

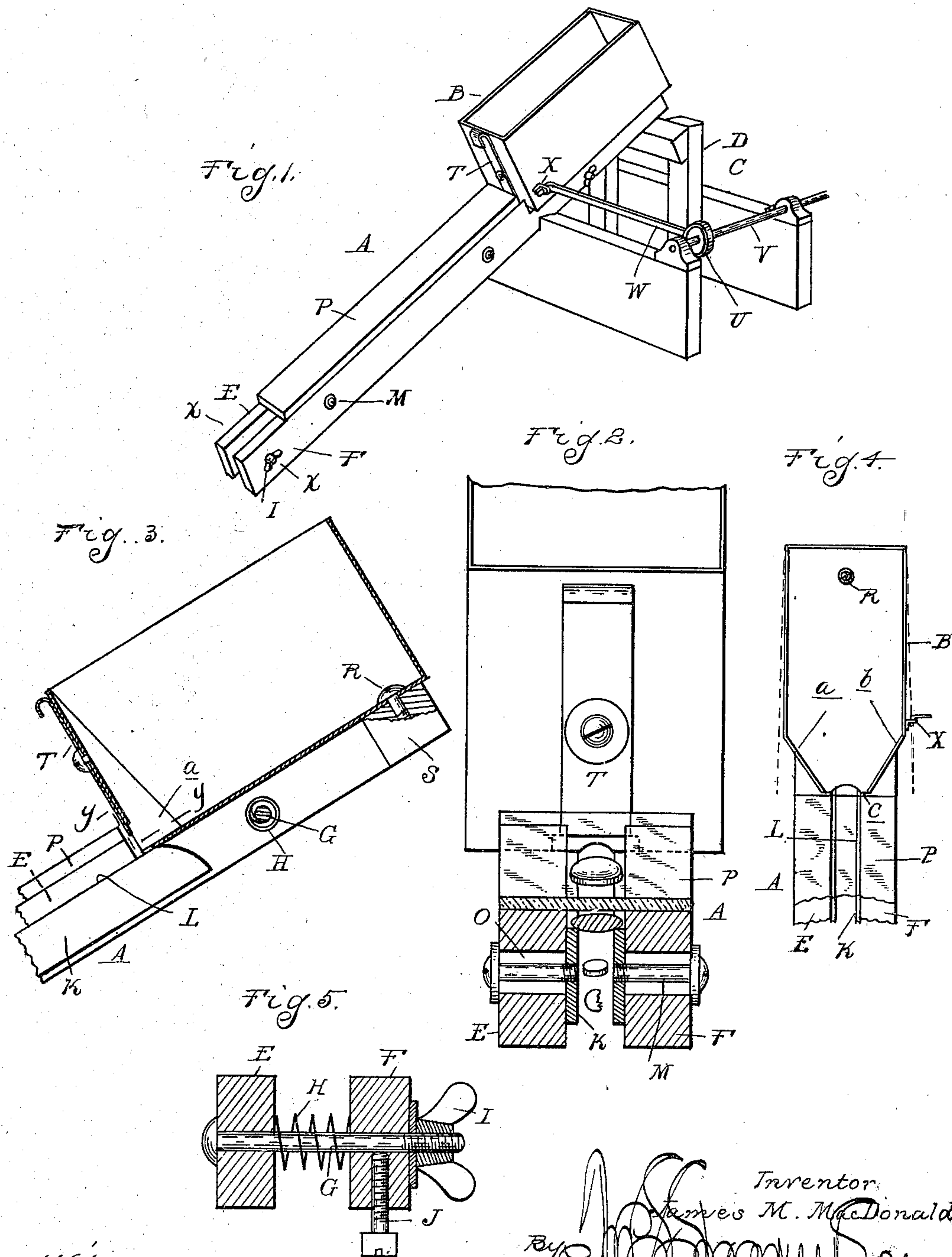
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J. M. MACDONALD.  
MACHINE FOR GRADING TABLETS.

APPLICATION FILED APR. 1, 1902.

NO MODEL.



Witnesses  
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# UNITED STATES PATENT OFFICE.

JAMES M. MACDONALD, OF DETROIT, MICHIGAN.

## MACHINE FOR GRADING TABLETS.

SPECIFICATION forming part of Letters Patent No. 735,396, dated August 4, 1903.

Application filed April 1, 1902. Serial No. 101,011. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES M. MACDONALD, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Machines for Grading Tablets, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention consists in the novel construction of a tablet-grading machine and in the peculiar arrangement and combination of its various parts, as will be hereinafter described, and shown in the drawings, in which—

Figure 1 is a perspective view of mechanism embodying my invention. Fig. 2 is a view in elevation of the upper portion of the machine. Fig. 3 is a vertical central section through the hopper and a portion of the grading-chute. Fig. 4 is a section on line *yy*, Fig. 3. Fig. 5 is a section on line *xx* of Fig. 1, illustrating the adjusting means for varying the size of the chute.

The grading-machine comprises, essentially, a grading-chute A, arranged in an inclined position, as hereinafter set forth, and provided at its upper end with a hopper B, adapted to be vibrated by suitable mechanism to discharge its contents into the chute.

A suitable framework C is employed which is provided with an upright section D. The chute, as shown, is connected to the framework, the upper end of the chute being supported upon the upright D, so that the ways E and F of the chute will form incline planes, down which the tablets are adapted to travel. The inclined ways referred to are spaced and adjustably connected to each other by means of bolts G, as illustrated in Fig. 5. Coil-springs H upon the bolts intermediate of the ways serve to retain the latter in their spaced position, while suitable appliances, such as wing-nuts I, engage the bolt ends and afford means for varying the distance between the way to accommodate the chute for different sizes of tablets. After the proper adjustment is effected the ways are locked by means of set-screws or bolts J, which are inserted in the under faces of the ways and bear against the bolts in the manner indicated.

Each of the ways described is provided upon its inner face with a guide-plate, such as K, the upper edges L of which form the inclines upon which the tablet travels. These plates are secured to the ways by screw-bolts M, which are shown as extending through vertical slots O within the ways, as plainly indicated in Fig. 2. By this manner of adjustment the space between the upper edges of the guide-plates and the chute-cover P may be varied and the chute properly adjusted to receive tablets of different thickness.

The upper end of the chute, as shown in Figs. 1 and 3, is recessed, and within the recess is seated the hopper B. A bolt R forms a pivotal connection between the upper end of the chute and a cross-piece S between the ways and permits of the hopper being oscillated or vibrated laterally. The end of the hopper adjacent to the chute is formed with inclined portions *a* and *b*, which lead and are adapted to convey the tablets to the discharge-opening *c*. This opening, as shown in Fig. 4, is of greater width than the feed-opening of the chute and is adapted to substantially register with the latter. A vertically-adjustable gate T is connected to the lower end of the hopper to control the discharge-opening described and serves to prevent the tablets entering the chute from traveling on their edges.

Any suitable mechanism may be employed for vibrating the hopper. I have preferably shown an eccentric U, mounted upon the shaft V, journaled in suitable bearings in the framework, and a connection W engaging the eccentric at one end, as shown in Fig. 1, and having a hook at its opposite end extending within an eye in the form of an apertured ear X upon the hopper side. Motion being imparted to the shaft will cause the hopper to oscillate laterally and the tablets to be discharged therefrom within the grading-chute.

In operation a quantity of tablets of various sizes are placed within the hopper and the grading-chute adjusted to receive and convey the tablets of the largest diameter and thickness. Upon the oscillation of the hopper only one size will enter the grading-chute, while the others will drop between the spaced



ways into a suitable receptacle. (Not shown.)  
The grading-chute may then be adjusted for  
another size of tablet and the steps described  
repeated until the quantity of tablets have  
5 been properly separated.

The mechanism described is also convenient  
for use in separating broken tablets from  
a number of tablets of uniform size, the perfect  
tablet passing through the grading-chute,  
10 while the broken portions of the tablet will  
drop between the ways in the manner set  
forth.

While I have shown a particular arrangement  
of the parts and mechanism of a certain  
15 type for vibrating the hopper, I do not desire  
to be limited to this construction, as various  
modifications may be made without in any  
manner departing from the spirit of the invention.

20 What I claim as my invention is—

1. In a tablet-grading machine, the combination  
of two spaced and inclined ways each  
provided upon its inner face with a guide-  
plate, means for vertically adjusting said  
25 plates, a hopper mounted upon the upper ends  
of the ways for vibratory movement, and  
means for vibrating the hopper.

2. In a tablet-grading machine, the combination  
with a covered grading-chute, the ways  
30 thereof having the vertical slots O formed  
therein, of guide-plates upon the inner faces  
of the chute, bolts extending through the  
slots and engaging the guide-plates, a hopper

in operative relation to the chute, and means  
for oscillating the hopper.

3. In a tablet-grading machine, the combination  
with an inclined grading-chute having  
its upper end recessed, of a hopper seated  
within the recessed portion of the chute and  
pivoted to the latter, the discharge-opening  
40 in the hopper registering with the chute, and  
means for laterally oscillating the hopper.

4. In a tablet-grading machine, the combination  
with an inclined grading-chute having  
a hopper-seat formed in its upper end, of a  
45 support for maintaining the chute in its inclined  
position, a hopper mounted within the seat  
and pivoted to the chute for transverse  
vibratory movement, a drive-shaft upon the  
support, an eccentric carried by the shaft,  
50 and an operating connection between said eccentric  
and the hopper.

5. In a tablet-grading machine, the combination  
with an inclined grading-chute, of a  
hopper pivoted upon the upper end thereof  
55 and having its discharge-opening extending  
in operative relation to and in axial alignment  
with the chute-opening, and means for oscillating  
the hopper upon the chute.

In testimony whereof I affix my signature  
60 in presence of two witnesses.

JAMES M. MACDONALD.

Witnesses:

L. J. WHITEMORE,  
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