

(No Model.)

E. FUCHS.
SIFTING APPARATUS.

No. 282,300.

Patented July 31, 1883.

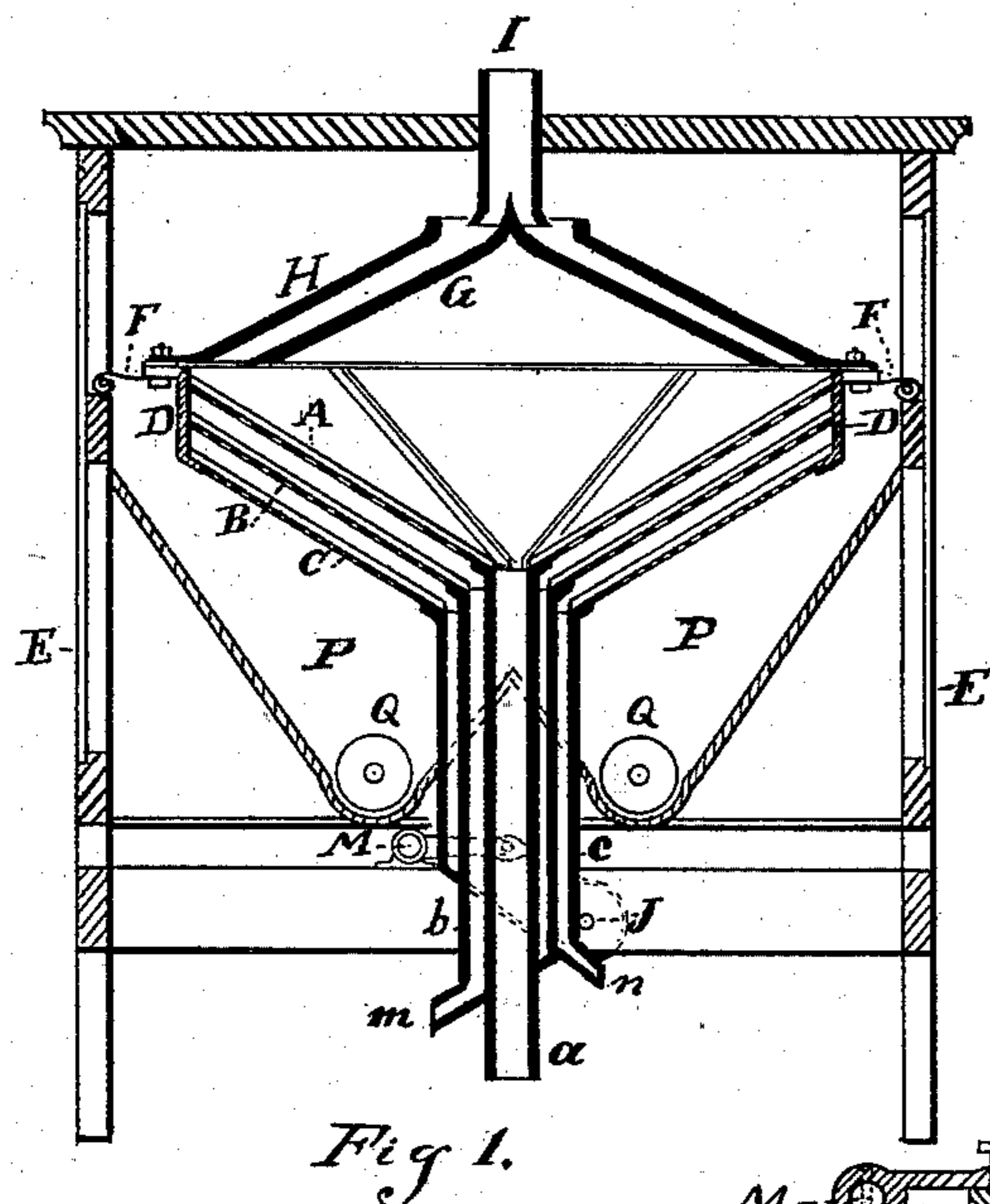


Fig. 1.

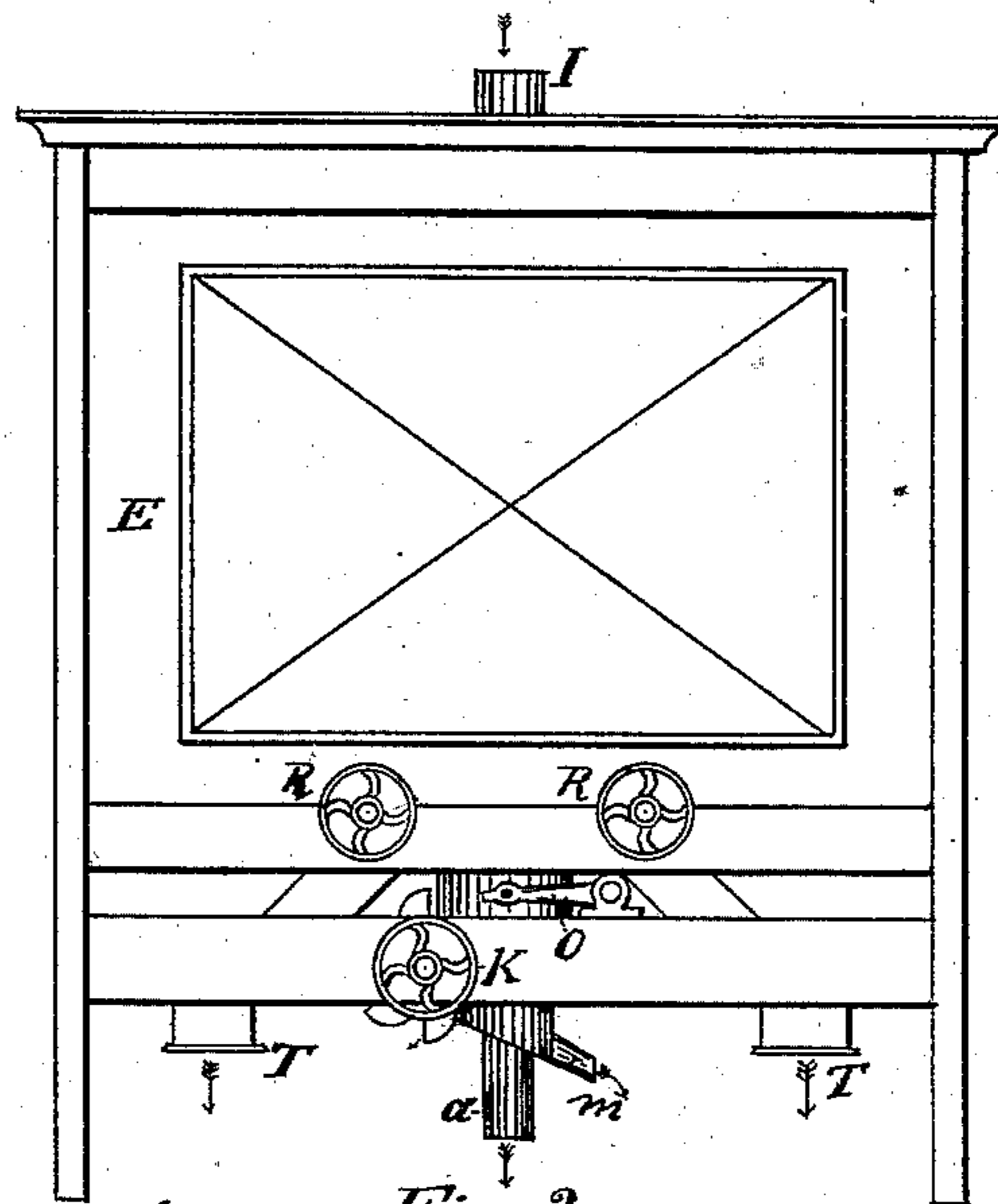


Fig. 2.

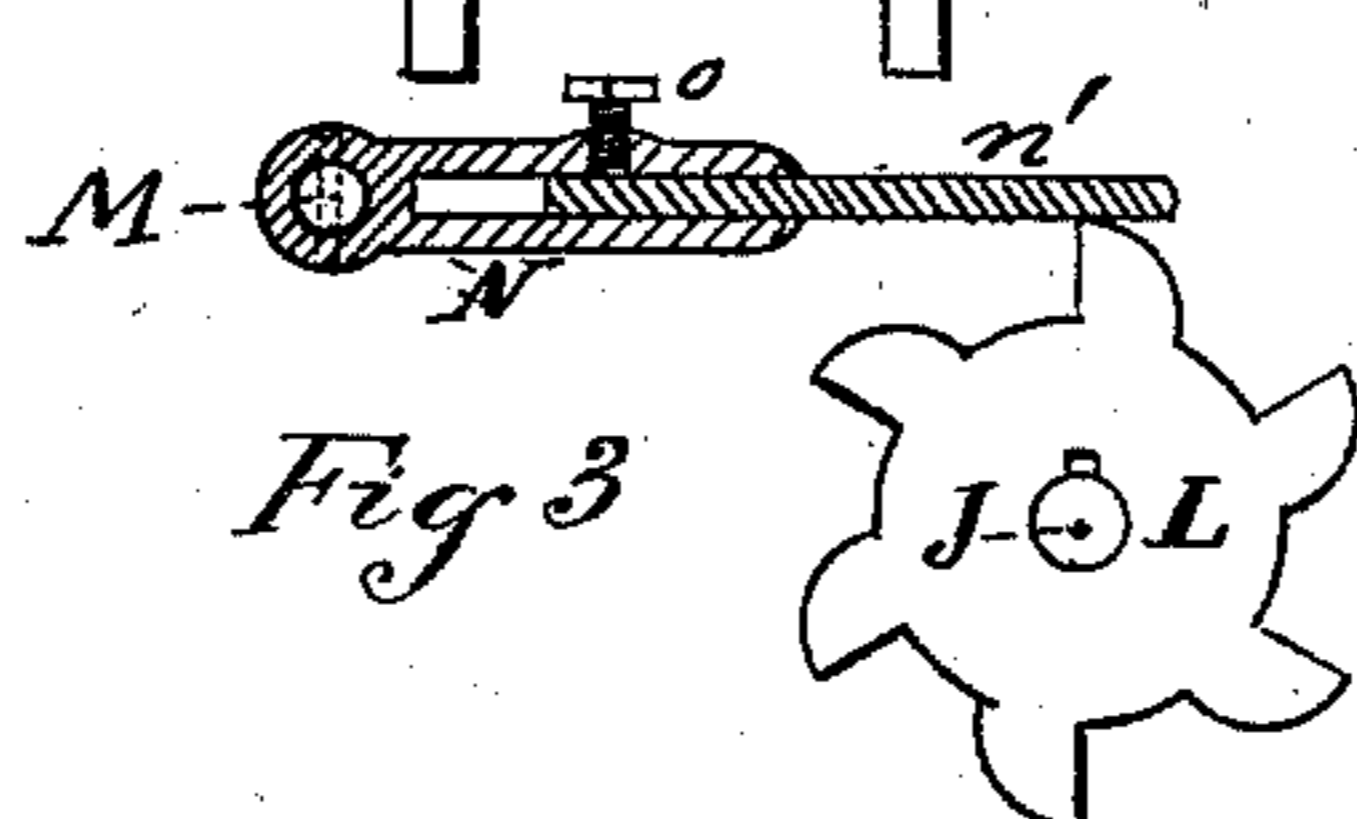


Fig. 3.

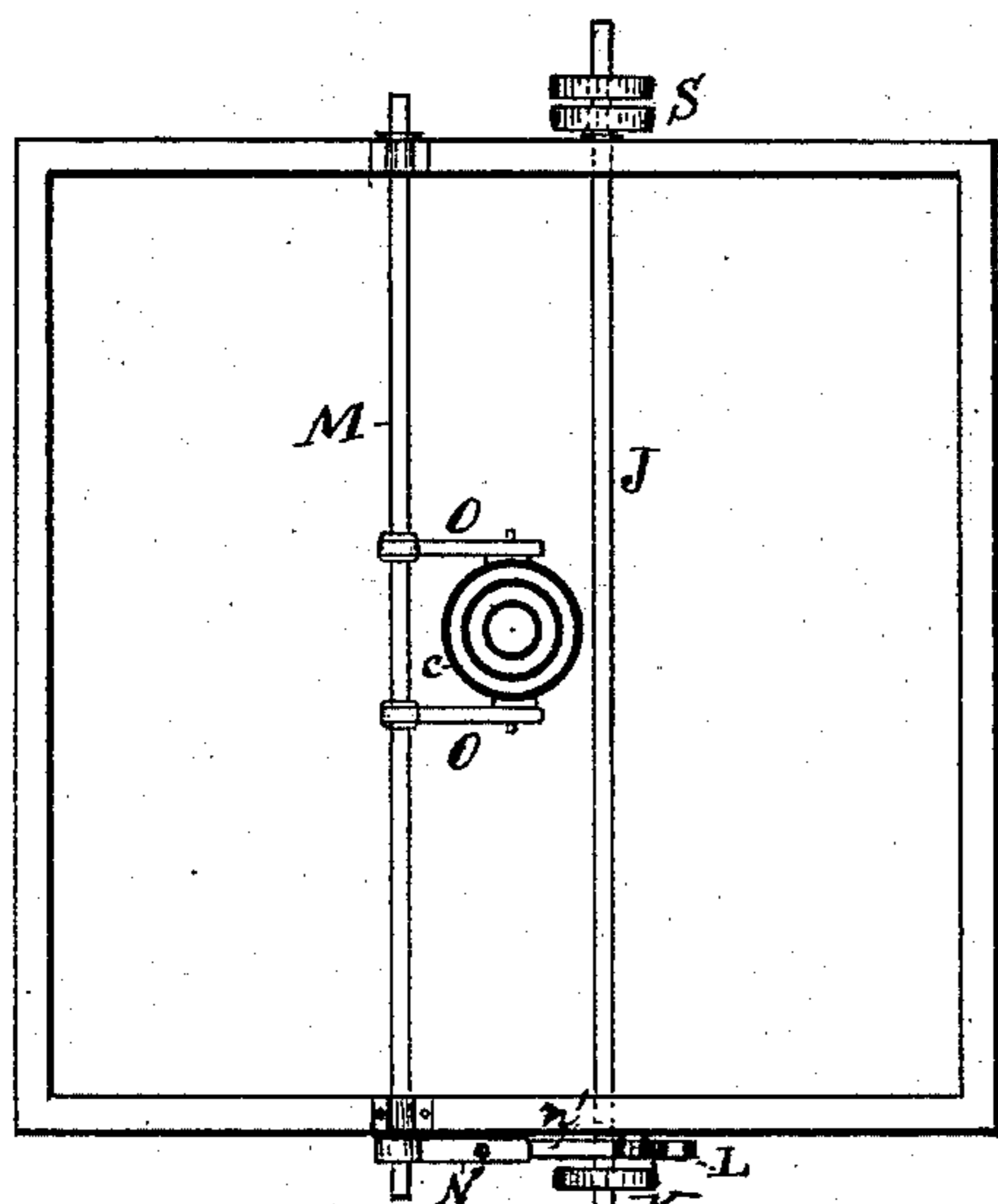


Fig. 4.

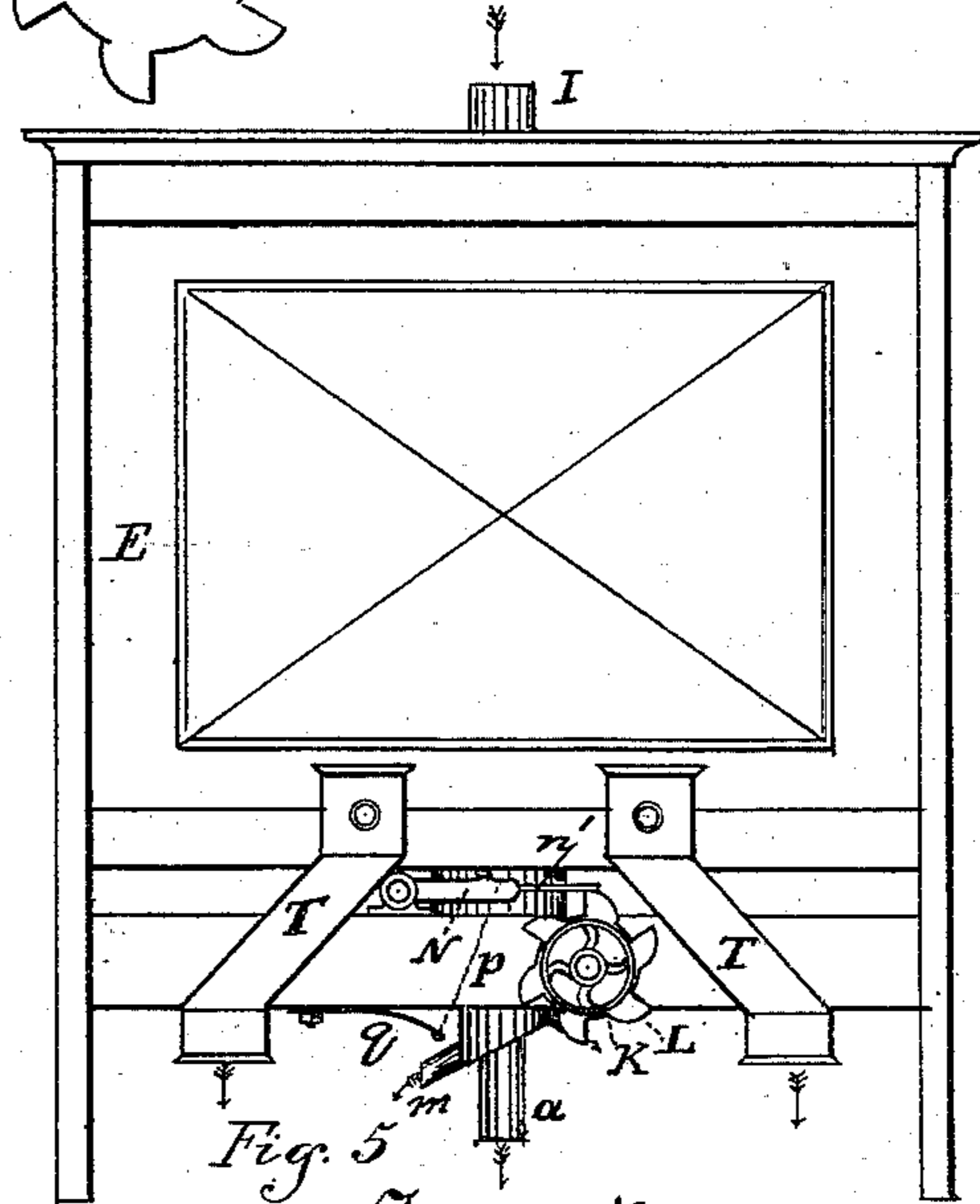


Fig. 5.

Witnesses:
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UNITED STATES PATENT OFFICE.

ERNST FUCHS, OF CHICAGO, ILLINOIS.

SIFTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 282,300, dated July 31, 1883.

Application filed December 2, 1882. (No model.)

To all whom it may concern:

Be it known that I, ERNST FUCHS, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful
5 Improvements in Sifting Apparatus; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon,
10 which form a part of this specification.

This invention relates to machines or apparatus for separating the several qualities of flour and middlings from the bran, or for sorting the different grades of fineness of other
15 pulverized materials; and it is my object to produce a machine that is simple, effective, and reliable in operation.

My invention consists of the novel devices and combinations of devices hereinafter described and specifically claimed.

In the accompanying drawings, Figure 1 represents a vertical section of my machine; Fig. 2, a front elevation, Fig. 4 a sectional plan, Fig. 5 a rear elevation, of the same; and Fig.
25 3 is a detached sectional view of the riddle-arm.

The same letters in the several figures of the drawings designate the same or corresponding parts.

30 A, B, and C denote three sifter-frames, the upper one, A, being covered with a brass-wire screen, the next one, B, with a coarser quality of bolting-cloth, and the lower one, C, with fine gauze. All three sifter-frames are se-
35 cured within a common frame, D, and each sifter represents in shape a hexagon funnel, the bottom spouts of which are formed of pipes *a*, *b*, and *c*, of different diameters, which are projected one through the other in such a manner
40 that the pipe *c* of the sifter C is the largest, pipe *a* of the sifter A the smallest, and pipe *b* of sifter B of the intermediate size, a sufficient ring-like opening being provided between each two pipes for the flour and middlings to pass
45 through. The pipes *b* and *c* are cut off diagonally at their bottom ends, which are closed. At one side of the lowest extremity of each pipe a discharge-opening is formed, with which a small discharge-spout, *m* or *n*, is con-
50 nected, said spouts emptying in opposite direction, as shown in Fig. 1.

E is the box-frame of the machine, in which

the sifter-frame D is suspended by a series of springs, F, in a manner to be held steady
55 therein and to allow a vertical vibration of the sifters. Upon this sifter-frame D is secured a distributing-cone, G, and over this again a conical cover, H, which is open on top for the
60 spout I to discharge the meal upon cone G, over which the meal will spread out and be conducted and distributed near the periphery of sifter A.

J is the main shaft, and K the driving-pulley, next to which is rigidly mounted upon
65 such shaft the cam-wheel L.

M is the riddle-shaft, that has an arm, N, which rides upon the cam-wheel and is vibrated by the teeth thereof. Two arms, O,
70 mounted upon the central portion of shaft M, are pivotally connected at their ends to pipe *c* in such a manner that the vibration of arm N is transmitted to the sifters, so as to impart to them a quick and short vertical reciprocating movement. The arm N, I construct in
75 such a manner that its length can be varied, and thereby the distance of reciprocation of the sifters reduced or increased. This I accomplish by forming the arm N, that is secured upon shaft M, with a socket, into which
80 I insert a bar, *n'*, that is to ride upon cam-wheel L, and can be projected more or less. This bar *n'*, I secure on its desired position by a set-screw, *o*. This arm N, by a rod, chain,
85 or cord, *p*, I connect with a leaf-spring, *q*, that will tend to pull it downward and hold such arm in contact with the cam-wheel.

Meal being fed through spout I upon cone G will spread out as it slides down on said cone and be discharged in a thin sheet upon the periphery of sifter A, which will allow the
90 middlings and flour to pass through its meshes, but not the bran, which will be discharged through pipe *a*. The material that passes through sifter A will drop upon sifter B, which will separate the coarser middlings and discharge them through pipe *b*, and sifter C will
95 separate the fine middlings and discharge them through pipe *c*, while the fine flour that passes the meshes of sifter C will drop into hoppers P. These hoppers P are provided in their
100 bottom with conveyer-screws Q, each of which has a pulley, R, mounted upon its projecting shaft, to be driven by a belt from pulleys S of main shaft J. These conveyer-screws dis-

charge the flour into spouts T. The quick vertical vibration of the sifters will not only assist the quicker discharge of the bran and middlings from the sifters and through the spouts, but it will also prevent the meshes of the sifters being clogged or filled up.

This machine or apparatus is very compact in its arrangement, reliable in its operation, and simple and durable in its construction.

10 What I claim is—

1. In a sifting apparatus, the combination of the funnel-shaped sifters A B C, having meshes of different degrees of fineness, inclosing-frame D, frame E, springs F for suspending said sifters to said frame E, and the pipes *a b c*, forming the bottom spouts of said sifters, the whole being constructed and arranged substantially as and for the purpose shown and described.

20 2. In a sifting apparatus, the combination of the funnel-shaped sifters A, B, and C, discharge-pipes *a b c*, frame D, main frame E, springs F, vibrating shaft M, having arms O,

connected to pipes C, arm N, cam L, and shaft J, all substantially as described, to operate as specified.

3. In a sifting apparatus, the rotating cam L, in combination with the riddle, the riddle-shaft M, socketed arm N, extension-bar *n'*, and set-screw *o*, substantially as and for the purpose set forth.

4. In a sifting-machine, the funnel-shaped sifters A, B, and C, a frame, D, the distributing-cone G, supported thereon, conical cap H, frame E, springs F, and the spouts or pipes *a b c*, in combination with main shaft J, cam L, riddle-shaft M, arms O and N, and bar *n'*, the whole being constructed and arranged to operate substantially as set forth.

In testimony that I claim the foregoing as my invention I affix my signature in presence of two witnesses.

ERNST FUCHS.

Witnesses:

H. W. HUEHL,
R. G. SCHMID.