July 20, 1926.

1,592,817

R. BACCELLIERI

RATCHET MECHANISM

Filed Dec. 8, 1925

3 Sheets-Sheet 1

Fig. 1.

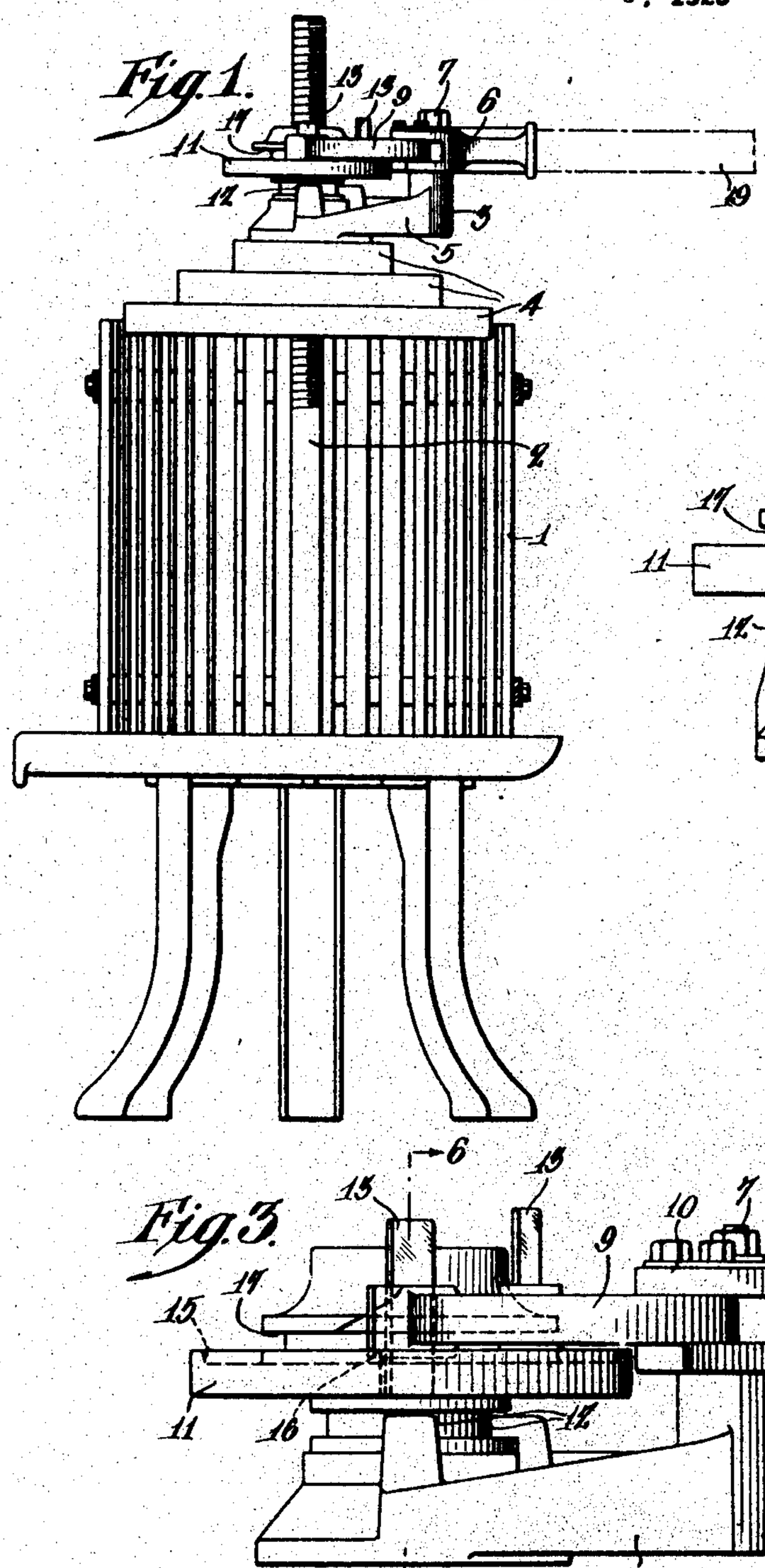


Fig. 2.

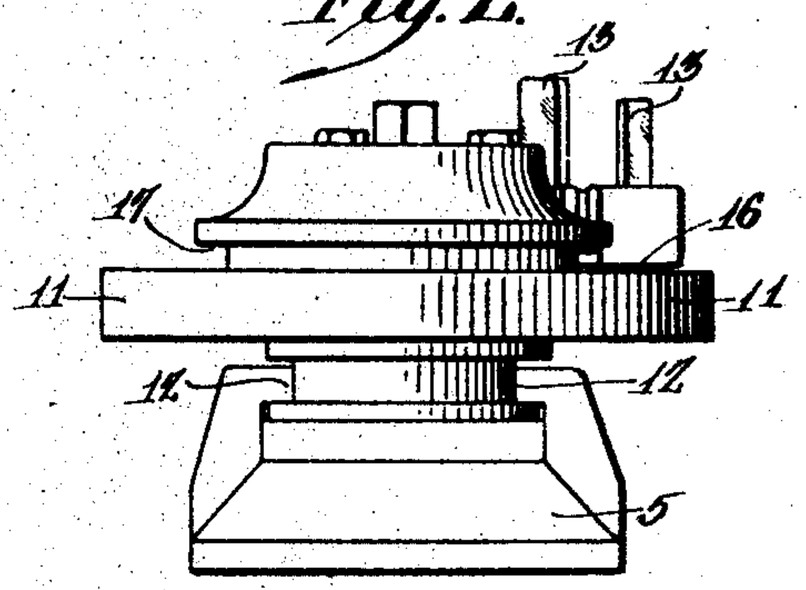
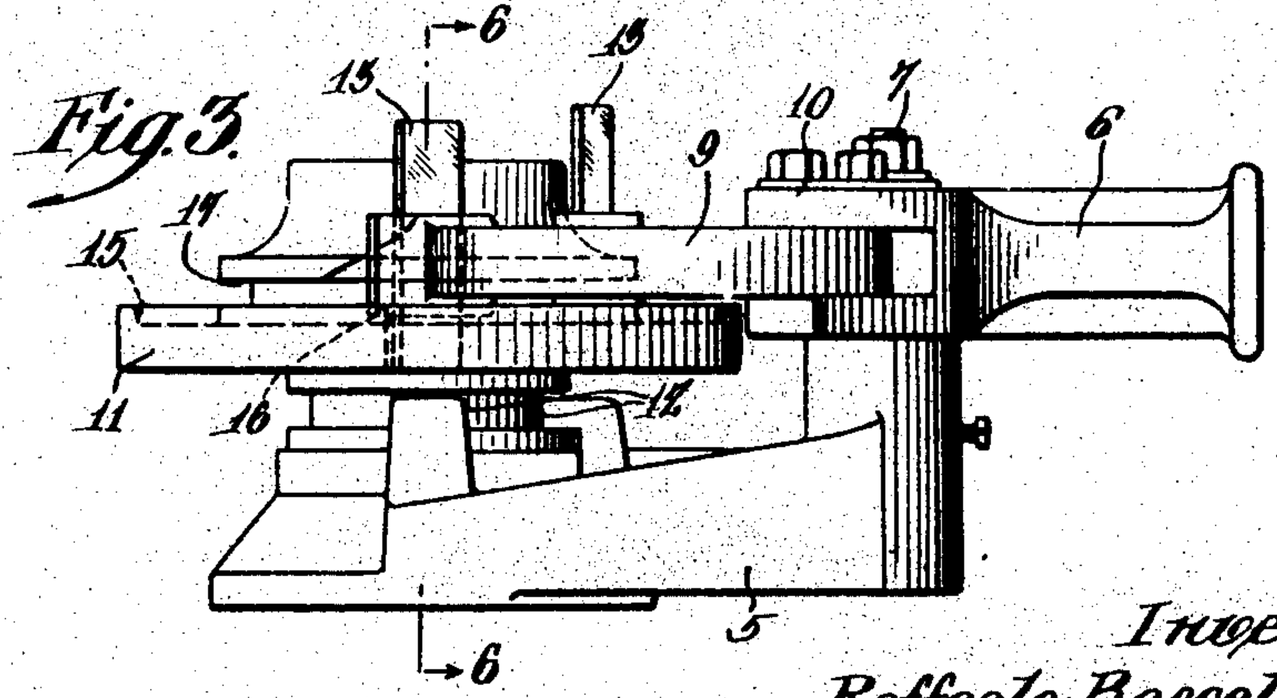


Fig. 3.



Witnesses:
Walter Chum
George A. Gross

Inventor:
Raffaele Baccellieri.

by
Joshua R.H. Potts
his Attorney.

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R. BACCELLIERI

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Fig 4.

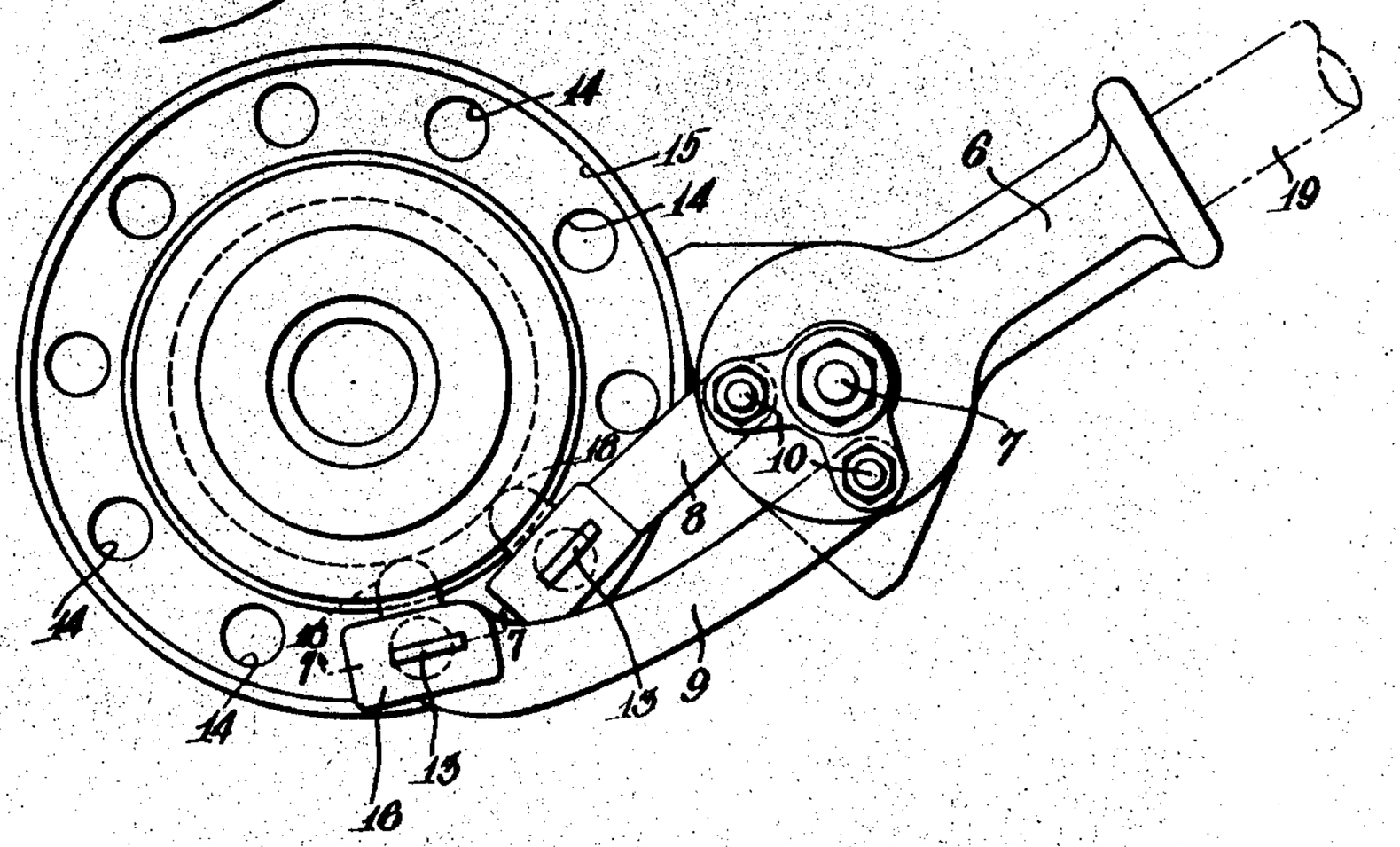
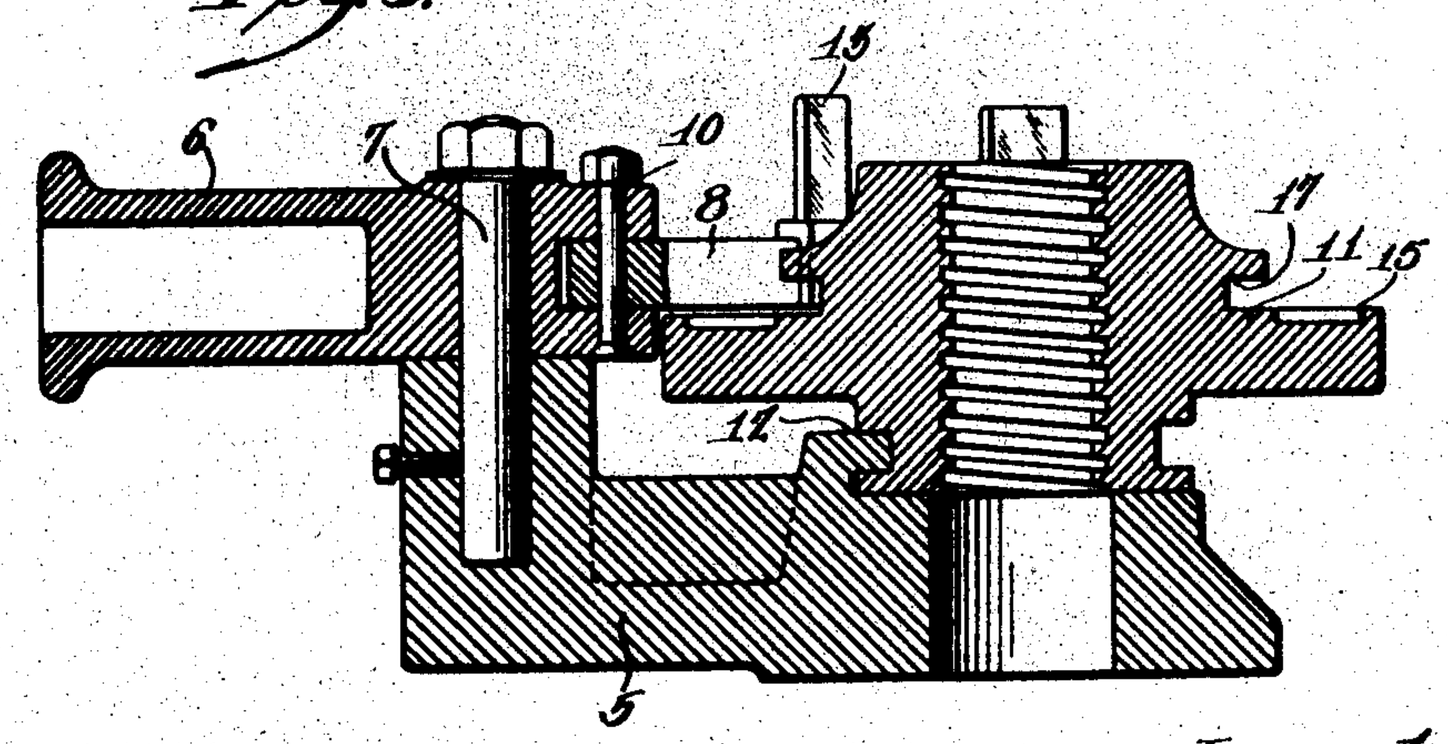


Fig 5.



Witnesses:
Walter Thum.
George A. Grell

Inventor:
Raffaele Baccellieri
by
Joshua R. H. Potts
his Attorney

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R. BACCELLIERI

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Fig. 6.

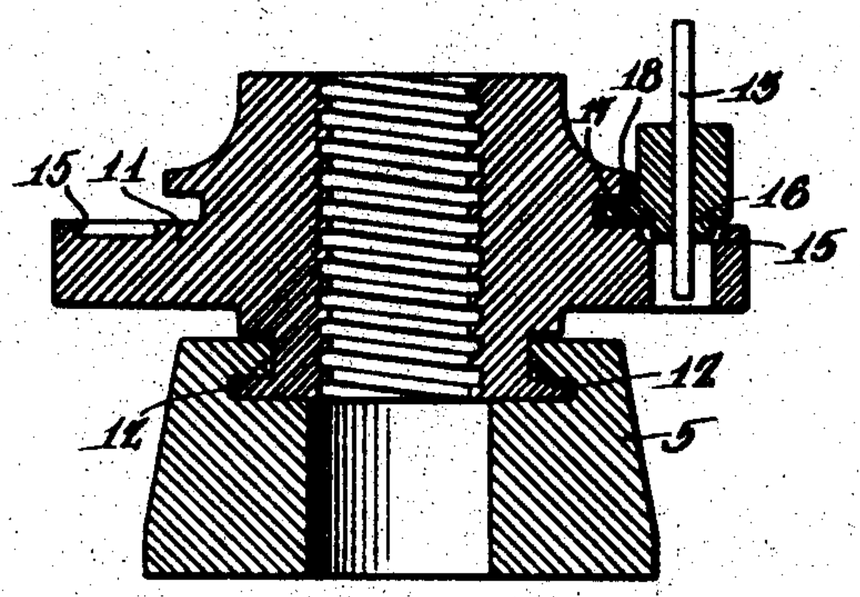


Fig. 7.

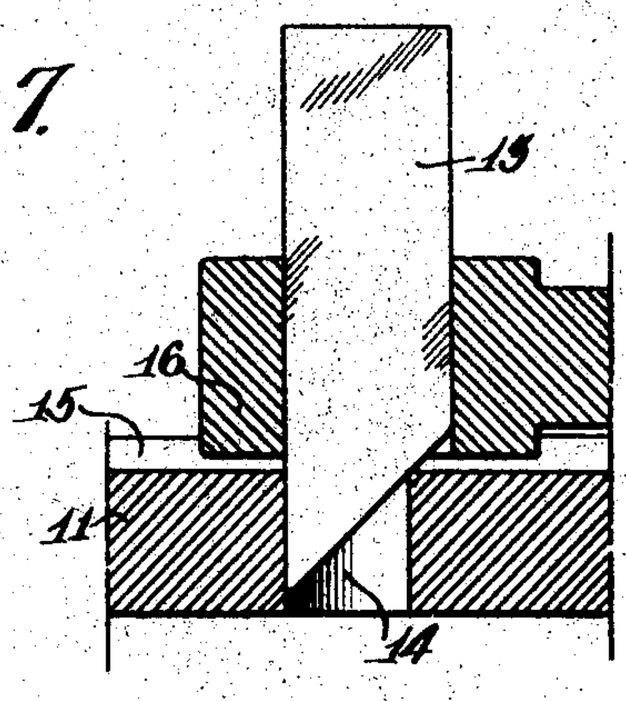


Fig. 8.

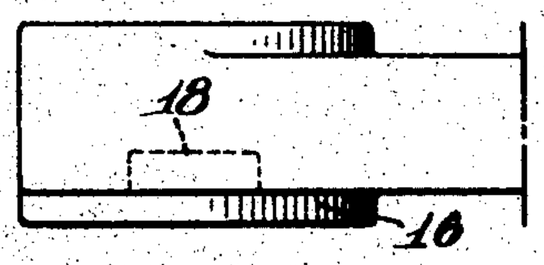
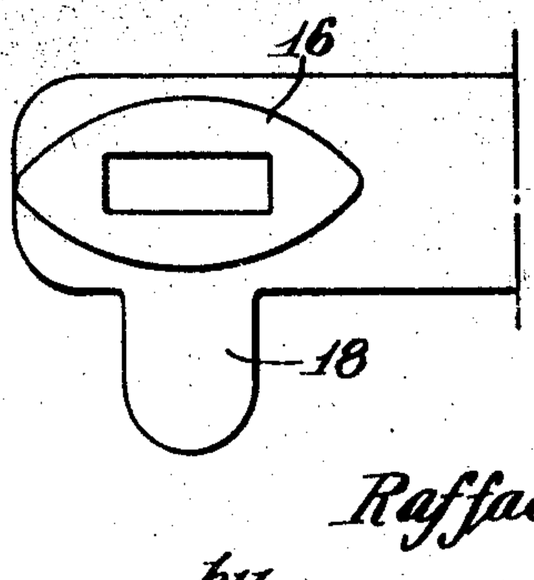


Fig. 9.



Witnesses:
Walter Chum.
George A. Brucell

Inventor:
Raffaele Baccellieri
by
Joshua R.H. Potts
his Attorney.

Patented July 20, 1926. 1,592,817

UNITED STATES PATENT OFFICE.

RAFFAELE BACCELLIERI, OF PHILADELPHIA, PENNSYLVANIA.

RATCHET MECHANISM.

Application filed December 8, 1925. Serial No. 73,965.

This invention relates to ratchet mechanism for fruit presses and more especially to mechanism provided with a pair of horizontally swingable arms carrying vertically slidable pawls.

The chief objection to ratchet mechanism of this type is that after the pawl and its associated parts have been worn, and play has developed between them, the pawl when placed under pressure to actuate the ratchet wheel, tilts and tends to slip out of engagement with the ratchet wheel. This lifts the end of the pawl-carrying arm and causes it to bind around its pivot, thereby producing considerable wear and making it difficult to operate the ratchet mechanism.

The object of my invention is to provide ratchet mechanism in which the pawl-carrying arms will be held in position against abnormal upward and sidewise movement, thereby avoiding binding of the arms at their pivots and the subsequent wear and difficult operation of the ratchet mechanism.

This object, and other advantageous ends which will be described hereinafter, I attain in the following manner, reference being had to the accompanying drawings in which—

Figure 1 is a side elevation partly in section of a fruit press having my ratchet mechanism applied thereto,

Figure 2 an enlarged end view looking from the left of Figure 1 of the ratchet mechanism shown therein,

Figure 3 a side view looking from the right of the ratchet mechanism shown in Figure 2,

Figure 4 a plan view of Figure 3,

Figure 5 a vertical central section through the ratchet mechanism,

Figure 6 a section on line 6—6 of Figure 3,

Figure 7 an enlarged section on line 7—7 of Figure 4, and

Figures 8 and 9 enlarged fragmentary side elevation and bottom plan views of an element which forms a part of my invention.

Referring to the drawings, 1 indicates a fruit press having a screw 2 and 3 my improved ratchet mechanism threaded to the screw for pressing fruit within a cage by pressing blocks 4 under the ratchet mechanism.

The ratchet mechanism is composed of a base 5; a head 6 pivoted to the base at 7; a pair of arms 8 and 9 pivoted to the head at 10; a ratchet wheel 11 rotatably mounted on the base preferably by a tongue and groove connection shown at 12, and pawls 13 vertically slidable in the ends of arms 8 and 9 and adapted to engage holes 14 arranged adjacent the periphery of the ratchet wheel when actuated to rotate the same. The ratchet wheel has a vertical groove 15 in which lugs 16, depending from the bottom of the arms, are normally positioned to engage the side walls of the groove and prevent sidewise movement of the arms from their normal path of movement. A horizontal groove 17, in the hub of the ratchet wheel, receives laterally extending lugs 18, on the sides of the arms, for preventing upward movement of the arms.

For operation the ratchet mechanism is attached to a press as shown in Figure 1 so that the threaded hub of the ratchet wheel fits on the screw 2 of the press, and the base 1 has the pressing block 4 placed thereunder. Head 6 is then oscillated by manipulating its handle indicated in dot-and-dash lines at 19 to cause arm 8 to move in one direction and arm 9 in reverse direction. As the head is swung to the left (see Figure 4), arm 8 moves forwardly and its pawl 13 engages one of the holes 14 and turns the ratchet wheel. When arm 8 has reached the end of its path of movement, arm 9 will be in position to allow its pawl to engage one of the holes 14 and turn the ratchet wheel, in a similar manner as arm 8, upon swinging the head to the right. During the ratchet wheel actuating movement of arms 8 and 9, lugs 16, depending from the bottom of the arms, engage the side walls of the vertical groove 15 to keep the arms in position against abnormal sidewise movement and thus always bring pawls 13 in registry with holes 14. If for any reason, such as by inaccurate machining or by wear, an excessive amount of play has developed between the pawls and arms, the pawls will tilt when placed under pressure and will tend to slide out of holes 14 and lift the ends of arms 8 and 9, but due to lugs 18 extending horizontally into grooves 17, this upward lifting of the arms is prevented, thus insuring easy operation of the ratchet mechanism and preventing excessive wear caused by binding of the parts.

The ratchet mechanism above set forth requires less power to operate the same, and

has less wear on the parts than the older types of ratchet mechanism, thereby increasing its life of usefulness.

While I have described my invention as taking a particular form, it will be understood that the various parts may be changed without departing from the spirit thereof, and hence I do not limit myself to the precise construction set forth, but consider that I am at liberty to make such changes and alterations as fairly come within the scope of the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. In ratchet mechanism having a base; a head pivoted on the base; arms pivoted on the head for horizontal movement; a ratchet wheel rotatable on the base, and having an annular series of holes adjacent its periphery; pawls carried by the arms adapted to engage in the holes and actuate the ratchet wheel, and means carried by the arms and engaging the wheel for keeping the arms in position against abnormal vertical and horizontal movement relatively to the wheel.

2. In ratchet mechanism having a base; a head pivoted on the base; arms pivoted on the head for horizontal movement; a ratchet wheel rotatable on the base, and having an annular series of holes adjacent its periphery; pawls carried by the arms adapted to engage in the holes and actuate the ratchet wheel, and means carried by the arms and engaging the wheel for keeping the arms in position against vertical movement.

3. In ratchet mechanism having a base; a head pivoted on the base; arms pivoted on the head for horizontal movement; pawls carried by the arms; a ratchet wheel rotatable on the base adapted to be actuated by the pawls and having annular grooves, and means carried by the arms engaging the walls of the grooves for keeping the arms in position against abnormal vertical and horizontal movement.

4. In ratchet mechanism having a base; a head pivoted on the base; arms pivoted on the head for horizontal movement; pawls carried by the arms; a ratchet wheel rotatable on the base adapted to be actuated by the pawls and having an annular horizontal groove; means on the arms extending into the groove for keeping the arm in position against vertical movement, and means on the arms engaging the ratchet wheel for keeping the arms in position against abnormal horizontal movement.

5. In ratchet mechanism having a base; a head pivoted on the base; arms pivoted on the head for horizontal movement; pawls carried by the arms; a ratchet wheel rotatable on the base adapted to be actuated by the pawls and having a vertical groove; means on the arms extending into the groove for keeping the arms in position against abnormal horizontal movement, and means on the arms engaging the wheel for keeping the arms in position against vertical movement.

6. In ratchet mechanism having a base; a head pivoted on the base; arms pivoted on the head for horizontal movement; pawls carried by the arms; a ratchet wheel rotatable on the base adapted to be actuated by the pawls and having horizontal and vertical annular grooves; means carried by the arms extending into the horizontal groove for keeping the arms in position against vertical movement, and means on the arms depending into the vertical groove for keeping the arms in position against abnormal horizontal movement.

7 In ratchet mechanism having a base; a head pivoted on the base; arms pivoted on the head for horizontal movement; pawls carried by the arms; a ratchet wheel rotatable on the base adapted to be actuated by the pawls and having horizontal and vertical annular grooves; lugs carried by the arms extending into the horizontal groove for keeping the arms in position against vertical movement, and lugs carried by the arms depending into the vertical groove for keeping the arms in position against abnormal horizontal movement.

In testimony whereof I have signed my name to this specification.

RAFFAELE BACCELLIERI.