

(No Model.)

J. F. COLE.  
AUTOMATIC DUST COLLECTOR.

No. 535,675.

Patented Mar. 12, 1895.

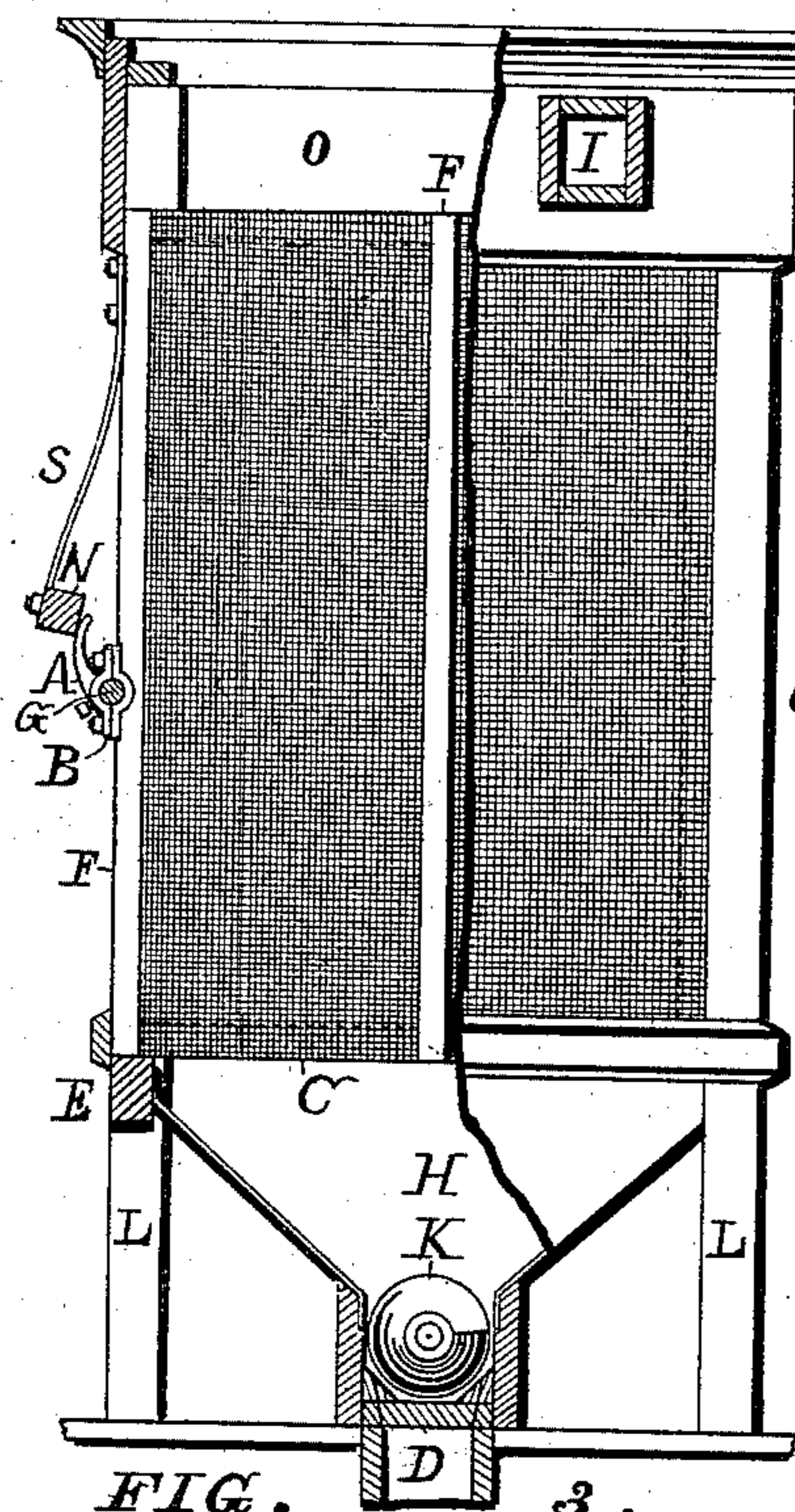


FIG. 3.

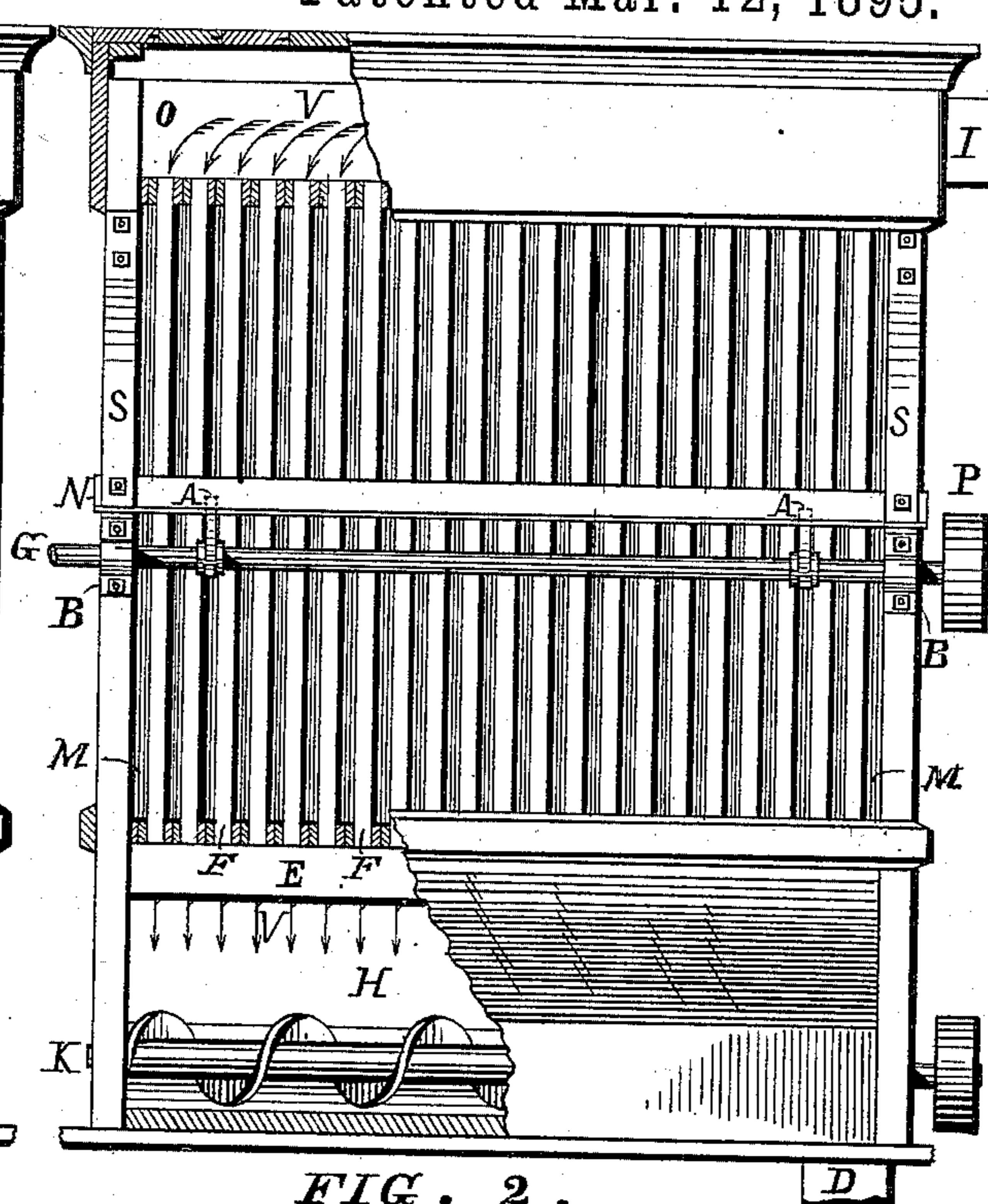


FIG. 2.

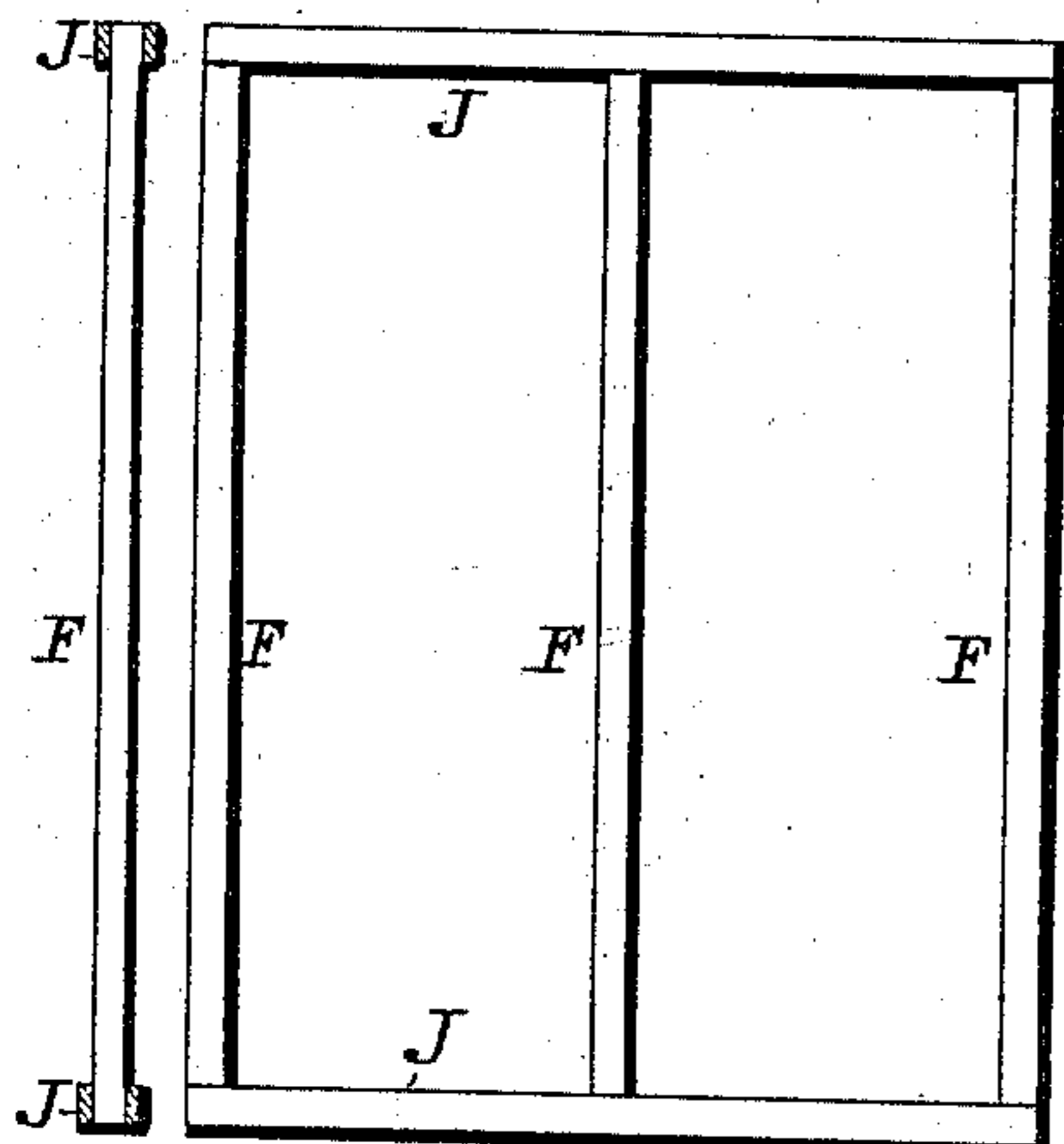


FIG. 4.



FIG. 5.

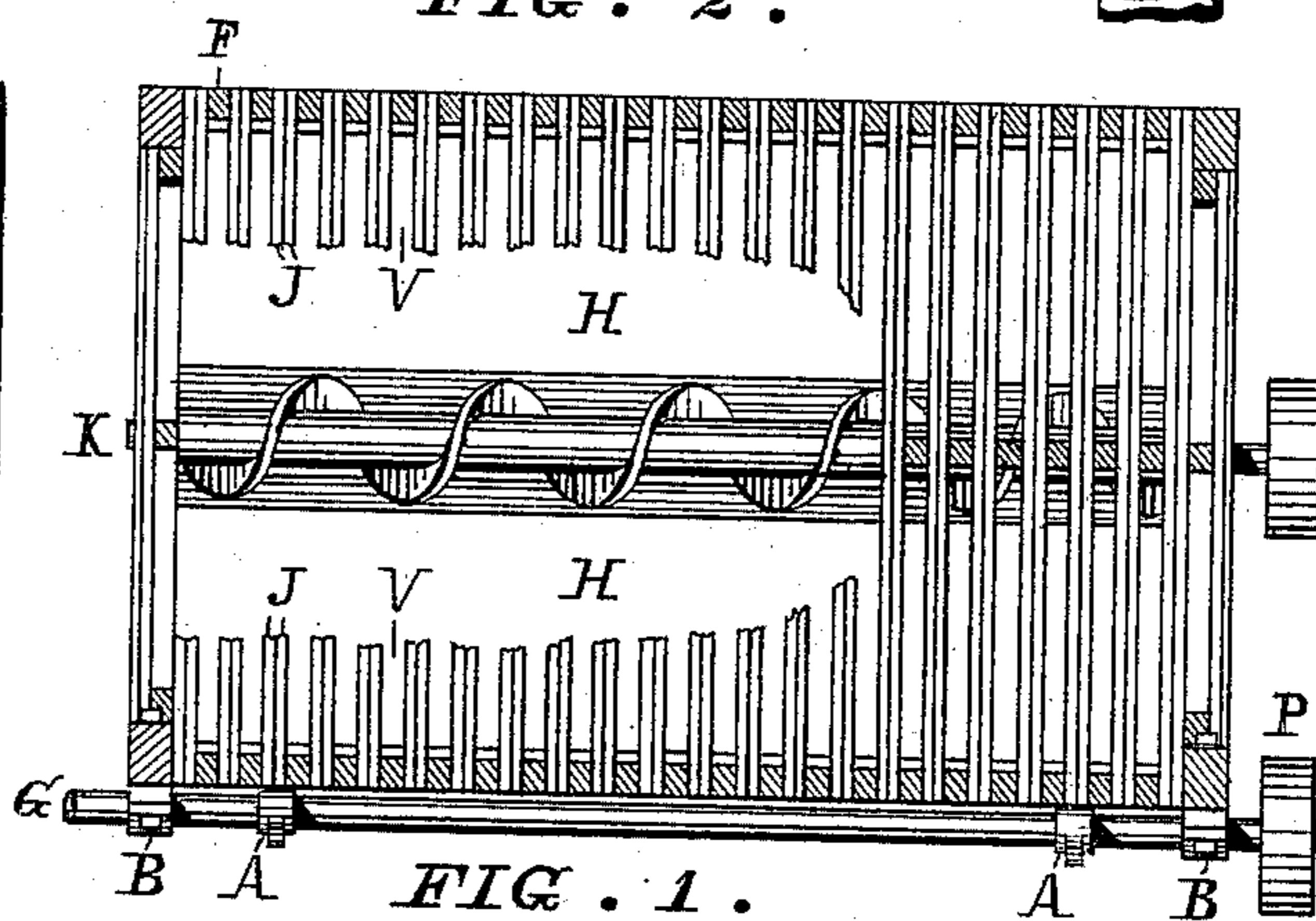


FIG. 1.

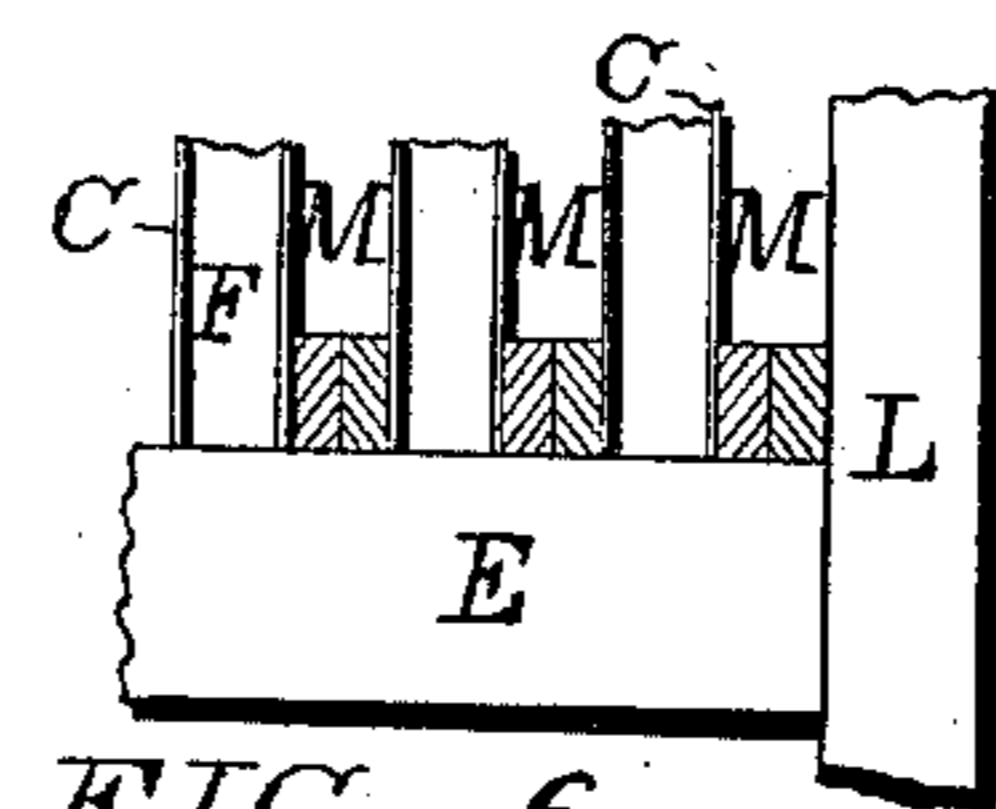


FIG. 6.

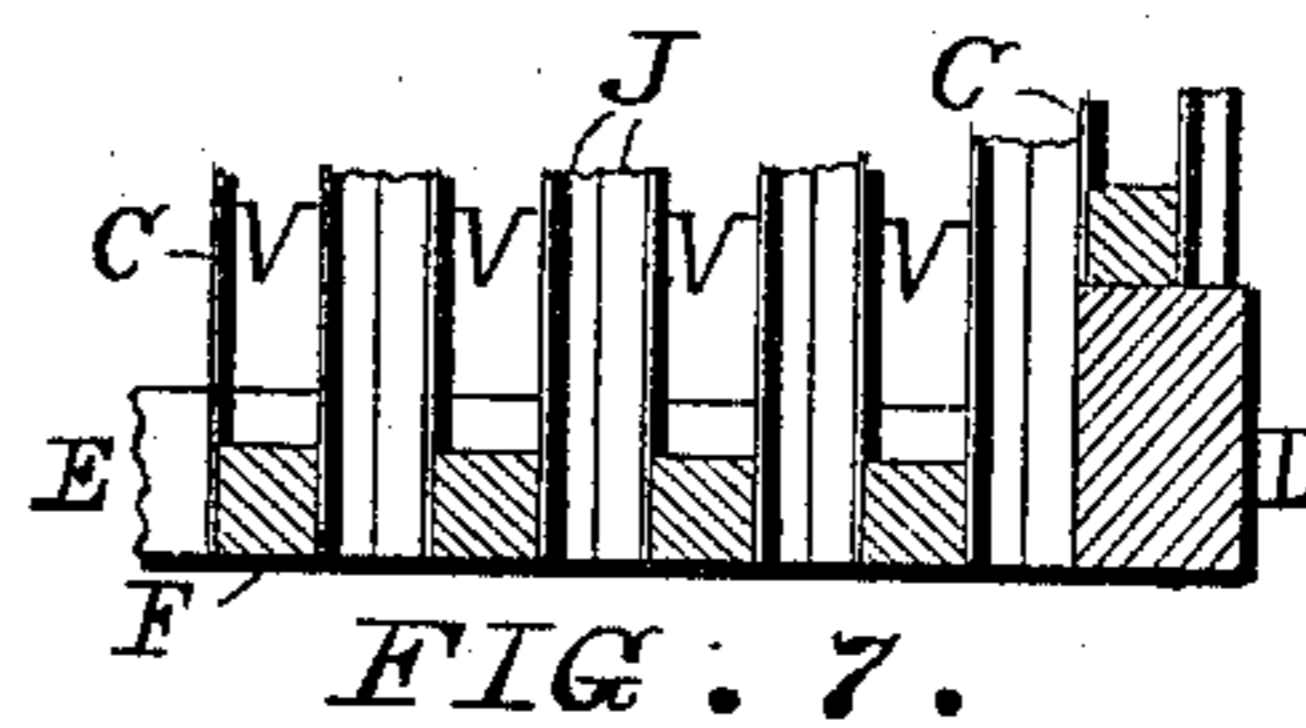


FIG. 7.

Witnesses:

*J. L. Middleton*  
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Inventor,

*Judson F. Cole*  
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# UNITED STATES PATENT OFFICE.

JUDSON F. COLE, OF SHELBY, OHIO.

## AUTOMATIC DUST-COLLECTOR.

SPECIFICATION forming part of Letters Patent No. 535,675, dated March 12, 1895.

Application filed August 4, 1894. Serial No. 519,498. (No model.)

*To all whom it may concern:*

Be it known that I, JUDSON F. COLE, a citizen of the United States of America, residing at Shelby, in the county of Richland and State of Ohio, have invented certain new and useful Improvements in Automatic Dust-Collectors, of which the following is a specification.

My invention relates to improvements in dust collector strainers designed to catch, retain and deliver the dust blown into it from dust producing machinery.

The object of the invention is to provide a collector with an exceedingly large cloth surface while at the same time it will occupy but little space, and further to provide means for keeping the meshes of the cloth free from dust thus permitting free passage to the air and preventing clogging. I attain these objects by means of the invention illustrated in the accompanying drawings, in which—

Figure 1 is a horizontal section partly broken away. Fig. 2 is a side elevation partly in section. Fig. 3 is an end elevation with part of one of the strainers broken away. Fig. 4 is a detail showing one of the strainer frames without the cloth. Fig. 5 is an end view of the same. Fig. 6 is a vertical section of the lower portion of the strainers on a larger scale, and Fig. 7 is a horizontal sectional view of the portion represented in Fig. 6.

In the drawings L are the supporting standards or legs to which are secured the longitudinal supporting bars or sills E, forming the foundation frame of the machine. Upon the sills are mounted the strainer frames, as will be hereinafter more particularly described, and above the upper ends of the strainer frames is the air chamber O into which the dust laden air is conducted through a duct I. A hopper H is provided beneath the frames to receive the dust as it drops from the cloth and in this hopper, at the bottom thereof, is provided a conveyer K which conveys away the dust and dirt which may accumulate. An outlet D is provided through which the dust is conveyed from the conveyer.

The strainer frames, shown in detail in Figs. 4 and 5, consist of the vertical bars F, (two, three or more as desired) to which are connected upon each side the horizontal bars J, J, forming rectangular frames. Upon the vertical bars F, and between them and the

bars J, at their point of contact are stretched the filter cloths, having their edges secured by gluing or tacking or like manner to the outer faces of the vertical bars and to the inner faces of the horizontal bars. It will thus be seen that when the frames are mounted vertically upon the sills as shown in the drawings there will be a series of spaces or passages V, which are open at their upper ends to the chamber O, and at their lower ends to the hopper H, but which have their sides closed by the vertical bars F. Alternately arranged between these spaces V, are a series of corresponding spaces M, M, which have their tops and bottoms closed by the horizontal bars J, J, but are open on their sides. It will thus be seen that as the air laden with dust passes from the blower or other source of supply into the chamber O, it will pass from there into the spaces V, and spread over the surface of the filter cloths, and as the outlet D is normally closed so that no air can pass through it the air will be forced through the cloths into the spaces M, and from thence will escape through the side openings into the room occupied by the separator, or may be collected and carried to any suitable point. The dust, however, will remain upon the filter cloths within the openings or spaces V and as it accumulates will drop down into the hopper and will be conveyed by the screw toward the delivery opening D where it may be removed at certain intervals.

In order to keep the filter cloths free from dust and prevent their becoming clogged I provide means for jarring the frames. This means consists of a horizontal bar N mounted upon springs S which tend to keep it forced constantly against the edges of the frames. A shaft G, driven from any suitable source of power carries two or more cams or arms A, which as the shaft revolves, alternately force the bar outward against the pressure of the springs, and then allow it to spring back and strike a sharp blow against the edges of the frames, thus vibrating them and shaking off all collected dust.

Having thus described my invention, what I claim is—

In a dust collector, the combination of the upper chamber for receiving the air, the lower dust collecting hopper, and the series of ver-

5 tically arranged filtering frames, each frame comprising the single vertical side bars and the double horizontal top and bottom bars carrying parallel filtering surfaces, said frames being placed one against the other whereby the side bars and the double top bars space the filter surfaces and cause such spaces to communicate alternately with the air and de-

livery hopper, and with the delivery space for the purified air, substantially as described. 10

In testimony whereof I affix my signature in presence of two witnesses.

JUDSON F. COLE.

Witnesses:

H. W. HILDEBRANT,  
JOHN S. TRIMBLE.