D. ROBERTSON.

POSTMARKING MACHINE.

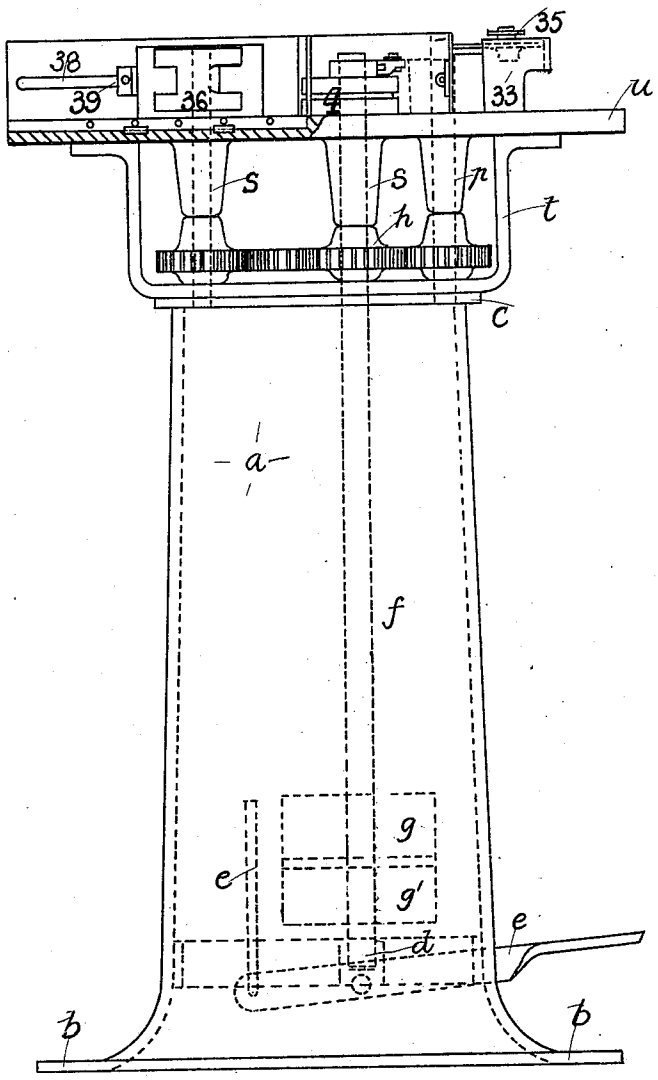
APPLICATION FILED NOV. 23, 1905.

914,513.

Patented Mar. 9, 1909.

4 SHEETS—SHEET 1.

FIG. 1



WITNESSES

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4 SHEETS—SHEET 2.

FIG. 2

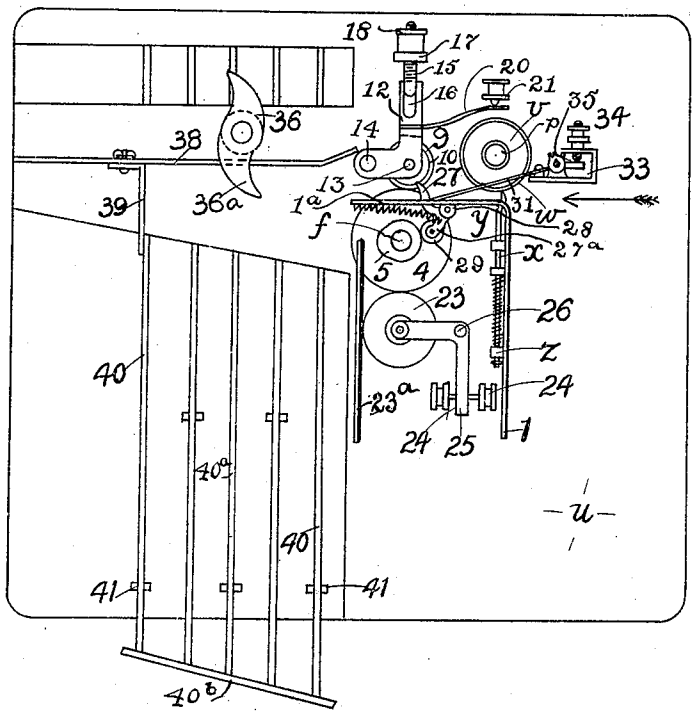
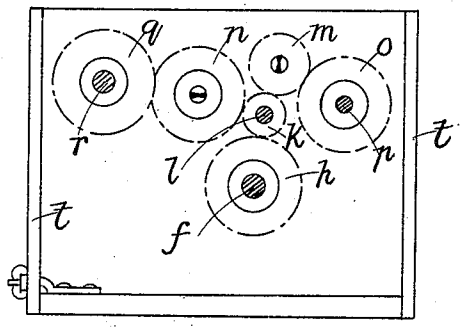


FIG. 3



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4 SHEETS—SHEET 3.

Fig 4

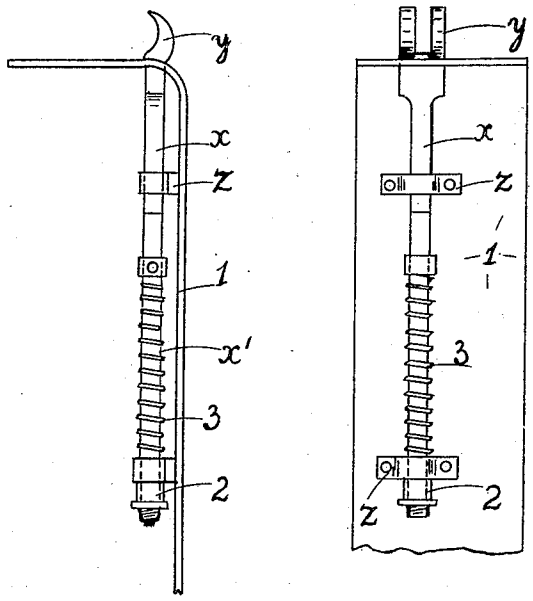
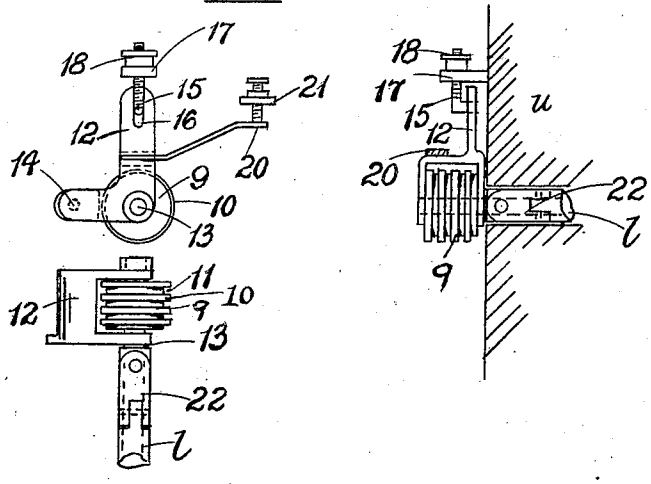


Fig 5



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4 SHEETS—SHEET 4.

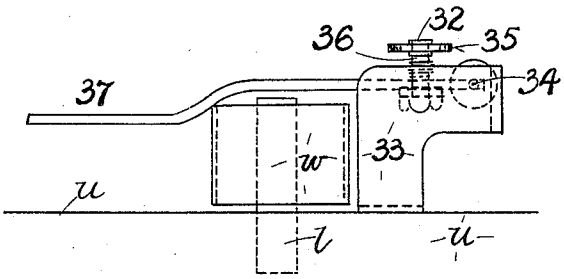
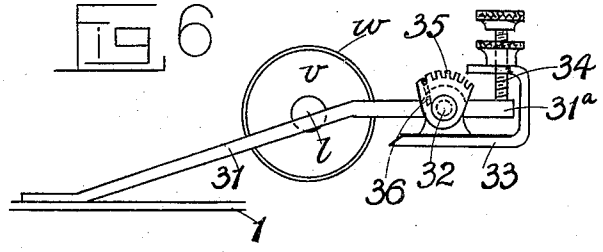


Fig. 6



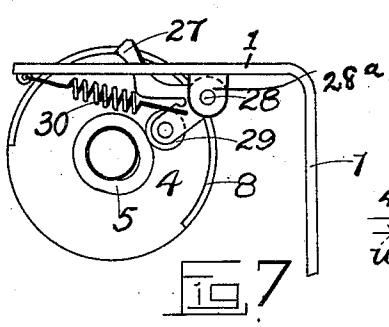


Fig. 8

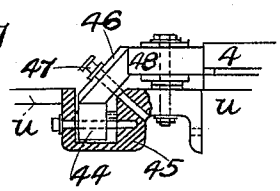
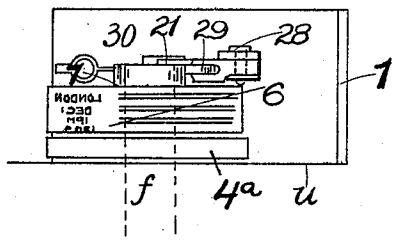


Fig. 7



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UNITED STATES PATENT OFFICE.

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POSTMARKING-MACHINE.

No. 914,513. Specification of Letters Patent. Patented March 9, 1909.

Application filed November 23, 1905. Serial No. 288,781.

To all whom it may concern:

Be it known that I, DONALD ROBERTSON, a subject of Great Britain, residing at Wellington, New Zealand, have invented new and useful Improvements in Postmarking-Machines, of which the following is a specification.

My invention consists in improvements in post or mail marking machines which are characterized by a continuously revolving marking wheel and has for its object the production of a simple machine which will cancel postage stamps and postmark ordinary mixed mail matter at a high rate of speed and with great accuracy.

A further object is the provision of a thoroughly efficient means of separating the mail before it reaches the marking mechanism when mechanically fed.

My invention will be more clearly understood by reference to the accompanying drawings in which—

Figure 1, represents the elevation of the machine the gear box cover being removed. Fig. 2, is a plan, and general view of mechanism on table. Fig. 3, shows driving gears. Fig. 4, shows detail of separator. Fig. 5, shows detail of pressure roller. Fig. 6, shows detail of index finger and feed wheel. Fig. 7, shows detail of marking wheel. Fig. 8, shows detail of alternative inking device.

From the drawings it will be seen that the machine consists of a hollow standard carrying a gear box between itself and the table, or platen above, and on which latter are arranged the feeding, separating, marking, stacking, and other devices.

(*a*) is the hollow standard of the machine made in cast iron, having a foot (*b*) and a flange (*c*) for gear box. Within the standard is a footstep bearing (*d*) and belt-shifting arm (*e*) the footstep bearing (*d*) supports the main vertical driving shaft (*f*) carrying fast and loose pulleys (*g*) (*g'*), for attachment of driving belt. It will be understood however that I may use any other desired means for driving such for instance, as an electric motor perpendicularly placed of suitable speed and whose shaft may be direct coupled to the vertical shaft driving the pressure roller.

The main shaft (*f*) carries a spur wheel (*h*) driving the spur pinion (*k*), see Fig. 3, mounted on shaft (*l*), said pinion (*k*) driving idler spur wheels (*m*) and (*n*); spur wheel (*m*) drives the feed spur wheel (*o*) being mounted on shaft (*p*), and spur wheel (*n*) drives the stacker spur wheel (*q*) mounted on shaft (*r*).

The spur wheel shafts have suitable bearings in journal bosses (*s*) formed in metal of gear box (*t*) and table (*u*) the shafts (*f*) (*l*) (*p*) (*r*) passing through the table and carrying the marking pressure, feeding and stacking devices respectively.

The feeding mechanism consists of a revolving wheel (*v*) carrying a rubber or other suitable gripping or frictional surface (*w*) see Fig. 6. This wheel (*v*) for purposes which I will hereafter explain revolves at a lower peripheral speed than the marking or other wheels. In close proximity to but not actually touching the rubber surface of this wheel are the points of a spring controlled separator (*x*), Fig. 4, preferably having a forked extremity (*y*) and journaled in brackets (*z*) on a fence (1) at right angles to the mail path which is shown by arrow, Fig. 2. A terminal nut (2) screwed on end of separator (*x*) enables operator to regulate to a nicety, against the action of expansion spring (3) surrounding separator shaft (*x'*) the distance of the separator points from the feed wheel surface. The fence (1) is bent round where separator points protrude so as to be parallel to the mail path, and form a guide-plate for the mail.

The shaft (*f*) carries the marking wheel (4) and a cam (5) both fast thereto. The marking wheel (4), see Fig. 7, protrudes through the mail fence (1) and has a circular type holder (6) and cancellation die (7) cut on part of the upper portion of its periphery. The lower part of the marking wheel is provided with a continuous periphery (4^a) Fig. 7. The remaining part (8) of the upper portion of the periphery of the marking wheel is preferably cut away or slightly recessed to obviate the inking wheel from touching any but the marking periphery; thereby preventing smudging. The continuous periphery (4^a) of the lower part of the marking wheel besides simplifying the wheel enables very long letters to be handled without any fear of their bearing more than one impression of the die.

The pressure roller (9) is a simple rubber covered metal wheel and is mounted on a pin (13) which is positively driven by a

shaft (*l*) see Fig. 5, to which said pin is secured by a universal joint (22).

Hitherto in post marking machines considerable difficulties have been experienced in making provision against the smudging of the pressure roller when the latter is covered with an elastic substance.

While in practice it is found that a simple roller of metal gives good results there are disadvantages attached to the use of such a roller as the harshness of surface combined with irregularities in the mail cause imperfect impressions of the die to be delivered at times, added to which there is some chance of injury to the die and type. To overcome these disabilities I prefer to attach a rubber sleeve (10) to the pressure roller (9) and to cut therefrom shallow horizontal grooves (11) around the sleeve as indicated in Fig. 5. With this arrangement a thin piece of mail will take a clear impression of the die.

The pressure roller (9) is mounted in a bracket and is secured to a pin (13) see Fig. 5. The bracket is pivoted on a pin (14) as shown. A screwed hook (15) engages with a slot (16) passing through a screw (17) upon which the nut (18) takes a bearing and enables the position of the pressure roller to be accurately adjusted against the action of the spring (20) riveted or secured to pressure roller bracket (12) and bearing against screw pressure adjusting screw (21). The shaft (1) see Fig. 5, at a point immediately below the table is provided with a universal joint (22) to allow for driving and at the same time accommodation of pressure roller to inequalities of passing mail matter or adjustment.

In Fig. 2 I have shown the inking wheel (23) which is of the ordinary type tensioned between pivots and mounted in a bracket (25) and pivoted at (26). It is composed of a soft absorbent material, and is usually inked by hand with a brush but it may be arranged and inked in manner hereinafter described and illustrated in Fig. 8.

As before mentioned a cam (5) is carried fast on the rotating shaft (*f*). A time stop or supplementary separator (27) (see Fig. 7) is pivoted as at (28) to a projection (28^a) on fence (1) and is so shaped that its inner end (27^a) is fitted with a roller (29) engaging with cam (5), while its operative or outer end is made to lie during non-actuation at right angles to or across the mail path and in advance of the pressure and marking wheel centers. A contractile spring (30) tends to keep roller (29) in contact with cam.

To prevent the mail matter crowding out to the end of the stop it is guided by an index finger (31) pivoted on pin (32) in bracket (33). The said finger is so made as to lie close up to the portion of fence (1) forming a guide plate, but not to actually touch the same. The normal adjustment of the finger is such as to allow the passage of very thin mail up to the time stop (27). Thick mail displaces the finger sufficiently to accommodate itself.

The index finger is adjustable both as to the position of its point, that is the distance that it lies from the guide plate and as regards its tension or pressure.

The tail (31^a) of index finger (31) forms bearing surface for the adjustment screw (34).

The pin (32) in bracket (33) has mounted upon it the notched quadrant (35) (see Fig. 6). A spring (36) surrounds said pin the lower end being made fast, the upper end engaging with one of the notches in the quadrant (35); by altering its position with regard to the notches the desired tension is obtained.

The stacker or stacking wheel (36) (see Fig. 2) is driven by the interaction of the gears previously mentioned. It is mounted on shaft (*r*). Its radial double crescent arms (36^a) protrude beyond the mail fence (38). An adjustable stop (39) is placed at right angles to the mail path and beyond the stacker.

When mail is stacked after marking on the flat surface of a horizontal table it is found that a long stack is difficult unless the operator eases it frequently—owing to the friction between the mail and the table. To overcome this I provide a traveling tray (40^a) which at the commencement of the stack is pushed up to the stacking wheel.

The forward end of the tray (40^a) is provided with an upright piece (40^b) to support the mail. The tray (40^a) Figs. 1 and 2 consists of hollow rods (40) running on rollers (41) let into the table and runs partly under the extension of the mail path. The tray (40^a) moves forward as each piece of mail is stacked by the stacking wheel, the friction under these conditions being of a nominal character.

To prevent mail matter from being crowded off the tray on to the inking roller, a back plate (23^a) is provided close to the inking roller and parallel with the hollow rods of the tray.

The operation of my invention is as follows:—A bundle of mail is held in such a manner that the portion nearest the feed wheel is gently urged by the operator so that it touches with its edges the projecting prongs (*y*) of the separator (*x*). At the same time the continuously revolving feed wheel gripping the mail with its frictional surface draws same forward past the points of the separator (*x*). The separator now recedes a greater or less distance according to the thickness of the piece of mail, but continues to hug the first piece of mail so closely that it prevents the second piece from passing. Sometimes owing to operator pressing

too hard the bundle against the feed wheel, or from other cause, more than one piece of mail succeeds in passing the separator (*x*), but, as explained below, the time stop (27) in such case acts as an additional separator. In the ordinary way the piece of mail is fed forward the separator (*x*) preventing a second piece from being fed until the first has completely passed the separator and feed wheel. The first piece is now fed up to the time stop (27) and arrested. The feed wheel has now ceased to influence it the separator being so lightly tensioned as to allow the letter to accommodate itself to its new position. The letter remains at the stop until the stop is retracted by means of the cam (5) on shaft (*f*). Here it is worthy to note that in my improvement the stop recedes in the arc of a circle and being pivoted in advance of the marking and pressure rollers is withdrawn with a gradual tendency for the influence of the feed wheel to be felt. When the stop is clear of the mail path the feed wheel causes the letter to be gripped between the marking and pressure or abutment wheels (4) and (9) respectively. The actuating part of the cam having passed, the time stop (27) is permitted to attempt to regain its normal position. Before the stop was retracted the pressure of the index finger (31) was not sufficient to displace the stop, but when the mail matter has once passed between the marking and pressure wheels the stop is by its peculiar construction unable except in the case of a very thin mail to regain its normal position. In the case of very thin mail the letter passing conforms to these conditions by bending over the pressure roller. Immediately the letter has been drawn by the marking and pressure rollers beyond the feed wheel the latter begins to influence the next letter but, as already explained, the feed wheel peripheral speed is less than that of the marking and pressure rollers. This is designed to allow a slight interval between the tail of one letter and the forward end of the succeeding one. This insures more perfect separation.

Owing to the delicacy of the adjustments given to the index finger (31) I provide for the free passage of thin mail matter and this mechanism in conjunction with the time stop (27) also acts as an additional separator when in the case above cited two letters may pass the first separator. Should this happen and both be fed up to the time stop, the stop by virtue of its retraction and pointed nose will let slip only the first letter, which travels quicker (being in contact with the feed wheel), than the piece of mail which it is only frictionally influencing. The index finger also aids this by slightly curving the first letter so separating the two. The letter having been gripped between the marking and abutment wheels it is canceled, stamped, and thrown forward.

To insure the discharge of mail in such a way that it will stack evenly I place the axis (13) of the pressure roller behind the axis (*f*) of the marking wheel (4), so that the mail will curl out toward the guide plate or fence (38), and take its place behind the mail already stacked.

The stacking wheel catches the mail in its flight, piling the letters as they are fed forward in regular bundles against the fence (39). As the pile increases the traveling tray moves forward until the limit is reached when the mail is removed and the tray replaced for a further supply.

In Fig. 8 I have shown a modification of the inking roller. This consists of a roller (44) mounted in an ink bath (45). An intermediate beveled roller (46) is pivoted so as to take up ink from the roller (44) and ink the surface of a roller (48) with which the marking wheel (4) is intermittently in contact by reason of its construction in having part (8) cut away as hereinbefore described.

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

1. The combination in a post marking machine, of a feed wheel and an index finger on one side of the mail path, a spring controlled longitudinally movable separator extending at right angles to the mail path on the opposite side thereof, a stop or supplementary separator normally extending across the mail path and means for withdrawing said stop at certain times.

2. A postmarking machine comprising a mail fence a feed wheel on the opposite side thereof, a separator carried by the fence and coöperating with the feed wheel, a printing wheel and a pressure wheel therefor, a spring controlled index finger located on the same side of the mail path as the feed wheel and having its end coöperating with the fence at a point to the rear of the feed wheel and in front of the printing wheel, a stop normally extending across the mail path adjacent the end of the index finger and means for withdrawing the stop at intervals.

3. A postmarking machine comprising a fence having a portion extending parallel to the mail path, said portion being slotted, and a portion extending at right angles to the said path, a spring controlled forked separator carried by the letter portion of the fence, a feed wheel located on the other side of the mail path with which the forked end of the separator engages, a printing wheel located on the fence side of the mail path and having a portion extending through the slot in the fence, a pressure wheel on the opposite side of the path coöperating with the printing wheel, a stop carried by the parallel portion of the fence having a portion normally extending across the mail path in

front of the printing wheel, a cam on the printing wheel engaging with said stop to withdraw the projecting end thereof from across the path at intervals and a spring controlled index finger having its end engaging with the parallel portion of the fence immediately in front of the stop.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

DONALD ROBERTSON.

Witnesses:

V. J. BROGAN,

J. R. PARK.