May 26, 1931. O. MATZKA 1,807,424

APPARATUS FOR AFFIXING STAMPS, LABELS, AND THE LIKE

Filed July 30, 1929 2 Sheets-Sheet 1

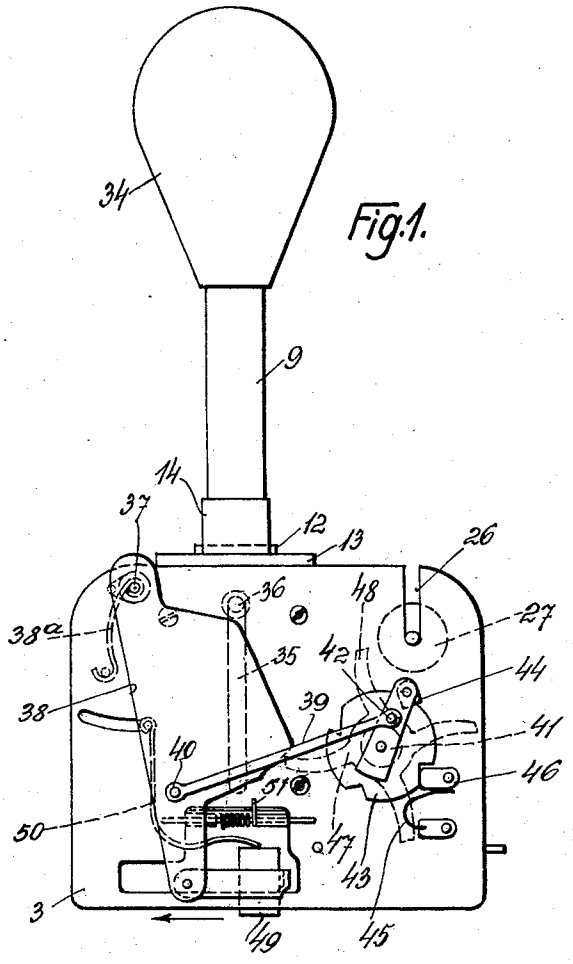


Fig. 1.

Inventor:
Otto Matzka
By
Dennis Davis Marvin & Edmonds
attorneys

May 26, 1931. O. MATZKA 1,807,424

APPARATUS FOR AFFIXING STAMPS, LABELS, AND THE LIKE

Filed July 30, 1929 2 Sheets-Sheet 2

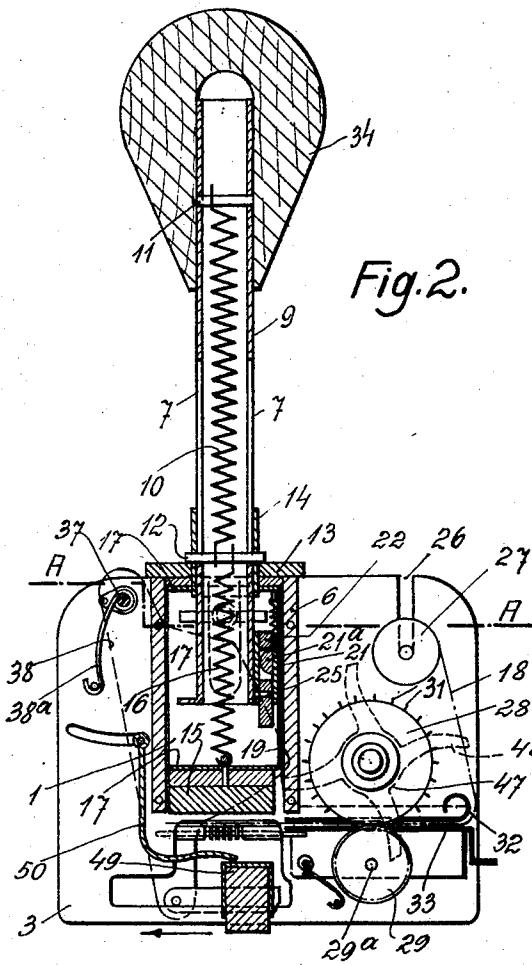


Fig.2.

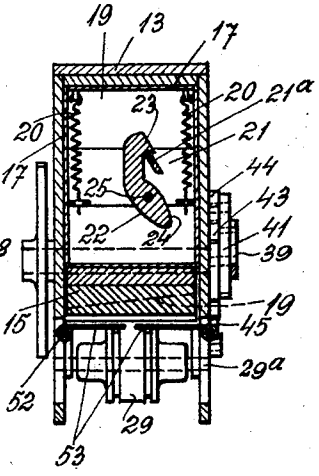


Fig.4.

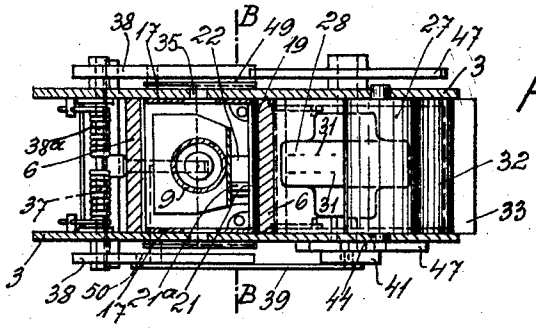


Fig.3.

Inventor:
Otto Matzka
By
Pennie Davis Marvin & Edmonds
attorneys

Patented May 26, 1931 1,807,424

UNITED STATES PATENT OFFICE

OTTO MATZKA, OF VIENNA, AUSTRIA, ASSIGNOR TO THE FIRM "ELECTA" APPARATENBAU-GESELLSCHAFT M. B. H., OF VIENNA, AUSTRIA

APPARATUS FOR AFFIXING STAMPS, LABELS, AND THE LIKE

Application filed July 30, 1929, Serial No. 382,269, and in Austria August 7, 1928.

My invention relates to apparatus for affixing stamps, labels and the like, in which the stamps are automatically advanced by a delivery roller operated by a feed mechanism, severed by a cutting device and after moistening or gumming of the support, which is also effected automatically, applied to the said support by means of a press plate which on being depressed, operates the above mentioned mechanisms.

The well known apparatus of that kind in the first place lack precision in the co-operation of the single parts of the apparatus. It is impossible to obtain the necessary accuracy of the parts by particularly fine machining thereof as the cost of production would become prohibitive and moreover friction and clearance must necessarily be put up with. The desired accuracy must therefore be obtained by the nature of the construction. In the second place, it is necessary to ensure that the advance shall take place with the greatest possible accuracy, in that during the continuing feed of the strip or band of stamps, even the slightest error in the feed of the individual stamps is cumulative with the result that the cut gradually advances from the boundary between two stamps, towards the centre thereof and thus spoils the stamps.

It is further necessary to avoid also any partial or excessive operation, so as to preclude the possibilities of an advance greater or smaller than that prescribed, and moreover the auxiliary mechanisms must be so arranged and operated that they shall not be incapable of hindering or modifying either the advance or the position of the stamp to be pressed down.

One way of carrying out the arrangement is shown by way of example in the accompanying drawings in which:

Fig. 1 is an elevation of the apparatus looking from the side at right angles to the direction of movement of the strip of stamps,

Fig. 2 is a vertical section through the apparatus in the same position as Figure 1,

Figure 3 a horizontal section on line A—A of Figure 1 or Figure 2, and

Figure 4 is a section on line B—B of Figure 3.

In the press plate casing constituted by the lateral walls 3 and the transverse walls 6 (Fig. 2) and open at the bottom, is mounted in an adjustable manner the pressure rod 9 made of tubular material and provided with diametrically opposite slots 7 and with a knob or handle 34. In the interior of the tube 9 is secured at the top to a pin 11 a pressure spring 10 the bottom end of which is attached to a pin 12 which is passed through a sleeve 14 adapted to guide the pressure rod 9 and secured to the detachable cover 13 of the casing. The press plate 15 intended for pressing on the stamp, is suspended by means of a tension spring 16 to the pin 12 of the sleeve and secured to a frame 17 enclosing it. The two walls of the frame which extend upwardly press against the cover 13 of the casing under the action of the tension spring 16. Consequently, on the knob handle being depressed, the press plate will not be driven immediately, but only when the pressure tube 9 reaches it. This will take place only when the cutting off operation is completely finished. The press plate 15 in the position of rest is close above the advanced end of the strip of stamps, owing to which the stamp advanced will be situated between closely adjoining surfaces and prevented from curling up.

On the casing wall 6 through which the strip of stamps 18 is admitted, is arranged a knife blade 19 with an oblique cutting edge which is suspended to the casing cover 13 by means of two tension springs 20 (Figure 4). To the knife blade 19 is secured, for instance by means of rivets, a plate 21 (Figure 3) which has a supporting ledge 21*a* arranged obliquely to the vertical, with which engages the lip or projection 23 of a pawl 22. The pawl 22 which is provided with a downward extension and held in the position shown in Fig. 4 by a spring not shown in the drawing, is rotatably mounted at 25 on that end of the pressure tube 9 which is opposite the knife blade 19 and projects into the casing. This pawl enables the knife blade to be driven during the descent of the pressure tube and to be raised again before the descent of the

press plate, as well as the knife blade to be moved down again for the next cutting only after the knob handle with the pressure tube has been completely raised and the pawl 22 has again seized the plate 21. This is of importance in connection with the advance in order to prevent any incompletely advanced stamps from being cut, and will be dealt with hereinafter.

In the slot 26 of the two lateral walls 6 is mounted a storage roller from which the strip of stamps 18 is unwound by means of two oppositely arranged transport rollers 28, 29. The upper roller 28 which is provided on its circumference with two rows 30, 31 of staggered fine metal points or pins, is arranged above a guide which is constituted by two superposed horizonal transverse walls 32, 33. The pins or teeth of the roller 28 project into the slot through a recess in the upper fixed slot wall 32 and by penetrating into the stamp, prevent the strip of stamps from making any movement relatively to the circumference of the roller. The bottom roller 29 which is provided at its circumference with two grooves corresponding to the rows of pins or teeth of the upper roller, passes with part of its circumference through the bottom slotted wall 33 which is connected to the bearing 29*a* of the bottom roller 29.

To the pressure tube 9 is connected a driver 36. During the descent of the pressure tube 9, it presses against the edge of a guide plate 38 rotatable about pivot pins 37 which plate is constantly pressed to the right by the springs 38*a* (Figure 1), and the driver rotates the said plate in a clockwise direction. To the guide plate 38 is secured at 40 one end of a connecting rod 39, the upper end of which at the same time drives by means of the pin 42 the feed arm 41 which is mounted concentrically with the toothed roller 28. Also mounted concentrically with the toothed roller 28 but rigidly secured to the same, is arranged the feed wheel 43 which is provided with recesses or gaps with which engages the movable feed tooth 44 of the feed arm 41. The arc distance between these feed recesses is calculated in such a manner that the rotation from one recess to another imparts exactly an angle of rotation corresponding to the length of a stamp (or width of a stamp) in the radius of the surface of the toothed roller.

Whenever the positions of rest are reached, one of the other recesses of the feed wheel 43, engages a feed tooth 46 rotatably mounted on the lateral wall 3 and held in engagement by a spring 45. The said tooth allows the wheel 43 to rotate in one direction only. On the opposite lateral wall 3 is arranged the spider 47 with four arms which is also rigidly secured to the toothed roller 28 and participates in its rotation. This spider acts as an additional safety device which prevents the toothed roller 28 from passing beyond the required arc owing to inertia, during the return of the pressure tube to the top under the action of the spring after the operation of the apparatus, each arm 48 of the said spider is prevented by the guide plate 38 which has returned to its position of rest, from continuing to rotate, so that the advance is stopped at an exactly determined point.

This additional safety device is not required in the case of a very powerful spring 45. As however strong cocking of the spring greatly increases the friction, and moreover the form of the recesses or gaps may be such as to enable the pawl easily to engage and to become disengaged in order to reduce the pressure work, an additional safety device is advantageous for ensuring easy and accurate operation.

In order to provide an exactly horizontal support for any stamp that may have been advanced, to support it in this position until the press plate becomes operative and at the same time securely to maintain it in that position also during the cutting, there are used two flaps 53 held in horizontal position by springs 51 and rotatable about lateral pins 52. During the descent of the press plate 15, these flaps are moved apart away from the centre and enable the press plate to pass, whilst after the ascent of the press plate, they at once return to the horizontal closed position for the purpose of receiving the next stamp which is already being advanced.

Moistening rollers have not proved successful in such apparatus as during the rotation the moisture applied by one place, is again absorbed by them at other places, and for this reason there is arranged a flat wiper 49, the movement of which in accordance with the advance and the descent is ensured by connecting it to the guide plates themselves. On the guide plates being operated, the wiper is moved in the direction of the arrow and during the said movement pressed forward by the spring 50. As the movement of the guide plates is a perfectly definite one, it is easy to arrange matters in such a manner that only the surface to be covered by the stamp will be moistened, but also not less of the said surface.

The working of the apparatus is as follows:

On the knob handle 34 being pressed, the tube 9 is first moved downwards in opposition to the action of the pressure spring 10. The knife blade 19 is caused to participate in this downward movement, the tension springs 20 being cocked at the same time, as the projection 23 of the pawl 22 keeps hold on the plate 21 secured to the knife and thus drives the knife. From the previous return of the press plate a stamp has remained in advanced position on the supporting flaps 53; this stamp is cut off by the knife from

the strip; as soon as the pawl 22 strikes with its downward extension 24 the upper surface of the press plate 15, it will be disengaged, and the knife 19 will spring upwardly under the action of the springs 20 and release the path for the further advance of the strip of stamps 18. Simultaneously with the beginning of the downward movement of the pressure tube, the guide plates 38 will be forced by the support 36 out of their position of rest. During that operation, the wiper 49 will be drawn over the paper surface and will moisten it, being pressed against it by the spring 50.

In this way, the wiper will be moved to the side and thus the path for the downward movement of the press plate 15 will be uncovered, and the said movement will begin, the tension spring 16 being cocked at the same time. The space for the downward movement will be released by the opening of the flaps 53 which will be moved apart in the downward direction by the pressure of the press plate. At the end of the travel of the press plate, the stamp will be pressed by it against the previously moistened paper surface.

Simultaneously with the lateral turning of the guide plate during the descent of the press plate, the connecting rod 39 will move the feed tooth 44 of the feed arm 41 into the next recess or gap of the feed wheel 43. The advance itself will remain unaffected.

On release of the knob handle 34, there will take place, under the action of the pressure spring 10 and the tension of the spring 16, the return of the pressure tube 9 and of the press plate 15 to the top, the flaps 53 closing after the passage of the press plate and returning to the horizontal position, and the wiper 49 will also return to its original position under the flaps.

The guide plates 38 also turn back, pressure being exerted on the connecting rod 39, as the pins 36 move upwards and uncover the path for the guide plates. The connecting rod 39 then drives the feed wheel 43 by means of the feed gear constituted by the feed arm 41 and feed tooth 44, and turns the said wheel to a definite angle corresponding to the angle between two recesses of the pawl wheel 43, and turns also the toothed roller 28 connected to the wheel 43, which will drive to an exactly determined length corresponding to the length of a stamp the strip of stamps 18 with a slight perforation by the teeth or pins which then engage with the grooves of the roller 29.

During the rotation in that direction, the feed wheel 43 will press back the feed tooth 46 in opposition to the action of its spring 45, whilst a turning in the opposite direction will be prevented by the said tooth. If the upward movement of the knob handle on its release has not been quite completed, the feed tooth 46 will not come into engagement, and during the next depression, the advance produced during the incomplete upward travel, will be cancelled, in which case during the depression any cutting or damaging by the knife of the strip of stamps advanced that may not have been completely pulled back, is precluded, as in the case of an incomplete upward movement, the pawl 22 also fails to seize or engage with the plate 21 on the knife blade 19.

This engagement takes place only at the very end of the upward movement, after the feed tooth 46 has engaged and locked the return of the completely advanced strip of stamps. The feed spider 47 rotates simultaneously with the toothed roller 28 and strikes the edge of one guide plate 38 with its arm when the rotation begins to exceed a prescribed amount, namely one pitch of the wheel 43. In that way, the advance will be always effected to exactly the same length, for it cannot be smaller than the arc between two recesses or gaps or greater than the said arc, since this is prevented by the feed pawl or the feed spider.

At the same time the supporting and holding of the stamp advanced between the supports and the press plate situated closely above them, as well as the return of the knife, avoid any change of the position exactly parallel to the press plate after the advance and during and after the cutting.

What I claim is:

1. An apparatus for affixing stamps, labels or the like, comprising a vertically movable press-plate adapted to press the object to be affixed against a support, a vertically reciprocating pressure member adapted to move said press-plate downward, feeding means for unwinding the objects to be affixed from a storage strip and for advancing them portion by portion into the path of the said press-plate, a vertically movable knife suspended by means of tension springs and adapted to cut off the said advanced object from its storage strip, a supporting ledge on said knife, and a pawl secured to the said pressure member and adapted to engage the said supporting ledge during the descent of the pressure member to but such an extent as to permit the said knife after having cut off the object to be affixed from the strip to return to its initial position while the press-plate is descending and moving the cut-off object towards the support.

2. An apparatus for affixing stamps, labels or the like, comprising a vertically movable press-plate adapted to press the object to be affixed against a support, a vertically reciprocating pressure member adapted to move said press-plate downward, feeding means for unwinding the objects to be affixed from a storage strip and for advancing them portion by portion into the path of the said

press-plate, a vertically movable knife suspended by means of tension springs and adapted to cut off the said advanced object from its storage strip, a supporting ledge on said knife, and a pawl secured to the said pressure member and adapted to contact the said supporting ledge temporarily during the descent of the pressure member, but to engage it only in the uppermost position of the said knife, whereby a complete return of the pressure member is required in order to start a renewed operation of the apparatus, whilst an interrupted return which would correspond to an incomplete advance movement, does not render possible an operation of the cutting device at the next descent and therefore precludes any damage or cutting of incompletely advanced objects.

3. An apparatus for affixing stamps, labels or the like, comprising a vertically movable press-plate adapted to press the object to be affixed against a support, a vertically reciprocating pressure member adapted to move said press-plate downward, means for unwinding the objects to be affixed from a storage strip, a pair of delivery rollers adapted to advance the said objects into the path of the press-plate, means for cutting off the object to be affixed from said storage strip, a feed wheel adapted to advance at least one of the said delivery rollers step by step to the arc exactly corresponding to the length of the object to be affixed, a feed arm pivotally mounted upon the axle of the said feed wheel and adapted to operate the latter during the upward movement of the said pressure member, a movable feed tooth on the said feed arm adapted to engage exactly with the recesses of the feed wheel to advance the latter, the distance between adjacent recesses corresponding to the feed step of the delivery rollers, and a pivoted locking-spring pawl secured at a suitable stationary point and adapted to engage exactly with the said recesses of the feed wheel so as to prevent, when engaged, the feed wheel from reverse rotation and to be disengaged from a recess by a proper feeding movement of the feed wheel, the said feed tooth being adapted to turn back the feed wheel when the locking pawl is in disengagement, and to ride idly over the teeth of the feed wheel when the locking pawl is in engagement, whereby an over-feed as well as an underfeed of the said feed wheel is prevented automatically.

4. An apparatus as set forth in claim 3, in which, of the two delivery rollers for advancing the object to be affixed, the roller driven by the feed wheel is provided at its circumference with two or more rows of fine metal points adapted to perforate the said object, and the other roller is provided with grooves corresponding to the said rows of points, the smooth surfaces of the said delivery rollers serving to advance the objects while the said points only serve to prevent the said objects from being displaced relatively to the surface of the delivery rollers, whereby an exact feeding of the object to be affixed is obtained.

5. An apparatus as set forth in claim 1, in which the press-plate for pressing the object to be affixed against a support is separate from the said pressure member and operatively engages with the said pressure member on occasion, the downward movement of the knife being controlled only by the pressure member moving independently from the pressure plate, whereby the object to be affixed is cut off before the press-plate begins to move downward.

6. An apparatus as set forth in claim 3, in which an additional safety device for preventing the feed rollers from passing beyond the prescribed arc is provided, said device comprising a feed spider with arms arranged in the same number and pitch as the recesses of the feed wheel and a stop controlled in the same manner as the guide plate serving to drive the said feed wheel, said arms being adapted to strike the said stop simultaneously with the engagement of the locking pawl with the recesses, whereby the driving spindle is prevented from continuing to rotate more than the length of the arc.

7. An apparatus as set forth in claim 3, in which a horizontally movable wiper adapted to wipe the support against which the objec is to be affixed, and the feed wheel for advancing the delivery rollers, are both permanently connected with the same rotatably mounted guide plate serving to drive both the wiper and the wheel.

8. An apparatus for affixing stamps, labels or the like, comprising a vertically movable press-plate adapted to press the object to be affixed against a support, a vertically reciprocating pressure member adapted to move said press-plate downward, feeding means for unwinding the objects to be affixed from a storage strip and for advancing them piece by piece into the path of the said press-plate, means for cutting off the object to be affixed from said storage strip, and hinged sheet-like flaps mounted on the housing beneath the press-plate, adapted to support the object to be affixed before and during the cutting to yield on the press-plate being depressed, to lean against the sides of the said press-plate when the latter has been completely depressed, and to be brought by springs back to the horizontal plane of the supply slot after the press-plate is returned to its uppermost position, the hinges of the flaps also being situated in this plane.

9. An apparatus as set forth in claim 8, in which the press-plate is situated, when in its position of rest, directly above the hinged flaps, only a narrow slot-like space into which the object to be affixed enters on being advanced separating the said flaps from the

press-plate, whereby the said object after entering in said space is held in the correct position, prevented from curling up, or other deformation, and is seized by the press-plate flat and uniformly during the depression.

In testimony whereof I affix my signature.

OTTO MATZKA.