

No. 687,911.

Patented Dec. 3, 1901.

W. W. BALCH.
BEAN OR SEED SORTING MACHINE.

(Application filed July 9, 1900.)

2 Sheets—Sheet 1.

(No Model.)

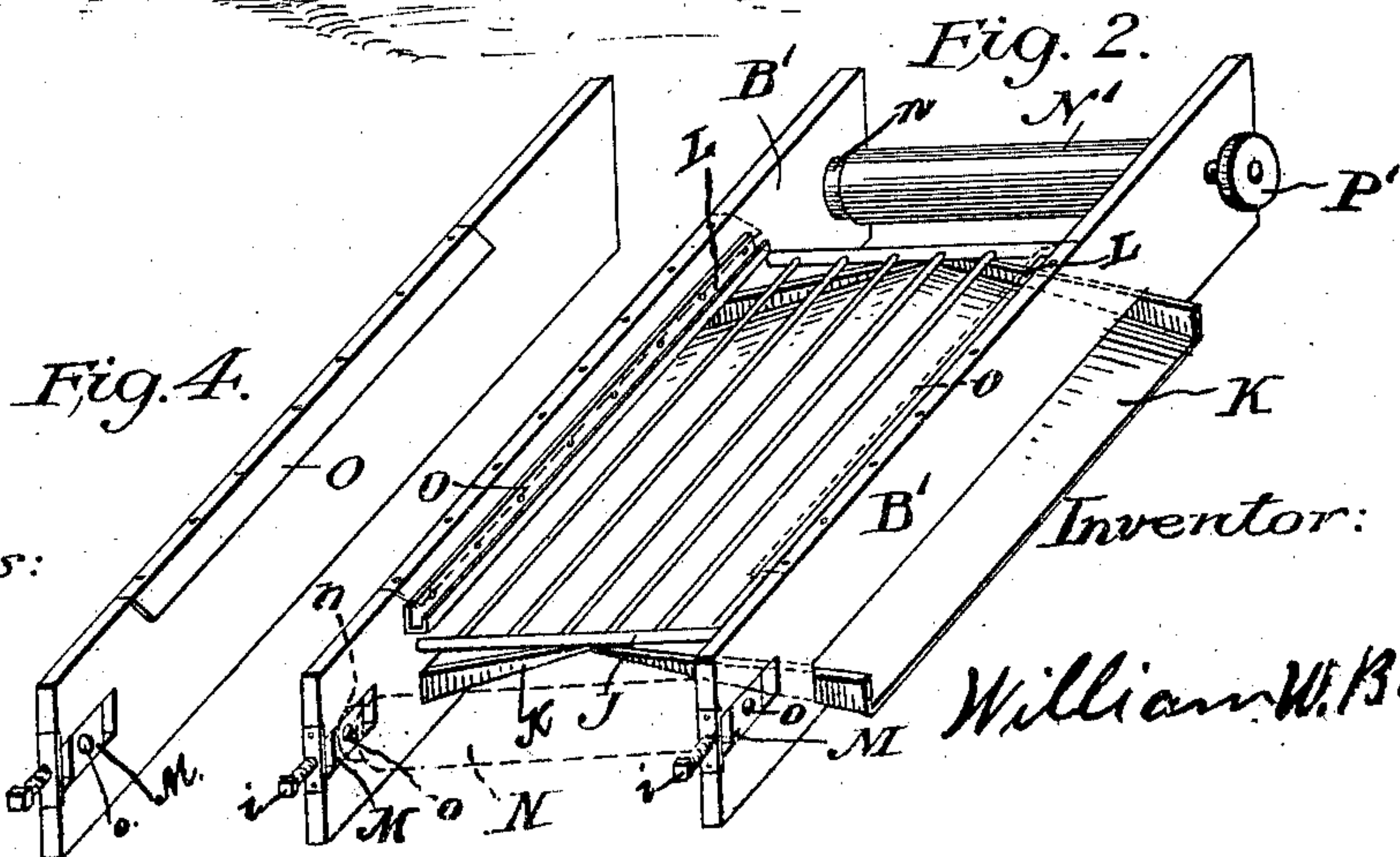
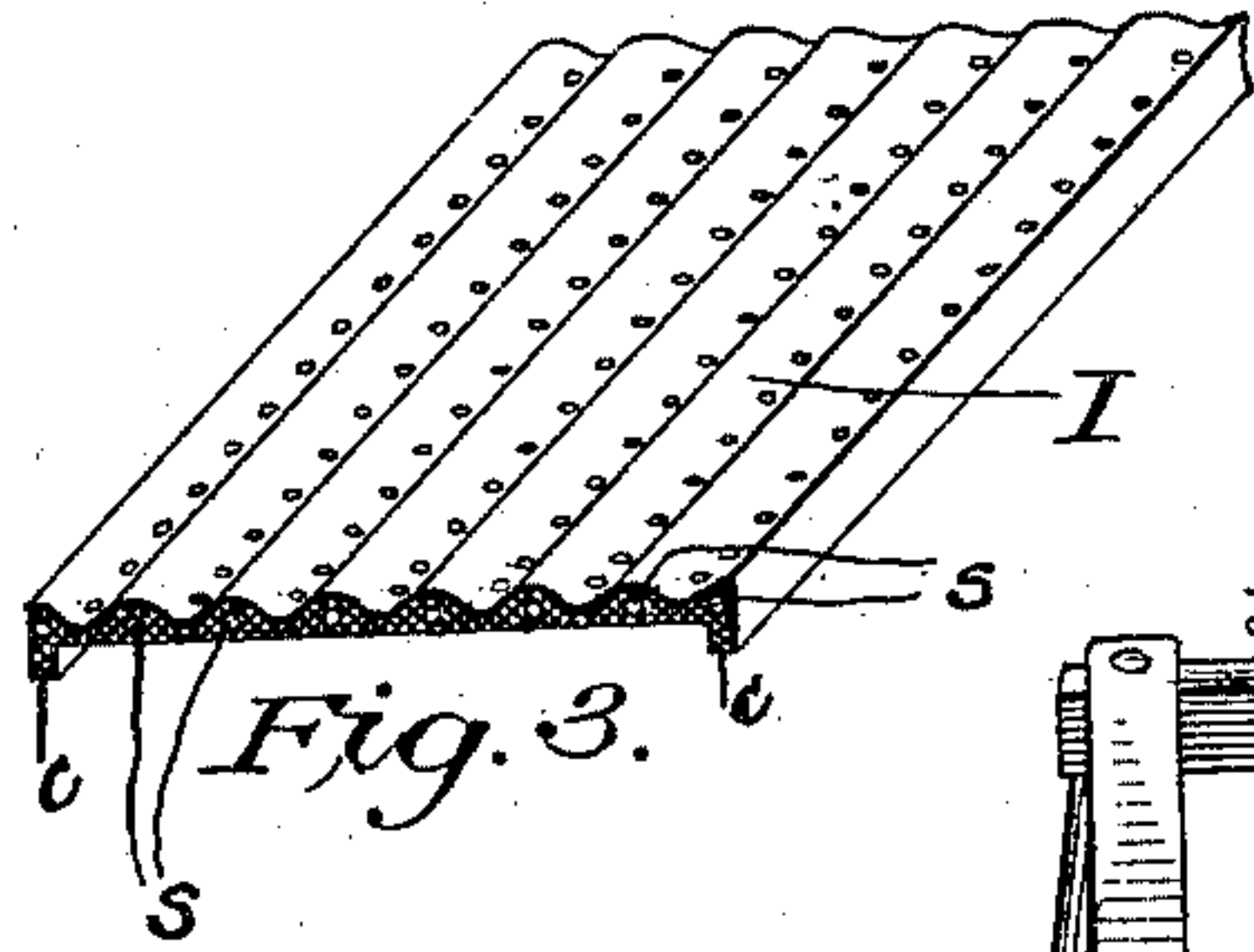
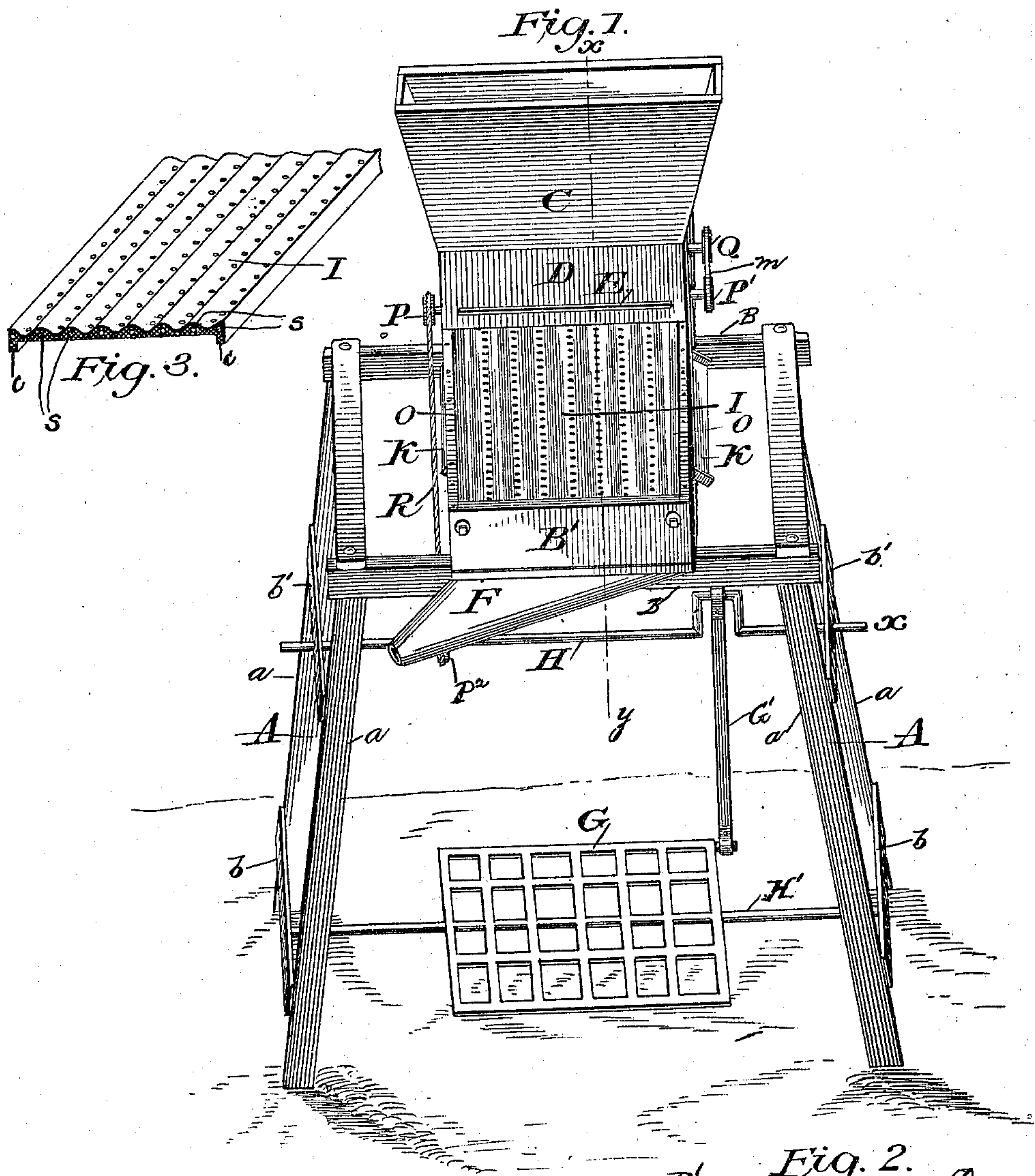


Fig. 4.

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Inventor:

William W. Balch

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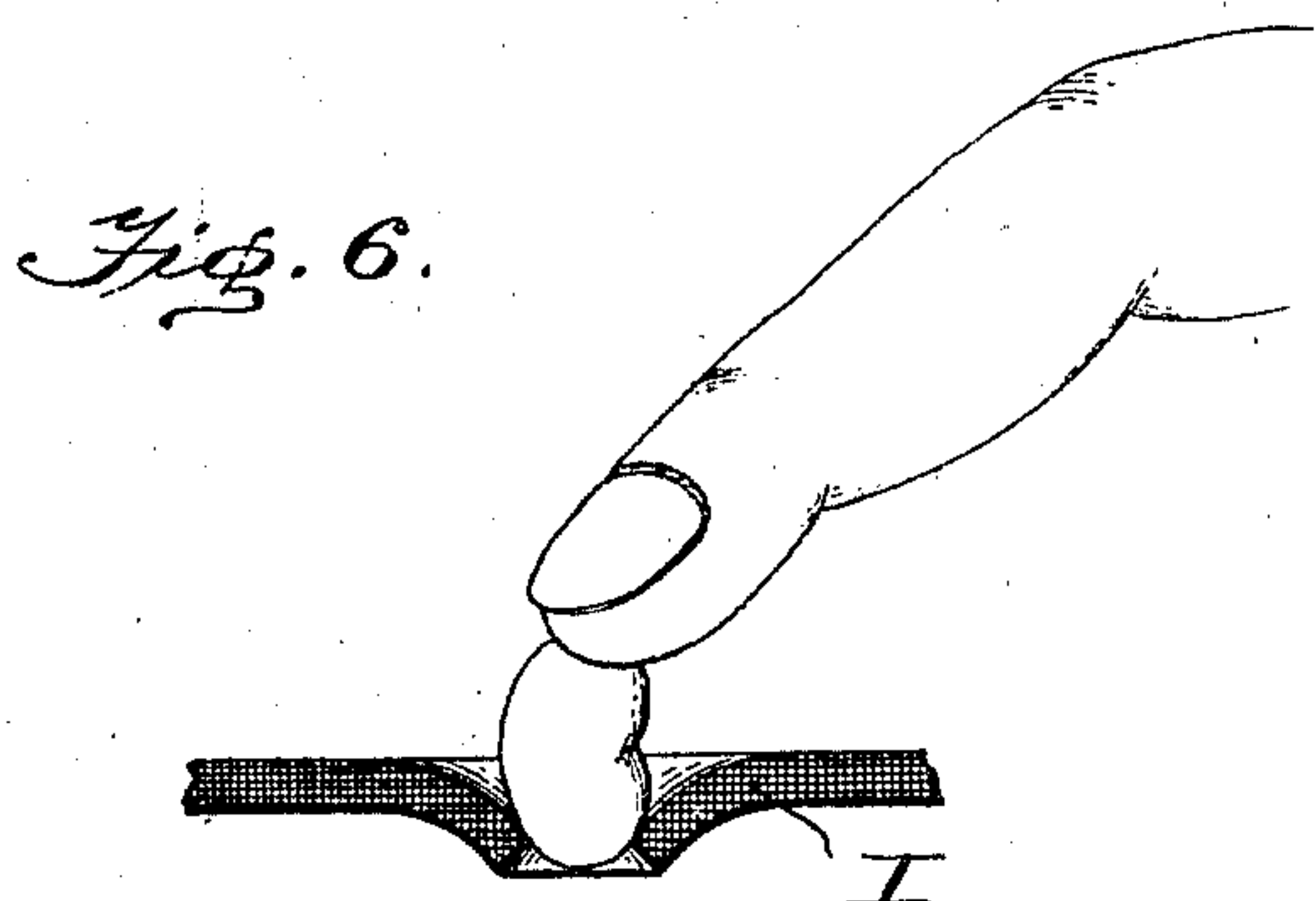
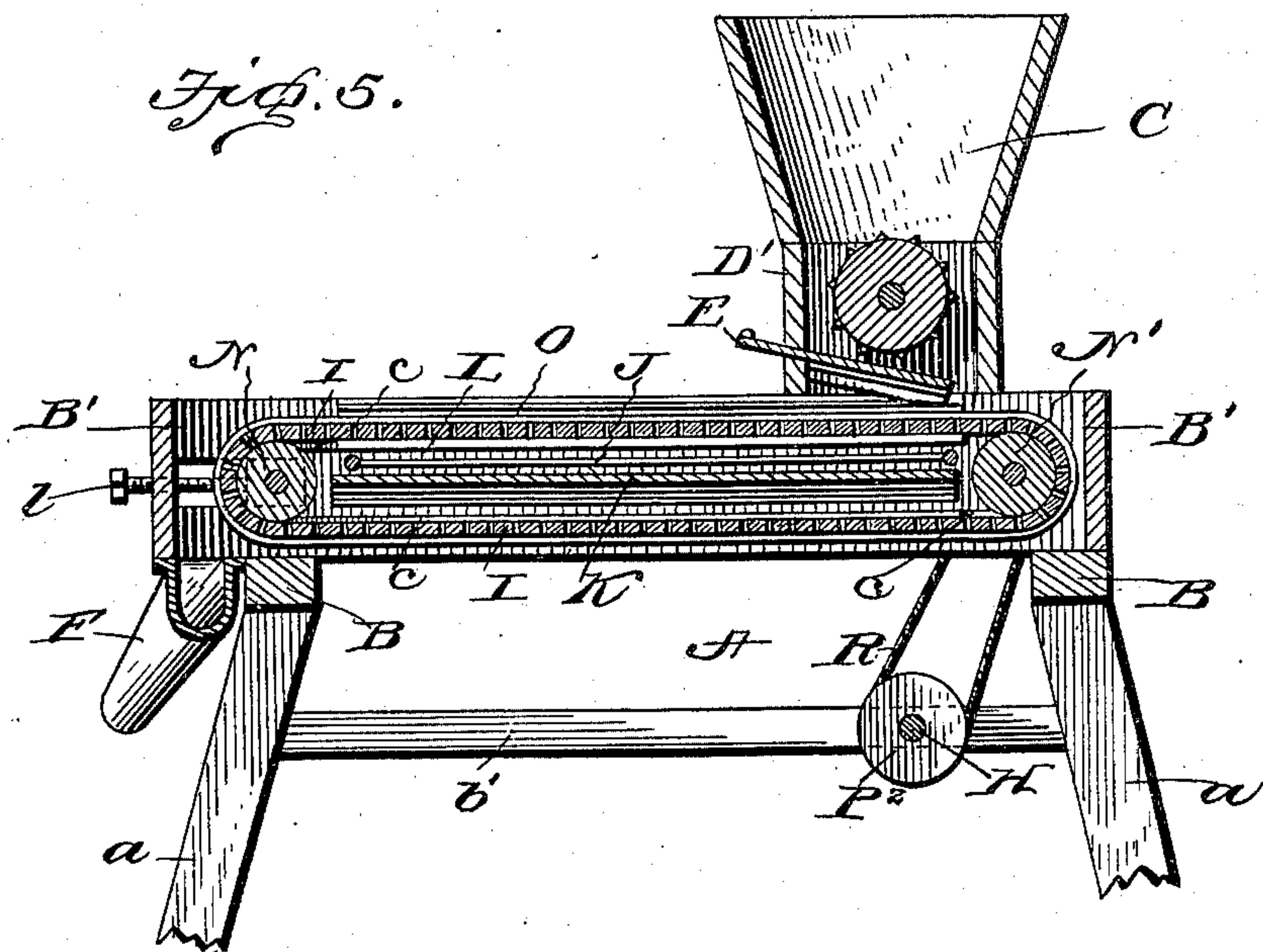
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UNITED STATES PATENT OFFICE.

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BEAN OR SEED SORTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 687,911, dated December 3, 1901.

Application filed July 9, 1900. Serial No. 22,927. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. BALCH, a citizen of the United States, residing at Deford, in the county of Tuscola and State of Michigan, have invented a new and useful Improvement in Hand Bean or Seed Sorting Machines, of which the following is a specification.

This invention has relation to improvements in bean and seed assorting machines; and it consists in the construction and arrangement of parts, as will be hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is an isometrical perspective view of the machine. Fig. 2 is a top plan view of the same with the frame, hopper, and belt removed. Fig. 3 is a cross-section or end view of the belt. Fig. 4 is a view of one of the side walls of the box, and Fig. 5 is a vertical longitudinal section of Fig. 1 on the line xy . Fig. 6 is a detail view of a portion of the rubber belt, showing the manner of forcing the seed through the perforations therein.

Referring to the drawings, the letter A indicates the framework of my invention suitably constructed for the purpose, the uprights a , connected on opposite sides of the frame, being provided with bearing-plates b and b' , arranged one above the other, the upper ones, b' , provided with a crank-shaft H, the lower ones, b , having a shaft H' with a pedal G secured thereto, by means of which motion is imparted to the crank-shaft H through the medium of a rod G', connected to said crank-shaft H and to the pedal G. Mounted on the side bars or rails B of the frame and secured lengthwise thereon is a frame or box B', above which is located a hopper C. Below the hopper C is a feed-box D, provided with a shut-off slide E, whereby to regulate the flow of seed from said box. To the inner side walls of the frame or box B' and secured in any suitable manner thereto is an open or slatted frame J, and immediately under this open or slatted framework is a double inclined screen-board K, which passes through openings in the side walls of the frame or box B'. Secured to the inner side walls of the box B' and on opposite sides thereof are ways or channels L, and arranged above said ways L

at the top edges of the side walls are projections or steps O for a purpose to be presently explained. Journaled in the side rails of the box B' and at opposite ends thereof are the rollers N N', having annular end grooves n therein.

The letter I designates a corrugated endless apron having longitudinal channels with expansible perforations therein. The corrugations of the belt or apron may be inlaid with cords of a suitable character to prevent lateral stretching of the same. The apron is formed with flanges c on its under opposite side portions, whereby said flanges are loosely mounted in the annular grooves n of the rollers N and N' and also connected in the channels or ways L and adapted to travel therein during the rotation of said rollers, the projections O, before mentioned, extending over the top edges of the apron I to prevent the same from having an upward movement or from being displaced from the channels L when the belt moves on the said rollers.

The letters P and P' are pulleys mounted on the opposite ends of the roller N', whereby motion is imparted to the endless apron I by means of a small belt R, connected to the pulley P and to a pulley P² on the crank-shaft H. A belt m connects with the pulley P' on one end of the roller N' and also connects with a pulley Q, attached to a feed-cylinder journaled in the feed-box D, whereby motion is given to said cylinder.

The letters M M denote blocks mounted in recesses or openings at the outer ends of the side walls of the box B'. Said blocks are provided with movable bearings o , in which are rotatably mounted the journal ends of the roller N. The blocks are rendered adjustable by means of screw-bolts i , located at the outer face portions of the said walls of the box B', whereby the slack of the apron I is regulated. To the bottom of the frame or box I provide a spout F for the passage of the seed.

The slatted frame J being located immediately under the apron or belt I prevents sagging of the same when the seeds thereon are forced through by the tips of the fingers of the hands of the operator.

The operation of my invention is as follows: The seed to be assorted is placed in the hop-

per C, from whence it flows to the feed-receptacle D, and by means of the slide E, connected to the feed-receptacle, the seed is permitted to gradually or evenly flow onto the belt I, and by the operation of the treadle G the rod G', connected thereto and to the crank-shaft H, causes the said shaft to rotate in its bearings, and the belt R being connected to the pulley P² on the crank-shaft H and to a pulley P on the end of the roller N' imparts motion to the apron I, which travels in the annular groove *n* of the rollers. By means of one end of the roller N' being provided with a pulley P', having a belt *m* thereon, which connects with a pulley Q on one end of the cylinder journaled in the feed-receptacle, the seed is permitted to pass onto the belt I.

Having described my invention, what I claim is—

1. The combination of a supporting-frame, a pair of rollers, and an endless apron of elastic material, formed with longitudinal channels, and perforations in said channels, substantially as set forth.
2. The combination of a supporting-frame, a pair of rollers, and an endless apron formed with longitudinal channels and perforations in said channels, said perforations being

made through elastic material forming a part of said belt substantially as set forth. 30

3. The combination of a frame, two rollers, rotatably mounted in, or supported by said frame, and an endless belt formed with grooves and expansible perforations, substantially as set forth. 35

4. The combination of a frame, rollers mounted in said frame, a grooved endless belt with expansible perforations, and an open frame between said rollers to maintain said belt in plane against the weight of the material and manual pressure, substantially as set forth. 40

5. In combination, a frame comprising side walls having guides or channels on their inner portions, annularly-grooved rollers, and a corrugated endless belt, composed in part of perforated elastic material, and formed with flanges engaging the channels and grooves in the rollers, whereby the belt is kept duly stretched laterally as well as longitudinally, substantially as set forth. 45 50

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