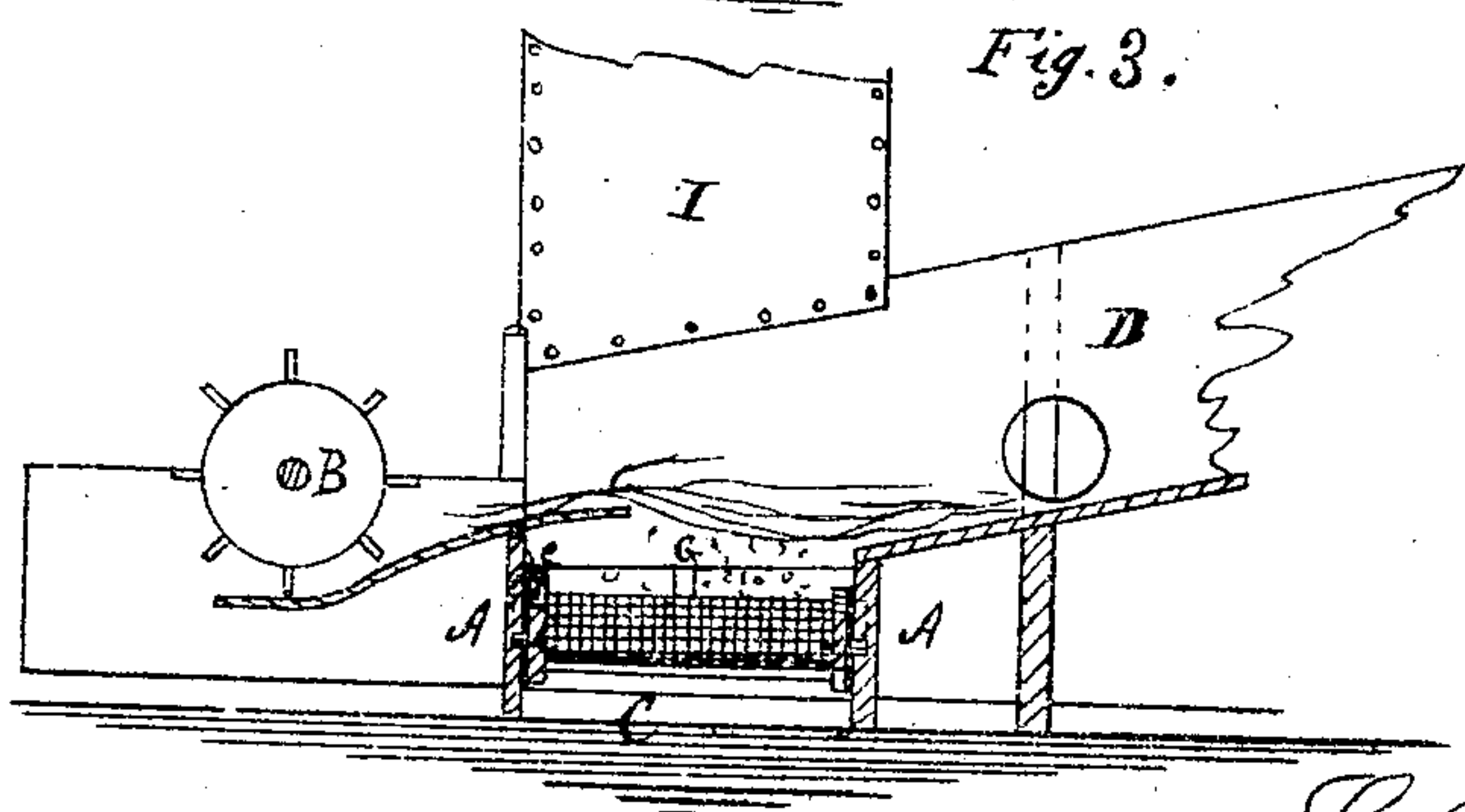
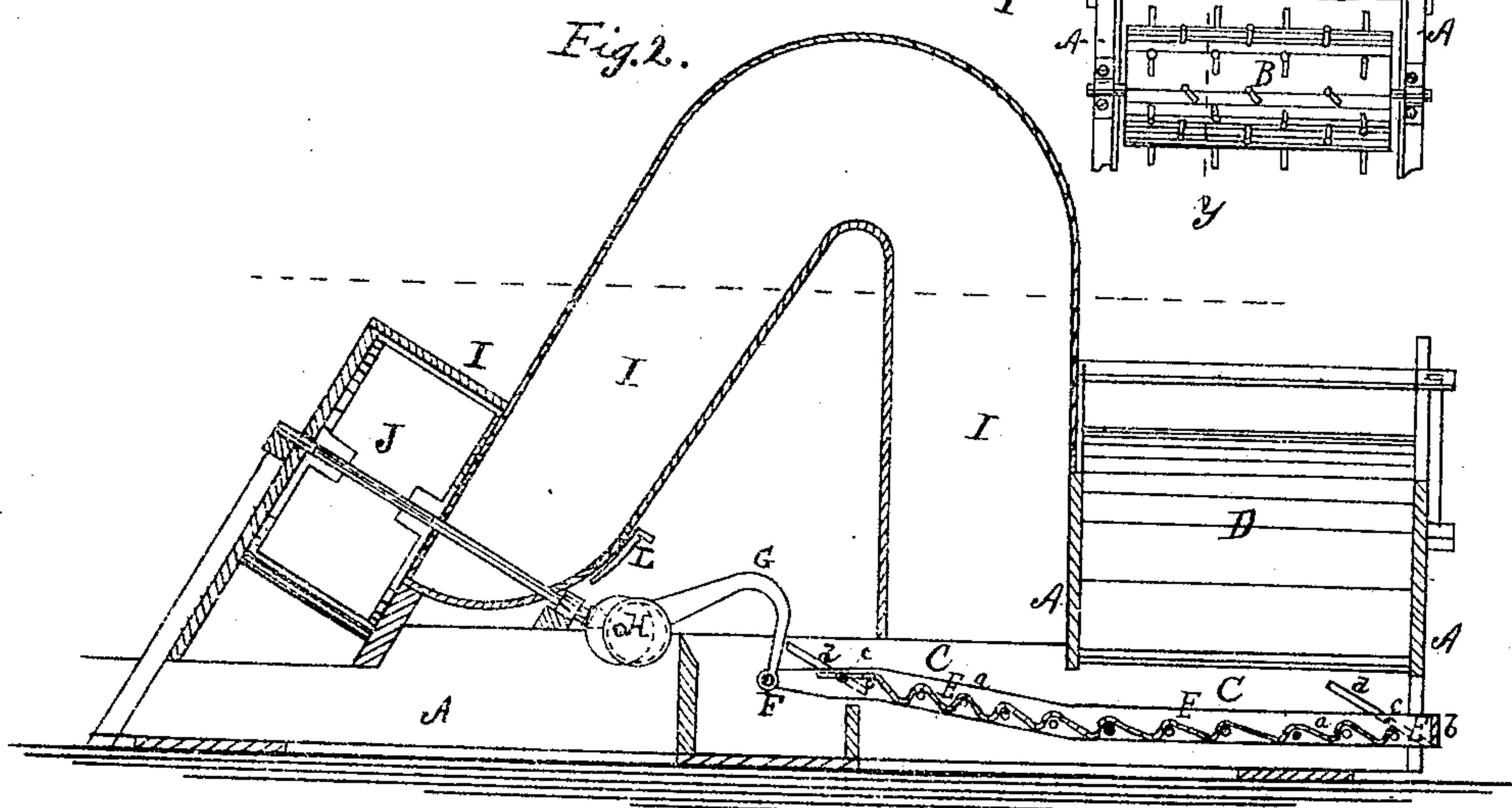
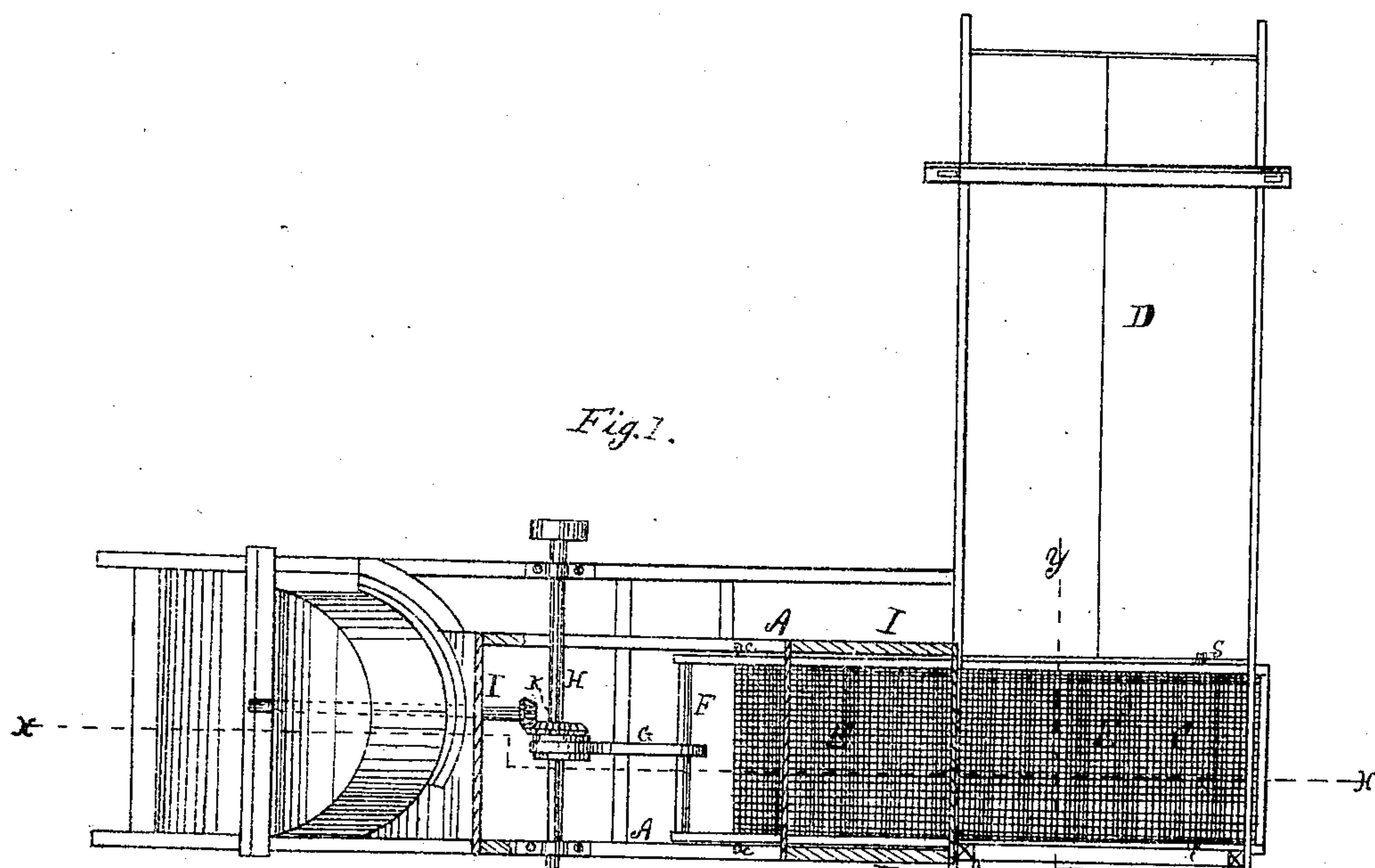


L. B. Lathrop.
Threshing-Machine & Grain-Separator.
N^o 73348 *Patented Jan. 14, 1868.*



Witnesses.
Theo. Tinsche
Wm. Brown

Inventor:
L. B. Lathrop
Per Munn & Co.
Attorneys

United States Patent Office.

LEVI B. LATHROP, OF SAN JOSÉ, CALIFORNIA.

Letters Patent No. 73,348, dated January 14, 1868.

IMPROVEMENT IN THRESHING-MACHINE AND GRAIN-SEPARATOR.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, L. B. LATHROP, of San José, in the county of Santa Clara, and State of California, have invented a new and useful Improvement in Separator and Screen for Threshing-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

Figure 1 represents a plan or top view of my invention.

Figure 2 is a vertical sectional view of the same, the plane of section being indicated by the line *x x*, fig. 1.

Figure 3 is a vertical transverse sectional view of the same, the plane of section being indicated by the line *y y*, fig. 1.

Similar letters of reference indicate corresponding parts.

This invention relates to a new manner of constructing and arranging the screens by which the straw and grain are carried from the threshing-cylinder, the former to a discharge-spout, the latter to the separator; and relates also to a new arrangement for separating the chaff from the grain.

The invention consists, first, in the novel motion imparted to the screen, which is a tossing motion imparted by an eccentric from a horizontal shaft, the screen being guided by means of pins, fitting into inclined grooves arranged in the sides of the framework of the machine, so that the screen is moved up and down in the direction of these grooves, and, as it is rapidly drawn upwards, the grain is tossed up and forward.

The invention consists, second, in the construction of the wire or lattice screen, which is arranged in waved lines, the front edge of each wave forming a carrier for the grain, after the same has been tossed up, as afore-described, and preventing it from rolling back when the screen moves down.

The invention consists, third, in arranging leather or other packing along the whole or part of the upper edge of the screen-frame, whereby straw or chaff is prevented from coming between the frame of the machine and the screen, from thereby obstructing the operation of the screen.

The invention also consists in arranging the end of a suction-pipe close above the screen for drawing up the chaff and other light substances, while the heavy grain remains on the screen, and is conveyed on the same to a suitable receptacle.

A represents the framework of a stationary or travelling threshing-machine. B represents the threshing-cylinder, from which the straw and grain are discharged in the direction of the arrow 1, fig. 1. The straw passes over a channel, C, which is arranged parallel with the axis of the threshing-cylinder, upon a screen of suitable construction, which is or may be arranged in a frame, D, as is indicated in fig. 3. The grain falls into the channel C, upon a wire or lattice screen, E, which is arranged in the same. This screen consists of side pieces *a a*, of wood or other material, and of a cross-piece, C, at its rear end, as shown, the perforated bottom being arranged between these pieces *a a* and C. Pins *c c* are secured to the outside of the side pieces *a*, and from it into grooves T T, that are arranged in the sides of the channel C in the frame A, as shown. These grooves are inclined, as shown. In the front end of the screen is a horizontal cross-bar, F, to which an arm, G, which fits around an eccentric on a horizontal shaft, H, that has its bearings in the frame A, is attached. By turning the shaft H, the screen will be moved forward and backward, and at the same time up and down, by reason of the positions of the grooves or guides T. The perforated bottom of the screen is bent or formed into a series of transverse waves, as is clearly shown in fig. 2, the front of each wave holding the grain, and preventing it from falling back while the screen moves down and backward; but when the screen is moved up and forward, the grain will be tossed up, and will be thrown forward, so as to drop into the next depression or valve. Above the screen E is arranged the open end of a suction-tube, I, which tube is provided with a fan, J, of suitable construction and arrangement. Thus, when the grain is being tossed up by the motion of the screen, the chaff and other light material are drawn up by the fan into the tube, and thence discharged through a spout at the outer end of the same, or otherwise. The screen, when connected with this suction-arrangement, must be perforated to allow the necessary supply of air; but when the screen is used, for instance, on the frame D, for conveying straw, or on a machine in which a different separating-apparatus is used, it need not be separated. The fan may be driven by bevel-gears K from the shaft H, if desired; its power may be modified or regulated

by the respective diameters of the gear-wheels, or by a gate, L, in the pipe I, or by making the discharge-opening of the latter larger or smaller. To the side pieces *a a* of the screen E should be secured leather or other packing, *e*, fig. 3, which will prevent straw, grains, or chaff from coming between the said side pieces and the sides of the channel C.

It will be observed that the screen E is curved, being gradually bent up towards its front end, fig. 2. This is for facilitating and aiding the tossing motion of the grain. From the front end of the screen E the grain is discharged into a suitable receptacle.

The screen, when arranged and operated as described, can also be used to convey grain to the threshing-cylinder, or to any other place.

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

1. The device for imparting the peculiar motion, as herein described, to the screen E, said device consisting of the inclined guides C, arm G, and crank-shaft H, or their respective equivalents.
2. Providing a screen, E, with alternate depressions and elevations similar to waves, substantially as and for the purpose herein shown and described.
3. The packing *e*, when arranged at the sides of the frame of the screen, substantially as and for the purposes herein shown and described.
4. Passing the grain by any suitable conveyer directly under the end of a suction-pipe, as set forth.
5. The screen E, when arranged and operated as set forth, in combination with the suction-tube I, the same being arranged substantially as described.
6. The tossing motion of the screen E, when applied to the purpose of separating grain from straw, or for separating it from chaff, or for simply conveying light articles, substantially as described.

LEVI B. LATHROP.

Witnesses:

J. N. HUDSON,
I. T. SMITH.