as specified.

2. The fingers *l l* on brush-heads I, combined with eyes *l'*, through the chain *m*, substantially as described.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

ABSALOM R. GUILDER.

Witnesses:

A. Y. DAVIDSON,

B. P. DAGUE.