(No Model.)

S. STONE & J. W. KINGSTON.

MIDDLINGS PURIFIER.

No. 395,637. Patented Jan. 1, 1889.

Fig. 1.

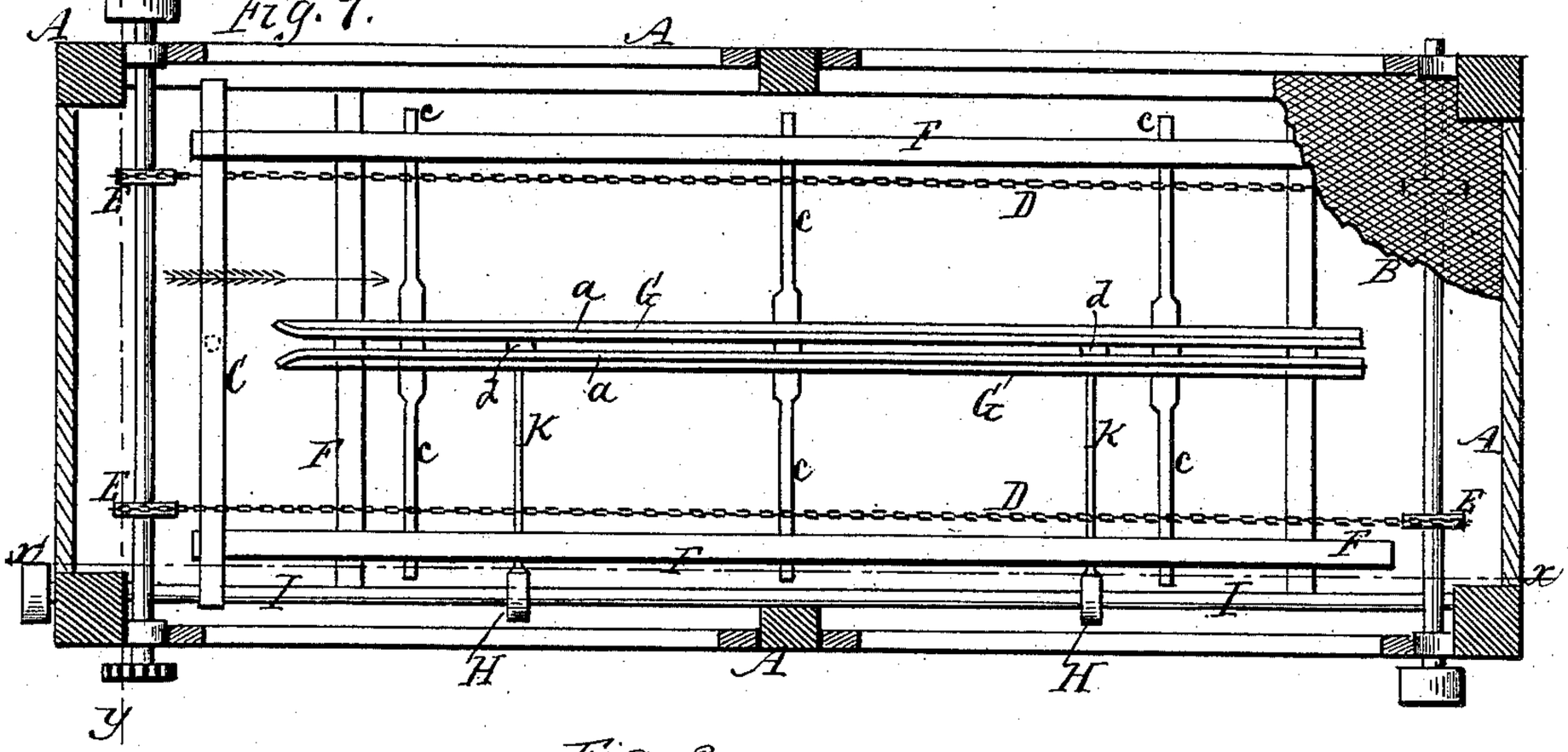


Fig. 2.

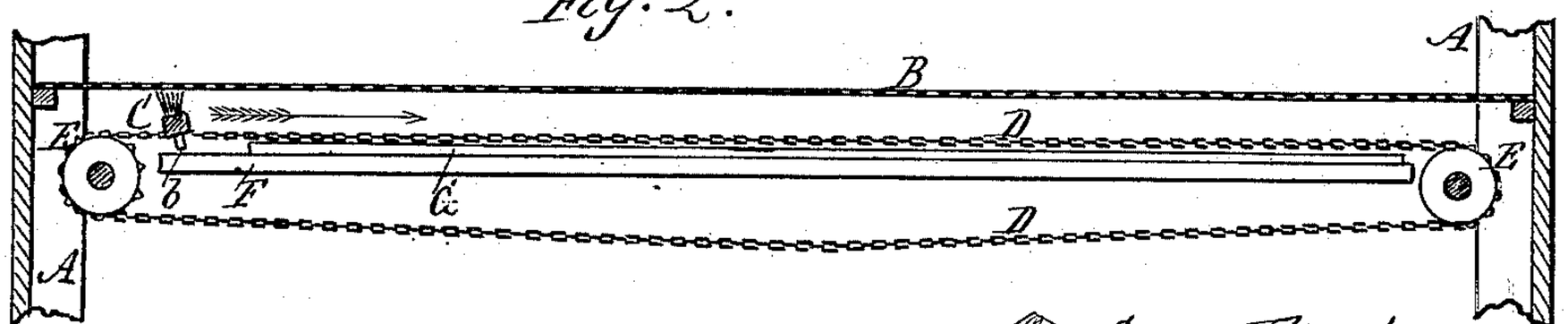


Fig. 3.

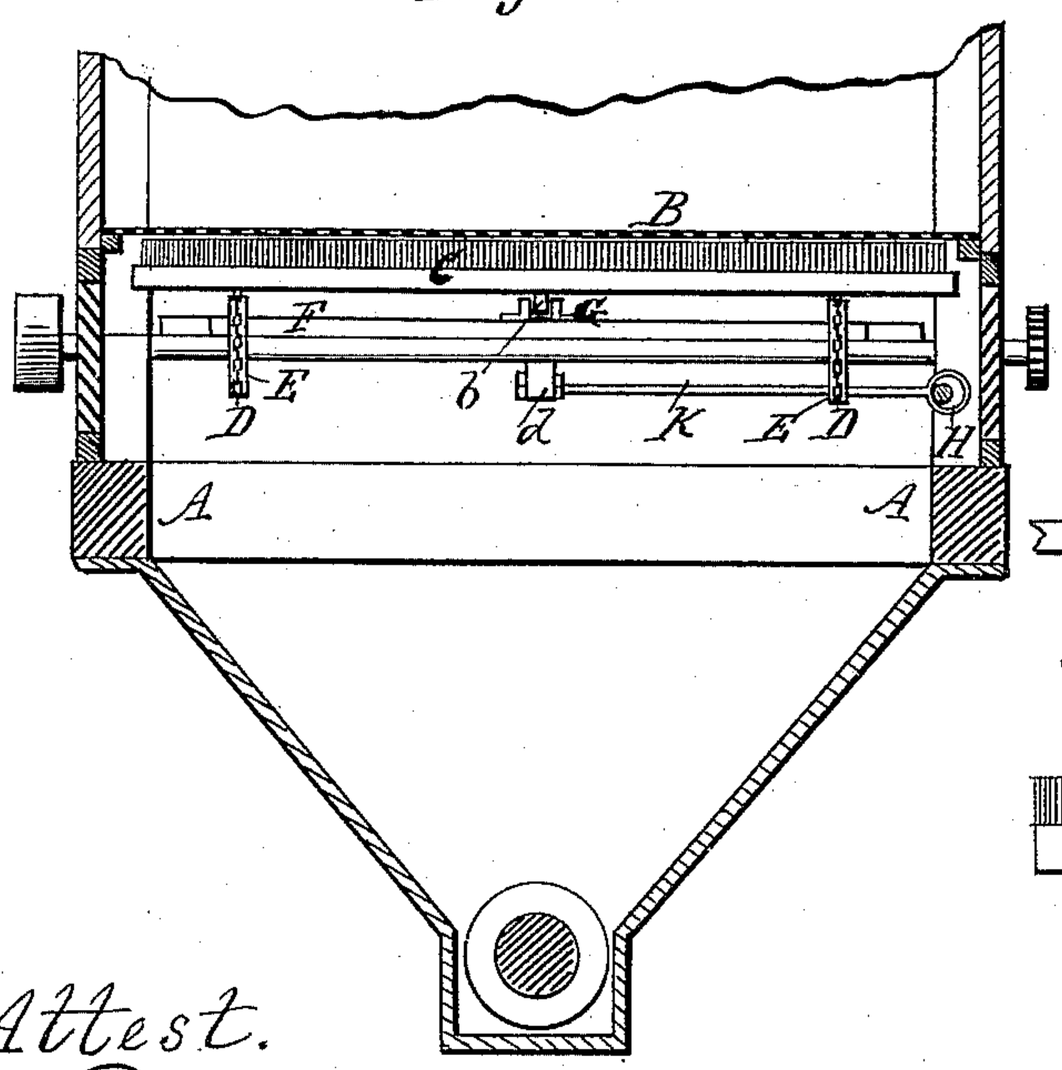


Fig. 4.

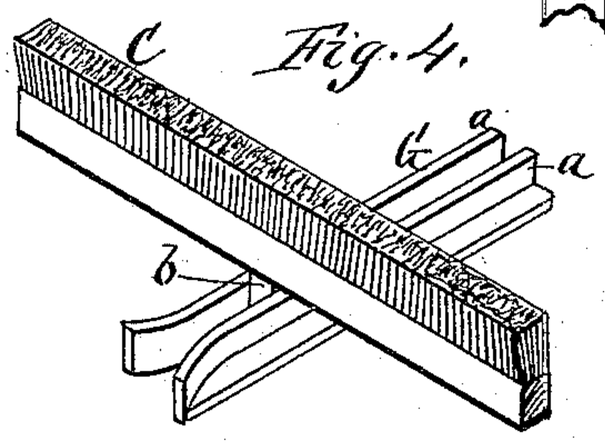


Fig. 5.

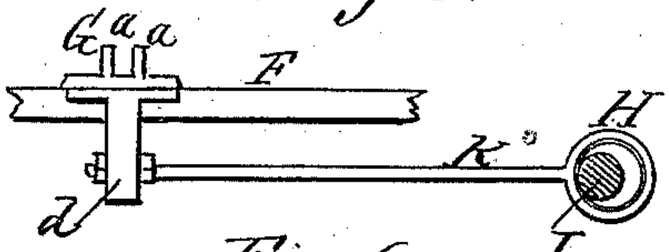
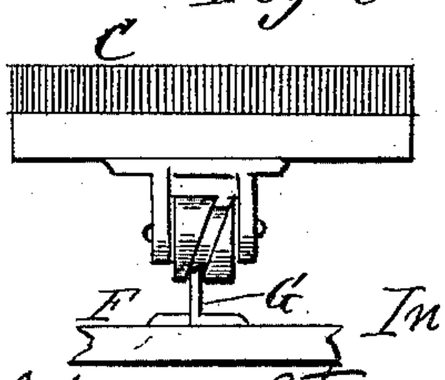


Fig. 6



Attest.

P. A. Hertel

Chas. A. Sidener.

Inventors.

Stephen Stone,

John W. Kingston,

per R. F. Osgood,

Atty.

UNITED STATES PATENT OFFICE.

STEPHEN STONE AND JOHN W. KINGSTON, OF ROCHESTER, NEW YORK, ASSIGNORS OF ONE-THIRD TO CHARLES P. KINGSTON, OF SAME PLACE.

MIDDLINGS-PURIFIER.

SPECIFICATION forming part of Letters Patent No. 395,637, dated January 1, 1889.

Application filed October 10, 1887. Serial No. 251,883. (No model.)

To all whom it may concern:

Be it known that we, STEPHEN STONE and JOHN W. KINGSTON, both of Rochester, in the county of Monroe and State of New York, have invented a certain new and useful Improvement in Middlings-Purifiers; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the drawings accompanying this application.

Our improvement relates to that class of middlings-purifiers in which the separating-screen is cleared by a brush attached to endless belts or chains on the under side of the screen.

The invention consists in the construction and arrangement of parts, hereinafter more fully described and definitely claimed.

In the drawings, Figure 1 is a horizontal section of a middlings-purifier just above the brush and just below the screen, showing our improvement. Fig. 2 is a longitudinal vertical section of Fig. 1 in line *x x*. Fig. 3 is a cross-section of Fig. 1 in line *y y*. Fig. 4 is a diagram showing a perspective view of the brush and ways. Fig. 5 is a diagram showing a side elevation of one of the eccentrics for operating the ways. Fig. 6 is a modification of the means for operating the brush.

A indicates the frame of the machine, which may be of any desired construction.

B is the screen, which is also of the usual form.

Our improvement is as follows:

C is the brush attached to endless chains D D, which pass around sprocket-wheels E E at the ends of the machine. When the brush comes on the upper side, it rests in contact with the screen and brushes the same from end to end.

F is a stationary rectangular frame located a little distance below the screen and below the upper lengths of the brush-chains. It serves to support the brush as it travels from one end to the other of the machine, and also to hold the ways, by which vibrating motion is given to the brush.

G G are two angle-irons constituting ways, with an open-ended slot between them for the passage of the pin on the brush-bar, the outer or induction end of the slot being widened by the spreading of the ends of the angle-irons to facilitate the entrance of the pin while the angle-irons are vibrating. The bottom of the brush has a pin, *b*, projecting downward, which, when the brush comes in line with the end of the ways, enters the slot and travels therein from end to end. The ways rest loosely on top of the frame F, and are provided with guide-rods *c c*, which extend out and pass loosely through holes in the sides of the frame F, by which means the ways can be vibrated laterally in the frame and yet keep their place.

H H are two or more eccentrics on a longitudinal shaft, I, at one side of the machine, and K K are rods connecting the eccentrics with hangers or bearings *d d* on the under side of the ways G. As the eccentrics are revolved, a vibrating motion will be imparted to the ways. Fig. 6 shows a cam-wheel on the under side of the brush, which runs on the top of the ways for giving vibratory motion.

The operation is as follows: When the brush comes to the upper side, it passes over stationary frame F and in contact with the under side of the screen, and in that condition is carried along the whole length of the screen. As it goes forward, the pin *b* on its under side enters the slot between the ways G G and traverses the same, and while in place in the slot any vibratory motion given to the ways will also be given to the brush, the chains to which the brush is attached being sufficiently flexible for the purpose. Thus as the brush progresses longitudinally it is vibrated laterally, and all parts of the screen-surface will be reached. By this means the meshes of the screen are kept clear, and equal wear is produced on the same. By the use of this brush having a lateral vibration one or two finer grades of screen-cloth can be used, by which means the middlings are much cleaner, and the tailings are more thoroughly separated.

Having described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a middlings-purifier, the combination, with the screen, endless chains, and brush, of the stationary frame F, the ways G G, resting loosely on the frame, and devices for giving

lateral vibration to the ways, as herein shown and described.

2. In a middlings-purifier, the combination, with the screen, endless chains, and brush, of the stationary frame F, the parallel angle-irons G G, forming an open-ended slot, a pin on the bottom of the brush which runs in the slot, and eccentrics H H and rods K K, for giving motion to the ways, as described.

In witness whereof we have hereunto signed our names in the presence of two subscribing witnesses.

STEPHEN STONE.
JOHN W. KINGSTON.

Witnesses:
R. F. OSGOOD,
P. A. COSTICH.