Oct. 19, 1954 A. J. FARKAS ET AL 2,691,936

DEVICE FOR MARKING ARTICLES

Filed Dec. 1, 1950 3 Sheets-Sheet 1

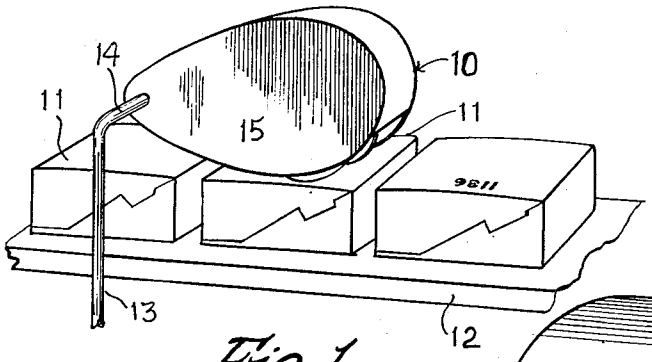


Fig. 1.

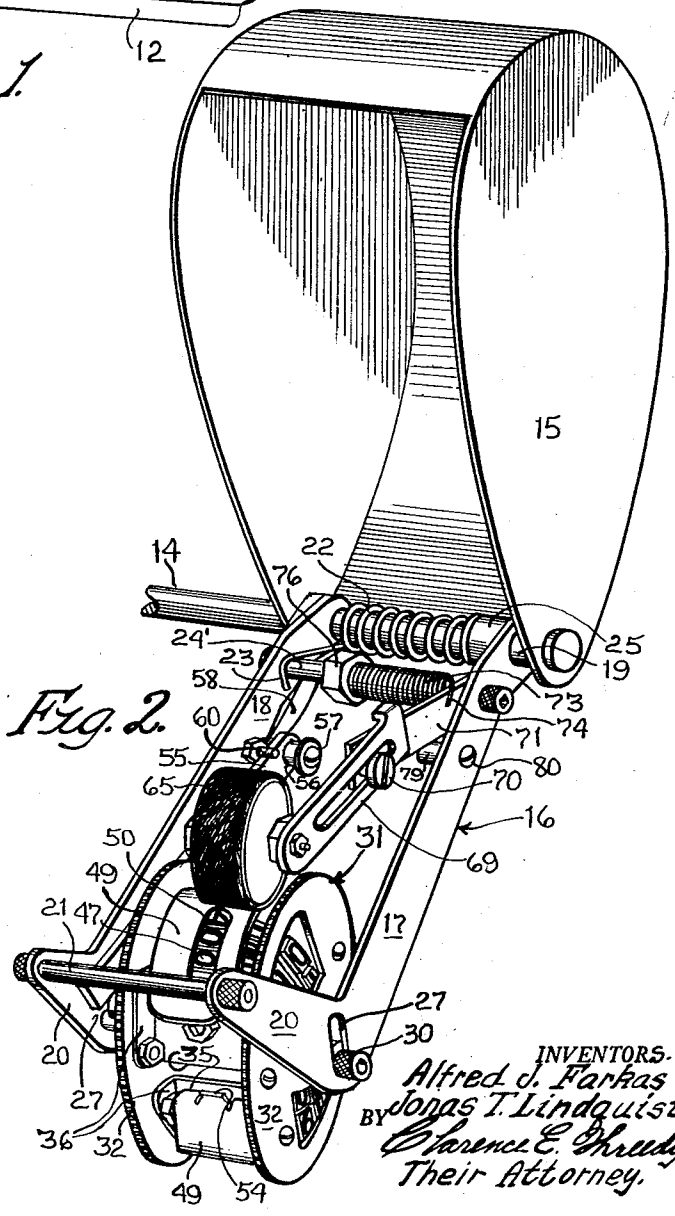


Fig. 2.

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DEVICE FOR MARKING ARTICLES

Filed Dec. 1, 1950 3 Sheets-Sheet 2

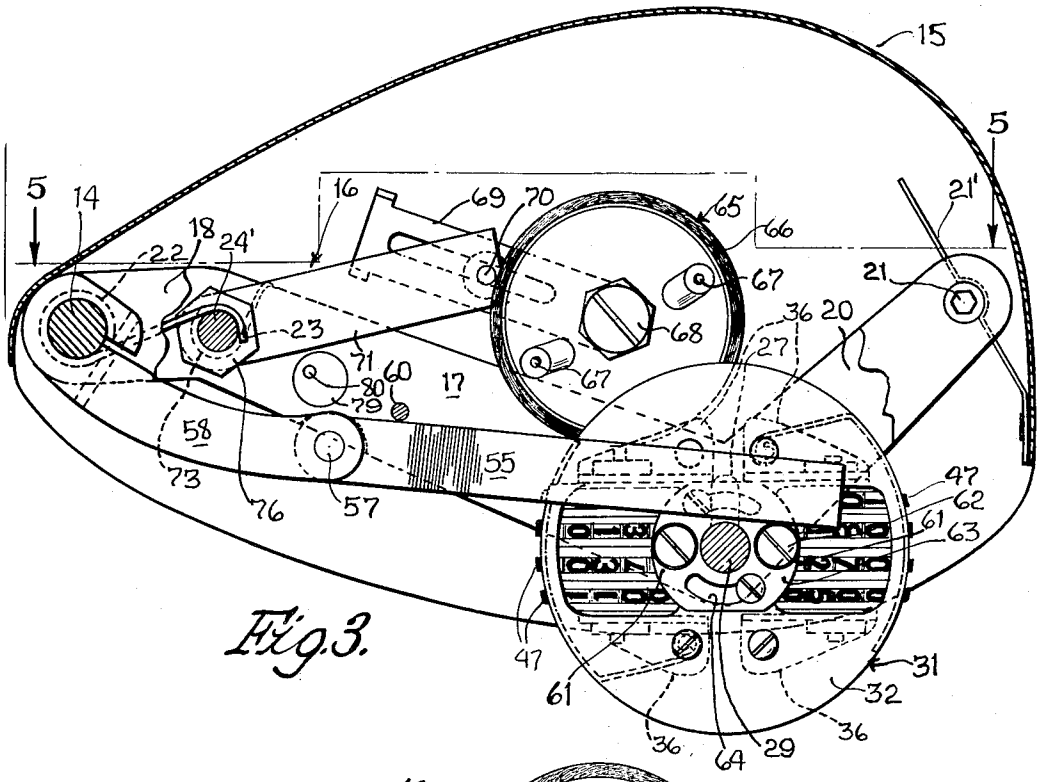


Fig. 3.

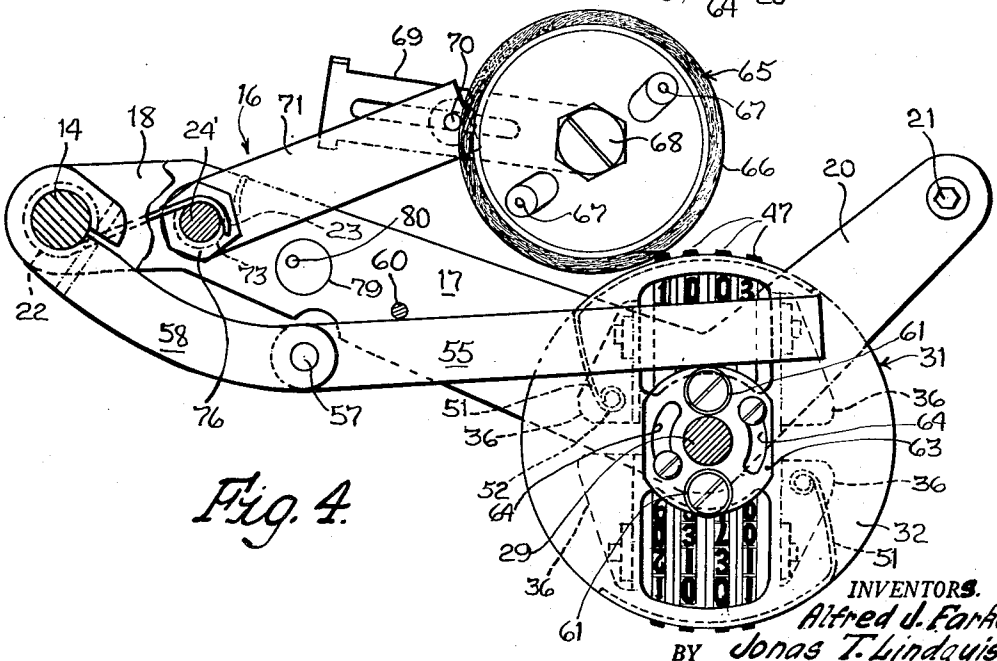


Fig. 4.

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DEVICE FOR MARKING ARTICLES

Filed Dec. 1, 1950 3 Sheets-Sheet 3

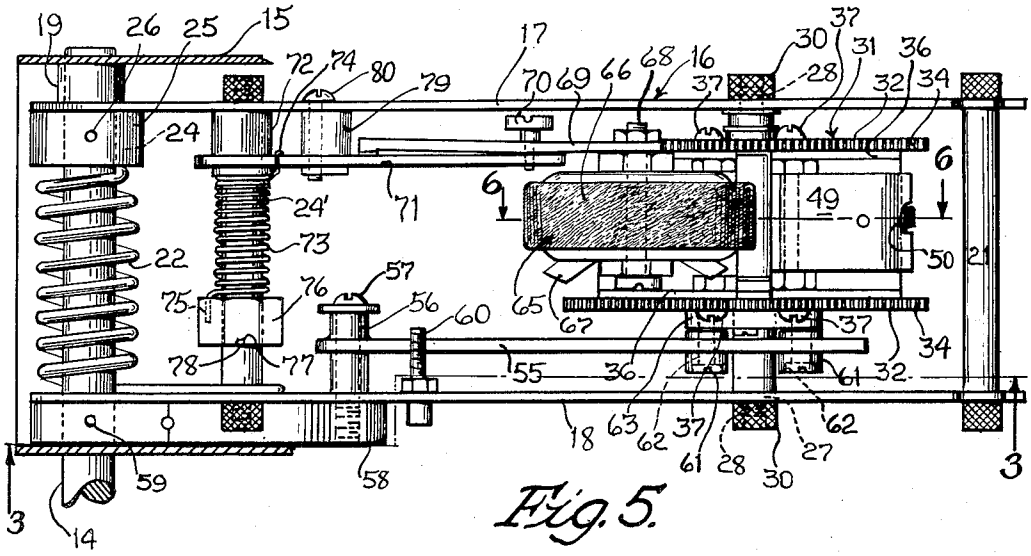


Fig. 5.

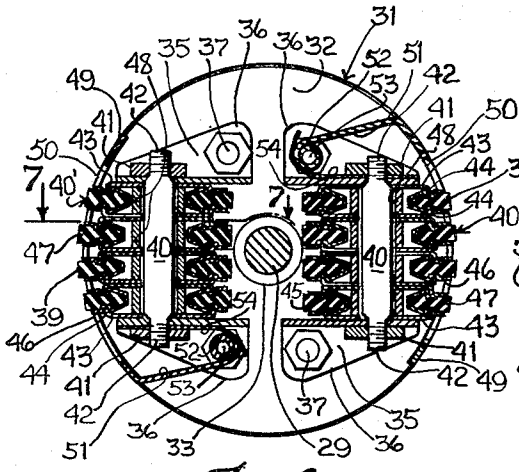


Fig. 6.

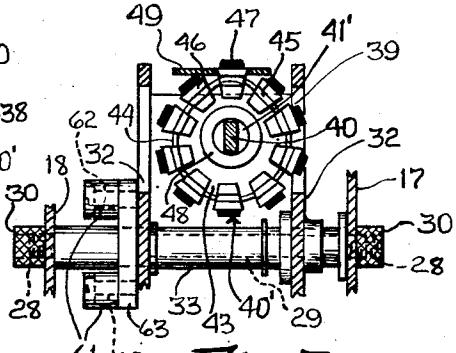


Fig. 7.

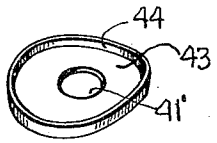


Fig. 8.

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UNITED STATES PATENT OFFICE

2,691,936

DEVICE FOR MARKING ARTICLES

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Application December 1, 1950, Serial No. 198,656

5 Claims. (Cl. 101—35)

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This invention relates to certain new and useful improvements in devices for marking articles and more particularly to a device for marking upon a moving package, coding or other identifying indicia during the movement of a package upon a traveling conveyor.

An object of the invention is the provision of a device having a simple and sturdy construction operable by a package to engage therewith active type characters of a type assembly of a type carriage for printing identifying coding or other indicia upon such package during movement thereof by a conveyor. By "active type characters" we mean such of the type characters as are disposed for engagement with the moving article.

A further and equally important object of our invention is the provision of a coding or package marking device having an arrangement for preventing overriding of the type carriage and for locating the type with respect to the package to be marked.

Another object of the invention is to provide a device for the purpose and of the character hereinafter described which may be used for printing indicia upon either the top, side, bottom, or end walls of a package under movement by a conveyor.

Another object of the invention is to provide an arrangement for aligning the type characters in the type carriage wheel.

An equally important object of the invention is to provide a device of this character wherein the printing mechanism is confined within an enclosure such as a hood or the like.

A further object of the invention is to provide a device of the character hereinafter described which comprises relatively few parts and one which may be economically manufactured and sold.

Other objects will appear hereinafter.

The invention consists in the novel combination and arrangement of parts to be hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawings showing the preferred form of construction, and in which:

Fig. 1 is a fragmentary perspective view showing our improved package marking and coding device in applied position with respect to a package to be marked;

Fig. 2 is a perspective view of the same showing the hood thereof in open position;

Fig. 3 is a sectional detail view taken substantially on line 3—3 of Fig. 5 with the hood in closed position with respect to the typing mechanism;

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Fig. 4 is a sectional detail view similar to that shown in Fig. 3 but showing the type carriage in position to engage a package;

Fig. 5 is a sectional detail view taken substantially on line 5—5 of Fig. 3;

Fig. 6 is a sectional detail view of the type carriage wheel taken substantially on line 6—6 of Fig. 5;

Fig. 7 is a fragmentary sectional detail view of the same taken on line 7—7 of Fig. 6; and

Fig. 8 is an elevational view of one of the type holding disks embodied in the invention.

The several objects of our invention are accomplished by the preferred form of construction shown in the accompanying drawings and in which our package marking or coding device is indicated at 10.

In Fig. 1, we have illustrated the device in its relationship to packages 11 to be marked or coded. These packages 11 are mounted for movement in a horizontal plane upon a traveling conveyor 12. The marking and coding device 10 is supported in a proper position with respect to the packages 11 by a supporting bar 13 which may be attached to a frame structure (not shown) of the conveyor 12. This supporting bar 13 has a horizontally extending arm 14 to which is pivotally connected a hood 15.

A main carriage is indicated generally at 16. This main carriage supports the type or printing mechanism to be presently described. The main carriage comprises similarly constructed side plates 17 and 18 arranged in parallel spaced confronting relation with respect to each other and providing at corresponding end portions bearings 19 through which the arm 14 is journaled thereby to pivotally support the main carriage from the bar 13.

The opposite corresponding end portions of the plates 17 and 18 provide upwardly extending arms 20 connected together by a tie bar 21. This tie bar 21 cooperates with a spring latch 21' carried by the hood 15 to latch the hood in covering position with respect to the carriage 16. The carriage 16 is yieldably urged in a downward direction with respect to the arm 14 by means of a spring 22 embracing the arm 14 between the plates 17 and 18 having one end portion 23 hooked to a shaft 24' the latter serving to connect the adjacent end portions of the plates 17 and 18 together. The opposite end portion of the spring frictionally projects into a socket 24 provided by a collar 25 fixed to the arm 14 by a suitable set screw 26.

At the junction between the plates 17 and 18

and the arms 20 there are provided transversely extending elongated slots 27 in which are journaled the end portions 28 of a shaft 29. These end portions 28 of the shaft 29 are threaded to receive the retaining nuts 30. On this shaft is rotatably mounted a type carriage wheel indicated generally at 31. This type carriage wheel 31 comprises similarly constructed circular side discs 32 spaced from each other by a suitable spacer sleeve 33 and having their circumferential edges knurled as at 34 to provide gripping surfaces which surfaces when engaging the package 11 will effect rotation of the type carriage 31 about the shaft 29.

These discs 32 are connected in spaced relation with respect to each other by spaced plates 35 having upstanding flanges 36 secured to the discs 32 by nut receiving bolts 37.

The type carriage wheel 31 is shown as supporting two sets of type assemblies 38 and 39; however, the arrangement may be such as to carry more than two assemblies. Each of the type assemblies comprises a shaft 40 carried by the spacer plates 35 and fixed to such plates by means of nuts 41 threaded upon the threaded end portions 42 of the shaft 40. Mounted on the shaft 40 are type character wheels 40' each comprising confronting discs 43 having inwardly turned flanges 44 engaging in grooves 45 formed in type shoes 46. These type shoes 46 support the type character 47 and are adjustable circumferentially with respect to the discs 43. The discs 43 are spaced from each other by a spacer sleeve 48.

The shaft 40 in cross section is substantially rectangular and each of the discs has similarly shaped openings formed therein. The type characters 38 may be formed of any approved material. In order to present the type upon an arch corresponding to the circumference of the discs 32 the openings 41' of the discs of the intermediate type wheels are slightly off center with respect to each other as shown in Fig. 8 to present the type character upon such arch.

The type characters, which we term the active type characters, are properly aligned for the printing operation by means of an aligning plate 49, there being one such aligning plate for each type assembly. Each aligning plate 49 comprises an elongated slot 50 through which the active type characters project. The aligning plate provides inwardly turned end portion 51 providing sleeve 52 through which projects a stud shaft 53 for pivotally connecting the aligning plate 49 to the discs 32.

The spacer plates 35 each carry a spring latch 54 which bears against the inwardly turned portion 51 of the aligning plate to yieldably hold such plate in position with respect to the active type characters.

In order to time the engagement of the active type characters with respect to the package to be printed upon by such type characters we provide a combination anti-override and locating bar 55. This bar 55 provides at one end portion a bearing sleeve 56 through which is journaled the shaft of a connecting bolt 57 by which the bar 55 is pivotally connected to an arm 58 adjustably fixed as at 59 to the arm 14. A laterally extending stud screw 60 is carried by the side plate 18 and bears upon the bar 55 whereby to yieldably bear the bar 55 against lateral rollers 61 carried by pivot bolts 62 threaded into a plate 63. By means of slot and bolt connections 64 this plate 63 may be adjusted circumferentially

with respect to the shaft 29 to position the rollers for proper engagement with the locating bar 55.

By this arrangement the bar 55 in cooperation with the rollers 61 prevents override of the type carriage 31 as the disc 32 moves from engagement with one package to a trailing package. It also effects proper engagement of the active type projecting through the elongated slot 50 of the retaining plate 49 with respect to the package, whereby, as the package is moved beneath the type carriage 31, the active type will at the proper time engage the surface of the package to be printed upon, thereby to make a complete printing or marking upon the package.

The inking mechanism comprises an inking roller 65 having a cylindrical ink absorbing pad 66 communicating with a reservoir within the roller 65, the ink being admitted to the reservoir through normally closed nipples 67.

This inking roller is rotatably carried by a shaft 68 fixed to an arm link 69. This arm link 69 is by means of bolt and slot connections 70 adjustably connected to an arm link 71. The arm link 71 provides a bearing 72 through which is journaled the shaft 24', the ends of which are journaled through openings formed in the plates 17 and 18. Embracing this shaft 24' is a spring 73 one end of which is hooked as at 74 to the arm link 71 and the opposite end frictionally projected into a socket 75 formed in an adjustment nut 76 mounted on the shaft 24' and having a plurality of notches 77 which are adapted to selectively receive the end portions of a pin 78 carried by the shaft 24' whereby the spring 73 may be placed under the desired tension.

The arm link 71 rests on an eccentrically mounted stud 79 carried as at 80 by a plate 17. By adjusting this eccentric stud 79, the downward pivotal movement of the arm link 71 may be varied. By adjusting the arm link 69 relative to the arm link 71, the position of the inking roller upon the type carriage 31 may be adjusted for the best results.

In use the supporting bar 13 is supported from a frame element of the conveyor 12 to support the carriage 16 in the path of movement of the packages 11. By adjusting the arm 58 relative to the arm 14 the distance between the type carriage 31 and the elevator may be varied to compensate for boxes of various heights. By adjusting the collar 25 relative to the arm 14 the bearing pressure of the locating bar 55 upon the rollers 61 may also be varied to the proper degree which permits a proper rotation of the type carriage 31 by the moving package 11. Likewise, by adjusting the nut 76 relative to the shaft 24' the proper tension will be exerted upon the inking roller as will best serve the purpose.

During the operation of the device the hood normally encloses the main carriage 16 as well as the upper portion of the type carriage 31. A package or other article moving beneath the type carriage 31 by the conveyor 12 will engage the knurled edges of the type carriage discs 31 and 32 and impart rotation to the type carriage 31 whereupon the active type characters will be brought into printing engagement with respect to the surface of the package on which the indicia or other characters are to be printed. During this rotation of the type carriage 31 by movement of the package on the conveyor 12 the rotation of the type carriage 31 is yieldably restrained by the override and locating bar 55. By this arrangement, the active type will properly engage

the surface of the box on which the printing is to be made.

By constructing the type carriage **31** in the manner herein described, adjustment of the type character may be made by merely moving the type retainer plate **49** from engagement with the active type and then shifting the type characters circumferentially with respect to their respective wheels to bring the desired type characters into position for passage into the slot **50** of the retaining plate **49**. This plate not only retains the type characters in position but also effects alignment of the type characters with respect to each other.

When the device is not in use, the hood **15** may be pivoted to an open position as shown in Fig. 2, and the ink roller elevated from the position shown in Fig. 2, in which position the ink roller may remain until it is desirable to again operate the device.

For the best operation it is desirable that the adjustment between the locating bar **55** and the rollers **61** be such that during idleness of the type carriage **31** the inking roller will not be disposed on the active type character projecting through the slot **50**. By such an arrangement impressions are not likely to be formed in the inking pad of the roller which would otherwise result were the inking roller left to remain in engagement with the active type.

As before stated, our device may be used for the purpose of marking upon the side walls as well as the top walls of the box. This may be accomplished by supporting the device from the conveyor, so that the type carriage **31** will engage the adjacent side walls of a box.

The simplicity of construction of our device permits the same to be manufactured at an economical cost. The device may be used for marking upon boxes of various sizes, the construction affording the type carriage to be adjusted to accomplish that purpose.

While we have illustrated and described the preferred form of construction for carrying our invention into effect, this is capable of variation and modification without departing from the spirit of the invention. We, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail ourselves of such variations and modifications as come within the scope of the appended claims.

Having thus described our invention, what we claim as new and desire to protect by Letters Patent is:

1. A package marker comprising a supporting member, a main carriage pivotally carried by said supporting member, a retaining arm fixed to said supporting member and engageable beneath said main carriage to limit downward movement of said main carriage relative to said supporting member, spring means carried by said supporting member and acting on said main carriage for yieldably holding said main carriage into bearing engagement with respect to said arm, a type carriage rotatably supported by said main carriage and having a pair of roller bearing studs extending laterally from one side thereof, independent type assemblies carried by said type carriage, a retaining bar carried by said arm and yieldably engaging the rollers of said studs to restrain the rotation of said type carriage, and inking means in the path of rotation of type carried by said type carriage, said type carriage having a type aligning and retaining plate for engaging type of said assemblies in the path of said inking means, said retaining bar and said roller bearing studs cooperating to locate the type on the type carriage at a point from engagement with said inking means when said type carriage is stationary.

2. A package marker comprising a supporting member, a main carriage pivotally carried by said supporting member, a retaining arm fixed to said supporting member and engageable beneath said main carriage to limit downward movement of said main carriage relative to said supporting member, spring means carried by said supporting member and acting on said main carriage for yieldably holding said main carriage into bearing engagement with respect to said arm, a type carriage rotatably supported by said main carriage and having a pair of roller bearing studs extending laterally from one side wall plate thereof, independent type assemblies carried by said type carriage, a retaining means carried by said arm and yieldably engaging the rollers of said studs to restrain the rotation of said type carriage, said wall plate having adjustable connection to said type carriage to permit circumferential adjustment of said studs with respect to said retaining means, and adjustable inking means rotatably carried in the path of rotation of type carried by said type carriage, said type carriage having a type aligning and retaining plate for engaging type of said type assemblies in the path of said inking means, said retaining means and said roller bearing studs cooperating to locate the type on the type carriage at a point from engagement with said inking means when said type carriage is stationary.

3. A package marker comprising a supporting member, a main carriage pivotally carried by said supporting member, a retaining arm fixed to said supporting member and engageable beneath said main carriage to limit downward movement of said main carriage relative to said supporting member, spring means carried by said supporting member and acting on said main carriage for yieldably holding said main carriage into bearing engagement with respect to said arm, a type carriage rotatably supported by said main carriage and having a pair of roller bearing studs extending laterally from one side wall plate thereof, independent type assemblies carried by said type carriage, a retaining bar carried by said arm and yieldably engaging the rollers of said studs to restrain the rotation of said type carriage, said wall plate having adjustable connection to said type carriage to permit circumferential adjustment of said roller bearing studs with respect to said retaining bar, and inking means in the path of rotation of type carried by said type carriage, said type carriage having a type aligning and retaining plate for engaging type of said type assemblies in the path of said inking means, said retaining bar and said roller bearing studs cooperating to locate the type on the type carriage at a point from engagement with said inking means when said type carriage is stationary.

4. A package marker comprising a supporting member, a main carriage pivotally carried by said supporting member, a retaining arm fixed to said supporting member and engageable beneath said main carriage to limit downward movement of said main carriage relative to said supporting member, spring means carried by said supporting member and acting on said main carriage for yieldably holding said main carriage into bearing engagement with respect to said arm, a type carriage rotatably supported by said main carriage and having a pair of roller bear-

ing studs extending laterally from one side thereof, independent type assemblies carried by said type carriage, a retaining bar carried by said arm and yieldably engaging the rollers of said studs to restrain the rotation of said type carriage, and adjustable inking means rotatably carried in the path of rotation of type carried by said type carriage, said type carriage having a type aligning and retaining plate for engaging type of said type assemblies in the path of said inking means, said retaining bar and said roller bearing studs cooperating to locate the type on the type carriage at a point from engagement with said inking means when said type carriage is stationary.

5. A package marker comprising a supporting member, a main carriage pivotally carried by said supporting member, a retaining arm fixed to said supporting member and engageable beneath said main carriage to limit downward movement of said main carriage relative to said supporting member, spring means carried by said supporting member and acting on said main carriage for yieldably holding said main carriage into bearing engagement with respect to said arm, a type carriage rotatably supported by said main carriage and having a pair of roller bearing studs extending laterally from one side wall plate thereof, independent type assemblies carried by said type carriage, a retaining bar carried by said arm and yieldably engaging the

rollers of said studs to restrain the rotation of said type carriage, said wall plate having adjustable connection to said type carriage to permit circumferential adjustment of said roller bearing studs with respect to said retaining bar, and adjustable inking means rotatably carried in the path of rotation of said type carried by said type carriage, said type carriage having a type aligning and retaining plate for engaging type of said type assemblies in the path of said inking means, said retaining bar and said roller bearing studs cooperating to locate the type on the type carriage at a point from engagement with said inking means when said type carriage is stationary.

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