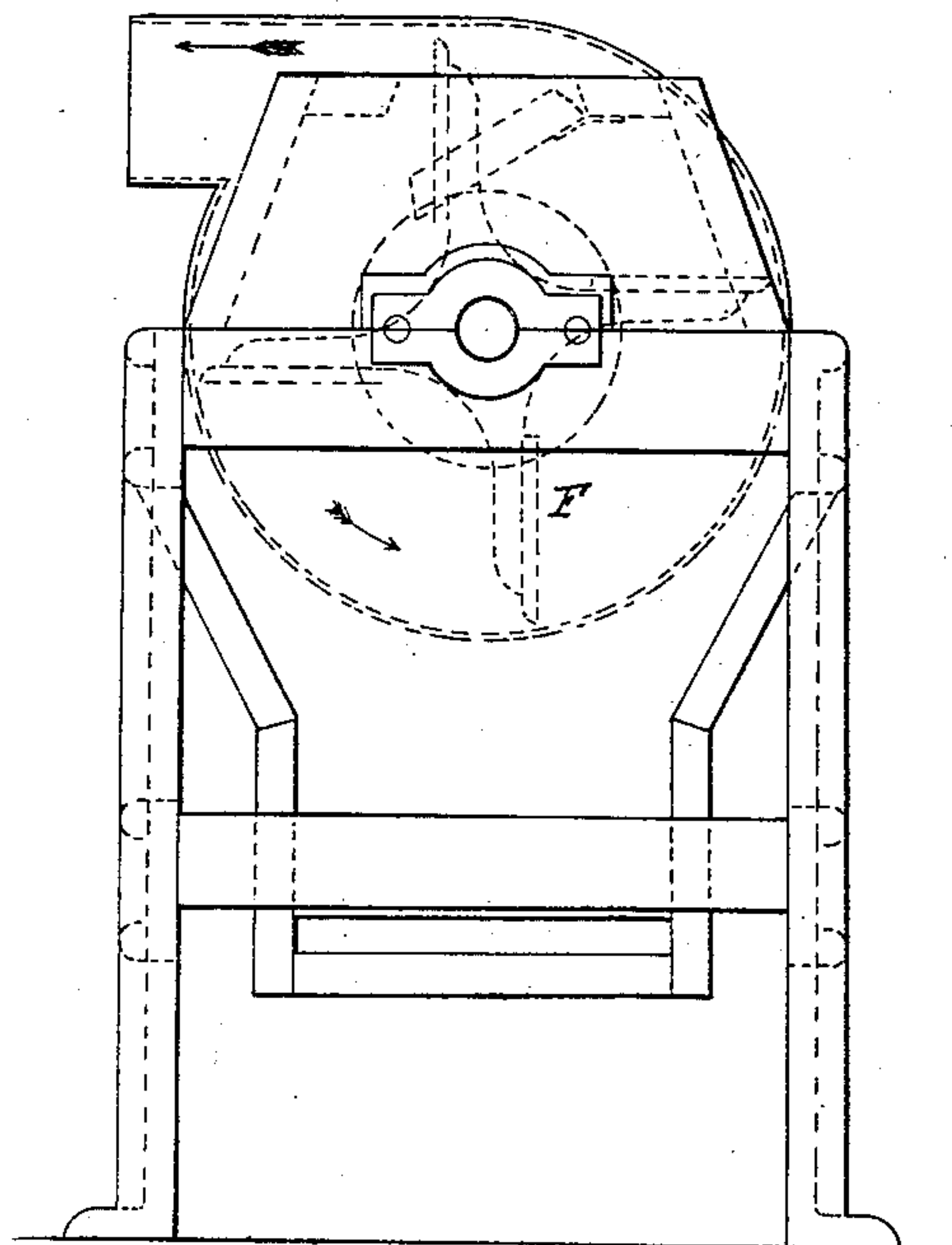
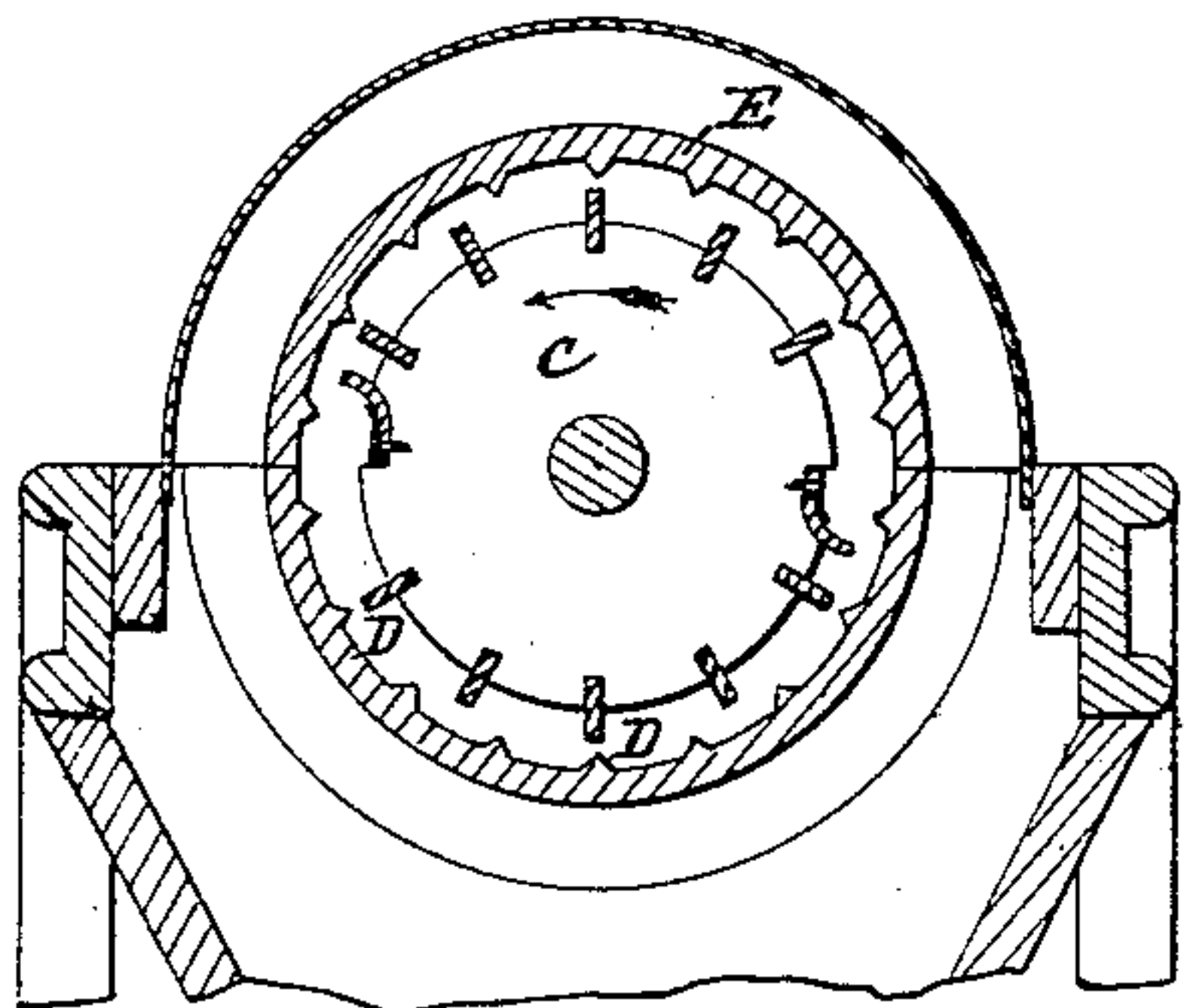
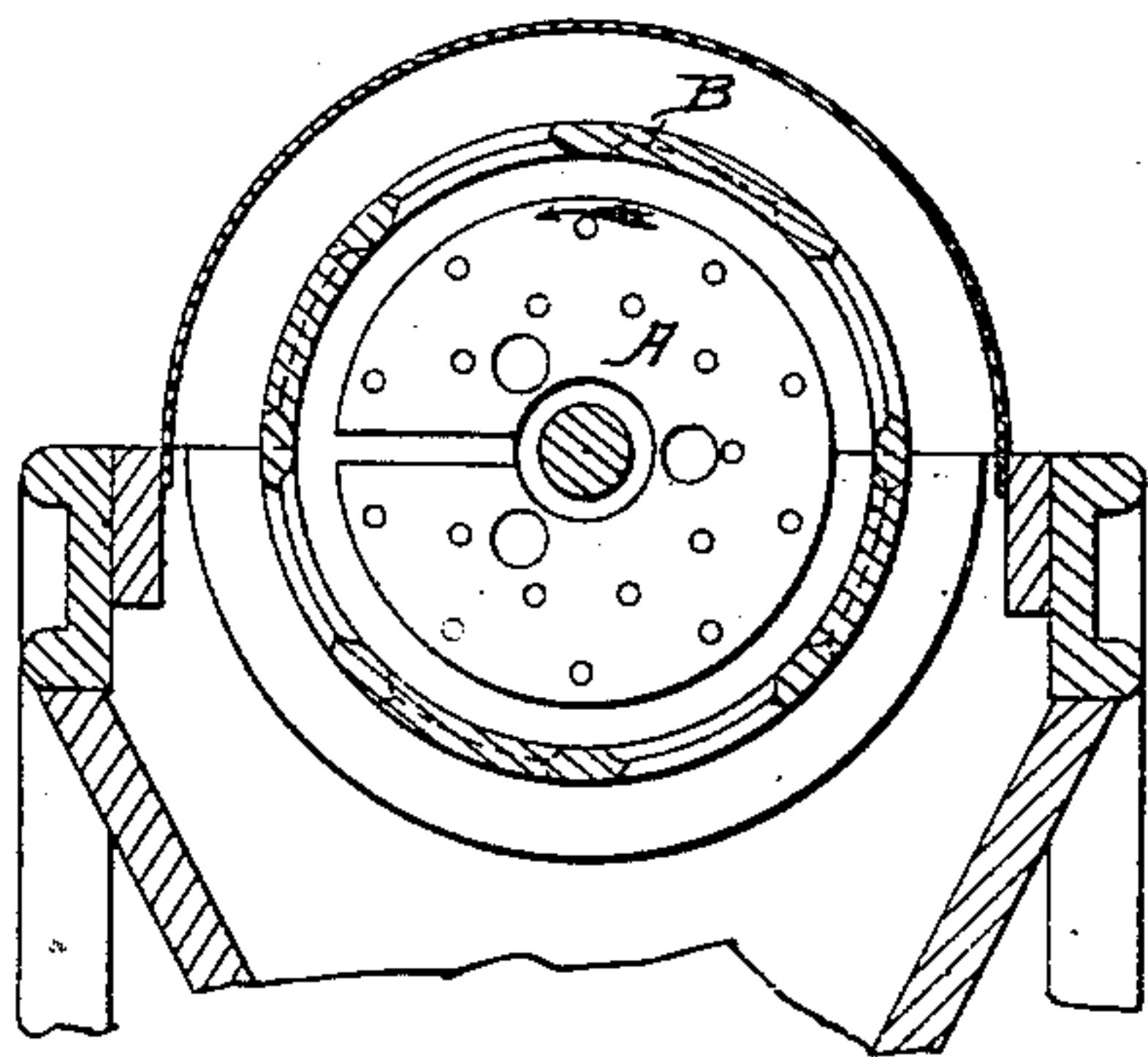
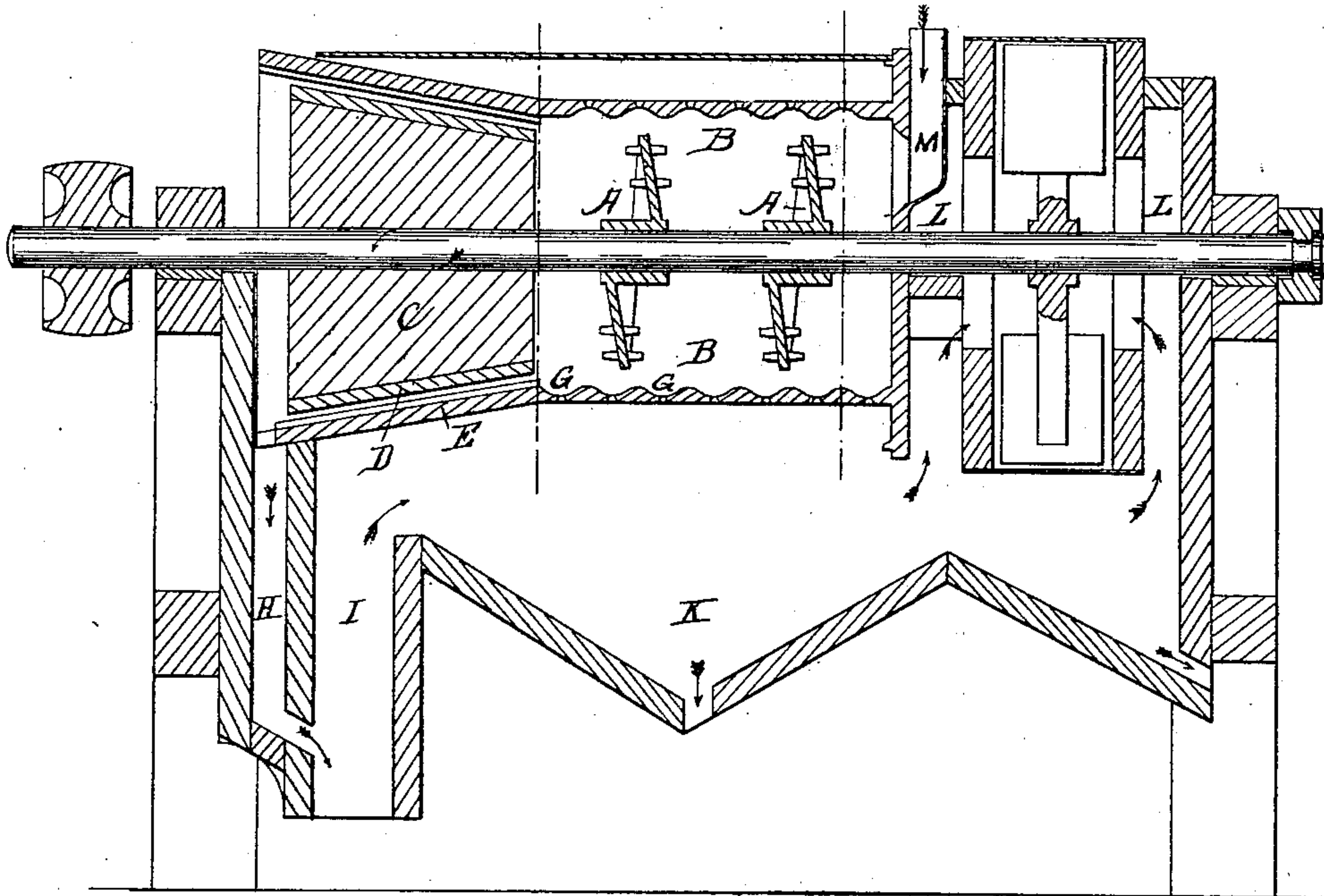


B. T. TRIMMER.
SCOURING AND CLEANING GRAIN.

No. 36,541.

Patented Sept. 23, 1862.



Witnesses:
Chas. S. Otis
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Inventor
B. T. Trimmer

UNITED STATES PATENT OFFICE.

BENJAMIN T. TRIMMER, OF ROCHESTER, NEW YORK.

SCOURING AND CLEANING GRAIN.

Specification of Letters Patent No. 36,541, dated September 23, 1862.

To all whom it may concern:

Be it known that I, BENJAMIN T. TRIMMER, of the city of Rochester, county of Monroe, and State of New York, have invented a new and Improved Mode of Scouring, Hulling, Separating, and Cleaning Buckwheat, Barley, and other Kinds of Grain; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and to letters of reference marked thereon.

The nature of my invention consists in the use of a series of screws, of a single thread or more with teeth or pins projecting from the sides for the purpose of scouring the grain, also in the use of a cone with rubbers of leather, india rubber or other suitable elastic material projecting from the body of the cone for the purpose of hulling and scouring, also a conical case with ribs or beaters projecting inward and diverging from the plane of the axis sufficiently to prevent the grain from passing too rapidly through the huller, and to form a resistance for the hullers to act against. Also a cylindrical case with openings for the purpose of passing out the dust and other impurities and forming the case for the screw scourers to operate in. Also in the use of suction pipe air chambers fan blower &c.

To enable others skilled in the art to make and use my invention I will describe its construction and operation.

I make a suitable frame work to receive the different parts, provided with journal boxes on the top at the ends, for the shaft to run in. At one end, I make an air-chest opening in to the fan blower, which is next, and used for the purpose of exhausting the chamber and pipe below. Next to the fan box place another air chest which also connects with the chamber and fan box so that both sides of the fan may be supplied with air. Next to the last mentioned air chest and concentric with the shaft, place the scouring cylinder or screw case which I make of cast iron, having numerous undulating indentations, in the deep part of which are openings for the purpose of passing out the dust from the screw scourers.

One of the important features of the case or scouring cylinder is the peculiar indentations which I make about two inches long in the deep part and in the direction of the circumference, the other way or longitudi-

nally about one inch, and nearly one quarter of an inch deep and so shaped as to give an undulating surface making the bottom nearly flat, so the grain in the process of scouring will not be wedged in causing the openings to clog, as would be, in the wedge or V shaped indentations. The peculiar shape of the indentations causes the grain to rebound with greater force, facilitating the operation of scouring. Next to the scouring case and forming part of it I place the conical hulling case, having the same taper of the hulling cone. The cone may be made of wood or iron and about one inch less than the case in diameter. The rubbers are inserted into the cone radially or screwed on obliquely between strips of sheet iron so they can be moved out to compensate for wear, and should run near enough to the ribs in the case to touch. The ribs are set in an oblique form in the conical case so as to retain the grain long enough to properly hull it. The screw scourers are made of cast iron about half an inch less in diameter than the inside of the scouring case, and form about one thread, or once around the shaft having openings through the sides near the center for the air to pass. The sides near the circumference have numerous pins or teeth projecting about three fourths of an inch.

The pitch of the screw should be about one and a half inches and open at the ends of the thread for the grain to pass freely. The hullers or rubbers may be made of leather india rubber, or strips of thin steel and should be elastic enough to pass over the grain without crushing the berry, and should be set in the line of the shaft. The conical case has openings in the lower side at the end for the grain to pass out, and enter the top of the pipe which leads to near the lower end of the suction pipe, where it enters and comes in contact with a current of air which is drawn up through the pipe into the chamber to the fan blower. The suction pipe is made about half the size of area of the scouring cylinder and extends from near the bottom of the machine (leaving room for the free ingress of air) to near the under side of the conical case where it turns over into the chamber which occupies with the pipes before mentioned the entire length of the machine. The chamber is hopper shaped from the suction pipe to about two thirds the length

of the machine and then a slant bottom to the end so as to discharge the light grain and hulls by themselves while the dust is drawn through to the fan blower, making
 5 a complete separation of all the offal. Over the scouring case I place an outside case of sheet-iron for the purpose of confining the dust in the machine. In the top of the dust case make several small holes for the air
 10 to pass in to draw the dust to the chamber that it may be passed out through the fan. I use but one shaft upon which outside of the frame is placed the pulley for driving the revolving parts of the machine. The
 15 grain enters the machine at the end of the scouring case opposite the cone by means of a pipe which passes down the head of the case to an opening for the grain to enter.

Referring to the drawings which form
 20 part of this specification (A) is the screw scourer, (B) the scouring case, (C) the conical huller, (D) the leather hullers, (E,) the conical case in which the huller runs.

(F) is the fan blower, (G) the undulating indentations with the openings, (H)
 25 the pipe from the huller to the suction pipe, (I) the suction pipe, (K) the chamber under the working part of the machine (L) the air chests, (M) the pipe for the grain
 30 to enter.

To operate the machine motion is imparted to it by means of a belt to the pulley giving motion in the proper direction for the screws to draw the grain through in the
 35 direction of the cone and fast enough to

properly do the work. The grain after passing through the screws enters the hulling case where by the rubbing operation the hulls are removed and with the grain enters the pipe leading to the suction where
 40 the separation take place, the grain passing down and the lighter matters are by the suction drawn up into the chamber, where the heavy parts are deposited, the dust and light stuff being carried through to the fan
 45 and passed off out of the way.

Having described the construction and operation of my invention, I claim—

1. The screw scourers with pins or teeth projecting from their sides, and holes
 50 through the body for the circulation of air.

2. The conical huller or rubber having strips of leather, india rubber, steel, or other elastic material, inserted, or screwed on so
 as to be moved out to compensate for wear. 55

3. The undulating indentations in the scouring case running in the direction of the circumference with openings in the bottom for the escape of dust and other impurities.

4. I claim the arrangement of the pipes
 60 and chamber for the separation of matter after the hulling process.

5. I claim the combination of scouring, hulling and separating in the manner described in one operation.

B. T. TRIMMER.

Witnesses:

M. S. OTIS,
 HENRY E. WHITE.