

(No Model.)

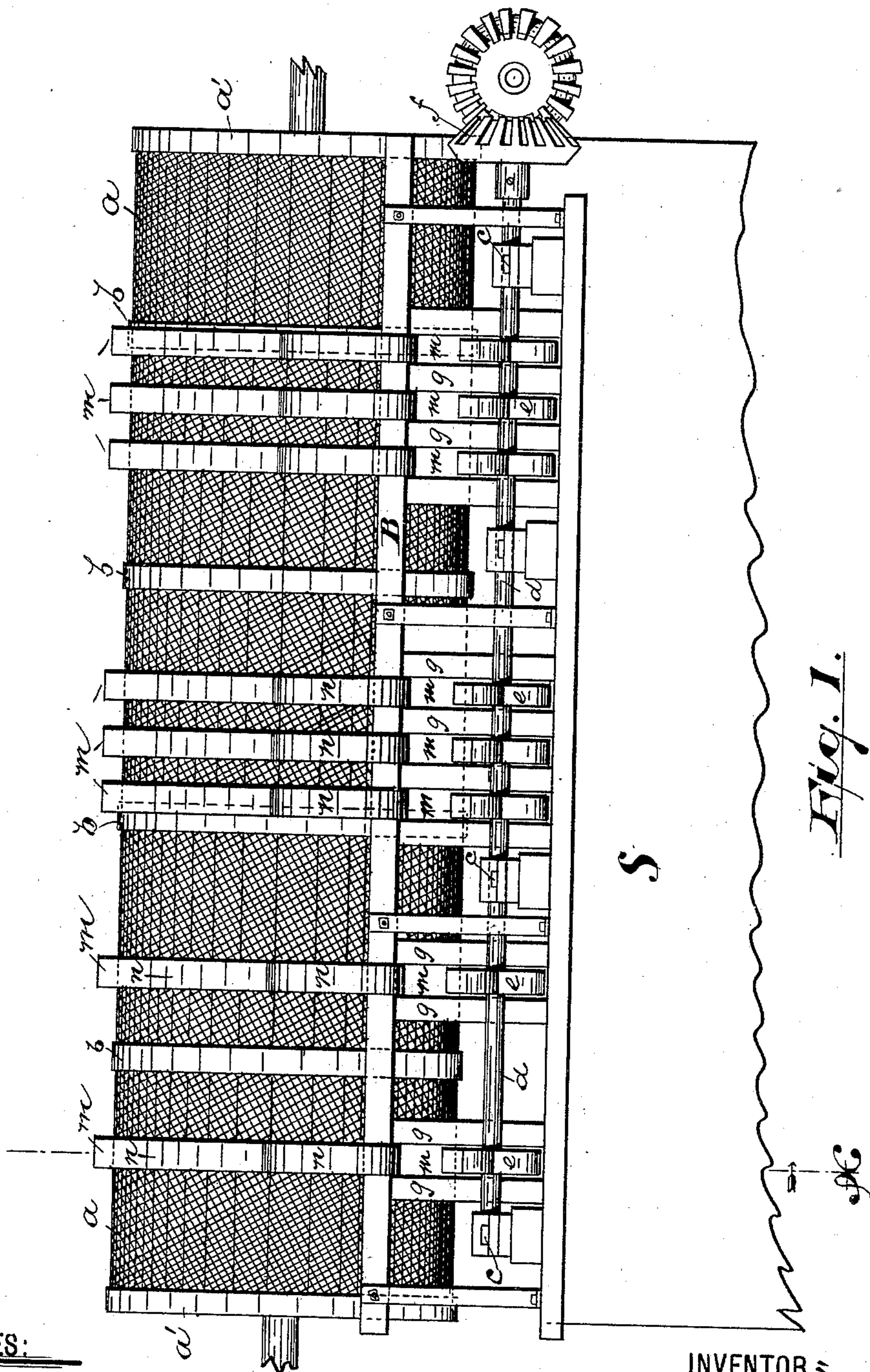
2 Sheets—Sheet 1.

A. LISTER.

CLEANING ATTACHMENT FOR BONE FLOUR SIFTERS.

No. 427,774.

Patented May 13, 1890.



WITNESSES:

INVENTOR:

Wm. A. Michel  
vs Wayland

*Alfred Lister,*

BY *Drake & Co* ATTY'S.

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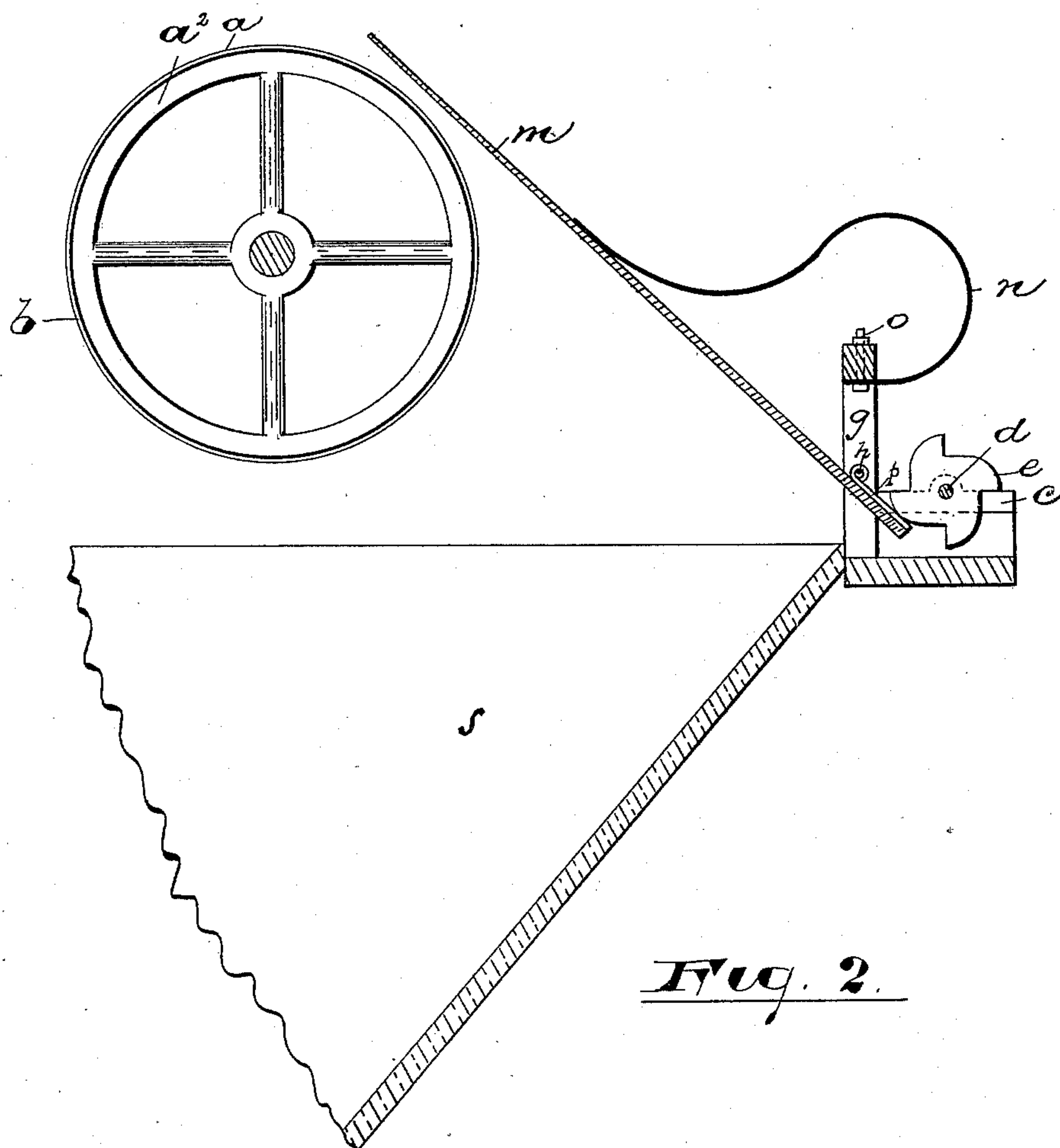
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WITNESSES:

INVENTOR

Oscar H. Michel,  
Jas Wayland

*Alfred Lister,*

BY *Drake & Co.* ATTY'S.



# UNITED STATES PATENT OFFICE.

ALFRED LISTER, OF NEWARK, NEW JERSEY.

## CLEANING ATTACHMENT FOR BONE-FLOUR SIFTERS.

SPECIFICATION forming part of Letters Patent No. 427,774, dated May 13, 1890.

Application filed January 11, 1890. Serial No. 336,669. (No model.)

*To all whom it may concern:*

Be it known that I, ALFRED LISTER, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Cleaning Attachments for Bone-Flour Sifters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

The object of this invention is to provide a bone-flour-sifting machine with an attachment for automatically keeping the sifting-cylinder free—*i. e.*, keeping the meshes thereof from becoming clogged with the flour; and the invention consists in the application to the machine of certain devices for accomplishing said object and in the arrangement and combination of said devices, as hereinafter set forth and shown, and finally pointed out in the claims.

In the accompanying drawings, in which like letters of reference indicate corresponding parts in the several figures where they occur, Figure 1 represents a front elevation of a bone-flour-sifting machine having my improvement connected therewith; and Fig. 2 represents a vertical transverse section taken through line *x* of Fig. 1, showing my improvement in detail.

In said drawings, *a* indicates a sifting-cylinder composed of wire-cloth secured upon suitable end disks *a'* and intermediate rings or wheels *a''* by means of bands or binders *b*. In the front of the frame are arranged bearings *c*, in which revolve a cam-shaft *d*, on which are secured in any position desired cams *e*. (Shown more clearly in Fig. 2.) This cam-shaft is operated, as shown in the drawings, by miter-gears *f*; but it can be operated in any other manner desired, as will be manifest. In the rear of the cam-shaft *d* are arranged standards or supports *g* with pins *h*, on which are pivoted clappers *m* near the lower ends thereof. The clappers are secured to the standards by means of the metallic plates *p*, one of which is secured upon each clapper, having an eye formed at its upper end to en-

gage with the pin *h*, and having its opposite end extended down to the end of the clapper for a shoe, against which the cam engages and prevents the wear of the end of the clapper, and also permits of its being renewed when worn without the necessity of renewing the entire clapper. To the top of the standards are secured, by bolts *o*, one end of curved metallic springs *n*, the other end being secured upon or in contact with the clappers *m*, as shown in Fig. 2, to hold them in the desired position in respect to the wire cylinder, and to force them back thereon when raised and released by the action of the cam *e*, as will be readily understood upon reference to Fig. 2.

Under the wire cylinder is arranged a receiving-bin *S*, to receive the dust as it falls from the cylinder.

In operating a machine with my improved device the cylinder is filled with the ground bone and the machine set in motion. The cam-shaft *d* being arranged and adapted to run at a much higher rate of speed than the cylinder will cause the clappers to have a rapid intermittent motion and be continually pounding on the surface of the cylinder. This action keeps the surface of the cylinder free from clogging, and also greatly aids in expelling the dust therefrom, as will be obvious.

By securing each clapper to a standard independently of each other, and then operating them by cams upon a shaft journaled in front of them, a light quick blow can be given directly to the wire-cloth, thus causing it to be more thoroughly jarred and cleaned than could be done by striking the frame to which the cloth is secured, and it accomplishes this result without injury to the cloth, owing to the fact that very light clappers can be used, the force of the blow being controlled entirely by the spring, which forces it against the cloth, whereas if they were all connected to a common support and acted by gravity, their weight would necessarily make the blow heavy, which would soon destroy the cloth. Another advantage which is secured by arranging the clappers independently of each other is that they may be made to strike the cylinder consecutively—that is, one after the other—by arranging the cams upon the shaft so that one clapper may be released or operated while



another one is being raised to its highest point from the cylinder, and still another is just beginning to be raised, thus securing a continual pounding or agitation of the cylinder.

5 By arranging the cam-shaft independently from the cylinder or its operating mechanism it may be provided with such means as that its speed may be varied independently from that of the cylinder, if desired, whereby the  
10 operation or action of the clappers may be increased or diminished as the condition of the flour may require, as when the flour is moist or damp, the clappers can be operated more rapidly than when everything is dry and not  
15 so apt to clog the meshes of the cylinder.

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

1. In a cleaning attachment for bone-flour-sifting machines, the combination of a frame,  
20 a cam-shaft journaled therein, cams mounted on said shaft, clappers pivoted to standards on the frame and operated independently of each other by said cams, and springs arranged and adapted to force the outer end of  
25 said clappers on the sifting-cylinder, as described and set forth.

2. In a bone-flour-sifting machine, the combination of a sifting-cylinder and means for  
30 operating the same, a cam-shaft operating independently of and adapted to be run at a different rate of speed from the cylinder, cams secured to said shaft, clappers pivotally secured to a suitable support and adapted to  
35 be operated by said cams, and springs adapted to force said clappers on the cylinder when

released by the cams, as described and set forth.

3. In a bone-flour-sifting machine, the combination, with the sifting-cylinder and means  
40 for operating it, of a cam-shaft adjacent thereto having a series of cams arranged thereon, a standard between each cam and the cylinder, a clapper pivotally secured to each standard, one end of which can be made  
45 to strike upon the wire-cloth of the cylinder, and a spring secured to the top of the standard at one end and bearing against the clapper with its free end, as described and set forth.

4. In a bone-flour-sifting machine, the combination, with the sifting-cylinder and means  
50 for operating it, of a cam-shaft adjacent thereto having a series of cams arranged thereon, a standard between each cam and  
55 the cylinder, a clapper for each standard having a flat plate secured near one end, said plate having an eye at one end, and having its opposite end extended upon the clapper to form a shoe against which the cam engages,  
60 a pin through the standard and through the eye of the plate, and a spring secured to the top of the standard, the free end of which bears the clapper and forces it against the  
65 cylinder, as described and set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 9th day of January, 1890.

ALFRED LISTER.

Witnesses:

OSCAR A. MICHEL,  
OLIVER DRAKE.