

(No Model.)

2 Sheets—Sheet 1.

H. E. COOK & J. B. THAYER.

Magnetic Grain Separator.

No. 233,920.

Patented Nov. 2, 1880.

Fig 1

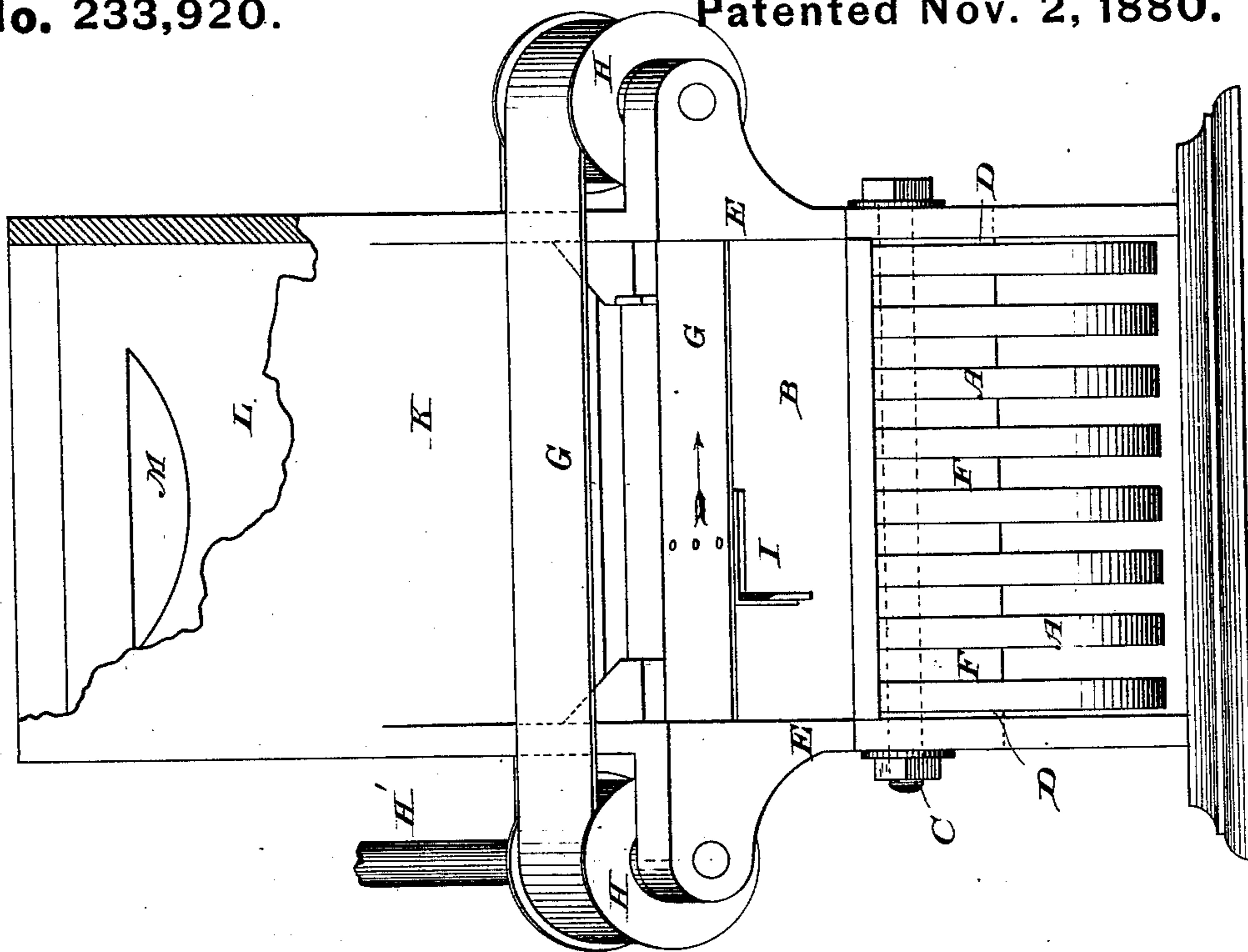
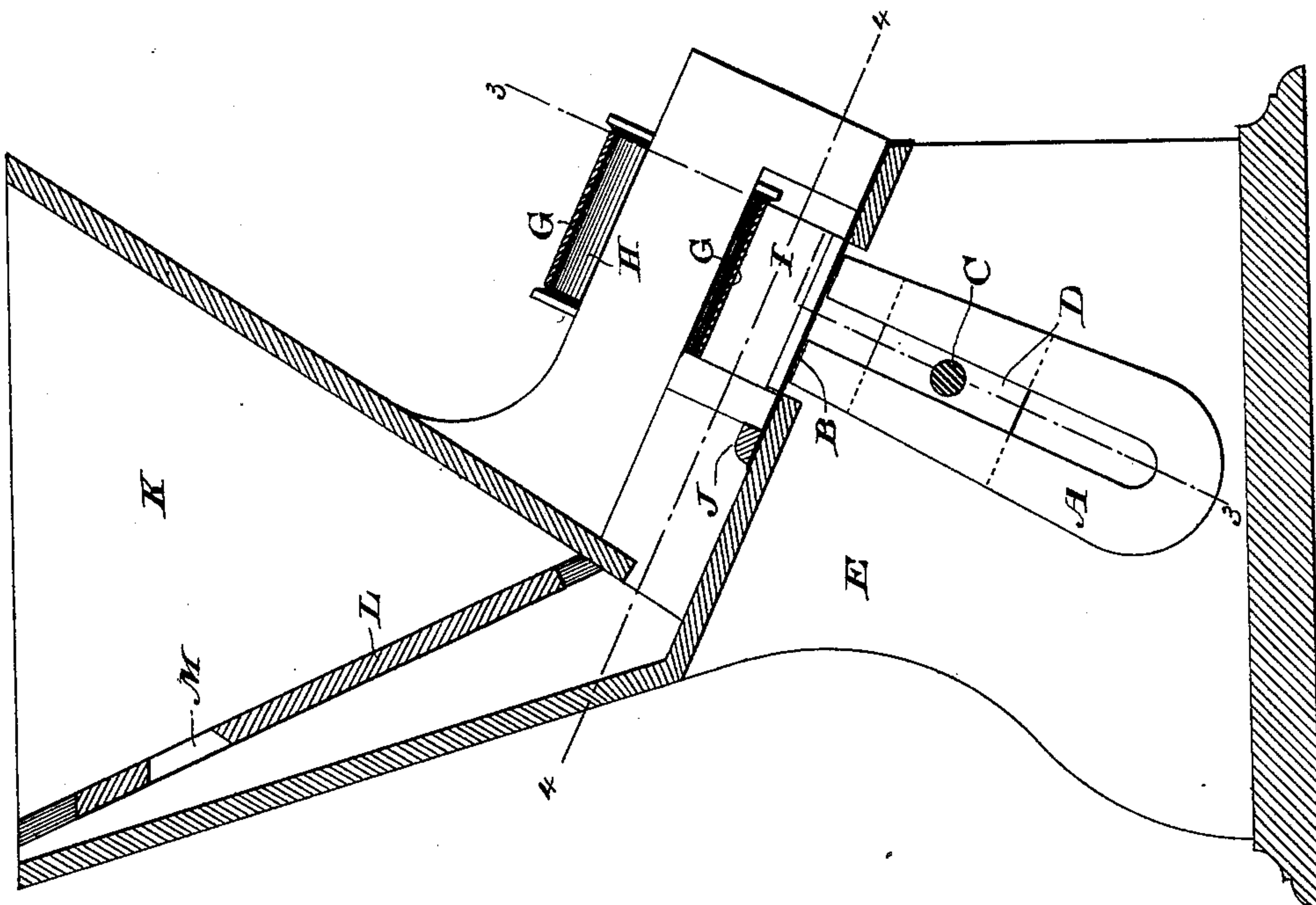


Fig 2.



WITNESSES

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By their Attorneys.

Baldwin, Hopkins, & Peyton.

(No Model.)

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Fig. 3.

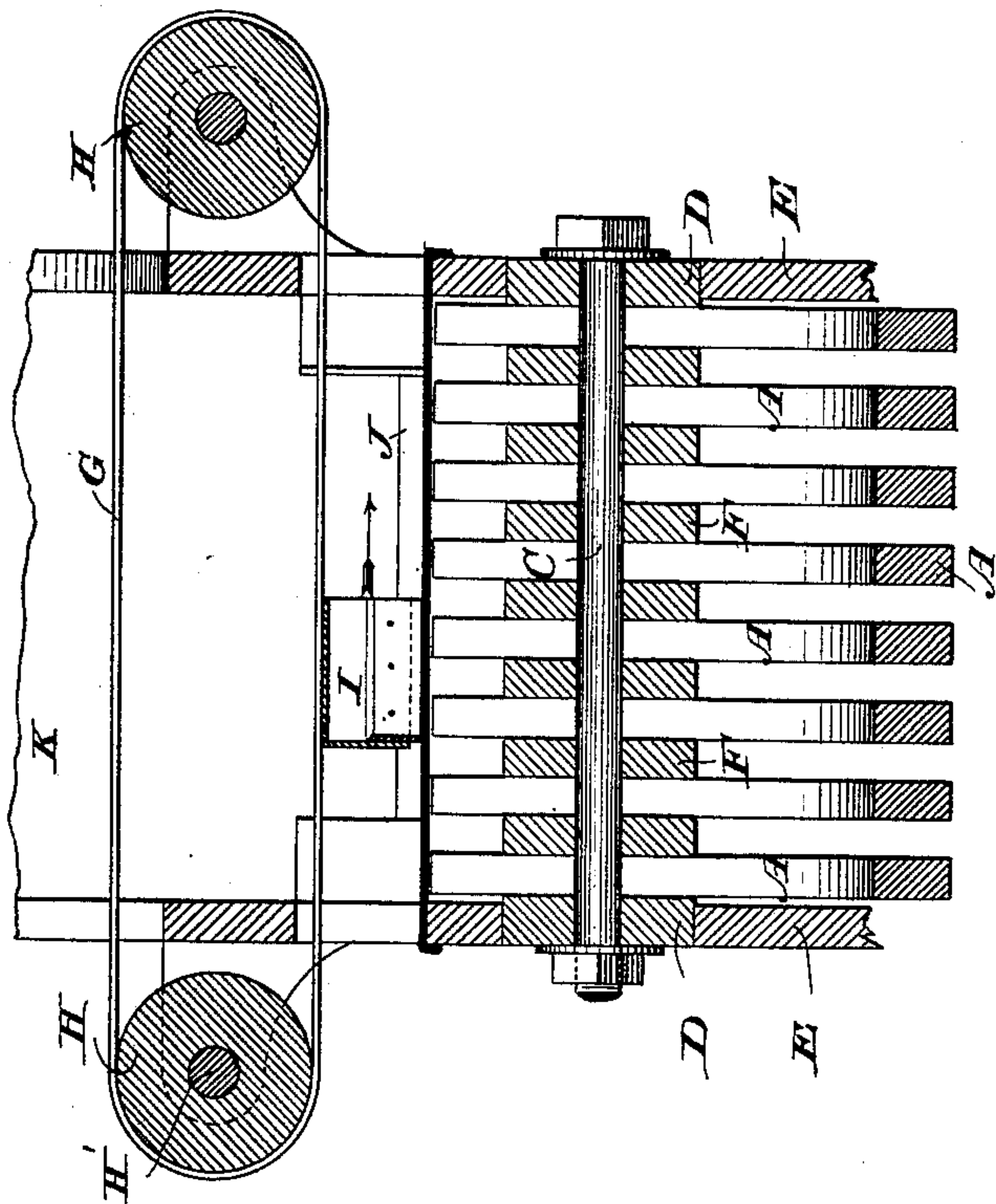


Fig. 6.

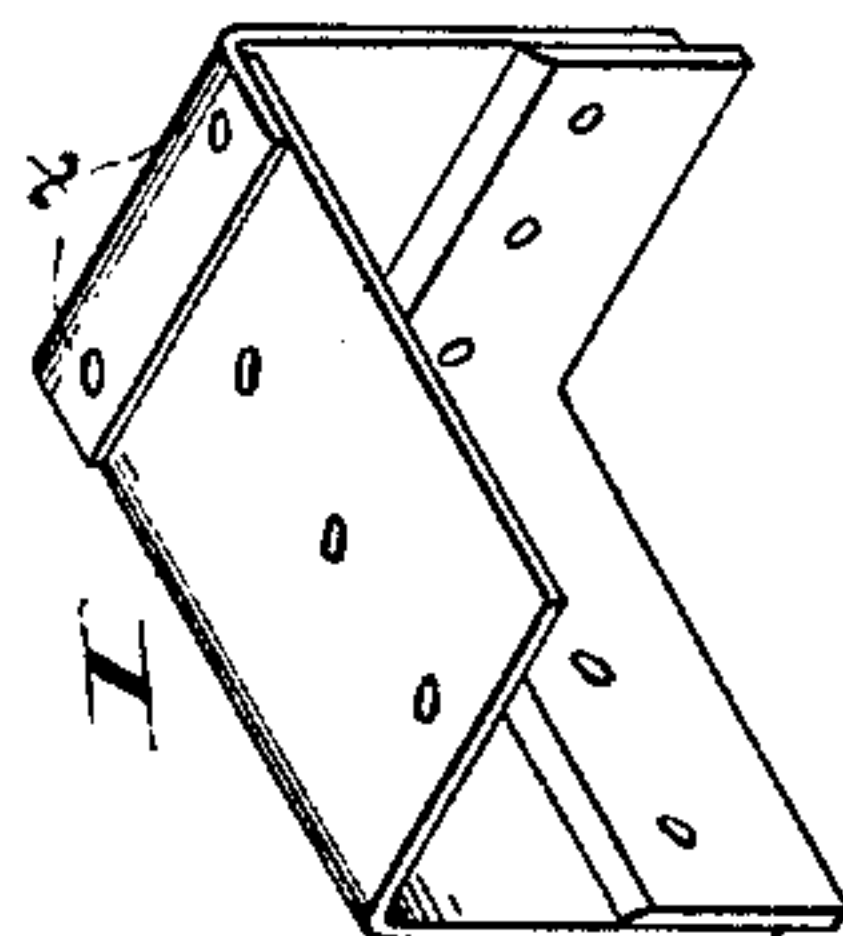


Fig. 4.

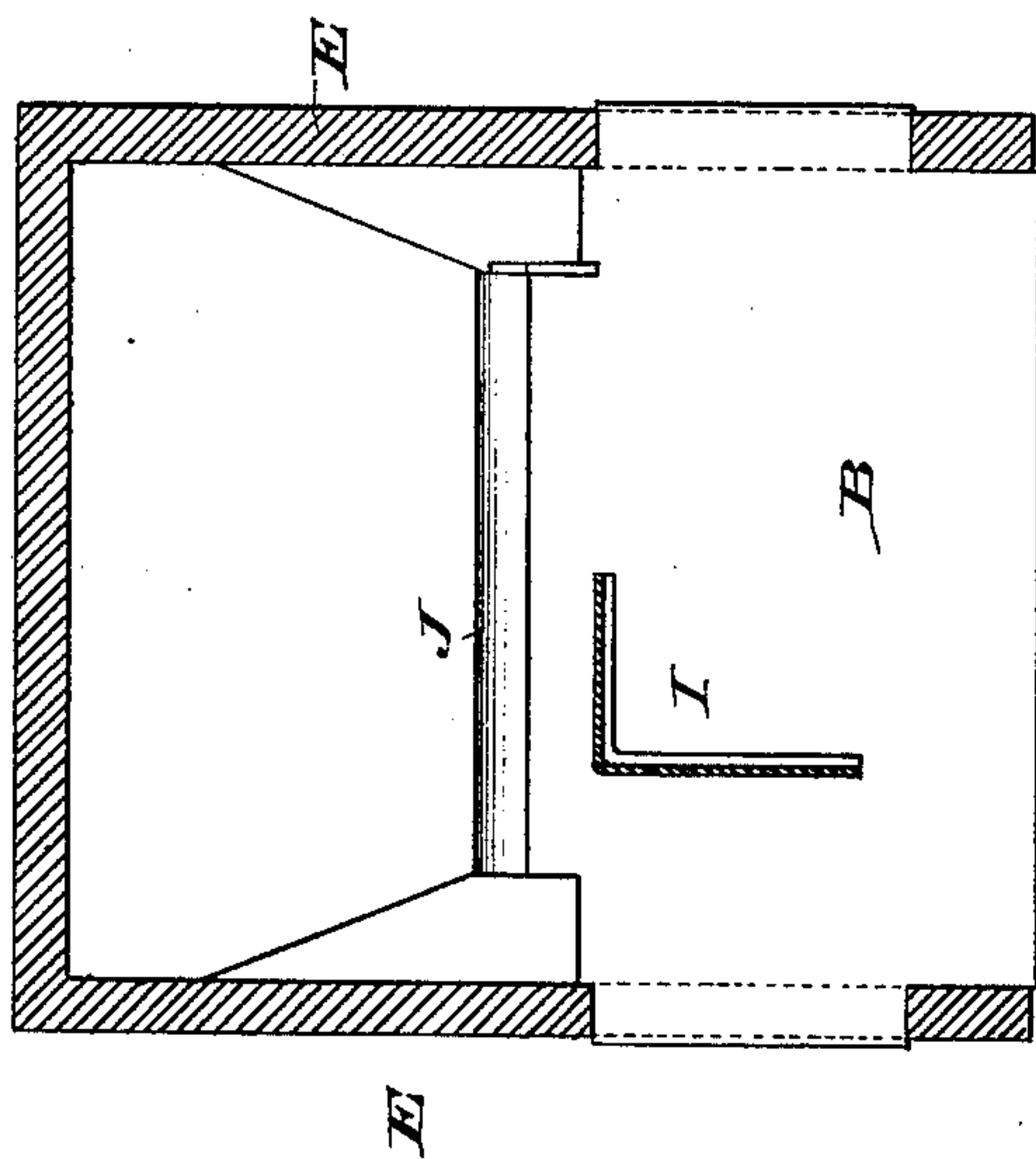
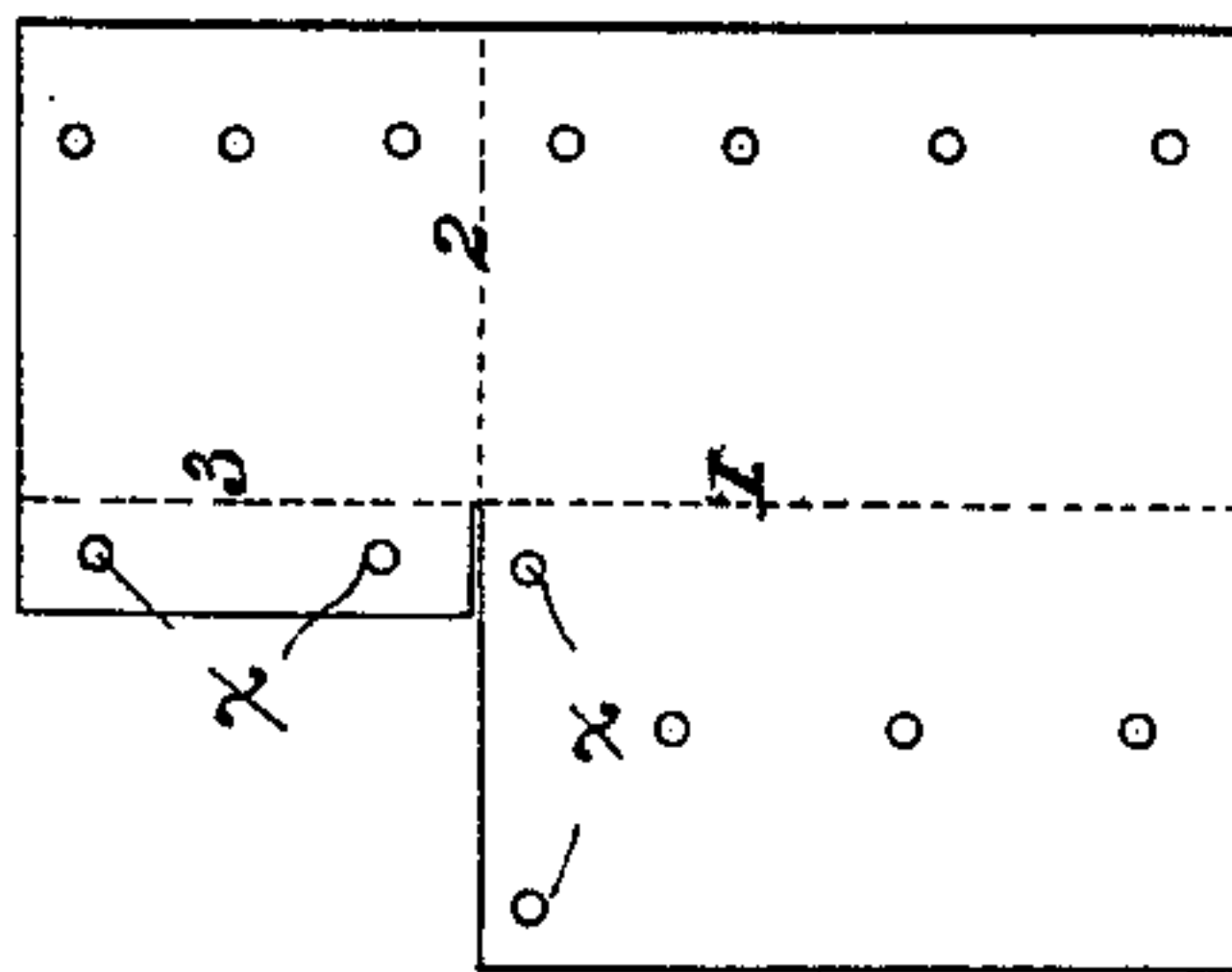


Fig. 5.



WITNESSES

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UNITED STATES PATENT OFFICE.

HENRY E. COOK AND JESSE B. THAYER, OF RIVER FALLS, WISCONSIN.

MAGNETIC GRAIN-SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 233,920, dated November 2, 1880.

Application filed April 1, 1880. (No model.)

To all whom it may concern:

Be it known that we, HENRY E. COOK and JESSE B. THAYER, both of River Falls, in the county of Pierce and State of Wisconsin, have
5 invented certain new and useful Improvements in Magnetic Separators, of which the following is a specification.

Our invention relates to and constitutes an improvement upon that class of machines for
10 which Letters Patent No. 225,029 were granted us on the 2d of March, 1880.

Its object is to obtain a proper flow of the grain or other material from the hopper, and to insure a supply of the material therein with-
15 out danger of its overflowing.

A further object of our invention is to hold the wiper firmly upon the conveying-surface while it is moving over it, and thus insure the removal of the magnetic particles.

20 A further object of our invention is to accomplish the removal of the magnetic particles by the continuous motion of an endless band carrying a wiper.

In the accompanying drawings, Figure 1 is
25 a front elevation, partly broken away to show the sliding partition in the hopper. Fig. 2 is a vertical central section. Fig. 3 is a section on the line 3 3 of Fig. 2; Fig. 4, a section on the line 4 4 of Fig. 2. Fig. 5 is a view of the wiper-
30 blank, and Fig. 6 is a view of the wiper.

The magnets A are secured in place beneath the conveying-surface B by means of a rod, C, formed of brass or other non-magnetic material, passing between the arms of the magnets,
35 which are of the ordinary horseshoe form. This rod has its bearings in rectangular blocks D, which fit into corresponding apertures in the frame E, and is provided with a flange or enlargement at one end and a screw-nut upon
40 the other.

Any desired number of magnets may be employed, and they are held at suitable distances apart by means of washers F. The magnets and washers are clamped together and held in
45 place by means of the nut upon the end of the supporting-rod. This construction permits of the ready removal and replacement of the magnets.

When the supporting-bar is made of mag-
50 netic material—such, for instance, as iron—a very injurious effect is produced upon the mag-

nets. This we obviate by making the bar of non-magnetic material, as above stated.

The conveying-surface may be made either of magnetic or non-magnetic material, or of both
55 combined, as may be desired.

An endless band, G, works over pulleys H, one of which receives its motion through a shaft, H', which may be driven in any usual well-known way. A right-angled wiper, I, is
60 secured upon this band, which revolves continuously in the direction indicated by the arrow. The wiper is carried around by the band and removes all magnetic particles adhering to the conveying-surface. By the continuous
65 motion of the endless band the wiper is always caused to move in one direction when clearing the conveying-surface, and the magnetic particles are all delivered at one side of the machine. The frame of this wiper is made in
70 whole or in part of magnetic material, so that in passing over the conveying-surface it will be drawn down thereon by the magnetic attraction, and its edges are faced with strips of rubber or similar material.
75

A breast or dam, J, is placed across the top of the conveying-surface to evenly distribute the flow of the material operated upon, and suitable offsets or brackets are secured to the frame at the ends of the dam to direct the flow
80 of the material from the openings in the frame through which the wiper passes.

The hopper K is provided with a sliding partition, L, by means of which the flow of the material from the hopper may be regulated. This
85 slide can be held in any desired position by a set-screw, or in any other well-known way. An overflow-aperture is made in this partition for the purpose of always maintaining a supply of material in the hopper. To accomplish this
90 the slide should be so adjusted that the material will not discharge from the hopper quite so rapidly as it is received, and there will therefore be a slight overflow through the aperture M. The material which overflows passes down
95 between the rear wall of the hopper and the slide and unites with that discharged from the lower hopper-opening. By this means overflow of the hopper is prevented, while it is always kept supplied with material.
100

Our machine is more especially adapted to separating metallic particles from wheat, but,

of course, may be used for numerous other purposes.

In Fig. 5 we have shown a blank struck out of sheet metal, from which the wiper is formed by bending it on the lines 1, 2, and 3 and riveting it at the points X.

The operation of the machine will readily be understood from the foregoing description.

We claim as of our own invention—

10 1. The hopper provided with a partition having an overflow-aperture, substantially as hereinbefore set forth.

15 2. The combination, substantially as hereinbefore set forth, of a magnetic conveying-surface and a wiper the frame of which is formed of magnetic material.

3. The combination, substantially as hereinbefore set forth, of a stationary magnetic conveying-surface, an endless band driven in one direction above said surface, a right-angled 20 wiper mounted on the band, and pulleys upon which the band runs, whereby the conveying-surface is always swept in one direction and the magnetic particles delivered at one side of the machine.

25 In testimony whereof we have hereunto subscribed our names.

HENRY E. COOK.
JESSE B. THAYER.

Witnesses:

W. P. KNOWLES,
E. B. HOLMES.