(No Model.)

J. WENZIN.

RECIPROCATING GEARING.

No. 421,533. Patented Feb. 18, 1890.

Fig. 1.

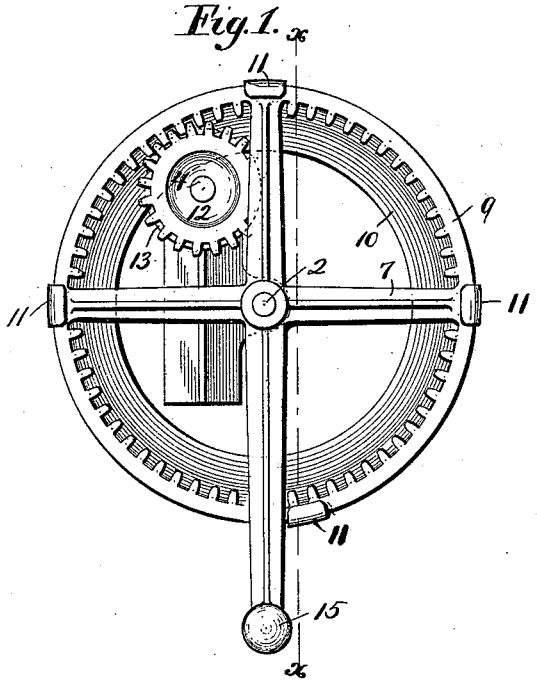

Fig. 2.

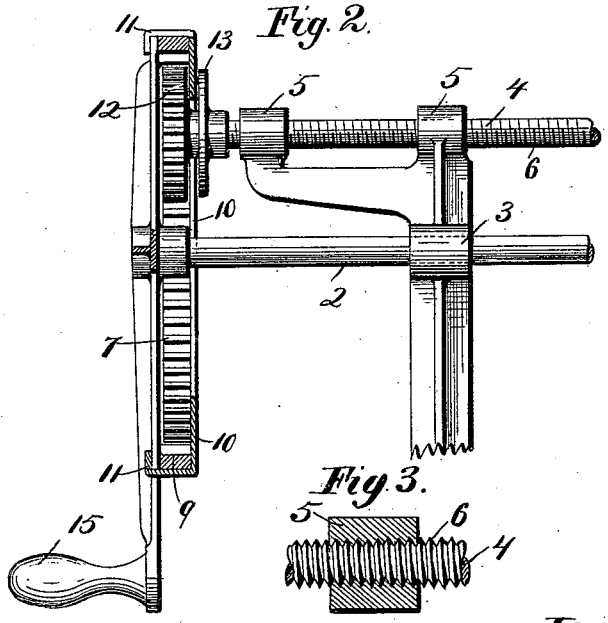

Fig. 3.

Witnesses
J. Jessen
B Booth

Inventor
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UNITED STATES PATENT OFFICE.

JOHN WENZIN, OF MINNEAPOLIS, MINNESOTA.

RECIPROCATING GEARING.

SPECIFICATION forming part of Letters Patent No. 421,533, dated February 18, 1890.

Application filed May 28, 1889. Serial No. 312,394. (No model.)

To all whom it may concern:

Be it known that I, JOHN WENZIN, of Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain Improvements in Reciprocating Gearing, of which the following is a specification.

This improvement relates particularly to improvements in gearing designed for use in connection with reciprocating or longitudinally-movable shafts.

In the construction of machinery it is frequently necessary to use shafts which reciprocate longitudinally while being geared together, so as to be rotated one from the other.

My invention consists, generally, in constructing gearing which may be applied to shafts which are to be simultaneously rotated one from the other, and also given a simultaneous longitudinal movement.

In the accompanying drawings, forming part of this specification, Figure 1 is a front elevation of my improved gearing. Fig. 2 is a vertical section of the same on line *x x* of Fig. 1. Fig. 3 is a detail.

In the drawings, 2 represents a suitable shaft mounted in suitable bearings 3, and capable of longitudinal movement therein. 4 represents a shaft mounted in bearings 5, and preferably arranged parallel to the shaft 2. One of these shafts is provided with means for causing it to move longitudinally while it is being rotated. I have here shown the shaft 4 provided with a worm or screw-thread 6, which is arranged to engage a corresponding thread in one or both of the bearings 5. As the shaft 4 is rotated, it is caused by its worm to move longitudinally in its bearings. The shaft 2 is provided with a gear-wheel 7, which is preferably what is known as an internal or "cup" gear, being provided with a ring or flange 9, having gear-teeth upon its inner surface. A ring 10 is secured to the face of the gear-wheel 7, the inner periphery of the ring extending toward the center of the gear. This ring is preferably connected to the gear-wheel 7 by means of arms 11, which extend over the periphery of the gear and are bent down against its opposite face.

The shaft 4 is provided with a pinion 12, which is arranged to engage the gear-wheel 7, projecting inside of the ring 10. A collar 13 is preferably provided on the shaft 4 and is outside of ring 10. The ring 10 is thus between the collar 13 and the pinion 12, and a longitudinal movement of the shaft 4 will, through the ring 10 and gear-wheel 7, be communicated to the shaft 2, while at the same time one of these shafts is rotated from the other through the pinion and gear-wheel, and the relative speed of the two shafts will depend upon the relative sizes of the pinion and gear-wheel.

I have shown the gear-wheel 7 provided with a handle 15, by means of which power may be applied to the shaft 2. From this shaft power will be communicated through the gear-wheel and pinion to the shaft 4, and as this shaft is caused to move longitudinally the shaft 2 will also move longitudinally with it.

This gearing will be found to be advantageous for use in apple or potato paring machines, though it may be used in many other places.

I claim as my invention—

1. The combination, with the longitudinally-movable shaft 2, provided with the gear-wheel 7, of the ring 10, secured upon the face of said gear-wheel, and the longitudinally-movable shaft 4, provided with the pinion 12, engaging said gear-wheel and projecting inside of said ring, whereby said shafts will have a simultaneous longitudinal movement, substantially as described.

2. The combination, with the longitudinally-movable shaft 2, provided with the internal gear-wheel 7, and with the ring 10, secured upon the face of said gear-wheel, of the shaft 4, provided with a collar 13 and a pinion 12, said pinion engaging said gear-wheel and projecting inside of said ring, and said shaft provided also with a screw-thread engaging a corresponding thread in the shaft-bearing, for the purpose specified.

In testimony whereof I have hereunto set my hand this 11th day of May, 1889.

JOHN WENZIN.

In presence of—
A. M. GASKILL,
J. JESSEN.