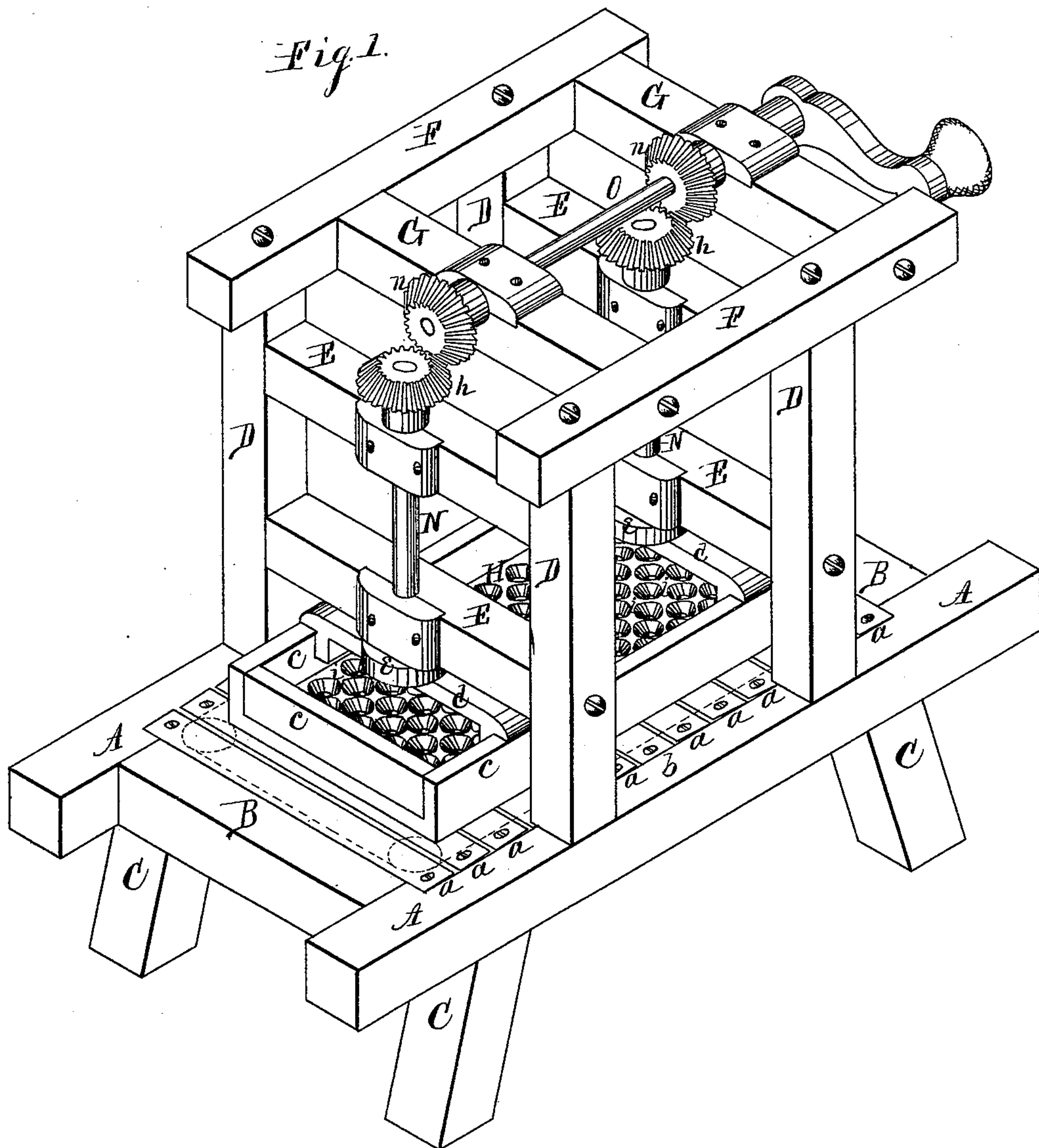


G. H. CORMACK,  
Oatmeal-Machine.

No. 220,578.

Patented Oct. 14, 1879.



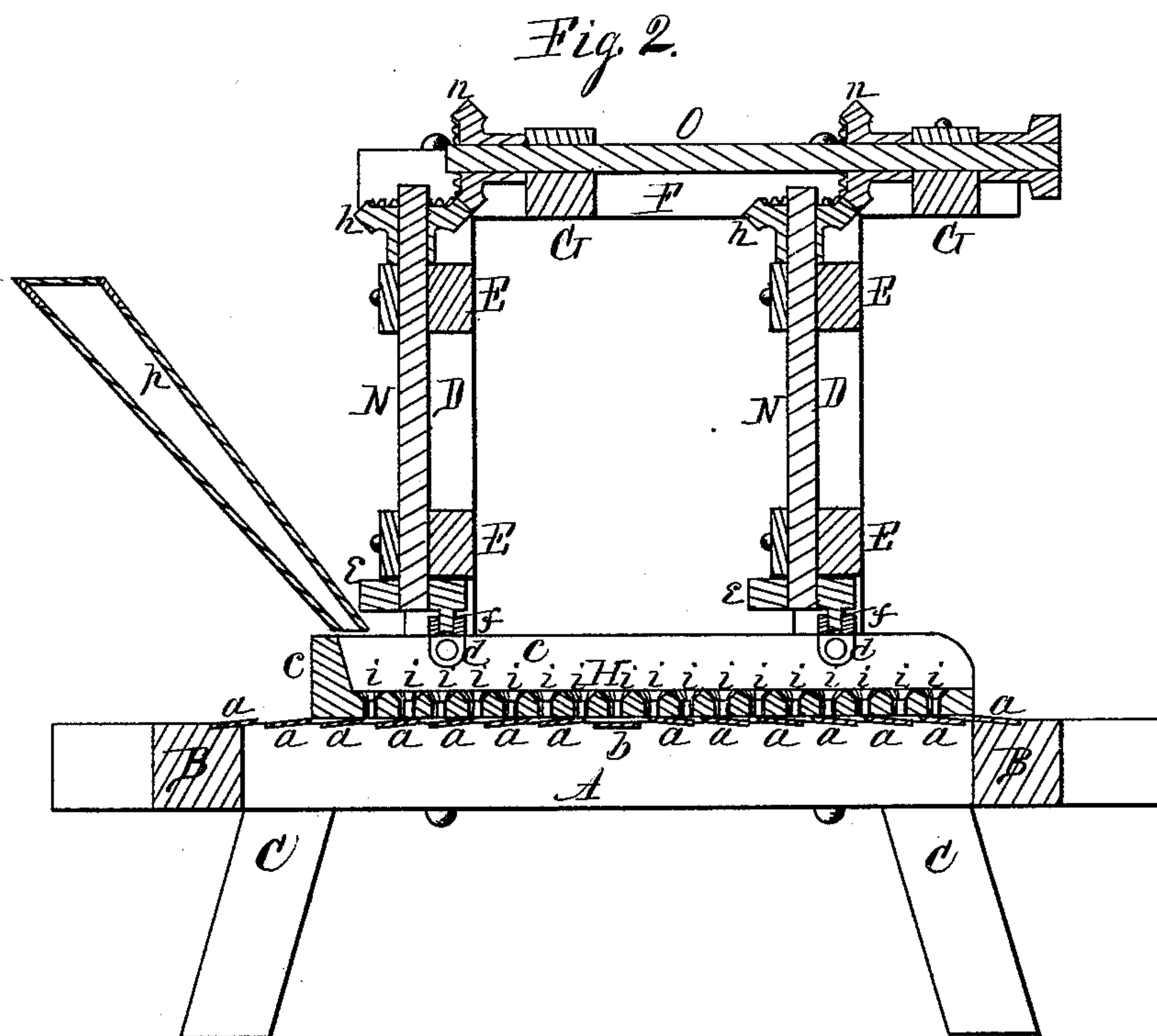
Witnesses.  
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F. J. Sovereign.

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# UNITED STATES PATENT OFFICE.

GEORGE H. CORMACK, OF ROCKFORD, ILLINOIS, ASSIGNOR TO A. M. JOHNSTON & CO., OF SAME PLACE.

## IMPROVEMENT IN OATMEAL-MACHINES.

Specification forming part of Letters Patent No. **220,578**, dated October 14, 1879; application filed February 8, 1879.

*To all whom it may concern:*

Be it known that I, GEORGE H. CORMACK, of the city of Rockford, in the county of Winnebago and State of Illinois, have invented a new and useful Improvement in Oatmeal-Milling Machines, of which the following is a specification.

This invention relates to that class of machines employed in the manufacture of oatmeal or grits. Its purpose is to cut the oat-grains into small sections or grits after the chaffy hull or shuck has been removed from the grain, forming clean, sharp grits with but little waste.

To this end I have designed and constructed the machine represented in the accompanying drawings, in which—

Figure 1 is an isometrical representation of my improved oatmeal-milling machine, of which Fig. 2 is a lengthwise vertical central section.

In the figures, A represents the side sills, into which are framed the end sills, B, forming a rectangle-frame, which constitutes the base-frame of my improved oatmeal-machine. This base-frame is supported on legs C, which are framed into the under side of the side sills.

D are posts framed into the upper side of the side sills of the base-frame, and into each end pair of these posts are framed cross-beams E, forming the two vertical end frames. These end frames are capped by a horizontal frame consisting of longitudinal side beams, F, framed onto the upper ends of the posts, and of lateral cross-beams G, framed into the side beams. These parts, framed and bolted in the manner represented, constitute the frame of my improved oatmeal-machine.

*a a* represent the cutter-blades, which are made of suitable plate material and fitted with a cutting-edge, and are fixed to the longitudinal side beams of the base-frame, having their ends gained into the beams at an angle to the plane of the frame in such a manner that the cutting-edge of each blade will be on a plane above the non-cutting-edge of the next adjacent cutter, in which position they are fixed to the frame. The inclination of these cutter-blades determines the vertical distance between the cutting and non-cutting-

edges of the several cutting-blades, and the vertical distance between the cutting-edge and non-cutting edge of the adjacent cutters determines the length of the sections cut from the grains which form the meal or grits, and the length of the sections cut from the grains determines the quality or grade of meal.

In this instance I have arranged the cutters in two series, in each of which the cutters are inclined toward the center, and in the lengthwise center of the base-frame, between the series of inclined cutters, a horizontal plate, *b*, is placed on the same plane with the non-cutting edges of the cutter-blades.

H is a box-like plate of rectangular form, longer than wide, having its lengthwise side edges and one end provided with vertical walls, forming a box of four closed and two open sides. The bottom plate of this box is closely perforated with holes *i*, of proper size to freely admit the grains endwise, from which the meal or grits is to be cut. These holes are enlarged on the upper side of the plate in the form of a countersink to receive and direct the grains endwise into the holes in the plate.

*d* are bars placed crosswise of the box, supported on its vertical side walls, to which they are fixed. This perforated box-like plate is placed in the frame, and in this instance is supported on the cutter-blades, on which it is free to be moved over the cutters.

N are vertical shafts fitted to revolve in bearings on the cross-beams E of each vertical end frame.

*e* are crank-heads fixed to the lower ends of the vertical shafts N, and are provided with wrist-pins *f*, which are connected centrally with the cross-bars *d* of the box-like perforated plate H.

*h h* are miter-gear wheels fixed to the upper ends of the vertical shafts N. The teeth of these wheels engage the teeth of similar gear-wheels *n*, mounted on the horizontal shaft O, fitted to revolve in bearings on the cross-beams G in the upper horizontal frame.

From the foregoing it will be seen that a rotary motion imparted to the horizontal shaft O will be transmitted through the gear-train to the perforated box-like plate, causing each perforation to move over the edges of the cut-



ting-plates in a complete circle, having a diameter equal to the throw of the crank. This circular movement of each perforation in the box-like plate produces a drawing or shearing cut of the grains projecting through the plate.

In Fig. 1 the dotted lines represent the outline movement of the perforated plate. *p* represents a spout through which the grain to be cut may be conducted into the head of the box onto the perforated plate. Instead of the crank-handle, a belt-pulley mounted on the horizontal shafts, or on either of the vertical shafts, may be employed to put the machine in connection with the motive power; or any other suitable method may be employed.

The machine having been put in motion, and grain introduced onto the perforated plate, its sieving motion will cause the grains to enter and descend through the perforations endwise onto the inclined cutter-blades, which they will descend until they come in contact with the cutting-edge of the blades, and the further onward movement of the plate will cause the grains to be cut into sections about equal in length to the vertical distance between the cutting and non-cutting edges of the adjacent cutters, and the sections thus cut form the meal or grits, which drops from the cutters into a receptacle, from which it may be put into suitable packages or otherwise disposed of. In this operation particles too large to pass through the perforations will be carried over the perforated plate and discharged through its open end.

In this instance I have represented the cutting-blades placed crosswise of the frame and inclining toward its center, all of which I prefer, but do not wish to confine myself to these particulars, as it is evident that they may incline from the center; or they may all incline in the same direction toward either end; or they may be placed lengthwise of or obliquely to the frame, and may incline in any direction which may be deemed most convenient.

When, from the movement of the machine in the same direction, the portions of the cut-

ter-edges utilized become worn or unfit for use, the movement of the machine may be reversed, which will bring into action a different portion of the cutting edges; and by thus changing the movement of the machine in different directions the whole of the cutting-edges within the movement of the perforations may be utilized.

I have also represented the box-like plate as being supported on the cutters; but it may be supported in any suitable manner immediately above the cutting-blades, in close working contact therewith.

I claim as my invention—

1. In an oatmeal-machine, the combination, with a series of inclined cutters secured to a stationary frame, of a perforated plate located over said cutters, and suitable actuating mechanism connected with said perforated plate for moving the same backward and forward in a circular path over the cutters, whereby the grain is fed through the perforations and subjected to a shearing cutting action by the stationary cutters, substantially as set forth.

2. In an oatmeal-machine, the combination, with a series of inclined cutters, of a perforated plate located over said cutters, and one or more horizontally-moving cranks connected with the perforated plate, to impart a backward and forward movement to the same in a circular path over said cutters, substantially as set forth.

3. In an oatmeal-machine, the combination, with a series of cutters inclined in one direction and a series of cutters inclined in an opposite direction, of a perforated plate located over said series of cutters, and suitable mechanism for imparting to said perforated plate a forward and backward movement in a circular path over said cutters, substantially as set forth.

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Witnesses:

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