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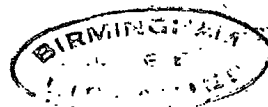
PROVISIONAL SPECIFICATION.

New or Improved Apparatus for the Delivery of Stamps, Tickets and the like.

I MAX SIELAFF, of 23 Spener Strasse, Berlin, Kingdom of Prussia, German Empire, Manufacturer do hereby declare the nature of this invention to be as follows:—

- My invention relates to apparatus for the delivery of stamps, tickets and the like, which are printed upon long strips of paper provided with perforations for easily separating the single stamps or tickets. In the mechanisms hitherto used for separating the single stamps the paper strip has been guided between two rollers, which are rotated until one stamp or ticket has completely passed through the same and can then be torn off.
- 10 These machines have the great disadvantage that it is practically impossible to correctly adjust to the distance between the perforated lines, the mechanism for rotating the rollers so that even in the case of long strips an exact working of the mechanism does not take place, that is to say, after dispensing a great quantity of stamps the rotation of the rollers does not correspond exactly to the length of the tickets or stamps. It will be clear that in case the difference
- 15 between the length of the tickets and the rotation of the rollers amounts to a small fraction of a millimetre, it will happen at certain intervals that one stamp will not be fed forward to a sufficient extent, by the rotation of the roller to enable it to be torn off; or in case the angular movement of the rollers is too
- 20 great it will be possible at intervals to tear off two stamps.
- In order to do away with this disadvantage, according to the present invention, the rollers which guide the paper strip and which are moved by the coin freed mechanism are not rotated far enough to completely deliver one stamp, ticket or the like, that is to say the paper strip is moved by the rotation of
- 25 these rollers only so far as to enable it to be seized, but not so far that the perforated line passes between the rollers. The paper strip can be afterwards seized and drawn forward, so that the rollers will further rotate and as soon as the perforated line has passed between the rollers, the friction which occurs in rotating the rollers is so great that the paper in the line of the perforations will
- 30 not stand the pull and the stamp or ticket is therefore torn off.
- It will be understood that the pulling forward of the paper strip, after the end thereof has been projected by the rotation of the rollers, can be effected by hand as well as automatically.
- Instead of the rollers, brake-blocks, braking-springs or the like may be
- 35 employed to check the paper strip, so as to tear the latter along the line of perforations. Instead of rotating the rollers they may be used only for checking the movement of the paper strip, in this case the movement must be effected by pulling forward the paper strips by means of gripping devices or the like, or brake-blocks may be used instead of the rollers. The mechanism must in the
- 40 latter case be constructed in such a manner that the paper strip can be seized and drawn forward. The friction between the rollers or brake blocks must be adjusted so that the desired length of paper strip can be drawn forwards, but that as soon as a perforated line passes between the rollers, or brake blocks, the paper strip will tear in this line.

[Price 8d.]



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In order to make my invention more clear, I refer to the accompanying drawings, in which:

Figure 1 is a diagrammatic end view of the roll of paper and feed rollers,

Figure 2 is a front view of the improved apparatus,

Figure 3 is a side-view of the same,

Figure 4 is a detail view of the same.

Figure 5 is a front view of a modified construction,

Figures 6 & 7 are vertical sections of this modification, illustrating the operation of the apparatus,

Figure 8 shows a pair of rollers to be used for a machine, in which a gripping device is employed for pulling the paper strip forward,

Figure 9 is a side view of these rollers,

Figure 10 is a vertical section of the same, showing in side elevation a gripping device,

Figures 11 and 12 show details of the gripping device.

Figures 13—17 are diagrammatic views of another modification with a spring-influenced braking device, the different figures showing the same parts in different positions.

Figure 18 is a plan of the principal parts of the latter modification.

In the construction shown in Figures 1—4 1 is a paper strip drawn from a paper-roll 2. The paper strip 1 is provided at intervals with lines of perforations so as to form easily detachable stamps, tickets or the like. The paper strip 1 is guided between two rollers 3 and 4 adapted to feed the paper-strip 1 forward through the slot 5 in the front-wall 6 of the apparatus. The rollers are rotated to such an extent that the strip 1 can be seized outside the apparatus, without however the first line of perforations passing between the rollers 3 and 4. If the strip 1 is now pulled forward, the first stamp will tear off as soon as the first line of perforations passes between the rollers, as the paper strip is not strong enough along the line to withstand the pull. When the first stamp is torn off, the front edge of the following stamp is situated between the rollers so that if the rollers are again rotated, the second stamp will be projected and the same process repeated.

The rollers can be operated in any convenient manner, for instance the roller 3 may be rotated by means of a friction roller pressing against it. The pressure between the friction roller and the roller 3 must in this case be such that if the friction roller remains stationary and the roller 3 is rotated by the pulling forward of the paper strip 1, the friction between the non-rotating friction roller and the roller 3 will be great enough to cause the tearing of the paper-strip along the lines of perforations. The roller 3 may also be rotated by means of a click 11 a ratchet-wheel 9 and the roller 4 (Figures 2 and 4) in which case the necessary friction arises when the click 11 slides over the teeth of the ratchet-wheel 9. The roller 3 is mounted on a shaft 3¹ which is journaled in vertical slots in the brackets 4¹, so that it can be moved up or down. Spiral springs 7¹ fixed to the hooks 7 which take over the extremities of the shaft 3¹ press the roller 3 down upon the roller 4. The paper-strip 1 is drawn from a roll 2 contained in a cylindrical box 2¹ which is provided with a slot for the paper strip 1 to pass through. The strip 1 passes first between the rollers 3 and 4 and then through the slot 5 in the front-wall 6 of the apparatus. The roller 4 is loosely mounted upon the shaft 8 and to the latter a lever 10 is rigidly fixed, the said lever carries the click 11 for rotating the toothed wheel 9 which is rigidly connected to the roller 4.

In Figures 2 and 3 is shown, a coin-freed apparatus, the rollers 3 and 4 of which can be rotated from the outside of the casing; This machine comprises a disc 12 fixed to the shaft 8 and provided with a plurality of pins 13. Parallel to this disc 12 is a second disc 14 fixed to a shaft 8¹. This disc 14 is provided with an annular projecting ring 14¹ (Figure 2). Upon the shaft 8¹ is a two

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armed lever 17 held in its normal position by means of a spiral spring 17¹ connected to the short arm of the lever.

The operation of this machine is as follows:

A coin 15 inserted into the slot 15¹ is guided by the chute 15¹¹ into the space between the disc 12 and the disc 14, and rests upon this projecting ring 14¹. If the lever 17 is now pressed downward in the direction of the arrow *y* (Figure 3), the disc 14 will move in the same direction. The disc 14 is furnished with a projecting piece 16 (Figure 3), which as soon as the lever 17 is pressed downward, pushes the coin 15 against one of the pins 13 of the disc 12 and consequently this disc will also turn. When the lever 17 is in its lowest position, the coin 15 will drop down.

The lever 17 upon being released is returned to its normal position by the spiral spring 17¹. After the coin has fallen down there is no connection between the discs 14 and 12, the disc 12 will therefore remain stationary during the backward movement of the disc 14. The movement imparted to the shaft 8 by pressing the lever 17 downwards, causes the paper strip to be fed forward in the manner hereinbefore described, so that it may be pulled forward by hand or in any other convenient way, and the first stamp torn off. During the pulling forward of the paper strip 1 the click 11 slides over the ratchet-wheel 9, that is to say, the rollers 3 and 4 rotate, and the shaft 8 is stationary.

It will be understood that in the construction above described the tearing off of the stamps, will only take place when the movement of the paper strip is sufficiently checked. As it is difficult to adjust the friction between the rollers, a separate arrangement may be provided for effecting the checking of the paper strip. Such an arrangement is shown in the modification illustrated in Figures 5, 6 and 7 of the drawings, in which figures the coin-actuated mechanism is omitted for the sake of clearness. The paper strip passes between the rollers 18 and 19 and the roller 18 may be driven in the same manner as the roller 4 described above.

The roller 18 is provided circumferentially with grooves 18¹. The shaft of the roller 19 is journaled in slots provided in the frame 21 of the apparatus, and is pressed against the roller 18 by means of spiral springs 22 connected to the extremities of the said shaft.

On both ends of the roller 19 flanges 24 are formed which are in contact with scalloped discs 25 arranged on both sides of the roller 18. The roller 19 only presses against the roller 18 when the flanges 24 of the same are in the recessed portions 27 of the circumference of the discs 25. If the flanges 24 are upon the parts 26 of the discs 25, the roller 19 does not touch the roller 18. A double-armed lever 29 is pivoted at 30, and is held in the position shown in Figure 6 by means of the spiral spring 31. The lower arm 28 of this lever is furnished with several fingers, one of which is situated in each groove 18¹ of the roller 18. Now it will be clear that the spring 31 always tends to press the fingers 28 against the roller 19, that is to say against the paper strip passing between the rollers 18 and 19. The lever 29 is provided with other fingers 32, one of which is also situated in each groove 18¹ of the roller 18. This roller is provided with a plurality of pins 33 by means of which during the rotation of the roller the lever 29 is oscillated.

When the roller 19 presses against the roller 18 one of the pins 33 is situated beneath the extremities of the fingers 32. In this position the fingers 28 do not press against the roller 19, that is to say against the paper strip, as will be seen from Figure 7. During this time the forward movement of the paper strip takes place by the rotation of the roller 18. After the paper strip has been moved far enough forward, so that the end thereof can be seized, the roller 19 is pressed backward by one of the portions 26 of the discs 25 thereby arresting the movement of the paper strip. At the same time the pin 33 which was situated underneath the extremity of the fingers 32 enters a recessed portion 32¹ of these fingers, permitting the lever 29 to move under the influence of the

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springs 31 so that the arm 28 of this lever is pressed against the roller 19. If now the stamp is pulled by hand or by any other convenient means, it will tear at the perforated line when the latter passes the point, at which the arm 28 comes into contact the roller 19.

In order to effect the tearing off of each stamp automatically, a roller 20 may be provided underneath the roller 19, and be pressed against the roller 18 by means of spiral springs 23.

The operation of the apparatus is as follows:

The rollers 18 and 19, are rotated in the manner described above. When one division of the paper strip or one stamp projects far enough to be seized, the roller 19 is moved back out of contact with the roller 18 and the fingers 28 press the paper strip against the roller 19. The end of the strip during the rotation of the roller 18 and 19 is moved forward so far that the same is situated between the rollers 18 and 20. Now as the roller 18 rotates still further, the paper strip is moved forward by the rollers 18 and 20. During this forward movement the fingers 28 press against the paper strip as described above, so that as soon as the first perforated line has passed the spot at which the fingers 28 touch the roller 19, the stamp will tear off, and pass out between the rollers 18 and 20.

This construction may be modified in different ways, for instance the discs 25 as well as the flanges 24 may be omitted, in which case the spring 31 must be so strong, that after the pins 33 have entered the recess 32¹, it will be able to move the roller 19 out of contact with the roller 18.

It naturally depends upon the strength of the paper and upon the kind of perforations, which of the foregoing constructions will be most advantageous.

If at one operation of the apparatus several stamps are to be delivered, for instance five stamps, four stamps are freely passed through the rollers, while the fifth is treated in the manner above described.

A further modification of the invention is illustrated in Figures 8—12. In this modification the rollers are not used for moving the paper strip, but only for retarding or arresting the movement of the same. The moving of the paper strip is effected by means of a special gripping device, which may consist of a tongs rollers or the like. This gripping device seizes the first stamp situated between the rollers and draws the same forward, so that the perforations pass through the rollers and the front edge of the next stamp comes between the rollers as hereinbefore set forth.

In the drawing 34 and 35 are rollers situated one above the other. Each of these rollers is provided with an annular groove, so as to form a free space, 38. The paper strip 39 is provided with the described lines of perforations. 40 is a lever pivoted at 41 and provided with a gripping device. 42 is a bar connected to the lever 41 for swinging the latter into the position shown in dotted lines in Figure 10.

The lever 40 is on its free end provided with one of the jaws 43 of the gripping device. The other jaw is in the form of a double-armed lever 44 46 pivoted at 45. To the lever 40 a spring 47 is fixed, which always tends to press the upper jaw 44 downward against the jaw 43. In order to open the gripping device, a pin 48 is provided, which when the lever 40 swings back, comes against the lower arm of the double-armed lever 46 and moves the jaw 44 into the position shown in dotted lines in Figure 10.

In order to hold the jaws open so that they may be able to grip the paper strip when the lever 40 swings back, a pin 49 is provided in the lower part of the lever 40, around which pin a spiral spring 49¹ is coiled. The spring 49¹ tends always to bring the pin 49 to the position shown in Figure 11, in which position the end thereof projects from the side of the lever 40. In order to limit the outward movement of the pin 49, the latter is formed with an annular ring or flange 49¹.

The pin 49 moves out behind the arm 46 and prevents the closing of the

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gripping device until the paper strip 39 is situated between the jaws of the same. As soon as this takes place, the end 50 of the pin 49 which end is bent upwards, as shown in Figure 11, engages and slides along the beveled edge of the wedge piece 51, thereby drawing back the pin 49 against the pressure of the spiral-spring 49¹¹. As soon as the end of the pin 49 is level with the side of the lever 40 the upper jaw 44 is pressed downward by means of the spring 47, and the gripping device is closed upon the paper strip.

The operation of the apparatus is as follows:

In order to tear off one stamp or ticket, the lever 40 is brought into the position shown in full lines in Figure 10, in which position the paper strip is held fast between the jaws of the gripping device. The bar 42 is then pulled backwards, the rollers 34 and 35 being pressed one upon the other, so that a certain pull upon the paper strip is necessary to rotate them. This pull can be regulated by adjusting the pressure between the rollers, so that as soon as a perforated line has passed between the rollers 34 and 35 the stamp tears off. After this, the lower arm 46 of the double armed lever comes against the pin 48, which opens the gripping device and the stamp or ticket which was held fast by the same is dropped.

The pin 49 as soon as the gripping device opens, is moved forward by the spring 49¹¹ and is afterwards pulled back by the bent up end 50 of this pin 49 sliding along the beveled edge of the part 51 as and for the purpose described.

The device may be used in combination with coin-freed apparatus, in which case a mechanism must be provided to prevent the bar 42 from being moved until a coin has been inserted into the apparatus.

The construction may be modified in different ways for instance, instead of the rollers 34 and 35 provided with grooves two small rollers may be so arranged, that the paper strip, which projects at both sides of the same, can be seized by means of a fork-shaped gripping device, or two pairs of small rollers may be so arranged that the paper-strip can be seized between the rollers of each pair.

It will be understood that any other convenient gripping device may be used or the paper-strip may be seized by hand.

In the modification illustrated in Figures 13-18 two pairs of rollers are provided. The first pair of rollers serves for moving the paper strip, until the same is situated between the second pair of rollers. As soon as this is done, the first pair of rollers release the paper strip and a braking mechanism comes into action, which holds the second stamp fast, so that, if the second pair of rollers be still further rotated, the first stamp is torn off. The first pair of rollers consists for this purpose of rollers which do not possess a perfectly cylindrical shape, but which are provided with cut-out portions. The rollers consequently move the paper strip forward during part only of each rotation. The braking mechanism is advantageously constructed so that the pressure upon the paper-strip, that is to say the retarding effect of the brake, gradually increases, the maximum pressure being easily adjusted, so that under all circumstances a tearing off of the first stamp must take place.

In the drawing 52 and 53 are two pairs of rollers situated one above the other. In Figure 18 the upper pair of rollers is shown in plan, and it can be seen from this figure, that the upper rollers consist each of two small discs upon the same shaft. *s* is a paper strip, which is provided with perforations. The discs forming the righthand upper roller are perfectly cylindrical, while the discs forming the lefthand roller are only part cylinders, this part amounting in the example shown in the drawing to about 160°. Between the discs of the righthand roller a cam 54 is situated, which cam is fixed to the same shaft to which the discs are fixed. This cam acts upon a flap 55 pivoted at 56. The lower part of this flap is situated between the discs. Between the discs forming the lefthand upper roller 52 a lever 57 is situated, which is pivoted at 58. The lever 57 is pulled by means of a spiral spring 59 against a fixed stop 60.

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In order to make the drawing more clear, the lever 57 as well as the flap 55 are not shown in the plan Figure 18.

The operation of the device is as follows:

Figure 13 shows the mechanism in its normal position. The paper strip *s* is divided by perforated lines in single stamps or tickets *s*⁰, *s*¹, *s*², *s*³. . . . One stamp *s*⁰ is shown underneath the pair of rollers 53, which stamp has just been delivered by the mechanism. The lower edge of the stamp *s*¹ is situated between the upper pair of rollers 52, and the lefthand roller 52 is situated, so that the cylindrical surface just touches the righthand roller 52. The flap 55 touches the shallowest part 54¹ of the cam 54. In this position of the flap 55 a space is left between this flap and the lever 57, through which space the paper strip *s* can pass. If now the rollers are turned in the direction of the arrows the paper strip will be moved forwards, so that the stamp *s*¹ will come between the rollers 52 (see Figure 14). In this position the lefthand roller 52 has turned so far, that its cylindrical surface just leaves the surface of the righthand roller, thereby leaving the paper strip free (see Figure 15). In this position the cam 54 has turned so far, that the flap 55 is pressed by the part 54¹¹ of the same with small pressure against the lower part of the lever 57.

The further movement of the paper strip is now effected by the rollers 53 against the retarding effect of the lever 57 and the flap 55.

In the position shown in Figure 16 the flap 55 is situated upon the part 54¹¹¹ of the cam 54, in which position the pressure between this flap and the lever 57 is so great, that the lever begins to swing around its pivot 58 against the action of the spiral spring 59. In this position the perforated line between the stamps *s*¹ and *s*² passes between the flap 55 and the lever 57, thereby effecting the tearing off of the stamp *s*¹.

In the position shown in Figure 17 the stamp *s*¹ has been torn off, and is on the point of being delivered by the roller 52. The cam 54 has turned so far, that the flap 55 is over the shallowest portion 54¹. The paper-strip may either be free in this position, or may according to the construction of the mechanism, still be held fast between the parts 55 and 57. During the further movement of the rollers the paper strip *s* is seized again by the rollers 52, and the same process is repeated.

It will be clear from the foregoing description, that the upper rollers draw the paper strip forward for a certain distance and that the remainder of the movement is effected by the lower pair of rollers. The extension of the cylindrical part of the discs forming the lefthand upper roller may vary between extreme limits it being necessary only that the stamp may be seized by the lower rollers, before it is free of the upper rollers.

It will be understood, that the brake 55, 57 for the paper strip need not be arranged between the discs forming the upper rollers, but this brake may also be situated underneath the upper pair of rollers, that is to say between the upper and lower pair of rollers.

In the latter case the brake can be broader than is possible in the construction shown in the drawing. Instead of the cam 54 an eccentric or any other convenient device for actuating the brake may be provided.

Also this construction may be modified in different respects, for instance the rollers 52 and 53 may consist of one single disc situated in the middle of the paper strip.

Dated this 30th day of January 1903.

JENSEN & SON,
77, Chancery Lane, London, W.C.
Chartered Patent Agents.

New or Improved Apparatus for the Delivery of Stamps, Tickets and the like.

COMPLETE SPECIFICATION.

New or Improved Apparatus for the Delivery of Stamps, Tickets and the like.

I, MAX SIELAFF, of 23 Spener Strasse, Berlin, Kingdom of Prussia, German Empire, Manufacturer do hereby declare the nature of this invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

5 My invention relates to apparatus for the delivery of stamps, tickets and the like, which are printed upon long strips of paper provided with perforations for easily separating the single stamps or tickets. In the mechanisms hitherto used for separating the single stamps the paper strip has been guided between two rollers, which rotate until one stamp or ticket has completely passed through
10 the same and can then be torn off.

These machines have the great disadvantage that it is practically impossible to correctly adjust to the distance between the perforated lines the mechanism for rotating the rollers so that even in the case of long strips an exact working of the mechanism does not take place, that is to say, after dispensing a great
15 quantity of stamps or other articles the rotation of the rollers does not correspond exactly to the length of the articles which will be hereinafter referred to as stamps. It will be clear that in case the difference between the length of the stamps and the rotation of the rollers amounts to a small fraction of a millimetre, it will happen at certain intervals that one stamp will not be fed
20 forward to a sufficient extent, by the rotation of the rollers to enable it to be torn off, or in case the angular movement of the rollers is too great, it will be possible at intervals to tear off two stamps.

In order to do away with this disadvantage, according to the present invention, the rollers which guide the paper strip and which are moved by the coin
25 freed mechanism are not rotated far enough to completely deliver one stamp, that is to say the paper strip is moved by the rotation of these rollers only so far as to enable it to be seized, but not so far that the perforated line passes between the rollers. The paper strip can be afterwards seized and drawn forward, so that the rollers will further rotate, and as soon as the perforated line
30 has passed between the rollers, the friction which occurs in rotating the rollers is so great that the paper in the line of the perforations will not stand the pull and the stamp is therefore torn off.

It will be understood that the pulling forward of the paper strip, after the end thereof has been projected by the rotation of the rollers, can be effected by
35 hand as well as automatically.

Instead of the rollers, brake-blocks, braking-springs or the like may be employed, to check the paper strip, so as to tear the latter along the line of perforations. Instead of rotating the rollers they may be used only for checking the movement of the paper strip, in this case the movement must be
40 effected by pulling forward the paper strips by means of gripping devices or the like, or brake-blocks may be used instead of the rollers. The mechanism must in the latter case be constructed in such a manner, that the paper strip can be seized and drawn forward. The friction between the rollers or brake blocks must be adjusted so that the desired length of paper strip can be drawn
45 forwards, but that as soon as a perforated line passes between the rollers or brake blocks, the paper strip will tear in this line.

In order to make my invention clear, I refer to the drawings filed with the Provisional Specification, in which:

Figure 1 is a diagrammatic end view of the roll of paper and feed rollers,

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Figure 2 is a front view of the improved apparatus,

Figure 3 is a side-view of the same,

Figure 4 is a detail view of the same,

Figure 5 is a front view of a modified construction,

Figures 6 and 7 are vertical sections of this modification, illustrating the operation of the apparatus,

Figure 8 shows a pair of rollers to be used for a machine in which a gripping device is employed for pulling the paper strip forward.

Figure 9 is a side view of these rollers,

Figure 10 is a vertical section of the same, showing in side elevation a gripping device,

Figures 11 and 12 show details of the gripping device,

Figures 13—17 are diagrammatic views of another modification with a spring-influenced braking device, the different figures showing the same parts in different positions.

Figure 18 is a plan of the principal parts of the latter modification.

In the construction shown in Figures 1—4 1 is a paper strip drawn from a paper roll 2. The paper strip 1 is provided at intervals with lines of perforation, so as to form easily detachable stamps, tickets or the like. The paper strip 1 is guided between two rollers 3 and 4 adapted to feed the paper strip 1 forward through the slot 5 in the front wall 6 of the apparatus. The rollers are rotated to such an extent that the strip 1 can be seized outside the apparatus without, however, the first line of perforations passing between the rollers 3 and 4. If the strip 1 is now pulled forward, the first stamp will tear off as soon as the first line of perforations passes between the rollers, as the paper strip is not strong enough along the line to withstand the pull. When the first stamp is torn off, the front edge of the following stamp is situated between the rollers, so that if the rollers are again rotated, the second stamp will be projected and the same process repeated.

The rollers can be operated in any convenient manner, for instance the roller 3 may be rotated by means of a friction roller pressing against it. The pressure between the friction roller and the roller 3 must in this case be such that if the friction roller remains stationary and the roller 3 is rotated by the pulling forward of the paper strip 1, the friction between the non-rotating friction roller and the roller 3 will be great enough to cause the tearing of the paper-strip along the lines of perforations.

The roller 3 may also be rotated by means of a click 11 a ratchet-wheel 9 and the roller 4 (Figures 2 and 4) in which case the necessary friction arises when the click 11 slides over the teeth of the ratchet-wheel 9. The roller 3 is mounted on a shaft 3¹ which is journaled in vertical slots in the brackets 4¹ so that it can be moved up or down. Spiral springs 7¹ fixed to the hooks 7 which take over the extremities of the shaft 3¹ press the roller 3 down upon the roller 4. The paper-strip 1 is drawn from a roll 2 contained in a cylindrical box 2¹ which is provided with a slot for the paper strip 1 to pass through. The strip 1 passes first between the rollers 3 and 4 and then through the slot 5 in the front-wall 6 of the apparatus. The roller 4 is loosely mounted upon the shaft 8 and to the latter a lever 10 is rigidly fixed, the said lever carries the click 11 for rotating the toothed wheel 9, which is rigidly connected to the roller 4.

In Figures 2 and 3 is shown a coin-freed apparatus, the rollers 3 and 4 of which can be rotated from the outside of the casing. This machine comprises a disc 12 fixed to the shaft 8 and provided with a plurality of pins 13. Parallel to this disc 12 is a second disc 14 fixed to a shaft 8¹. This disc 14 is provided with an annular projecting ring 14¹ (Figure 2). Upon the shaft 8¹ is a two armed lever 17 held in its normal position by means of a spiral spring 17¹ connected to the short arm of the lever.

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The operation of this machine is as follows:

A coin 15 inserted into the slot 15¹ is guided by the chute 15¹¹ into the space between the disc 12 and the disc 14, and rests upon this projecting ring 14¹. If the lever 17 is now pressed downwards in the direction of the arrow *y* (Figure 3) the disc 14 will move in the same direction. The disc 14 is furnished with a projecting piece 16 (Figure 3), which as soon as the lever 17 is pressed downwards, pushes the coin 15 against one of the pins 13 of the disc 12 and consequently this disc will also turn. When the lever 17 is in its lowest position, the coin 15 will drop down. The lever 17 upon being released is returned to its normal position by the spiral spring 17¹. After the coin has fallen down there is no connection between the discs 14 and 12, the disc 12 will therefore remain stationary during the backward movement of the disc 14. The movement imparted to the shaft 8 by pressing the lever 17 downwards causes the paper strip to be fed forward in the manner hereinbefore described, so that it may be pulled forward by hand or in any other convenient way, and the first stamp torn off. During the pulling forward of the paper strip 1 the click 11 slides over the ratchet wheel 9, that is to say the rollers 3 and 4 rotate and the shaft 8 is stationary.

It will be understood that in the construction above described the tearing off of the stamps will only take place when the movement of the paper strip is sufficiently checked. As it is difficult to adjust the friction between the rollers, a separate arrangement may be provided for effecting the checking of the paper strip. Such an arrangement is shown in the modification illustrated in Figures 5, 6 and 7 of the drawings, in which figures the coin-actuated mechanism is omitted for the sake of clearness. The paper strip passes between the rollers 18 and 19 and the roller 18 may be driven in the same manner as the roller 4 described above.

The roller 18 is provided circumferentially with grooves 18¹. The shaft of the roller 19 is journaled in slots provided in the frame 21 of the apparatus, and is pressed against the roller 18 by means of spiral springs 22 connected to the extremities of the said shaft.

On both ends of the roller 19 flanges 24 are formed, which are in contact with scalloped discs 25 arranged on both sides of the roller 18. The roller 19 only presses against the roller 18 when the flanges 24 of the same are in the recessed portions 27 of the peripheries of the discs 25. If the flanges 24 are upon the parts 26 of the discs 25, the roller 19 does not touch the roller 18. A double-armed lever 29 is pivoted at 30 and is held in the position shown in Figure 6 by means of the spiral spring 31. The lower arm 28 of this lever is furnished with several fingers, one of which is situated in each groove 18¹ of the roller 18. Now it will be clear that the spring 31 always tends to press the fingers 28 against the roller 19, that is to say against the paper strip passing between the rollers 18 and 19. The lever 29 is provided with other fingers 32 one of which is also situated in each groove 18¹ of the roller 18. This roller is provided with a plurality of pins 33 by means of which, during the rotation of the roller, the lever 29 is oscillated.

When the roller 19 presses against the roller 18 one of the pins 33 is situated beneath the extremities of the fingers 32. In this position the fingers 28 do not press against the roller 19, that is to say against the paper strip, as will be seen from Figure 7. During this time the forward movement of the paper strip takes place by the rotation of the roller 19. After the paper strip has been moved far enough forward, so that the end thereof can be seized, the roller 19 is pressed backward by one of the portions 26 of the disc 25, thereby arresting the movement of the paper strip. At the same time the pin 33 which was situated underneath the extremity of the fingers 32 enters a recessed portion 32¹ of these fingers, permitting the lever 29 to move under the influence of the springs 31, so that the arm 28 of this lever is pressed against the roller 19. If now the stamp is pulled by hand or by any convenient means, it will tear at

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the perforated line when the latter passes the point, at which the arm 28 comes into contact with the roller 19.

In order to effect the tearing off of each stamp automatically, a roller 20 may be provided underneath the roller 19, and be pressed against the roller 18 by means of spiral springs 23.

The operation of the apparatus is as follows:

The rollers 18 and 19 are rotated in the manner described above. When one division of the paper strip or one stamp projects far enough to be seized, the roller 19 is moved back out of contact with the roller 18 and the fingers 28 press the paper strip against the roller 19. The end of the strip during the rotation of the rollers 18 and 19 is moved forward so far that the same is situated between the rollers 18 and 20. Now as the roller 18 rotates still further, the paper strip is moved forward by the rollers 18 and 20. During this forward movement the fingers 28 press against the paper strip as described above, so that as soon as the first perforated line has passed the spot at which the fingers 28 touch the roller 19, the stamp will tear off and pass out between the rollers 18 and 20.

This construction may be modified in different ways, for instance the discs 25 as well as the flanges 24 may be omitted, in which case the spring 31 must be so strong, that after the pins 33 have entered the recess 32, it will be able to move the roller 19 out of contact with the roller 18.

It naturally depends upon the strength of the paper and upon the kind of perforations, which of the foregoing constructions will be most advantageous.

If at one operation of the apparatus several stamps are to be delivered, for instance five stamps, four stamps are freely passed through the rollers, while the fifth is treated in the manner above described.

A further modification of the invention is illustrated in Figures 8—12. In this modification the rollers are not used for moving the paper strip, but only for retarding or arresting the movement of the same. The moving of the paper strip is effected by means of a special gripping device, which may consist of tongs, rollers or the like. This gripping device seizes the first stamp situated between the rollers and draws the same forward, so that the perforations pass through the rollers and the front edge of the next stamp comes between the rollers, as hereinbefore set forth.

In the drawing, 34 and 35 are rollers situated one above the other. Each of these rollers is provided with an annular groove, so as to form a free space 38. The paper strip 39 is provided with the described lines of perforations. 40 is a lever pivoted at 41 and provided with a gripping device. 42 is a bar connected to the lever 41 for swinging the latter into the position, shown in dotted lines in Figure 10.

The lever 40 is on its free end provided with one of the jaws of the gripping device. The other jaw is in the form of a double-armed lever 44, 46 pivoted at 45. To the lever 40 a spring 47 is fixed, which always tends to press the upper jaw 44 downward against the jaw 43. In order to open the gripping device, a pin 48 is provided, which when the lever 40 swings back, comes against the lower arm of the double-armed lever 46 and moves the jaw 44 into the position shown in dotted lines in Figure 10.

In order to hold the jaws open, so that they may be able to grip the paper strip when the lever 40 swings back, a pin 49 is provided in the lower part of the lever 40, around which pin a spiral spring 49¹ is coiled. The spring 49¹ tends always to bring the pin 49 to the position shown in Figure 11, in which position the end thereof projects from the side of the lever 40. In order to limit the outward movement of the pin 49, the latter is formed with an annular ring or flange 49¹.

The pin 49 moves out behind the arm 46 and prevents the closing of the gripping device until the paper strip 39 is situated between the jaws of the same. As soon as this takes place, the end 50 of the pin 49 which end is bent

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upwards, as shown in Figure 11, engages and slides along the beveled edge of the wedge-piece 51 thereby drawing back the pin 49 against the pressure of the spiral-spring 49^u. As soon as the end of the pin 49 is level with the side of the lever 40 the upper jaw 44 is pressed downward by means of the spring 47 and the gripping device is closed upon the paper strip.

The operation of the apparatus is as follows:

In order to tear off one stamp or ticket, the lever 40 is brought into the position shown in full lines in Figure 10, in which position the paper strip is held fast between the jaws of the gripping device.

The bar 42 is then pulled backwards, the rollers 34 and 35 being pressed one upon the other, so that a certain pull upon the paper strip is necessary to rotate them. This pull can be regulated by adjusting the pressure between the rollers, so that as soon as a perforated line has passed between the rollers 34 and 35 the stamp tears off. After this the lower arm 46 of the double-armed lever comes against the pin 48 which opens the gripping device and the stamp or ticket which was held fast by the same, is dropped.

The pin 49 as soon as the gripping device opens, is moved forward by the spring 49^u and is afterwards pulled back by the bent up end 50 of this pin 49 sliding along the beveled edge of the part 51 as and for the purpose above described.

The device may be used in combination with coin freed apparatus in which case a mechanism must be provided to prevent the bar 42 from being moved until a coin has been inserted into the apparatus.

The construction may be modified in different ways, for instance, instead of the rollers 34 and 35 provided with grooves, two small rollers may be so arranged, that the paper strip, which projects at both sides of the same, can be seized by means of a fork-shaped gripping device, or two pairs of small rollers may be so arranged that the paper-strip can be seized between the rollers of each pair.

It will be understood that any other convenient gripping device may be used or the paper-strip may be seized by hand.

In the modification illustrated in Figures 13—18 two pairs of rollers are provided. The first pair of rollers serves for moving the paper strip, until the same is situated between the second pair of rollers. As soon as this is done, the first pair of rollers releases the paper strip and a braking mechanism comes into action, which holds the second stamp fast, so that, if the second pair of rollers be still further rotated, the first stamp is torn off. The first pair of rollers consists for this purpose of rollers which do not possess a perfectly cylindrical shape but which are provided with cut-out portions. The rollers consequently move the paper strip forward during part only of each rotation. The braking mechanism is advantageously constructed so that the pressure upon the paper strip, that is to say the retarding effect of the brake, gradually increases, the maximum pressure being easily adjusted, so that under all circumstances a tearing off of the first stamp must take place.

In the drawing 52 and 53 are two pairs of rollers situated one above the other. In Figure 18 the upper pair of rollers is shown in plan, and it can be seen from this figure, that the upper rollers consist each of two small discs upon the same shaft. *s* is a paper strip, which is provided with perforations. The discs forming the righthand upper roller are perfectly cylindrical, while the discs forming the lefthand roller are only part cylinders, this part amounting in the example shown in the drawing to about 160°. Between the discs of the righthand roller a cam 54 is situated, which cam is fixed to the same shaft, to which the discs are fixed. This cam acts upon a flap 55 pivoted at 56. The lower part of this flap is situated between the discs. Between the discs forming the lefthand upper roller 52 a lever 57 is situated, which is pivoted at 58. The lever 57 is pulled by means of a spiral spring 59 against a fixed stop 60.

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In order to make the drawing more clear, the lever 57 as well as the flap 55 are not shown in the plan Figure 18.

The operation of the device is as follows:

Figure 13 shows the mechanism in its normal position. The paper strip *s* is divided by perforated lines in single stamps or tickets *s*⁰, *s*¹, *s*², *s*³. . . . One stamp *s*⁰ is shown underneath the pair of rollers 53, which stamp has just been delivered by the mechanism. The lower edge of the stamp *s*¹ is situated between the upper pair of rollers 52, and the lefthand roller 52 is situated so that the cylindrical surface just touches the righthand roller 52. The flap 55 touches the shallowest part 54¹ of the cam 54. In this position of the flap 55 a space is left between this flap and the lever 57, through which space the paper strip *s* can pass. If now the rollers are turned in the direction of the arrows, the paper strip will be moved forwards, so that the stamp *s*¹ will come between the rollers 53 (see Figure 14). In this position the lefthand roller 52 has turned so far, that its cylindrical surface just leaves the surface of the righthand roller, thereby leaving the paper strip free (see Figure 15). In this position the cam 54 has turned so far, that the flap 55 is pressed by the part 54¹¹ of the same with small pressure against the lower part of the lever 57.

The further movement of the paper strip is now effected by the rollers 53 against the retarding effect of the lever 57 and the flap 55.

In the position shown in Figure 16 the flap 55 is situated upon the part 54¹¹¹ of the cam 54, in which position the pressure between this flap and the lever 57 is so great, that the lever begins to swing around its pivot 58 against the action of the spiral spring 59. In this position the perforated line between the stamps *s*¹ and *s*² passes between the flap 55 and the lever 57 thereby effecting the tearing off of the stamp *s*¹.

In the position shown in Figure 17 the stamp *s*¹ has been torn off, and is on the point of being delivered by the roller 52. The cam 54 has turned so far, that the flap 55 is over the steep portion 54*, past which it slides until it arrives at the shallowest part 54¹. The paper strip may either be free in this position, or may, according to the construction of the mechanism, still be held fast between the parts 55 and 57. During the further movement of the rollers the paper strip *s* is seized again by the rollers 52 and the same process is repeated.

It will be clear from the foregoing description, that the upper rollers draw the paper strip forward for a certain distance and that the remainder of the movement is effected by the lower pair of rollers. The extension of the cylindrical part of the discs forming the lefthand upper roller may vary between extreme limits it being necessary only that the stamp may be seized by the lower rollers, before it is free of the upper rollers.

It will be understood that the brake 55, 57 for the paper strip need not be arranged between the discs forming the upper rollers, but this brake may also be situated underneath the upper pair of rollers, that is to say between the upper and lower pair of rollers.

In the latter case the brake can be broader than is possible in the construction shown in the drawing. Instead of the cam 54 an eccentric or any other convenient device for actuating the brake may be provided.

Also this construction may be modified in different respects, for instance the rollers 52 and 53 may consist of one single disc situated in the middle of the paper strip.

Having now particularly described and ascertained the nature of my said invention, and in what manner the same is to be performed, I declare that what I claim is:—

1. Apparatus for the delivery of stamps, tickets and the like, printed upon long perforated strips in which the strip is moved periodically and always only so far, that the first stamp or ticket can be gripped and the rollers between

New or Improved Apparatus for the Delivery of Stamps, Tickets and the like.

which the strip passes are by drawing the strip forward until a perforated line has passed between the rollers when the ticket will be torn off along the said line substantially as described.

2. An apparatus for the delivery of stamps, tickets and the like, in which a strip is pulled forwards by means of a gripping device actuated from the outside of the apparatus and passes between rollers or brake-blocks which effect a checking of the movement of the paper strip, substantially as described and for the purpose set forth.

3. An apparatus for the delivery of stamps, tickets and the like in which a paper strip is moved forward by means of rollers with recessed portions and passes between other rollers which effect the pulling forward and tearing off of the first stamp or ticket, the pulling forward being effected against the action of a braking-device, substantially as described and for the purpose set forth.

4. An apparatus for the delivery of stamps tickets and the like in which the braking device is constructed so that the retarding effect of the same is gradually increased, substantially as described and for the purpose set forth.

5. An apparatus for the delivery of stamps, tickets and the like in which the retarding effect of the braking device is increased by means of a cam acting upon a flap which is pressed against the strip, substantially as described and for the purpose set forth.

6. An apparatus for the delivery of stamps, tickets and the like, substantially as described with reference to Figures 1—4.

7. An apparatus for the delivery of stamps, tickets and the like, substantially as described with reference to Figures 5—7.

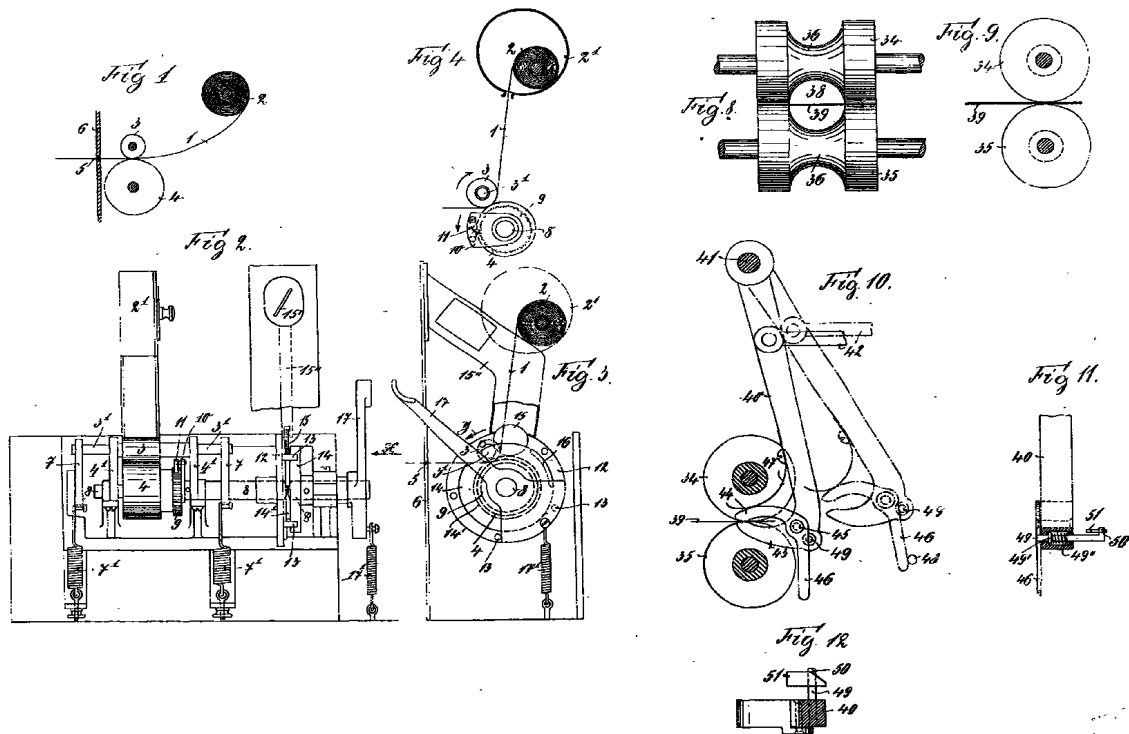
8. An apparatus for the delivery of stamps, tickets and the like, substantially as described with reference to Figures 9—13.

9. An apparatus for the delivery of stamps, tickets and the like, substantially as described with reference to Figures 13—18.

Dated this 30th day of October, 1903.

30

JENSEN & SON,
77, Chancery Lane, London, W.C.,
Chartered Patent Agents.



[This drawing is a reproduction of the original on a reduced scale]

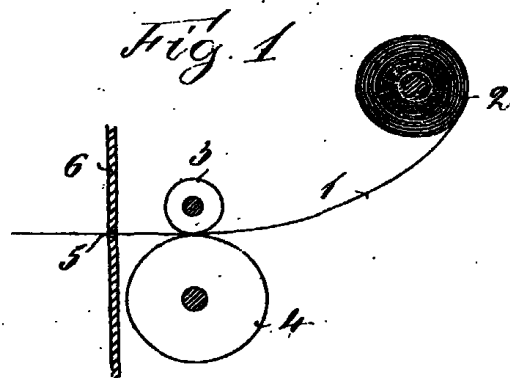
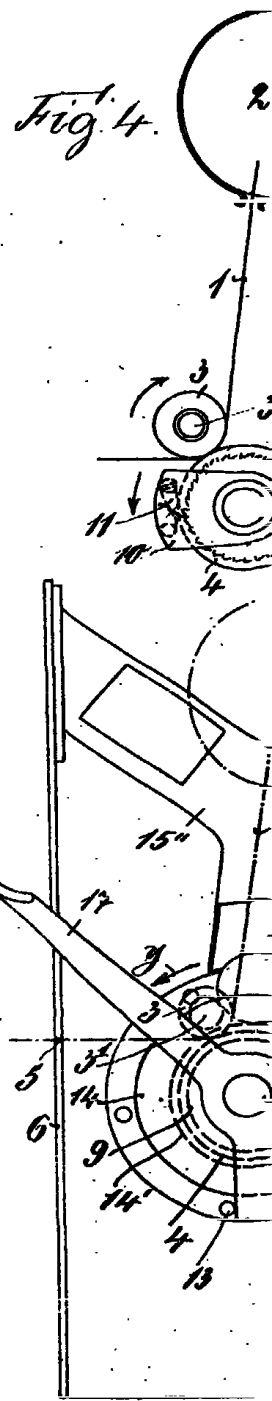
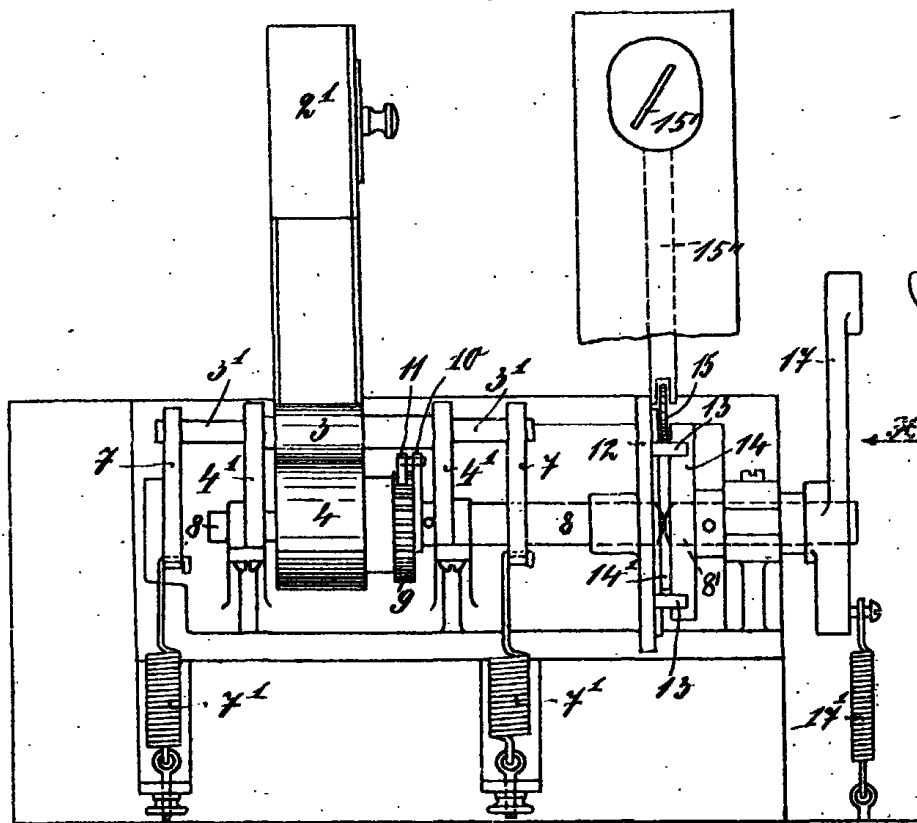


Fig. 2.



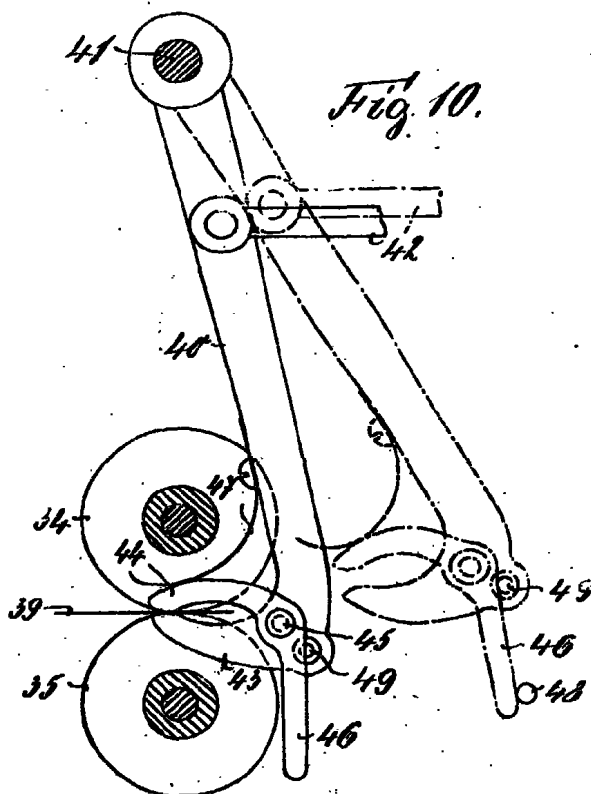
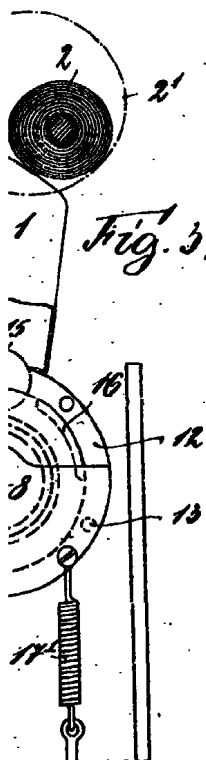
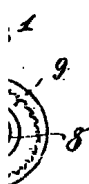
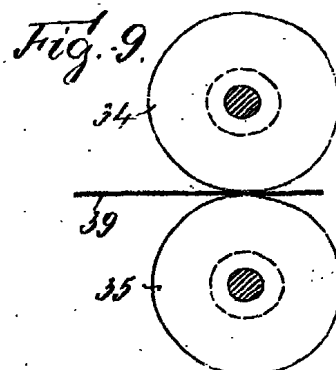
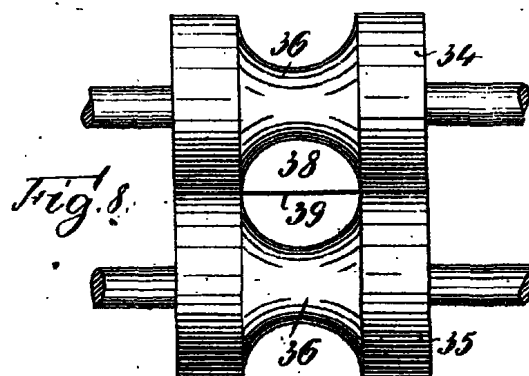
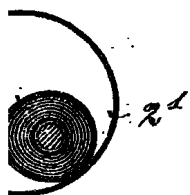


Fig. 11.

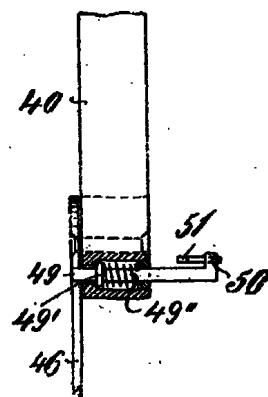


Fig. 12.

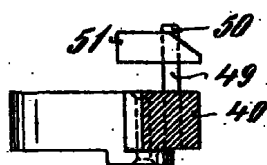


Fig. 5.

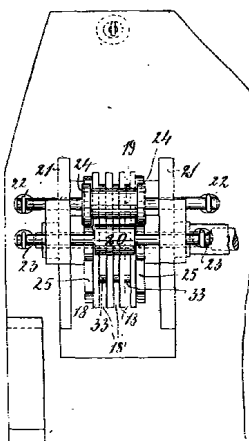


Fig. 6.

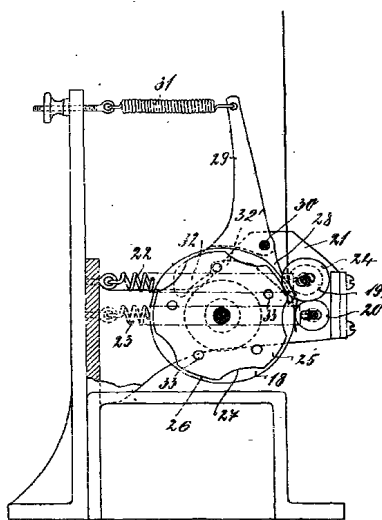
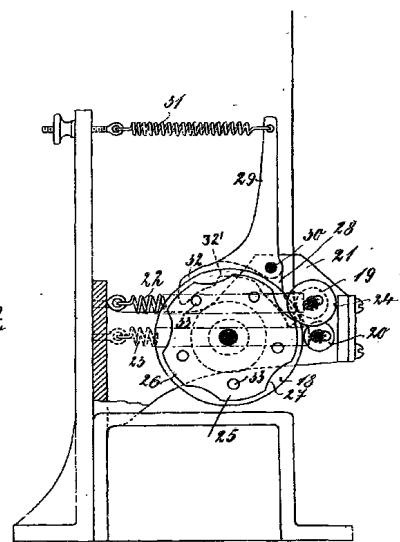


Fig. 7.



[This Drawing is a full size reproduction of the Original.]

Fig 5.

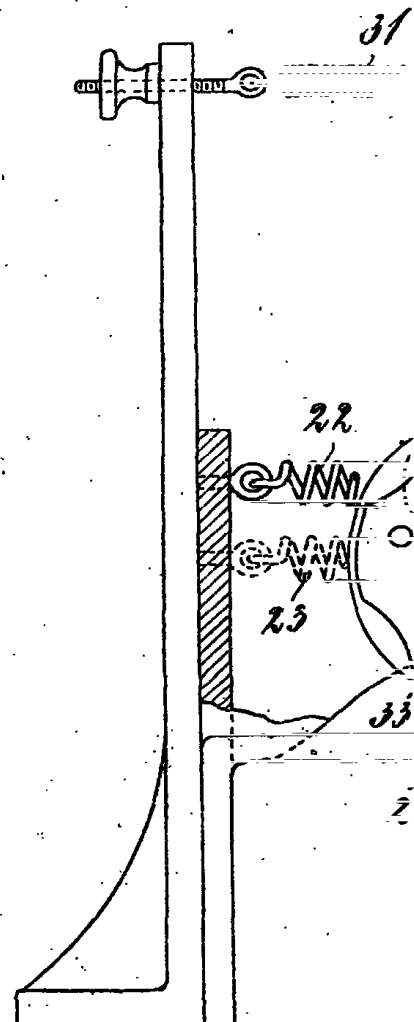
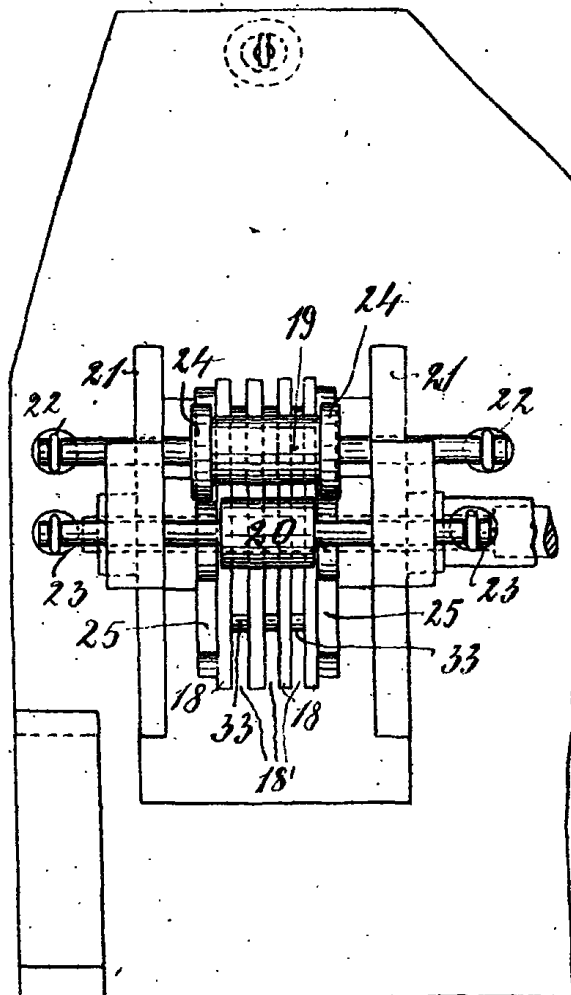


Fig. 6.

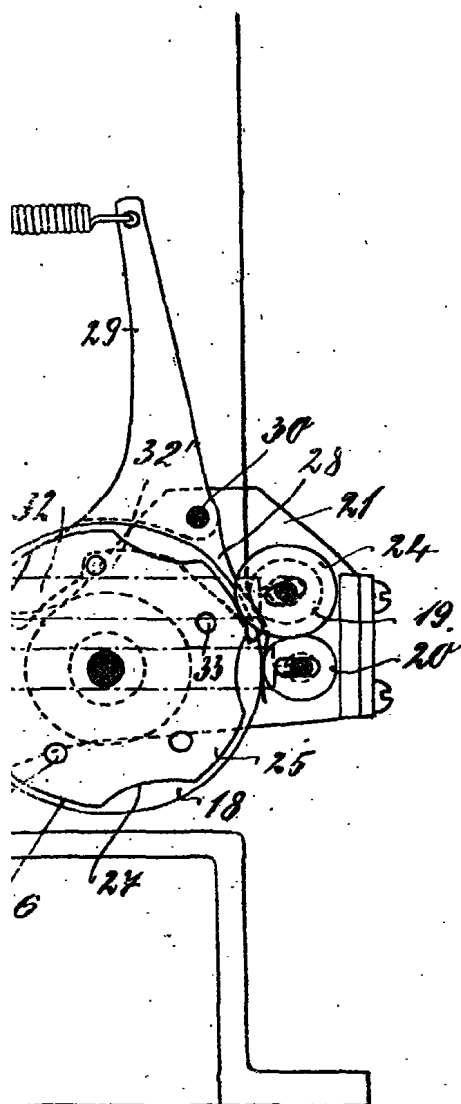
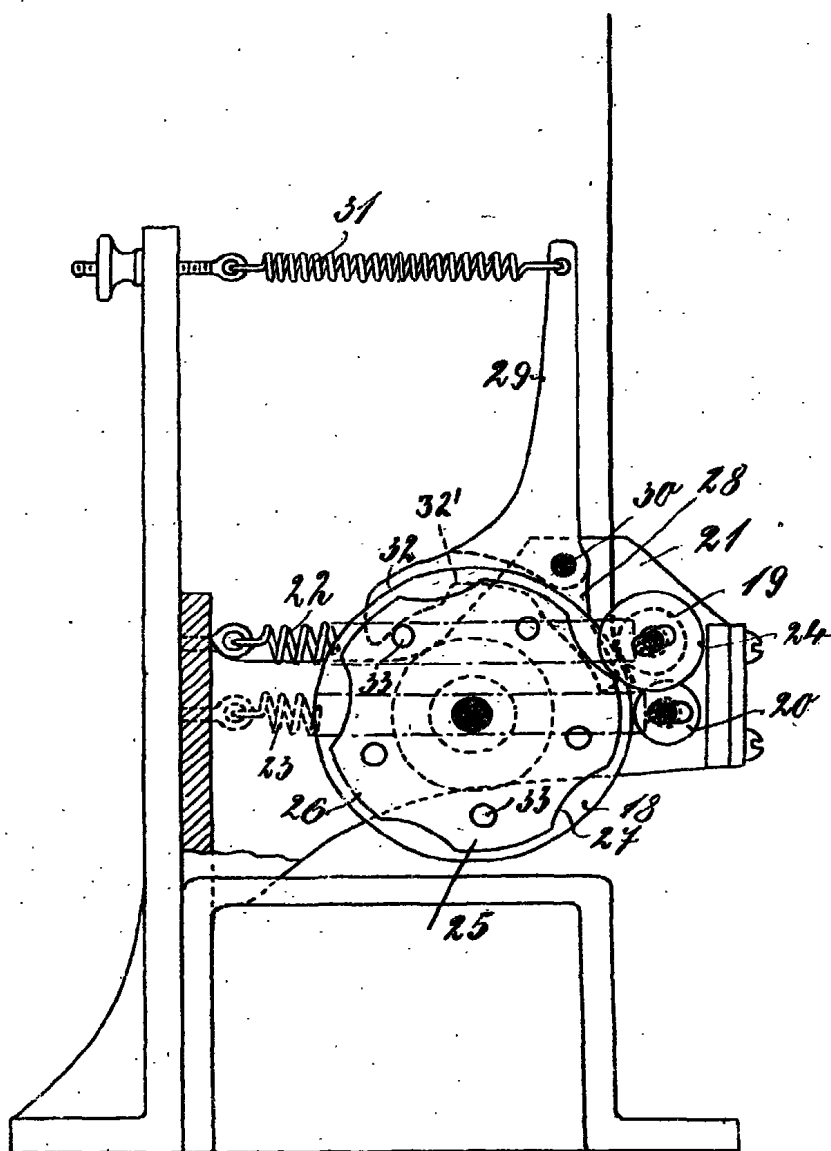
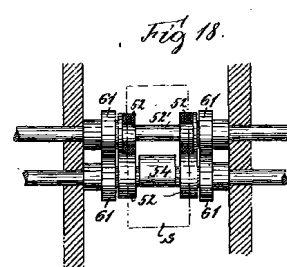
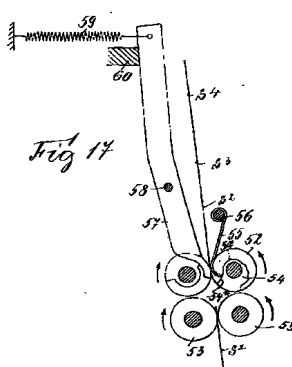
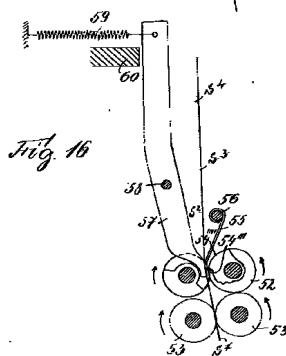
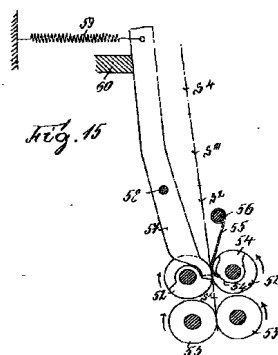
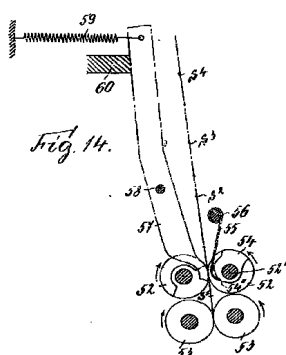
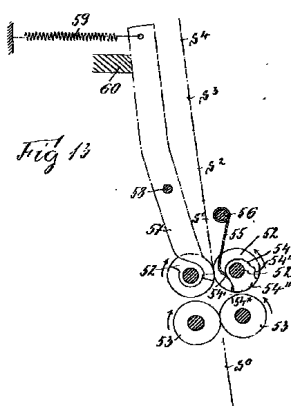


Fig. 7.





11. What is the main purpose of the passage?

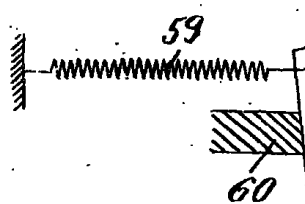


Fig 13.

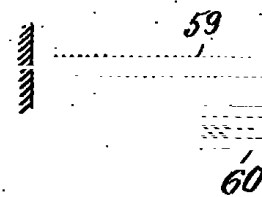


Fig. 14.

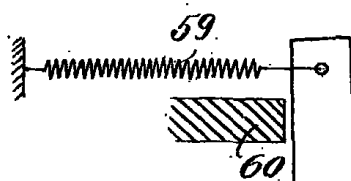
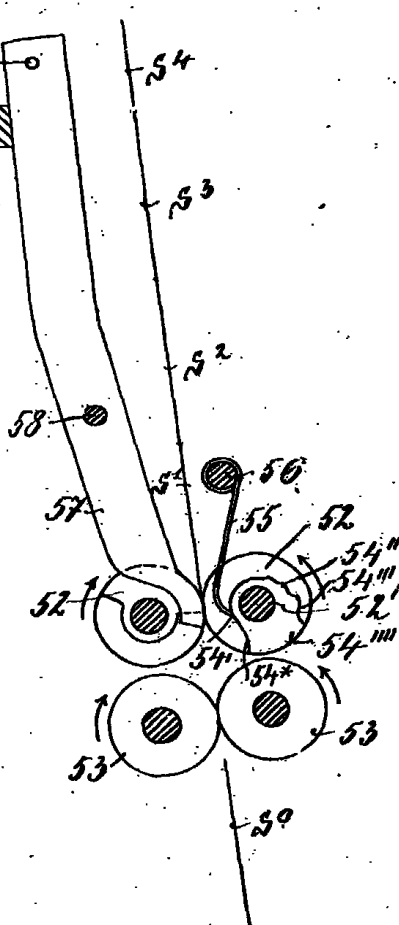


Fig. 16

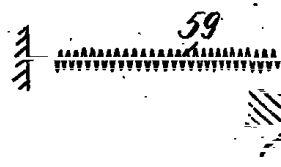
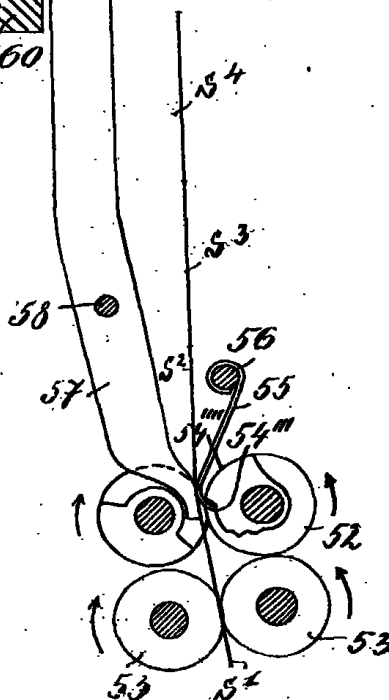


Fig. 17.



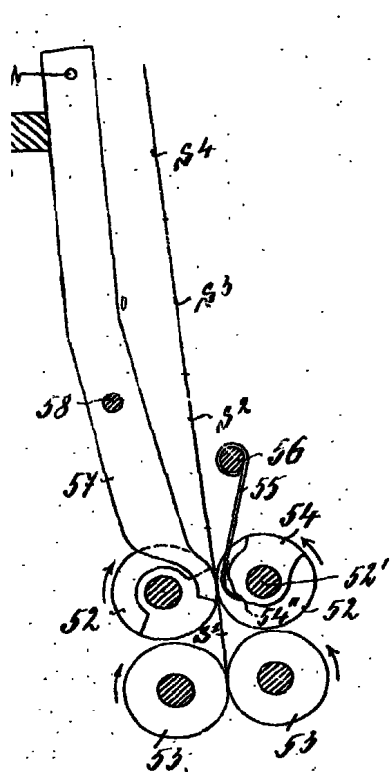


Fig. 15

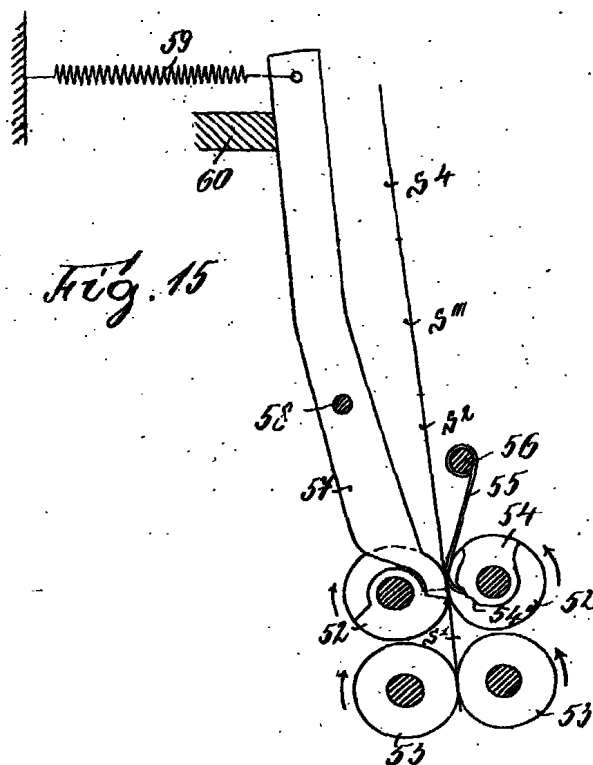


Fig. 18.

