No. 871,330. PATENTED NOV. 19, 1907.

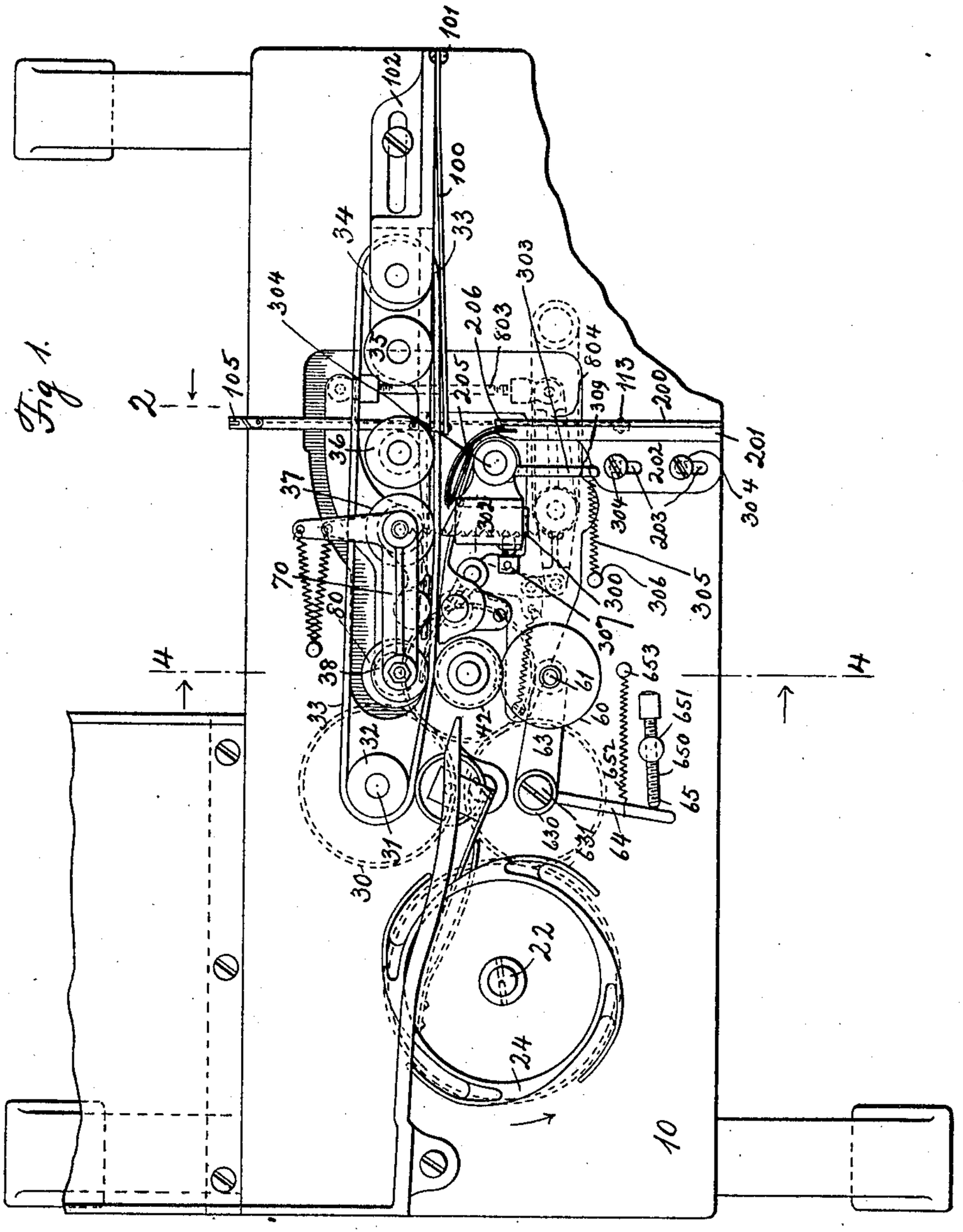
M. V. B. ETHRIDGE.

CANCELING AND POSTMARKING MACHINE.

APPLICATION FILED JUNE 1, 1905. RENEWED SEPT. 12, 1907.

3 SHEETS—SHEET 1

Fig 1.



Attest:
Alan Mc Donnell.
Herman Meyer

Martin V. B. Ethridge, Inventor:
by William R. Baird
his Atty

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3 SHEETS—SHEET 2.

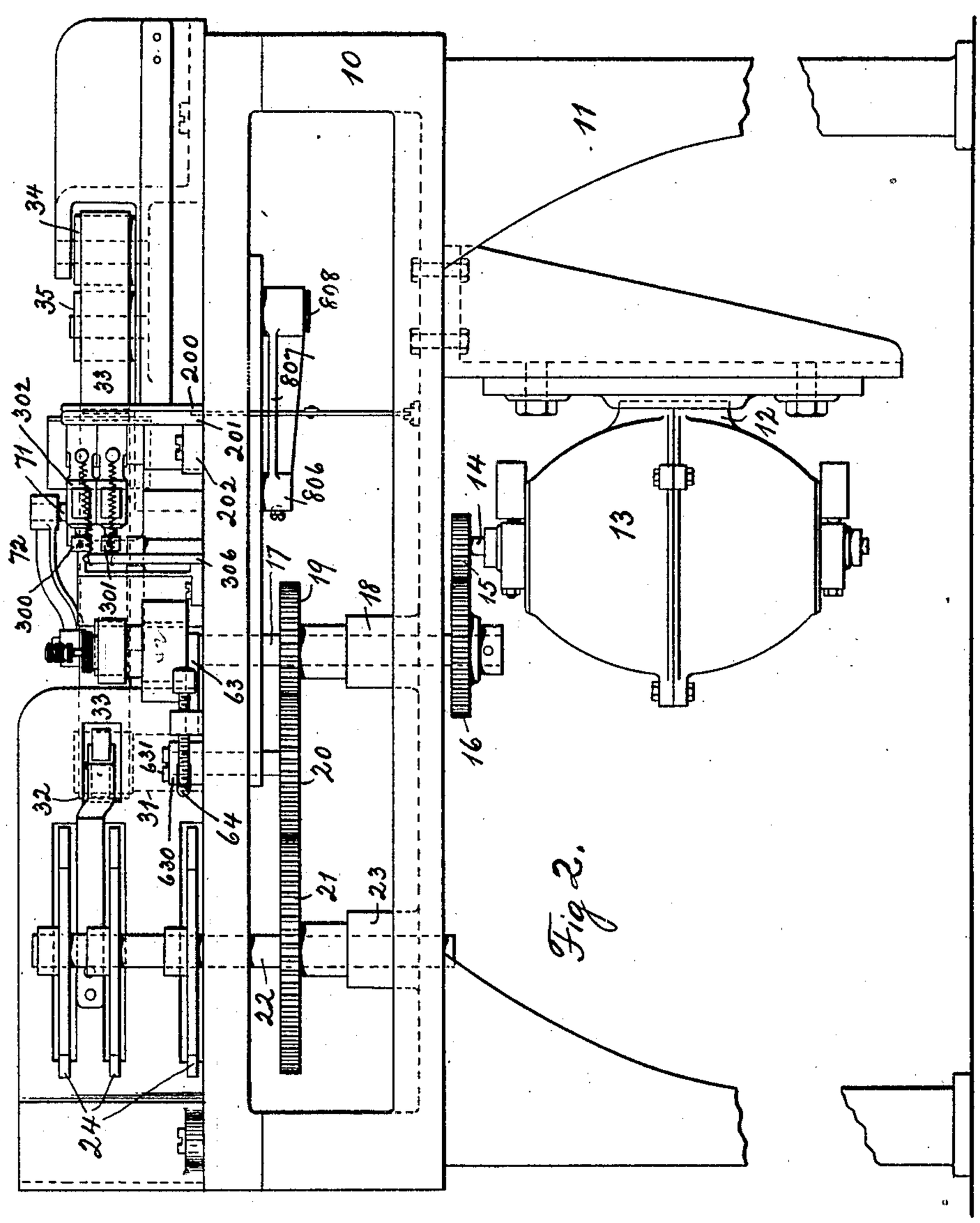

Fig 2.

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3 SHEETS—SHEET 3.

Fig. 4.

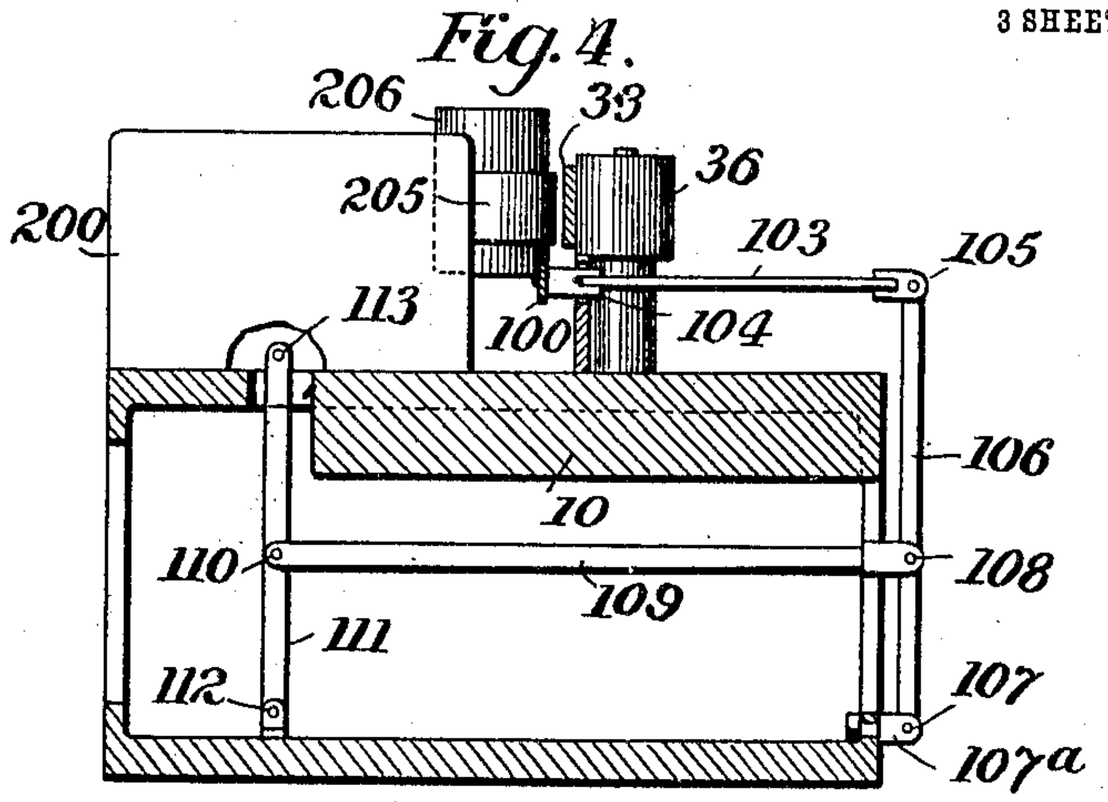
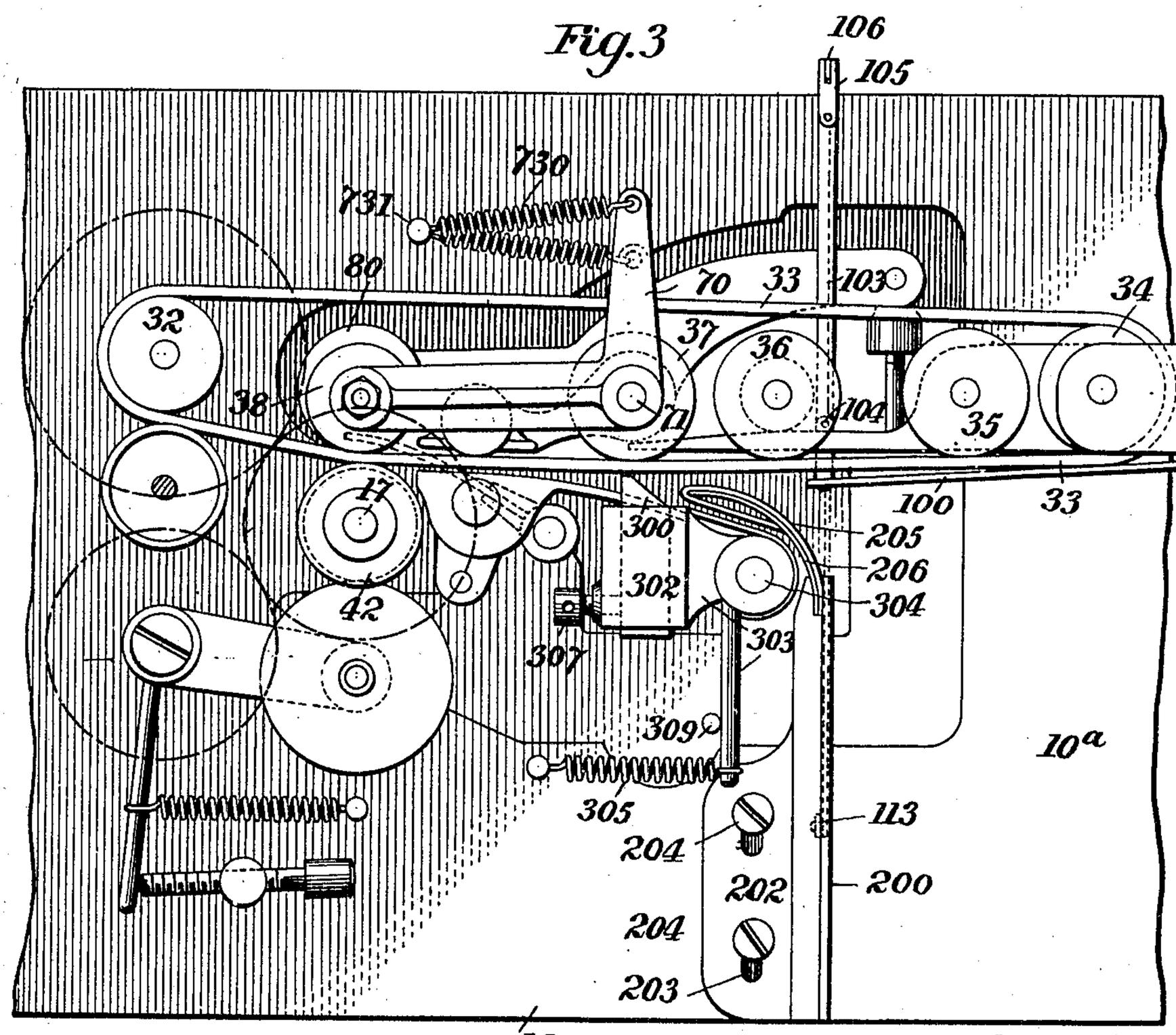


Fig. 3



10

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UNITED STATES PATENT OFFICE.

MARTIN V. B. ETHRIDGE, OF NEW YORK, N. Y.

CANCELING AND POSTMARKING MACHINE.

No. 871,330. Specification of Letters Patent. Patented Nov. 19, 1907.

Application filed June 1, 1905, Serial No. 263,237. Renewed September 12, 1907. Serial No. 392,568.

To all whom it may concern:

Be it known that I, MARTIN V. B. ETHRIDGE, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Canceling and Postmarking Machines, of which the following is a specification.

My invention has reference to machines for canceling and postmarking mail matter, and particularly relates to the parts of said machines intended to separate the mail matter and feed the same singly to the postmarking and canceling mechanisms.

The invention consists in certain peculiarities in the construction and arrangement of parts and in certain novel combinations of elements substantially as hereinafter described and particularly pointed out in the subjoined claims.

It is the particular purpose of the present invention to provide postmarking and stamp canceling machines with feeding and separating means which are of simple and practical construction and will effectively separate the letters and assure the passage of the same one at a time to the canceling and postmarking mechanism. This object is well accomplished by the construction shown in the accompanying drawings, in which:—

Figure 1 is a top plan view of a machine embodying my present improvements. Fig. 2 is a front elevation of said machine. Fig. 3 is a plan view on a larger scale than Fig. 1, of a portion of the machine. Fig. 4 is a transverse section on the line 4—4 of Fig. 1.

The same letters of reference designate the same parts in the several views.

In the drawings, 10 is a table or other means of support upon which the mechanism is mounted. It is provided with legs 11, and with a bracket 12, adapted to support a casing 13 within which is confined a motor (not shown) of any suitable size and construction. Extending upwardly from the casing 13 is the actuating shaft 14 of the motor. To this shaft is secured a toothed pinion 15 adapted to mesh with a gear 16 mounted upon a shaft 17 which is mounted to rotate in suitable bearings, as 18, in the frame of the machine and carries the printing cylinder 42 by which the postmarking data and stamp canceling marks are imprinted on the letters successively presented thereto. On the shaft 17 is secured a second gear wheel 19 which is the first one of the train of mechanism comprising the gears 20 and 21, the latter being fixed to a shaft 22 adapted to revolve in bearings 23 in the framework of the machine. Upon this shaft 22 is mounted a dispersing wheel 24, of usual construction and which needs no further description. The gear 19 not only meshes with the gear 20, but also with a gear 30 mounted upon a shaft 31 suitably suspended in bearings in the frame of the machine. This shaft 31 carries a pulley 32 around which passes the upright conveyer belt 33, which belt also passes around the idlers 34, 35, 36, 37 and 38, all of which are mounted to rotate upon shafts adapted to turn in suitable bearings in a usual manner, and the last of which (38) is mounted upon a bell-crank lever 70, which is fulcrumed at 71 and is provided with a spring 730 which is secured to a post 731 secured to the frame of the machine and serves to hold said idler yieldably toward the belt.

80 is the impression roller. In the machine indicated in the present drawings, means are provided whereby the tension upon the impression roller and the canceling cylinder is varied so that a thick letter will receive substantially the same impression as a thin one, but inasmuch as said means forms no part of the present invention it is not deemed to be either necessary or desirable to describe or fully show the same herein.

As already indicated the present invention relates to the feeding and separating portion of the machine, and it is to be understood that it is not restricted to any particular construction or arrangement of the other parts of the mechanism. My novel feeding and separating mechanism will now be described:—

The feeding separator comprises a primary separator and a secondary separator, which primary separator is intended to permit only one piece, or at the most two pieces, of mail matter to pass at one time while the secondary separator supplements the primary one and in the event of the passage of two pieces at once, catches and holds one of the same until the other has passed. These primary and secondary separators are arranged in the path of the letters being conveyed by the belt 33, and the primary separator, in its preferred and most advantageous form, comprises a flexible vertical guide mounted substantially parallel to the belt and having a rough mail engaging surface on the side toward the belt. This guide is pref-

erably a retarding sheet 205 formed of material which will impose considerable friction upon the mail and carried by a movably mounted carrier which is provided with adjusting means of such character that the operation of feeding a piece of mail matter to the belt 33, will cause said retarding sheet to move toward said belt and retard by its friction thereon the motion of the mail and permit only one piece to pass at a time. A suitable form of said adjusting means is as follows:—100 designates a movable rod or lever, which may be secured at one end (as at 101) and be made of sheet metal, or otherwise constructed, or mounted in order that it may move toward and from the vertical plane of the belt 33. This rod or lever is preferably located on a lower plane than the belt, as shown in Fig. 4 in order that it will not prevent free contact of the letter with said belt. Its free end is connected with a lever, rod or member 103, which extends transversely of the frame of the machine and is jointed at 104 to secure greater flexibility. The outer end 105 of said lever, rod or member 103 is pivoted to the upper end of a lever 106. This lever 106 is fulcrumed at 107 to a bracket 107[a] secured below the table, and, by means of a horizontal link 109 it is connected at 110 with an upright lever 111, the lower end of which is fulcrumed at 112 and the upper end of which is pivotally connected at 113 with the frame or carrier, which carries the retarding sheet or mail engaging portion of the separator. Thus, pressure imposed on the face of the rod, or lever, 100 will be transmitted to said frame, whereby the latter and the emery cloth will be advanced toward the belt 33.

The frame preferably comprises an upright portion 200 which extends transversely of the frame of the machine and is suitably formed to provide a space adapted to receive and retain the end or ends of the retarding cloth 205 within it. The upright portion 200 is also preferably of such construction as to constitute a partition or upright screen which provides the receiving end of the table or frame with a stacking space 10[a] of which it forms a separating wall and within which space the mail may be dumped without falling over into the other part of the frame where it would interfere with the separating mechanism. The other member 202 of said frame constitutes, so to speak, a laterally expanded base or shoe therefor, and is provided with slots 203 through which extend the securing pins 204 which also coöperate with said slots in guiding the frame in its movements toward and from the belt 33. The retarding sheet 205 is preferably an emery cloth infolded on itself and having its ends clamped or otherwise suitably held in the space in said portion 200 from which latter its folded portion projects and has requisite stiffness imparted to it by means of a strip 206 of thin flexible metal, which it incloses. The secured end 101 of the rod, lever or member 100 is preferably fixed to a slidably mounted bracket 102 which also acts as the take up of the belt 33.

It will be observed that the retarding element of the primary separator, composed, in the preferred detail embodiment herein shown, of a rough surface-material stiffened by a strip or plate of thin, flexible metal upon which it is folded, is by its approximately parallel relation to the path of the mail and the conveying means and by its inherent elasticity adapted frictionally to engage throughout a considerable part of the length of its face, the mail matter presented thereto, and at the same time will have a movement relatively to its frame or carrier. By this means a most efficient engagement of the retarding element with the mail matter is provided and one which is capable of yielding to prevent jamming of the passageway, independently of the movement of its frame or carrier.

The secondary separator, in its preferred form, consists of one or preferably two, blocks 300 and 301 of material, such as emery adapted frictionally to retard the letters. These blocks are mounted one above the other in holders 302 which are yieldably held toward the belt 33. They are preferably capable of movement independently of each other, whereby their effectiveness, particularly upon a piece of mail matter which is of varying thickness, is increased. Each of said holders 302 is, in the form herein shown and preferred, secured on the end of an angle lever 303 which is fulcrumed at 304 and has one of its arms provided with a spring 305 which presses it yieldably toward the belt. To prevent the blocks from unduly pressing on the belt, the movement of said lever and consequently of the block toward the belt 33, is limited by a stop 309. The face of each block 300 or 301 is beveled toward the mail so that a single piece can pass the same, and each block is adjustably secured in its holder by a set screw 307, or other suitable means, whereby it may be set at any predetermined distance from the belt and may also be adjusted to compensate for wear. The block or blocks 300 or 301 are set closer to the belt than the retarding cloth 205 of the primary separator.

The operation of the separators is as follows:—The letters, or other pieces of mail matter, are stacked vertically and placed with their lowermost edges downward upon the table, the whole bunch being pressed lightly against the strip 100. The movement of the conveyer tends to carry the letters along the conveyer and toward the printing roll. The pressure against the strip 100 however is transmitted through the levers 106 and 111 and causes the emery

cloth to move toward the belt. The movement of the letters being retarded by the pressure of the emery cloth only one, or at the farthest, two letters will be carried by it. The secondary separator is adjusted at a slight but predetermined distance from the belt and only one letter can pass between its emery block and the belt.

What I claim as new is:

1. In a machine of the class described, comprising an upright belt, a separator consisting of a rough cloth, a movable carrier therefor and means comprising a series of links and levers by which the act of feeding the letters to the belt automatically draws the cloth toward the belt.

2. In a machine of the class described, comprising an upright belt, a separator consisting of a rough cloth, a movable carrier therefor, and means whereby the act of pressing the letters against the belt automatically draws the cloth toward it.

3. In a machine of the class described, comprising an upright belt, a separator consisting of a rough cloth provided with a stiffening plate, a movable carrier therefor and means comprising a series of links and levers by which the act of feeding the letters to the belt automatically draws the cloth toward the belt.

4. In a machine of the class described, comprising an upright belt, a separator consisting of a rough cloth provided with a stiffening plate, a movable carrier therefor and means whereby the act of pressing the letters against the belt automatically draws the cloth toward it.

5. In a machine of the class described, comprising an upright belt, a flexible vertical guide mounted substantially parallel to the belt and having a rough surface on the side toward the belt in combination with means for moving the guide to and from the belt, consisting of a parallel motion, one lever of which is actuated from the belt and the other lever of which is secured to the guide.

6. In a machine of the class described, a separating mechanism comprising a rough mail engaging portion and a thin flexible stiffening strip by which the mail engaging portion is yieldably held toward the path of the mail.

7. In a machine of the class described, a separating mechanism comprising a thin flexible metallic plate and a rough mail engaging portion folded around the same and having its side presented toward the path of the mail.

8. In a machine of the class described, a separating mechanism comprising a movable frame or carrier provided with a relatively yieldable separating element, and means for moving the frame or carrier and separating element toward or from the path of the mail.

9. In a machine of the class described, a separating mechanism comprising a movable frame or carrier, provided with a separating element comprising a flexible strip having a rough mail engaging portion which is thereby yieldably held toward the path of the mail, and means for moving the frame or carrier relatively to the path of the mail.

10. In a machine of the class described, a separating mechanism comprising a movable frame or carrier, provided with a separating element comprising a flexible stiffening strip and a rough mail engaging portion folded around the same, a frame or carrier to which said element is secured and means for moving said frame or carrier relatively to the path of the mail.

11. A machine of the class described, comprising a conveying upright belt and a separator, the latter comprising a plurality of friction blocks arranged one above the other and each provided with a spring, whereby the blocks are independently yieldably pressed normally toward the belt and stop means to prevent the blocks from unduly pressing against the belt.

12. In a machine of the class described, comprising an upright belt, a primary and secondary separator to retard the movement of the letters placed in a bunch against the belt so that the latter shall convey them singly and in succession, the primary separator being adapted to automatically move toward the belt when lateral pressure is exerted against it and the secondary separator being maintained at a fixed distance from the belt.

13. In a machine of the class described, the combination with a traveling belt of two separators, a primary separator normally held out of contact with the belt, but adapted to be moved automatically against the belt when the latter is pressed away from the separator and a secondary separator normally held in contact with the belt and provided with means for preventing undue pressure against the same.

14. In a machine of the class described, the combination with a traveling belt, of a separator consisting of a flexible rough cloth, means for holding the same normally out of contact with the belt and means for moving the same automatically toward the belt when lateral pressure is brought to bear against the latter.

15. In a machine of the class described, the combination with a traveling belt, of a separator consisting of a flexible rough cloth, means for holding the same normally out of contact with the belt and means for moving the same automatically toward the belt when lateral pressure is brought to bear against the latter consisting of a parallel motion, one member of which is moved by the letters fed to the belt and the other

member of which is adapted to move the separator.

16. A machine of the class described, comprising a conveying means and a separating mechanism, the separating mechanism having a retarding element and means for moving the same, and the last mentioned means having an actuating element arranged in the path of the mail and operated thereby to move the retarding element toward the conveying means.

17. A machine of the class described, comprising a conveying means and a separating mechanism, the separating mechanism having a retarding element and means for moving it into the path of the mail by the force exerted in placing the mail in feeding position.

18. A machine of the class described, comprising a conveying means and a separating mechanism, the separating mechanism having a retarding element and an adjusting means therefor; the adjusting means having an actuating element which receives the force exerted in placing the mail in feeding position, and devices for transmitting such force to the retarding element and causing the latter thereby to move into operative position on the mail.

19. A machine of the class described, comprising an upright belt and a separating mechanism, the separating mechanism comprising a rough cloth, a movable carrier therefor and an adjusting means for the carrier having an actuating element arranged in the path of the mail and operated thereby to move the cloth toward said belt.

20. A machine of the class described, comprising a conveying means and a separating mechanism, the separating mechanism comprising a frame or carrier, an adjusting means therefor having an actuating element arranged in the path of the mail and operated thereby to move the frame toward the conveying mechanism and a retarding element which partakes of the movement of the frame or carrier and is movable relatively thereto.

21. A machine of the class described comprising a conveying means and a separating mechanism, the separating mechanism comprising a frame or carrier, an adjusting means therefor having an actuating element arranged in the path of the mail and operated thereby to move the frame or carrier toward the conveying mechanism and a retarding mechanism which extends into the path of the mail from the frame or carrier and comprises a flexible stiffening strip and a rough surface portion folded around the same.

22. A machine of the class described comprising a conveying means and a separating mechanism, the separating mechanism comprising a frame or carrier, an adjusting means therefor having an actuating element arranged in the path of the mail and operated thereby to move the frame or carrier toward the conveying mechanism and a retarding mechanism which extends into the path of the mail from the frame or carrier and by its elasticity is yieldable to the mail relatively to the frame or carrier.

23. A machine of the class described, comprising a conveying means and a separating mechanism, the separating mechanism having a retarding element, a movable frame or carrier and an adjusting means therefor; the adjusting means comprising an actuating element which receives the force exerted in placing the mail in feeding position and a pivotally connected series of levers connecting the actuating element and frame with each other and causing the latter to move toward the path of the mail when the former is pressed.

24. A machine of the class described, comprising a conveying means and a separating mechanism, the separating mechanism having a retarding element, a movable frame or carrier, and an adjusting means therefor; the adjusting means comprising an actuating element which receives the force exerted in placing the mail in feeding position, and means for transmitting such force to the frame and causing the latter to move toward the path of the mail when the former is pressed, consisting of a member pivoted to the actuating element, a fulcrumed lever depending from said member and pivoted thereto, a second lever fulcrumed at one end and having its other end pivoted to the movable frame and a link connecting the levers with each other.

25. A machine of the class described comprising a table, a conveyer and a separating mechanism, the separating mechanism having a movable frame which is mounted above the table and is adapted to constitute a wall of a stacking space thereon and a retarding element carried by the frame.

26. A machine of the class described, comprising a table, a conveyer and a separating mechanism, the separating mechanism having a movable frame which is mounted above the table and is adapted to constitute a wall of a stacking space thereon, a retarding element carried by the frame and means in the stacking space, connected with the frame and adapted to move the same when pressed.

27. A machine of the class described, comprising a conveying means and a primary and a secondary separator contiguous thereto, each of the separators having a retarding element, and the retarding element of the secondary separator being arranged closer to the conveyer than that of the primary separator.

28. In a machine of the class described, a conveying mechanism and a separating mechanism coöperating with the conveying mech-

anism to feed the mail one at a time, the separating mechanism comprising a plurality of friction blocks and springs for pressing said blocks independently of each other yieldably toward the conveying mechanism.

29. In a machine of the class described, a separating means comprising a pivoted angle lever, a holder carried by one member thereof, a spring to press said holder toward the path of the mail, a stop to limit the movement of the holder toward such path, and a retarding block projecting from the holder into the path of the mail.

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

MARTIN V. B. ETHRIDGE.

Witnesses:
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ALAN MCDONNELL.