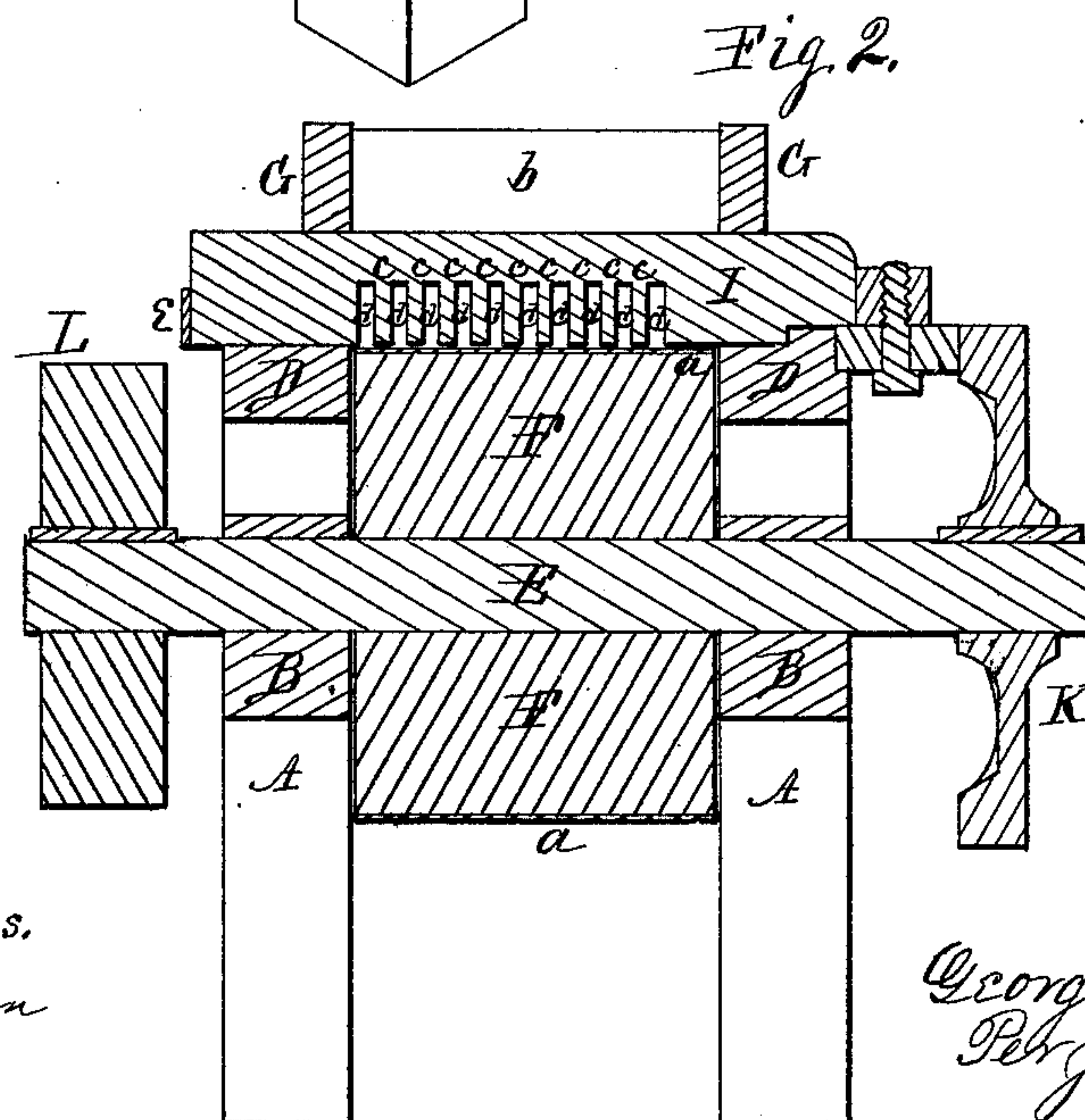
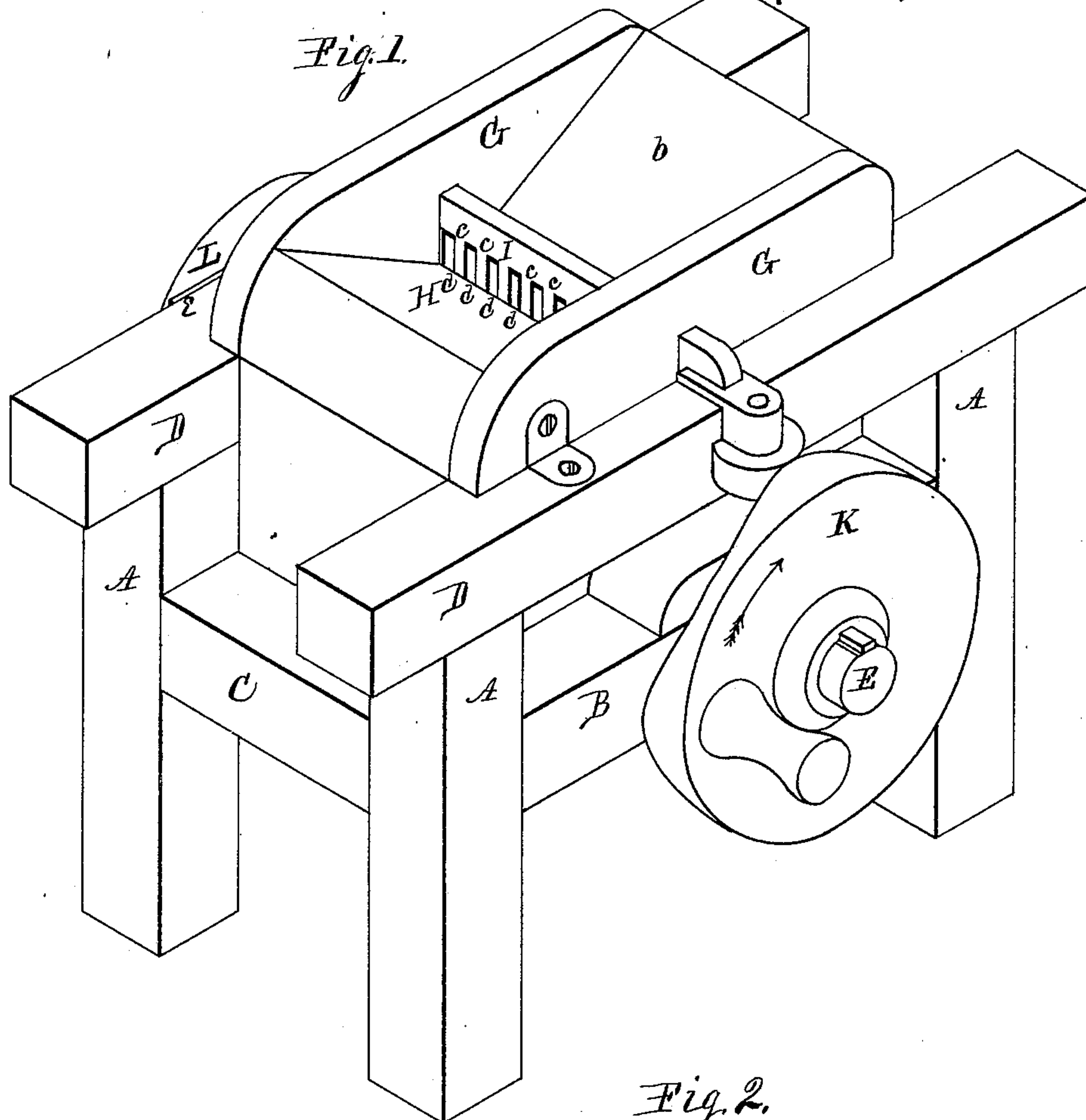


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Oatmeal-Machine.

No. 219,916.

Patented Sept. 23, 1879.



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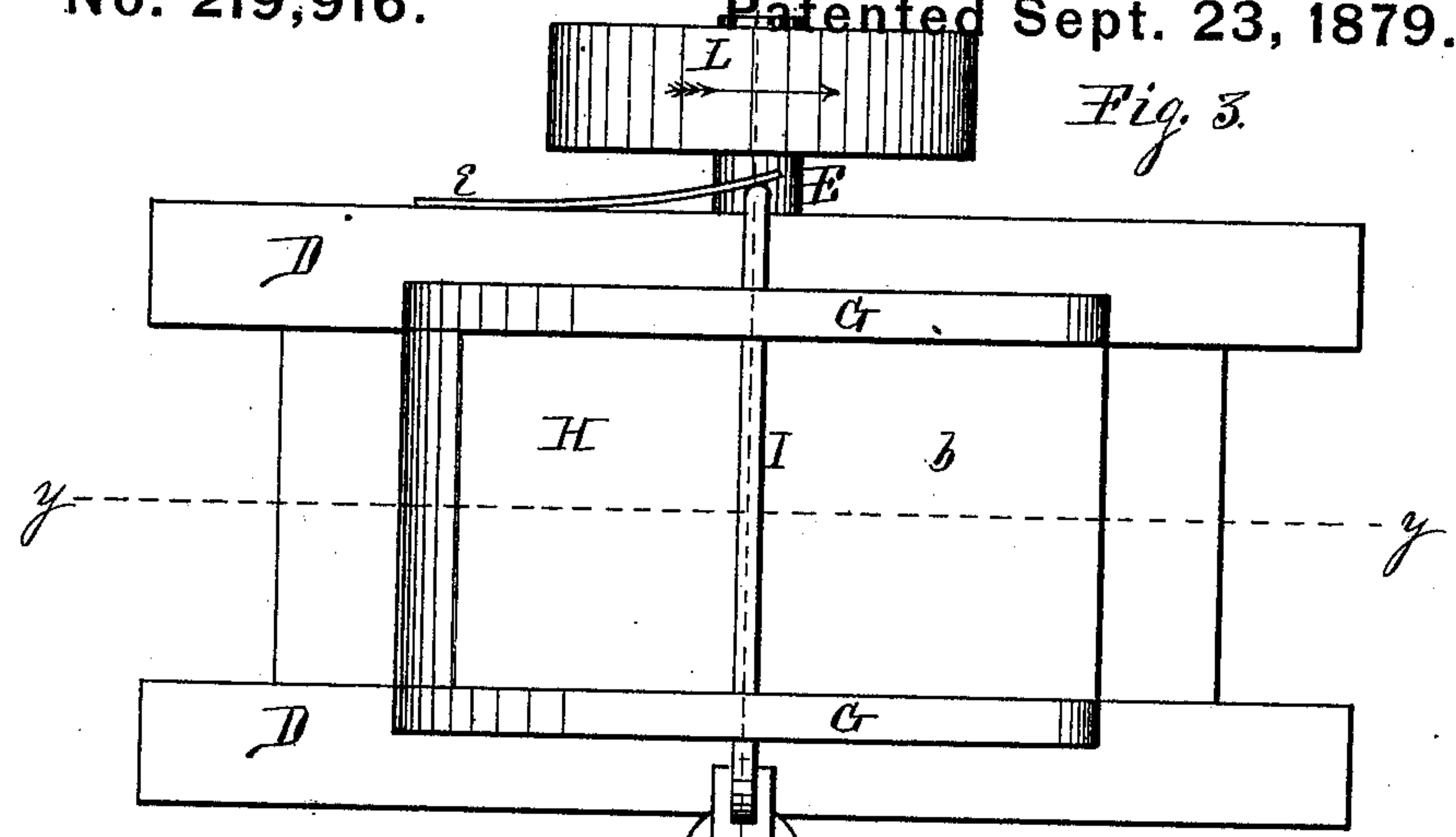


Fig. 3.

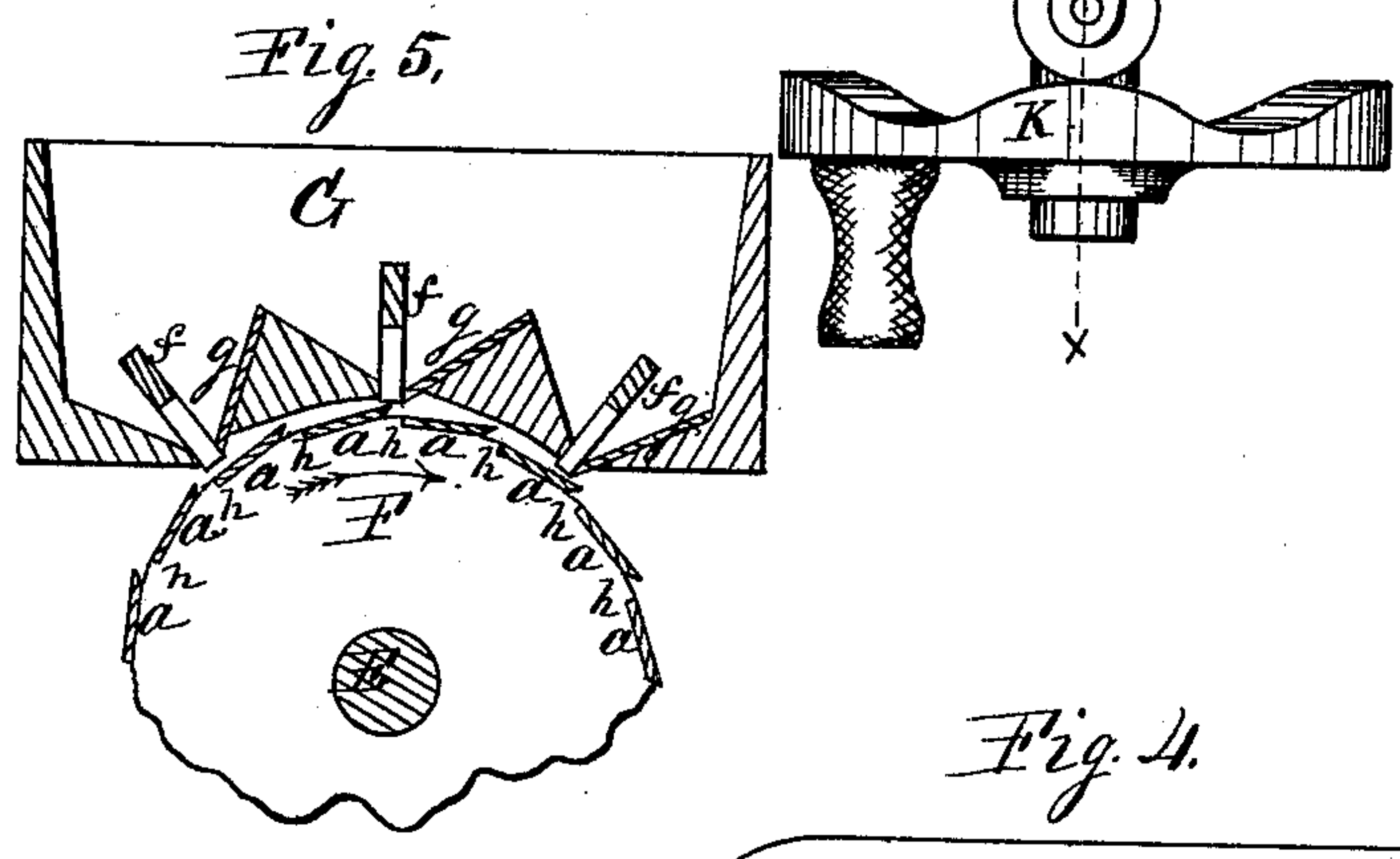


Fig. 5.

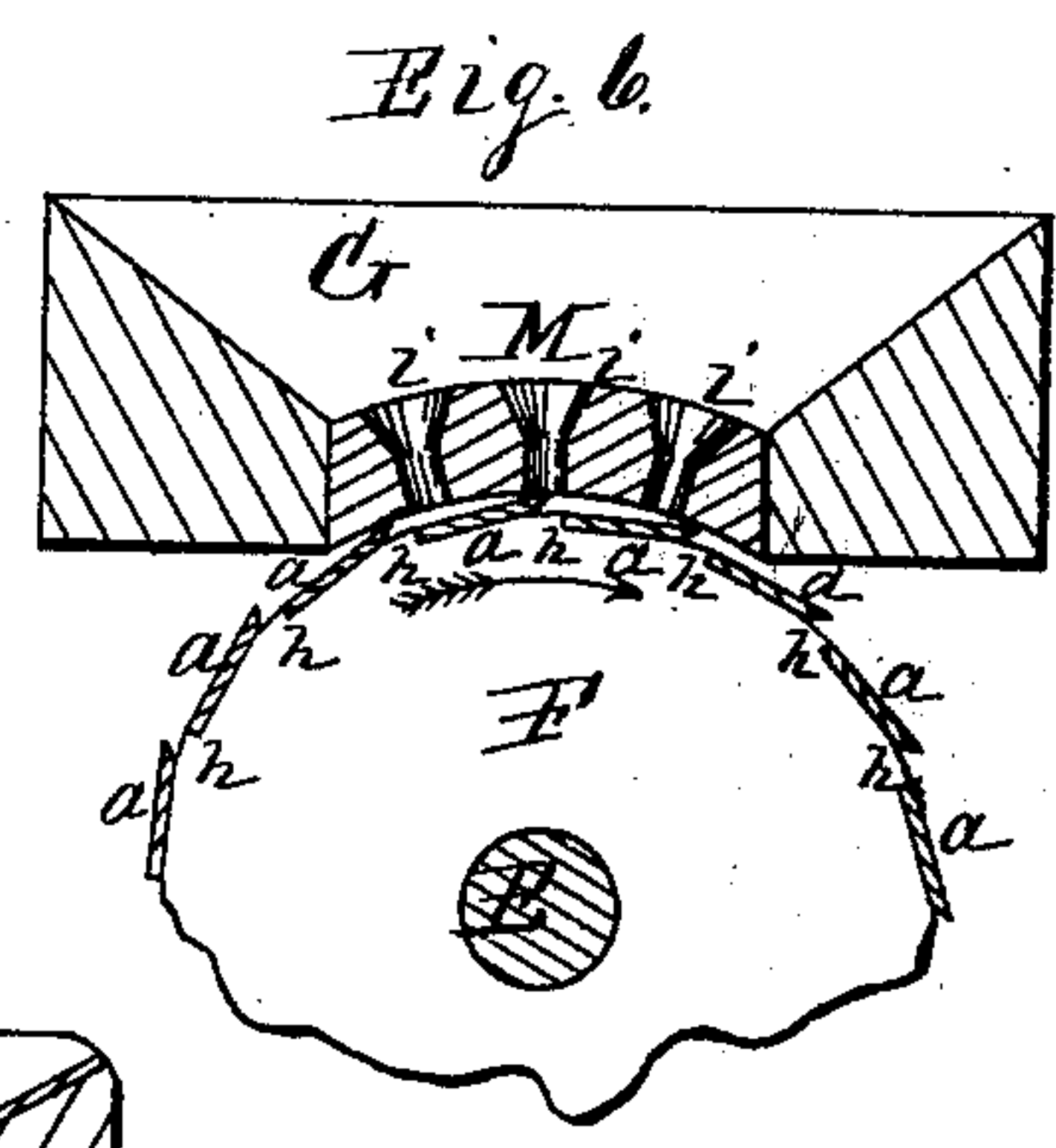


Fig. 6.

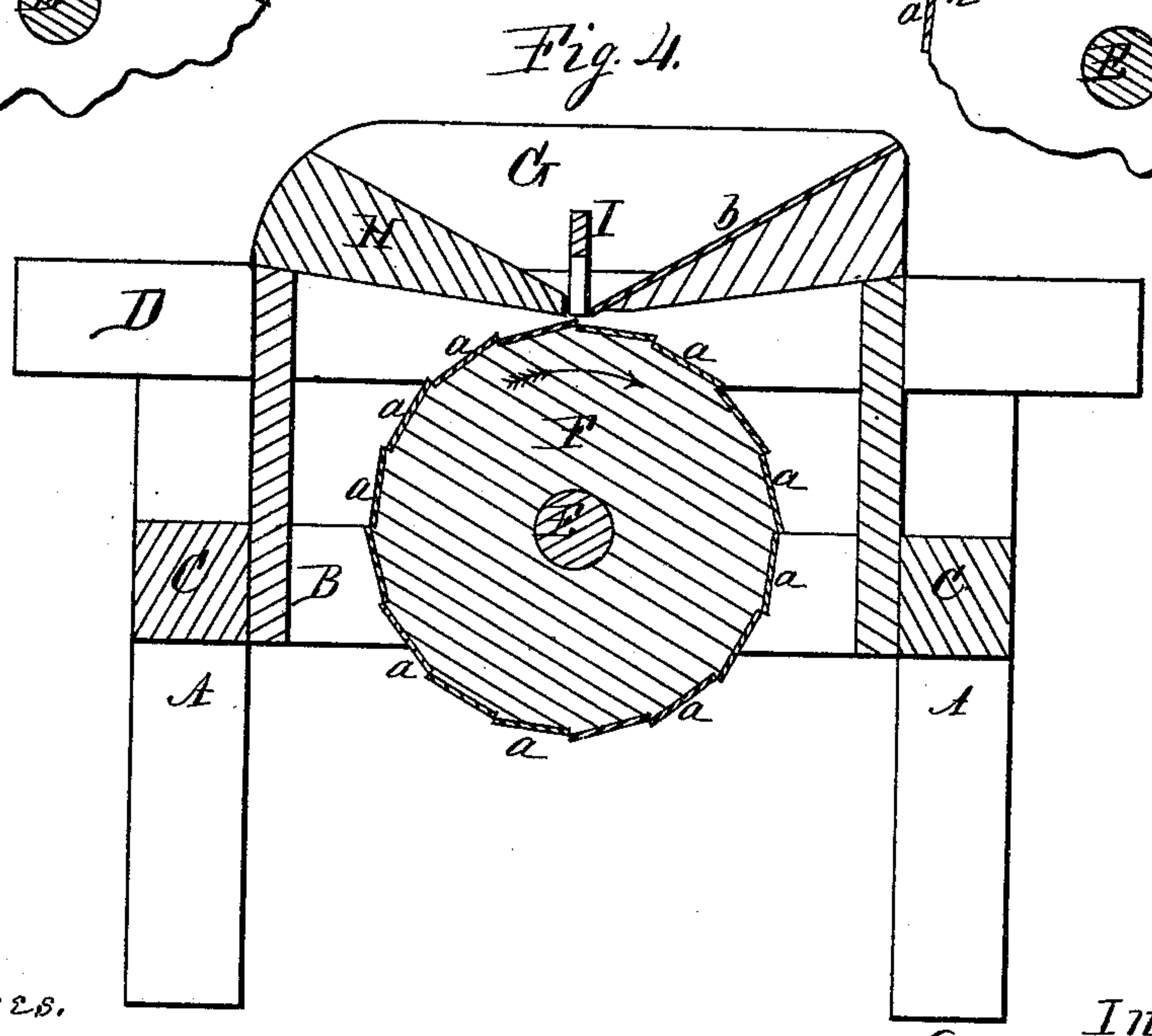


Fig. 4.

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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. 219,916, dated September 23, 1879; application filed July 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-Machines, of which the following is a specification.

My invention relates to that class of machines by which, in the manufacture of oatmeal, the hulled oat-grains are cut into sections.

The object of my invention is to produce clean sharp grits by rapidly cutting the hulled grains into sections uniform in size as near as practicable.

To this end I have devised and constructed the machine represented in the accompanying drawings, in which Figure 1 is an isometrical representation of my improved machine, of which Fig. 2 is a central vertical transverse section on dotted line *x* of Fig. 3; Fig. 3, a plan view, and Fig. 4 a central vertical lengthwise section on dotted line *y* of Fig. 3. Fig. 5 shows a modification of a portion of the cutting-cylinder, hopper, and reciprocating combs or toothed bars cut on the same lengthwise vertical plane as Fig. 4. Fig. 6 shows the cylinder modified as in Fig. 5, and cut on the same lengthwise vertical plane, in which I have substituted a perforated reciprocating bar in place of the reciprocating toothed bar.

In the several main figures, A represents supporting-posts, of rectangular beam form, into which are framed like-formed side beams, B, and end beams, C. Lengthwise beams D, of like form, are framed onto the posts. These parts are firmly bolted or otherwise securely fixed to each other, producing a supporting-frame of rectangular form and of suitable size on which to mount the working parts of my improved machine.

E is a shaft of suitable size, fitted to revolve in bearings centrally on the side beams of the supporting-frame. On this shaft is mounted a cylinder, F, of suitable size to revolve with the shaft within the frame. The periphery of this cylinder is fitted with cutter-blades *a*, placed lengthwise of the cylinder, with their cutting-edges placed to overlap their non-cutting edges, as clearly represented in section at Fig. 4, in which position they are fixed to the cylinder, having their cutting-edges farther from the center of motion than their non-cutting

edges, and the radial distance between the cutting and non-cutting edges of the blades thus placed determines the length of the sections cut from the oat-grains, which determines the grade of the meal.

G represents the vertical sides, and H the inclined ends, of a hopper, mounted on the frame centrally over the cylinder. *b* is a metallic cutting-plate, fixed to one of the inclined ends of the hopper, having its lower edge beveled, to coincide with a radial line produced from the center of the cylinder. This cutting-plate is fixed in such relation to the cutter-blades that in the revolutions of the cylinder their cutting-edges will pass each other closely, to produce a cutting action between the fixed and moving cutting-edges.

I represents a reciprocating bar, having its lower edge made in comb form, with teeth *c*, having the spaces *d* between them of such size as to freely admit a grain of hulled oats to lie lengthwise therein. This comb-formed bar is placed crosswise of the machine, lengthwise of the cylinder, to reciprocate in its lengthwise direction, held in position and guided in its movements in grooved guideways in such a manner that its teeth play closely between the beveled edge of the cutting-plate and the edge of the inclined end of the hopper, and the ends of its teeth in a horizontal plane immediately above the cutter-blades on the cylinder.

One end of this toothed bar is fitted with an anti-friction roller to engage the cam-face of the wheel K, mounted on the projecting end of the cylinder-shaft in such a manner that the prominences on the cam-wheel in its revolutions will cause the toothed bar to move in its grooved guideways lengthwise of the cylinder.

At *e* is represented a spring, fixed to the main frame in such position that its free end overlaps the end of the toothed bar opposite to that in which the anti-friction roller is placed, and operates to cause the roller to traverse the undulating face of the cam-wheel in its revolutions, which will impart a reciprocating movement to the toothed bar in the direction of its length.

L represents a pulley, mounted on the projecting end of the main shaft, and is designed

to receive a belt to connect it with the prime mover, through which motion is imparted to the machine.

In the use of my improved machine in the manufacture of oatmeal, the hulled oats are placed in the hopper and the cylinder is made to revolve in the direction indicated by the arrows, which movement will impart a reciprocating movement to the toothed bar, and will cause the oat-grains to enter the space between them and descend endwise onto the cylinder. The rotary motion of the cylinder will carry the cutter-blades past the cutting-plate, which action will cut the oat-grains in sections equal in length to the distance they depend below the cutting-plate, which will be about equal to the radial distance between the cutting and non-cutting edges of the cutter-plates fixed to the cylinder.

By the use of my improved machine I am enabled to produce oatmeal of a nearly uniform grade with but little waste, and with less power than usually employed in the production of oatmeal.

In the construction of my improved machine I have employed a single-faced cam-wheel and a spring to operate the toothed bar; but it may be operated by a double-faced cam, or a cam having a grooved trackway adapted to receive a traveler connected with the bar, to impart to it a positive movement in both directions and enable me to dispense with the spring. These and other known methods may be employed and still be within the scope of my invention.

In the drawings, at Fig. 5, I have represented my improvement, in which three toothed bars, *f*, and three cutting-plates, *g*, are employed, placed at any proper distance from each other, and fitted to reciprocate in substantially the same manner as the single bar above described. These bars, when employed, may be joined to each other and made to reciprocate in unison, or they may be made separate and reciprocate independently. When more than one recip-

rocating toothed bar is employed, the cutter-blades should be placed on the cylinder in such a manner as to leave a space, *n*, between the cutting and non-cutting edges of the blades, to permit the cut portion of the grain to pass through into the cylinder, which in such instance should be hollow, having open ends to permit the meal to escape therefrom.

At Fig. 6 is represented a cylinder, substantially the same as in Fig. 5, and having the cutter-blades placed and fixed thereon in the same manner. In this instance, however, instead of the toothed plates, I have employed a concave plate, *M*, perforated with countersunk openings, as at *i*, placed at proper intervals. This plate is placed in substantially the same relative position with the cylinder as the toothed plates, and is designed to be operated in the same manner. The oat-grains placed in the hopper will pass endwise through the perforations, and in the revolutions of the cylinder will be cut and discharged in substantially the same manner.

I claim as my invention—

1. In an oatmeal-machine, the combination, with a rotary cutter or cutters and a fixed cutting-plate, of a reciprocating feed-plate adapted to be moved at right angles to the travel of the rotary cutters, said feed-plate provided with openings for causing the grain to be fed lengthwise to the cutters, substantially as set forth.

2. In an oatmeal-machine, the combination, with a cylinder furnished with cutter-blades, arranged lengthwise thereon, and a fixed cutter-plate, of a reciprocating feed-plate located in the hopper, and provided with openings for causing the grain to be fed lengthwise to the cutters, and a cam-wheel, anti-friction roller, and spring for imparting a reciprocatory movement to said feed-plate, substantially as set forth.

GEORGE H. CORMACK.

Witnesses:

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