United States Patent

[11] **3,556,008**

[72] Inventors **Henry A. Branfield**
Chesham;
Harold R. Balding, Hornsey, England

[21] Appl. No. **797,728**
[22] Filed **Feb. 10, 1969**
[45] Patented **Jan. 19, 1971**

[73] Assignee **A. B. Dick Company**
Niles, Ill.
a corporation of Illinois

[32] Priority **Feb. 16, 1968**
[33] **Great Britain**
[31] **9550/67**

[54] INK CONTAINER MOUNT WITH SELECTIVELY OPERATIVE SPRINGS FOR EXPELLING INK

16 Claims, 9 Drawing Figs.

[52] **U.S. Cl.** **101/350,** 101/365, 101/366, 222/327, 222/340
[51] **Int. Cl.** **B41f 31/08**
[50] **Field of Search** 101/350, 356, 360, 363, 365, 366, 204, 207, 210, 148; 222/95, 97, 326, 327, 336, 340, 341, 386, 386.5; 401/150, 152, 162, 167, 180; 118/259

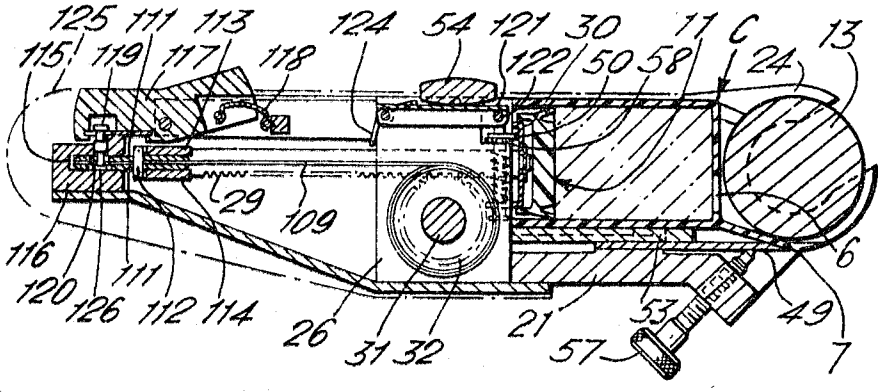
[56] **References Cited**

UNITED STATES PATENTS

2,998,767	9/1961	Vandercook et al.	101/269
3,354,823	11/1967	Lake	101/366X

Primary Examiner—Robert E. Pulfrey
Assistant Examiner—J. Reed Fisher
Attorney—McDougall, Hersh, Scott & Ladd

ABSTRACT: A device for mounting a disposable ink-filled cartridge on a duplicating machine and for applying pressure to the ink in the cartridge to expel it gradually on to a first inking roller of the machine. The device is adjustable for use with inks of varying viscosities in that the means for pressurizing the ink comprises a number of springs which act individually and are each able to be selectably locked in nonoperative conditions, so that a suitable combination of springs may be made operative depending on the nature of the ink.



PATENTED JAN 19 1971

3,556,008

SHEET 1 OF 4

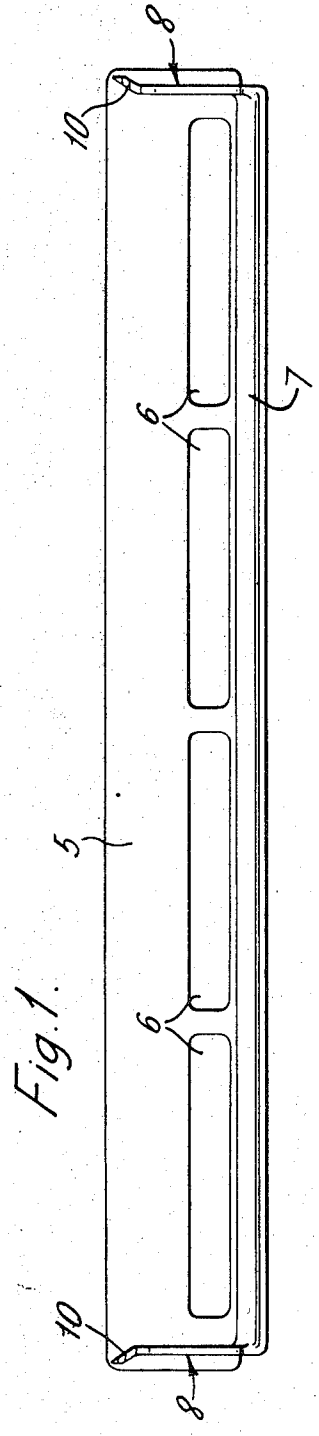


Fig. 1.

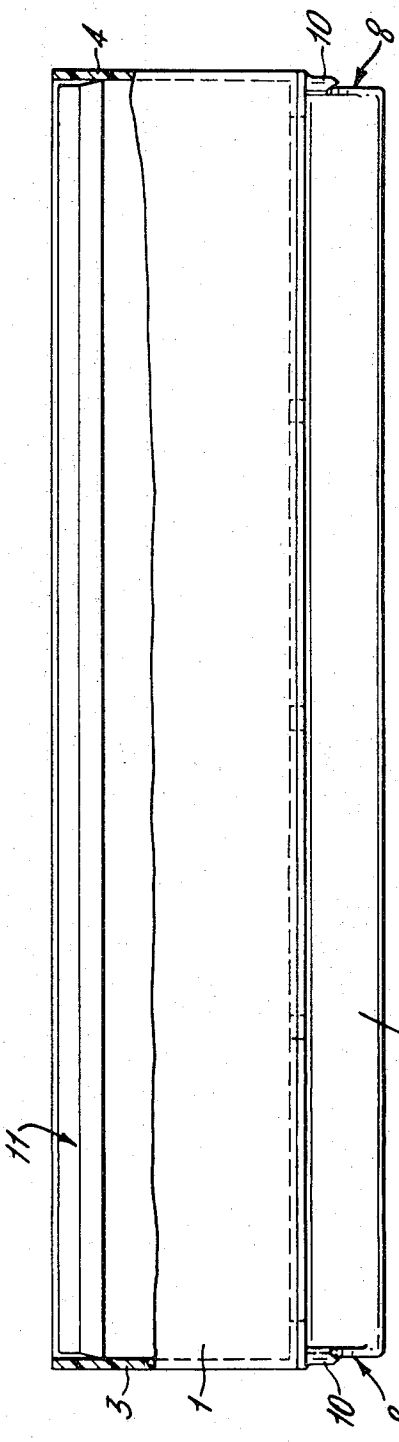


Fig. 2.

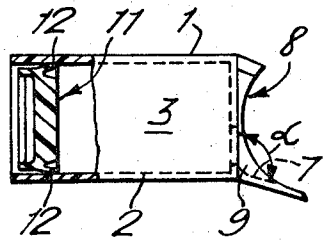
INVENTORS

HENRY ANTHONY BRANFIELD

HAROLD ROY BALDING

McDougall, Hersh, Scott & Ladd ATTYS

Fig. 3.



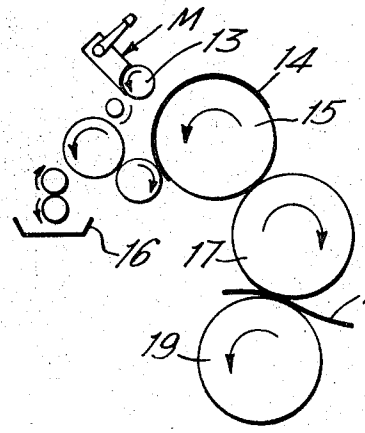


Fig. 4.

Fig. 6.

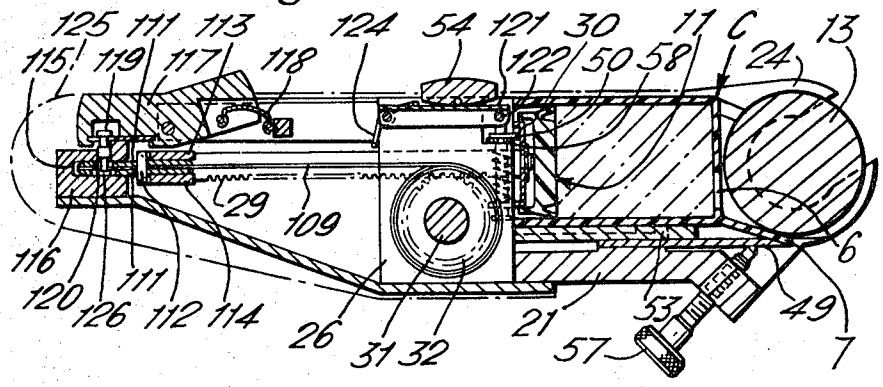


Fig. 5.

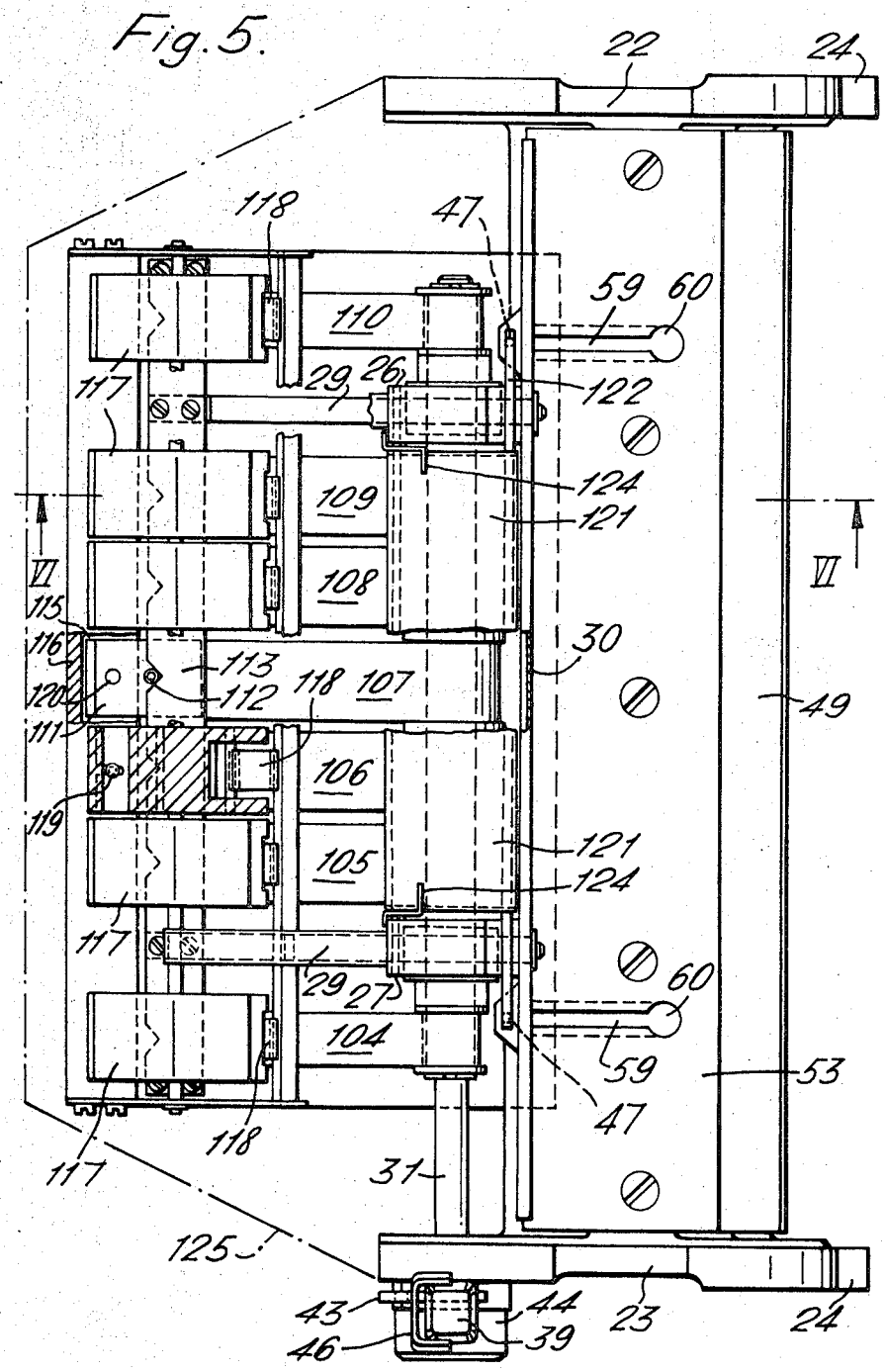

22
24
118
47
59
60
110
29
26
122
117
124
109
121
VI
VI
115
116
108
30
113
118
107
120
112
111
49
106
119
121
105
124
117
29
27
60
104
59
53
47
118
31
117
125
43
44
23
24
46
39

Fig. 7.

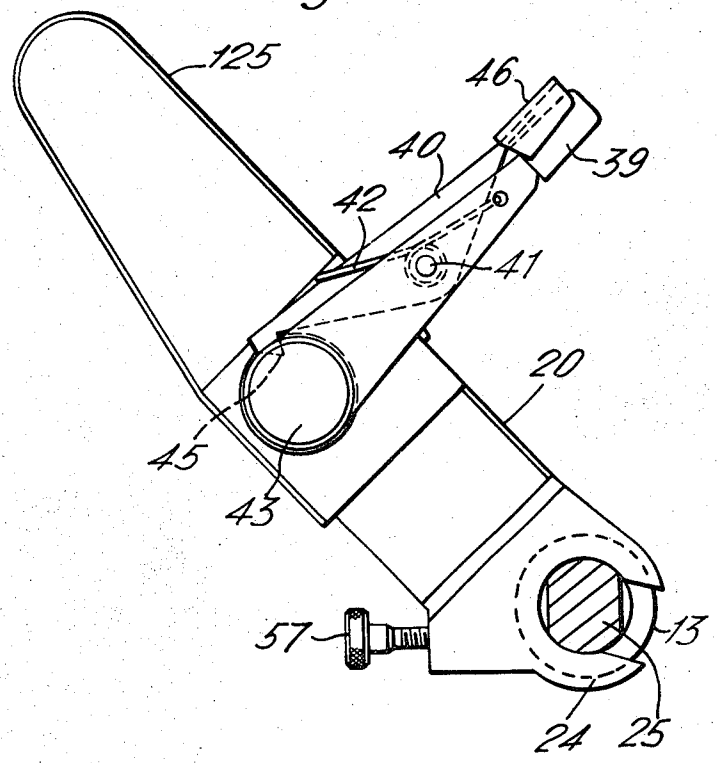
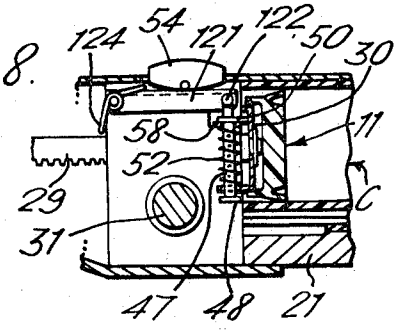


Fig. 8.



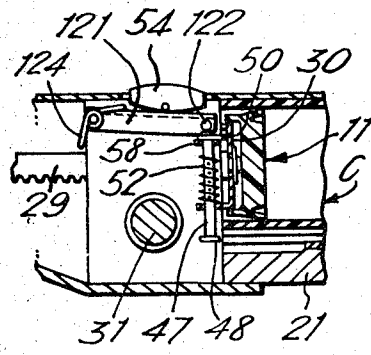


Fig. 9.

INK CONTAINER MOUNT WITH SELECTIVELY OPERATIVE SPRINGS FOR EXPELLING INK

This invention relates to printing and duplicating machines of the kind in which the supply of printing ink is to a narrow gap defined between the surface of one of a plurality of inking rollers of the machine and an ink metering blade whose edge lies along the roller surface; in operation ink is metered through such gap on to the roller surface and thence transmitted to its eventual point of application to the printed or duplicated sheet to be produced. Such machines are those hereinafter referred to as being "of the kind described." Typical examples of machines of the kind described are offset duplicating machines and some types of letterpress printing machines.

In the past the printing ink, which is often very viscous, has been supplied to the ink metering gap of machines of the kind described by forming a "pool" of ink in the elongate troughlike space defined between the surface of the first inking roller and the adjacent face of the metering blade, which space is known as the "ink fountain" of the machine and will hereinafter be referred to as such. Adjusting screws are usually associated with the said metering blade whereby the position of its edge relative to the surface of the first inking roller, and thus the width of the ink metering gap at various points in the length thereof, may be adjusted as desired so as to control the quantity of ink supplied to such inking roller.

Continued exposure causes printing inks to dry up or become contaminated and as a result, if the machine is to continue to operate s efficiently, the said ink fountain should be cleansed of ink at the end of each day's use. Cleaning of subsequent inking rollers downstream of the one already mentioned need not, on the other hand, be carried out as frequently as they only carry a thin film of ink; indeed, if slow-drying ink is used and the machine is in frequent use, such rollers need be cleansed only at long intervals or when the ink becomes contaminated. Nevertheless, daily removal of what remains of the supply of ink from the ink fountain is a time-consuming and unpleasant task and it is the primary object of the present invention to provide means whereby it may be avoided.

Application No. 707,636 filed on Feb. 23, 1968 discloses the concept of providing the supply of printing ink for a machine of the kind described not by placing the ink directly in the ink fountain to form an open "pool" of ink situated on one side of an inking rollers as in the past but rather by supplying the ink in a container which is adapted to be removably mounted on the machine, and also in the provision, as either a fixed or a readily removable part of the machine of means for applying pressure to the ink in such a container whereby it may gradually be expelled from the latter and metered on to an inking roller of the machine.

The use of such an ink container has two primary advantages over previous arrangements in which, as already mentioned, the ink supply was in the form of a pool of ink contained in the ink fountain of the machine. Thus, firstly, the container may be made easily mountable on and removable from a machine without an operator having to handle any components which may be fouled with ink. Secondly the container may be so constructed that, whilst it is in use on a machine, the ink both in the container and in transit between the same and an adjacent inking roller is maintained substantially out of contact with the atmosphere; as a result the container may be left in position on the machine for a period which will only, in practice, be limited by the periodic necessity to clean the inking rollers of the machine, and the need for daily cleaning of the machine is avoided. Further, pressurized feeding of the ink on to the associated inking roller a results in an adequate supply of ink over the whole length of the roller even if, as is often the case in practice, the ink take up from the roller varies substantially along its length. Moreover wastage of ink is almost entirely avoided as virtually the whole quantity of ink supplied will be used up; daily removal of ink from the ink fountain, on the other hand, leads to considerable wastage.

The said application No. 707,636 further discloses means for mounting such an ink container on a machine of the kind described, together wt with machines incorporating such mounting means.

It is an object of the present invention to provide means for mounting such an ink container on a machine of the kind described, which mounting means is particularly adapted for use when it is desired to employ inks of varying viscosities and, as a result, it is desirable for the operator to be able suitably to adjust the ink pressurizing force depending on the viscosity of the ink being used.

The viewed from one aspect the invention provides a device for mounting an ink container on a printing or duplicating machine of the kind described, which ink container has an elongate lip arranged to define an ink metering gap between itself and the surface of an inking roller and has at least one ink outlet opening in a wall thereof adjacent said lip, such device including: means for applying pressure to the ink in said container to expel ink therefrom via said outlet opening; spring means for driving said pressure applying means, said spring means comprising a plurality of springs each arranged to act separately on said pressure applying means; and means enabling an operator to select which one or more of said springs is to be operative at any one time.

It is a further object of the invention to provide a machine of the kind described incorporating such a mounting means.

Thus viewed from another aspect of the invention provides a printing or duplicating machine of the kind described, incorporating means for mounting an ink container on the machine, which ink container has an elongate lip arranged to define an ink metering gap between itself and the surface of an inking roller and has at least one ink outlet opening in a wall thereof adjacent said lip, such mounting means including: means for applying pressure to the ink in said container to expel ink therefrom via said outlet opening; spring means for driving said pressure applying means, said spring means comprising a plurality of springs each arranged to act separately on said pressure applying means; and means enabling an operator to select which one or more of said springs is to be operative at any one time. It will be appreciated that the container mounting means of each ma such a machine may be an integral or a removable part of the machine.

In a preferred form of the invention the arrangement is such that the action of withdrawing said pressure applying means causes all of said springs to be loaded, the said selector means being operable to lock in its loaded condition the or each spring which it is desired should not act on the pressure applying means. Preferably the apparatus then includes means automatically operative to prevent operation of said selector means ro release a loaded and locked spring during operation.

The said springs are preferably constant rate coiled leaf spring.

In a preferred embodiment of the invention the said mounting device comprises a boxlike housing for the ink container, such housing carrying an adjustable blade positioned to engage the back of the aforementioned lip of an ink container when the latter is mounted in the housing, so as to enable the width of the ink metering gap defined between the said lip and the associated inking roller to be adjusted at various points along its length.

The said pressure applying means may include a plunger or roller arranged to act directly on the ink in the container or on a separate inner container or sac to be positioned within the first mentioned container in use, or such means may include pusher means adapted to act on a plunger or roller provided in conjunction with the said container.

Preferably the said pressure applying means includes pusher means for acting on a plunger in the said ink container, and such pusher means incorporates means selectively engageable with the body of an ink container mounter in the device to bring about ejection of said container from the device by operation of said pusher means. The

The said mounting means may if desired be adapted to mount an ink container which is provided with its own integral inking roller.

In order that the invention may be more readily understood one embodiment of a container mounting device according to the invention, and of a container which it is adapted to mount, will now be described by way of example and with reference to the accompanying drawings, in which:

FIG. 1 is a front elevation of an ink container;

FIG. 2 is a side elevation thereof as seen from the top of FIG. 1, partly broken away to show the interior;

FIG. 3 is an end elevation thereof as seen from the left of FIG. 1, again partly broken away;

FIG. 4 is a diagram illustrating the arrangement of the rollers in a typical offset lithographic duplicating machine and also indicating the preferred position on such machine of the container mounting means of the invention;

FIG. 5 is a plan view, partly in section and with parts broken away, of a container mounting device according to the invention;

FIG. 6 is a section of the line VI–VI of FIG. 5;

FIG. 7 is a view in end elevation of the device of FIGS. 5 and 6; and

FIG. 8 and 9 are sectional views illustrating two respective positions of a mechanism in the mounting device for ejecting a container therefrom.

It will be observed that FIGS. 6, 8 and 9 show a container in position in the mounting device therefor, this container being indicated at C and being of the kind illustrated in FIGS. 1 to 3.

Referring first for the sake of clarity to the container illustrated in FIGS. 1 to 3, such container is moulded from a suitable synthetic plastics material and is of elongate boxlike form having front and rear sidewalls 1 and 2, end walls 3 and 4, and an outlet wall 5.

The outlet wall 5 of the container is formed with four ink outlets 6 and has a somewhat flexible lip 7 extending from one side of the wall so as to form an obtuse angle α therewith (see FIG. 3). A transverse ridge 8 of arcuate outline is formed at each end of the obtuse-angled surface defined by the wall 5 and the lip 7, the curvature of such ridges being chosen to cause them to fit the curved surface of the first inking roller of a duplicating machine on which the container is to be mounted. Thus when the container is so mounted on a machine the ridges 8 will seat on the roller surface and so maintain both the wall 5 and the lip 7 of the container slightly spaced from such surface and separated by an elongate well 9 of substantially triangular cross section which will become filled with ink in use.

As may best be seen from FIG. 1 the ends 10 of the ridges 8 slope inwardly in what will be the direction of rotation of an associated inking roller in use so as to lead ink on such roller inwardly away from the ends thereof, it will thus be seen that the ridges 8 form barriers defining the degree of spread of the ink lengthwise of an associated inking roller, in addition to their function as spacers.

The container houses means for enabling pressure to be applied to ink therein in the form of a plunger 11 which is slidable in the container to and from the apertured outlet wall 5 thereof and is formed with sealing skirts 12 on all four sides which engage sealingly with the walls 1 to 4 of the container. Such plunger is thus movable in the container to expel ink therein out through the outlets 6 in the outlet wall 5.

In this embodiment the container is one which will be supplied to a user already filled with printing ink. A sealing strip of plastics sheet, ink-impermeable paper, or metal foil will be affixed to cover the whole of the outer surface of the wall 5 in the filled container as supplied for use, thus closing the outlets 6. A similar sealing strip may be provided at the open side of the container covering the rear face of the plunger 11 and the surrounding wall edges. Both such sealing strips will be such as to be easily removable before the container is mounted on a duplicating machine; or the strip closing the open side of the container may alternatively be made frangible by being formed with a central longitudinal series of perforations.

One form of mounting device according to the invention, for use in mounting the above-described container on a duplicating machine, will now be described with reference to FIGS. 4 to 9.

Referring first to FIG. 4 the mounting device, here indicated at M, is adapted to be mounted adjacent a first inking roller 13 of a duplicating machine so that ink is supplies to such roller from the mounted container and thence via intermediate inking rollers to an image plate or sheet 14 on a master cylinder 15, the ink being mixed en route with water supplied via further rollers from a water bath 16. The ink image is transferred from the image plate or sheet to a blanket roller 17 and thence to paper 18 to form the duplicate; 19 is an impression cylinder.

Referring now to FIGS. 5 to 7 the container mounting device is of metal construction and comprises a boxlike housing having a front wall 20, a rear wall 21 and end walls 22 and 23, the housing being open at its top and bottom. Extension ears 24 of the end walls 22 and 23 of the housing are formed to be engaged on the respective ends of a shaft 25 carrying the first inking roller 13 of a duplicating machine (see FIGS. 6 and 7) so as to permit such rollers to rotate relatively to the mounting device.

The rear wall 21 of the housing has a blade 49 (see FIG. 6) clamped thereto within the housing by means of a plate 53 which also acts as a backing plate for the ink container; such blade extends the whole length of the wall 21 and is acted upon in known manner by a series of adjusting screws 50 mounted in such rear wall, 12 such screws being provided in this particular embodiment. The blade 49 engages the rear face of the lip 7 of the ink container, whereby the width of the ink metering gap between the latter and the surface of inking roller 13 may be adjusted as desired by means of the screws 50.

At the top of the housing is a frame comprising blocks 26 and 27 extending across the same and a back web (not shown) interconnecting such blocks. Each of the blocks 26 and 27 has a rack 29 slidably mounted in a bore therein, which racks carry an elongate pusher plate 30 at their lower ends, which pusher plate is intended to engage with the plunger 11 of a container in use. The racks mesh with respective toothed wheels 32 keyed on a shaft 31 journaled in the blocks 26 and 27.

In use of the apparatus the pusher plate 30 is continuously urged against the plunger 11 by spring means so as to apply pressure to the ink in the container and cause the ink to be expelled from the container via the outlets 6 thereof. Such spring means comprises a total of seven separate springs 104 to 110 each able to act separately on the pusher 30, together with means for selecting which one or more of such springs will be operational at any one time.

The springs 104 to 110 are constant rate coiled leaf springs wound on bushes freely rotatable on the shaft 31, and the free end of each spring (remote from shaft 31) is clamped between a pair of stiffening plates 111 in which a vertical pin 112 is also mounted. Each spring is freely slidable between a pair of upper and lower bars 113 and 114 bolted to the ends of the racks 29, with which bars the pins 112 on the springs are engageable when the springs move to the right (as seen in FIG. 6) from their fully extended conditions. Clearly such engagement of one or more of the springs with the bars 113 and 114 will urge the racks, and thus the pusher 30, to the right as seen in FIG. 6 to expel ink from a container as mentioned above.

A handle 39 for winding up (i.e. extending) the springs is keyed to the outer end of the shaft 31. As shown in FIGS. 5 and 7 of the drawings the springs have just been fully wound up by rotating the handle 39 anticlockwise as seen in Fig. 7. The handle 39 carries a pawl 40 pivotally mounted at 41 and biassed in the anticlockwise sense, as seen in FIG. 7, by a spring 41. A cam disc 43 rotatably mounted on the shaft 31 is fixed to the wall 23 of the housing so as to be stationary in operation, and has a notch in which a nose 45 of the pawl 40 automatically engages when the springs are fully wound up, so as to prevent return movement of the handle. Release of the nose of the pawl from the notch in the cam disc may be effected when desired by squeezing a conveniently situated finger plate 46 mounted on the pawl and simultaneously rotating the handle slightly in the winding up direction.

Thus, the springs **104** to **110** are extended by rotating the operating handle **39** anticlockwise as seen in FIG. **7** until the nose **45** of its pawl **40** engages in the notch in the disc **43** to secure the handle in its "wound up" position. Such movement of the handle rotates the shaft **31** and the pinions **32** and thus withdraws the racks **29** and the pusher **30** whereby the bars **113** and **114** on the racks, by virtue of their engagement with the pins **112** on the springs, cause the latter to be extended. The spring or springs which it is desired should operate on the pusher **30** are then selectable in a manner now to be described.

When each spring is fully extended, as is in fact the case with all of the springs as illustrated in FIGS. **5** and **6**, its free end engages in a slot **115** in a bar **116** at the rear of the device. Each spring is associated with a selector lever **117** mounted on the frame of the device and pivotally movable between two stable positions under the influence of a toggle spring **118**, each such selector lever carrying a locking pin **119** which is engageable in an aperture **120** formed in the associated spring and its stiffener plates **111** when the spring is fully extended and received in the slot **115**. With the selector lever **117** of the spring **109** in its position shown in FIG. **6** the spring **109** is locked in its fully extended position by its associated locking pin **119** and cannot act on the pusher **30**. Thus, once all of the springs have been fully extended by winding up the handle **39** those springs which are not desired to be operative will be so locked by depressing their selector lever **117**; the spring or springs not so locked will be free to act on the pusher **30** via their pins **112**, bars **113** and **114** and the racks **29** to cause ink to be expelled from an associated container.

Each locking pin **119** is radially enlarged at its lower end **126**, such enlarged portion being arranged to engage under a shoulder of the aperture **120** in its associated spring when, that spring being locked, it nevertheless moves forward a small distance to engage with the locking pin at the very beginning of operating movement of the pusher. Such engagement prevents spring releasing movement of the selector levers of the locked springs, once operation has begun, and thus acts as a safety catch.

It will thus be understood that when the device is operating pressure is applied to the plunger **11** of a container mounted in the mounting device in the manner shown in the drawings, via the pusher plate **30**. Ink is thereby forced out of the container on to the inking roller **13** so long as the latter is rotating to carry the ink away, as the plunger moves gradually into the container under the influence of the pusher plate. It will also be observed that the ink both in the container and in transit between the latter and the roller **13** is maintained substantially out of contact with the atmosphere so that it will not dry up or be contaminated, even whilst the apparatus is not being used. As a result the container may be retained in position on a machine for a period which, as previously mentioned, is only limited by the periodic necessity to clean the inking rollers; the pressure on the ink will preferably be released when the machine is not in use. However, the container mounting device with a partly exhausted container mounted therein may be temporarily removed from the machine when desired, e.g. at the end of each day's work or at other times when the rollers are to be cleaned. If this is to be done the ink outlets **6** or the container will first be sealed off by feeding a strip of sheet material such as suitable ink-permeable paper or metal foil into the gap between such outlets and the inking roller **13**; such strip will stick to the wall **5** of the container to seal the outlets **6** and the mounting device and container may then be lifted off the machine without ink being dragged from the outlets by adhesion to the roller **13** as would occur in the absence of such a sealing strip.

Means are provided in the mounting device for facilitating the removal of an exhausted container therefrom once the mounting device has been removed from the duplicating machine. Referring to FIGS. **5**, **6**, **8** and **9**, such means comprise a pair of ejector pins **47** formed with heads **48** mounted for axial movement in respective pairs of lugs **50** and **51** extending rearwardly from the pusher plate **30**, so that such ejector pins are movable in directions at right angles to the front and rear walls **20** and **21** of the container mounting device. Respective compression springs **52** engage between the lug **51** and a circlip **58** (FIG. **9**) on each ejector pin so as to urge the latter towards the said front wall **20**, the movement of the pins in that direction being limited by engagement of the said circlips **58** with the lugs **50**. The ejector pins thus have normal inoperative positions relative to the pusher plate **30** as illustrated in FIGS. **6** and **8**, and when they are in such positions relative to the pusher plate and the latter moves into the ink container in operation the heads **48** of the ejector pins travel just clear of the inside surface of the wall **2** of the container without positively engaging the latter. Means are provided for depressing the ejector pins against their springs **52** into operative positions thereof as illustrated in FIG. **9**; such means comprise an operating button **54** mounted in an opening in the wall **20** of the mounting device and acting on an elongate pivotally mounted plate **121** to depress the ejector pins **47** via a bar **122** carried by such plate and engageable with the ejector pins. The plate **122** is biased to its inoperative position by springs **124** acting against the blocks **26** and **27**. Upon depression of the button **54** the bar **122** engages the ejector pins **47** to depress them against their springs **52** to their said operative positions.

The operation of the container ejector mechanism is as follows. The mounting device having been removed from the machine, the pusher plate **30** is first fully withdrawn by turning the winding up handle **39** anticlockwise as seen in FIG. **7**. The ejector pins are then depressed to their operative positions by means of the operating button **54**, which causes the heads **48** of the ejector pins to move beyond the plane of the wall **2** of the container (see FIG. **9**). The pusher plate is now moved into the container again by rotation of the handle **39** so that the ejector pins engage the adjacent edge of the container wall **2** and move the container with them; the heads **48** of the ejector pins are guided during such movement in undercut slots **59** in the backing plate **53** already mentioned so as to maintain the ejector pins in their depressed operative positions when they have moved beyond the influence of their operating bar **54**. When the mechanism reaches the end of its container ejecting travel the heads of the ejector pins are automatically released from the slots **59** via enlargements **60** thereof so that the ejector pins return automatically to their inoperative positions relative to the pusher plate **30** under the influence of their springs **52**. The container may now easily be removed from its mounting device without handling any ink-fouled parts thereof.

The mounting device is provided with an enclosing casing **125** formed with an opening to give access to the selector levers **117**.

In a variation of the above-described mounting device the extremities of the leaf springs **104** to **110**, i.e. the portions clamped between the stiffening plates **111**, are replaced by rigid links pivotally connected to the ends of the springs and apertured to receiving the locking pins. Any possible misalignment between the ends of the springs and the slot **115** in the bar **116** i thereby prevented.

It will thus be seen that the above-described container mounting device according to the invention provides an efficient means of mounting an ink container on a duplicating machine, and of operating the same to expel ink in the desired manner, whilst enabling the container to be sealed and removed from the machine without difficulty when desired.

We claim:

1. A device for mounting an ink container on a printing or duplicating machine of the kind described, which ink container has an elongate lip arranged to define an ink metering gap between itself and the surface of an inking roller and has at least one ink outlet opening in a wall thereof adjacent said lip, such device including: means for applying pressure to the ink in said container to expel ink therefrom via said outlet opening; spring means for driving said pressure applying

means, said spring means comprising a plurality of springs each arranged to act separately on said pressure applying means; and means enabling an operator to select which one or more of said springs is to be operative at any one time.

2. A device as claimed in claim 1, wherein the arrangement is such that the action of withdrawing said pressure applying means causes all of said springs to be loaded, the said selector means being operable to lock in its loaded condition the or each spring which it is desired should not act on the pressure applying means.

3. A device as claimed in claim 2, including means automatically operative to prevent operation of said selector means to release a loaded and locked spring during operation.

4. A device as claimed in claim 1, wherein each of said springs is a constant rate coiled leaf spring.

5. A device as claimed in claim 1, which comprises a boxlike housing for the ink container, such housing carrying an adjustable blade positioned to engage the back of the aforementioned lip of an ink container when the latter is mounted in the housing, so as to enable the width of the ink metering gap defined between the said lip and the associated inking roller to be adjusted at various points along its length.

6. A device as claimed in claim 1, wherein the said pressure applying means includes a plunger or roller arranged to act directly on the ink in the said container.

7. A device as claimed in claim 1, wherein the said pressure applying means includes pusher means adapted to act on a plunger or roller provided in conjunction with the said container.

8. A device as claimed in claim 1, wherein the said pressure applying means includes pusher means for acting on a plunger in the said ink container, and such pusher means incorporates means selectively engageable with the body of an ink container mounted in the device to bring about ejection of said container from the device by operation of said pusher means.

9. A printing or duplicating machine of the kind described, incorporating means for mounting an ink container on the machine, which ink container has an elongate lip arranged to define an ink metering gap between itself and the surface of an inking roller and has at least one ink outlet opening in a wall thereof adjacent said lip, such mounting means including means for applying pressure to the ink in said container to expel ink therefrom via said outlet opening; spring means for driving said pressure applying means, said spring means comprising a plurality of springs each arranged to act separately on said pressure applying means; and means enabling an operator to select which one or more of said springs is to be operative at any one time.

10. A printing or duplicating machine as claimed in claim 9, wherein the arrangement is such that the action i of withdrawing said pressure applying means causes all of said springs to be loaded, the said selector means being operable to lock in its loaded condition the or each spring which it is desired should not act on the pressure applying means.

11. A printing or duplicating machine as claimed in claim 10, including means automatically operative to prevent operation of said selector means to release a loaded and locked spring during operation.

12. A printing or duplicating machine as claimed in claim 9, wherein each of said springs is a constant rate coiled leaf spring.

13. A printing or duplicating machine as claimed in claim 9, wherein said mounting means comprises a boxlike housing for the ink container, such housing carrying an adjustable blade positioned to engage the back of the aforementioned lip of an ink container when the latter is mounted in the housing, so as to enable the width of the ink metering gap defined between the said lip and the associated inking roller to be adjusted at various points along its length.

14. A printing or duplicating machine as claimed in claim 9, wherein the said pressure applying means includes a plunger or roller arranged to act directly on the ink in the said container.

15. A printing or duplicating machine as claimed in claim 9, wherein the said pressure applying means includes pusher means adapted to act on a plunger or roller provided in conjunction with the said container.

16. A printing or duplicating machine as claimed in claim 9, wherein the said pressure applying means includes pusher means for acting on a plunger in the said ink container, and such pusher means incorporates means selectively engageable with the body of an ink container mounted in the device to bring about ejection of said container from the device by operation of said pusher means.