Jan. 7, 1969 W. KOHMANN 3,420,165

PRINT MEMBER ACTUATORS WITH LOST MOTION COUPLING MEANS

Filed April 28, 1967 Sheet 1 of 3

FIG. 1a

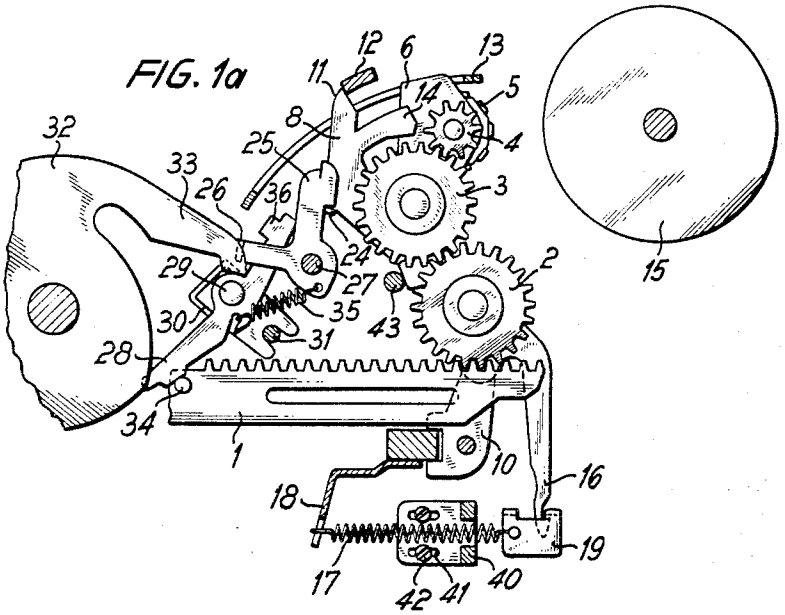


FIG. 1b

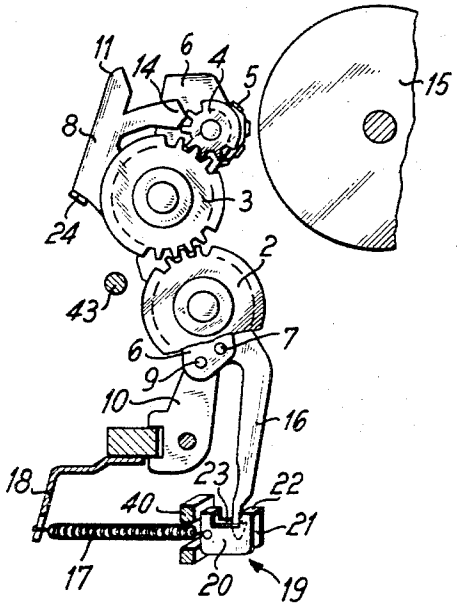
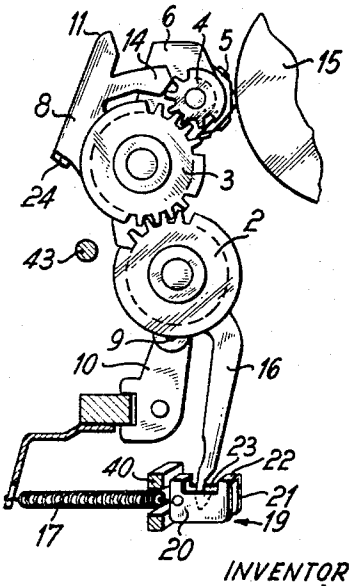


FIG. 1c



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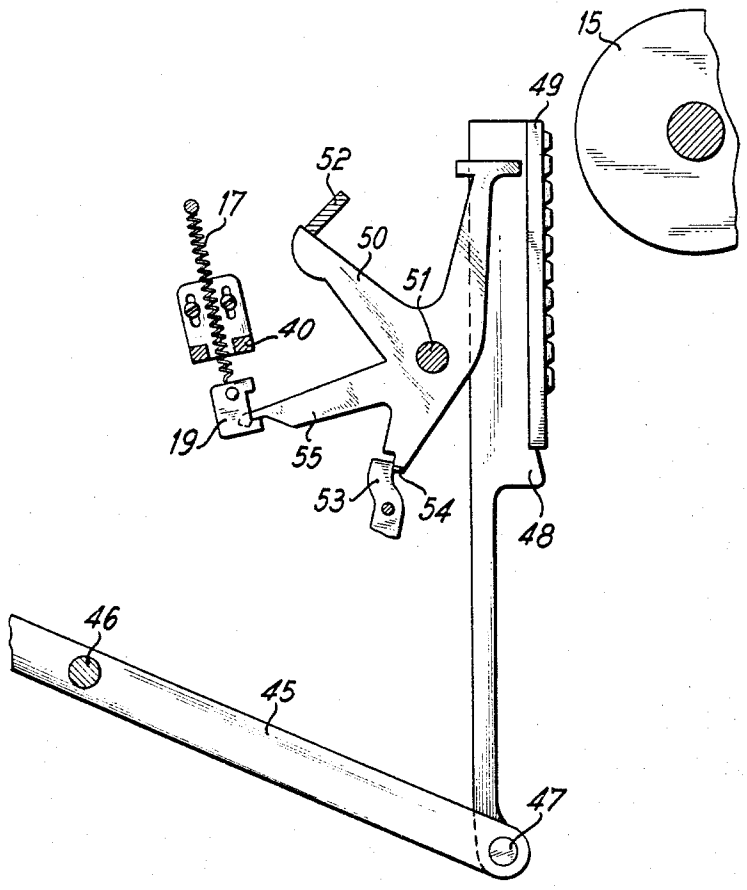
PRINT MEMBER ACTUATORS WITH LOST MOTION COUPLING MEANS

Filed April 28, 1967 Sheet 2 of 3

FIG. 2



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PRINT MEMBER ACTUATORS WITH LOST MOTION COUPLING MEANS

Filed April 28, 1967 Sheet 3 of 3

FIG. 3

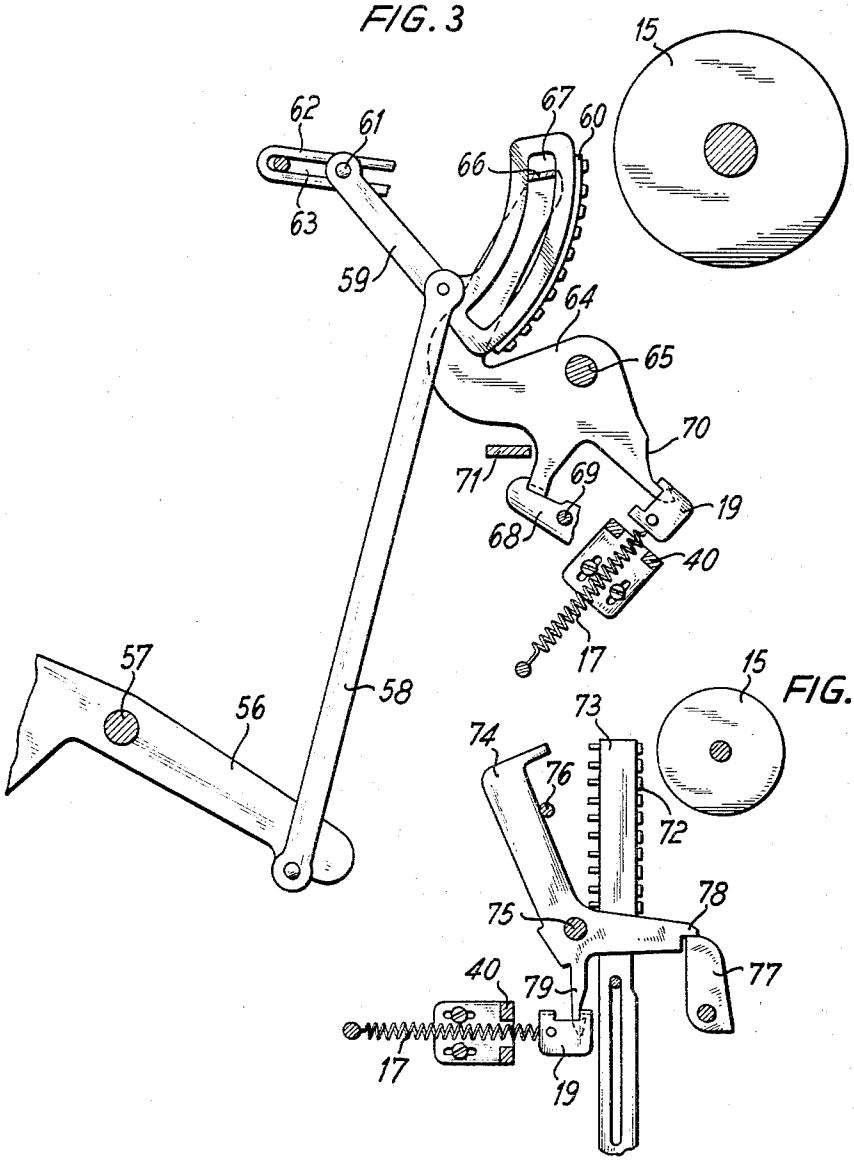

FIG. 4

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3,420,165

PRINT MEMBER ACTUATORS WITH LOST MOTION COUPLING MEANS

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U.S. Cl. 101—93 13 Claims
Int. Cl. B41j 9/10

ABSTRACT OF THE DISCLOSURE

Ordinal printing members or printing hammers for driving type carriers to a printing position, are driven by springs through lost motion couplings which are stopped shortly before the type carriers arrive in the printing position so that the printing members and type carriers are disconnected from the springs and move by inertia into the printing position.

Background of the invention

The present invention relates to a multi order printer of the type used in calculators and data processing machines and having individually settable type carriers provided with types representing the digits. The type carriers are set to a selected digital position by the setting means of the machine and returned to an initial position after the type carriers have simultaneously made imprints. The printing force is derived from force accumulators, and more particularly biasing means in the form of springs which urge the set type carriers to the printing position. As soon as the type carriers are released, the springs move the type carriers rapidly toward the printing area of a platen.

Due to the fact that the type carriers are driven by springs, it occurs frequently that the type carriers bounce back from the platen and engage the printing area repeatedly, whereby ghost imprints may be produced, and a clear and sharp imprint cannot be obtained.

However, in modern data processing machines, it is desirable that the imprints can be automatically read out by machines. It has been found that the imprints produced by the printers of the prior art cannot be accurately and reliably read out by machines due to the smudged contours of the printed characters which are formed of a main imprint and several ghost imprints.

Summary of the invention

It is one object of the invention to provide an ordinal printer which produces clear and sharp imprints suitable for being read out by a machine.

Another object of the invention is to provide a printer whose type carriers do not bounce back from the platen and produce no ghost imprints.

With these objects in view, the present invention provides a printer in which the ordinal type carriers are disconnected from the driving biasing means and move by inertia when engaging the printing area.

More particularly, in accordance with the invention, the biasing means which drive the type carriers toward the printing position, are disconnected from the same shortly before the type carrier impinge the printing area so that the imprint is made only due to the inertia of the moving parts and the entire kinetic energy is absorbed by the platen during the first impact of the types.

One embodiment of the invention relates to a printer which has an ordinal set of printing units. Each printing unit is settable to a plurality of digital positions in which

different selected types are operative, and is mounted for movement between a position of readiness in which the selected type is spaced from the printing area, and a printing position. Lost motion coupling means connect the printing units with biasing means so that the same urge the printing units into the position of readiness and beyond the same toward the printing position. Control means hold the printing units in the position of readiness, and when the control means are released, the printing units are moved by the biasing means toward the printing position.

Stop means stop the lost motion coupling means shortly before the printing units have reached the printing position. In this manner, the force of the biasing means is taken up by the stop means, while the lost motion coupling means permits the printing units to move by inertia to the printing position without any influence of the biasing means on such a motion. In this manner, bouncing of the types on the printing area is prevented.

In the preferred embodiment of the invention, the biasing means include an ordinal set of springs respectively connected by lost motion couplings with the printing units, and each lost motion coupling cooperates with an individual adjustable stop so that the moment in which the inertia movement of the printing units toward the printing position starts can be exactly determined.

Each printing unit includes a type carrier means movable between ten digital positions, and also movable between the position of readiness and the printing position, and further includes a printing means or hammer connected by a lost motion coupling with a spring of the biasing means. When the printing hammers are released, they move to an operative position engaging the type carrier means and driving the same toward the printing position. When during such movement, the lost motion couplings are stopped by the stop means, the printing hammers move further due to inertia until they have driven the type carrier means into the printing position.

Consequently, the last part of the printing movement of the printing hammers and type carrier means is due to the kinetic energy of the same, and is not produced by springs so that, particularly by adjustment of the stops, impact forces can be obtained which are completely consumed by a single impact so that bouncing back and repeated imprints are reliably prevented.

The present invention can be applied to printers having different kinds of type carriers, for example type carrier wheels, type carrier bars, type carrier segments, and carrier bars having type pins mounted thereon.

In a preferred embodiment of the invention, the lost motion coupling includes a lost motion member having an elongated slot in which a portion of a printing hammer is movable. As long as the spring pulls the lost motion member, the coupling portion of the printing hammer engages one end of the opening. When the lost motion member is stopped by a stop, the printing hammer can continue it movement while its coupling portion moves in the opening of the lost motion member. During this inertia movement of the printing hammer, the entire spring force is taken up by the stop against which the spring pulls the lost motion member.

The novel features which are considered as characteristic for the invention are set forth in particular in the appended claims. The invention itself, however, both as to its construction and its method of operation, together with additional objects and advantages thereof, will be best understood from the following description of specific embodiments when read in connection with the accompanying drawing.

Brief description of the drawing

FIGS. 1*a*, 1*b*, and 1*c* are fragmentary side views,

partially in section, illustrating one embodiment of the invention in different operational positions;

FIG. 2 is a fragmentary side view, partially in section, illustrating a second embodiment of the invention, parts which are shown in detail in FIG. 1*a* being omitted in FIG. 2 for the sake of simplicity;

FIG. 3 is a fragmentary side view, partially in section, illustrating a third embodiment of the invention, parts shown in FIG. 1*a* being omitted in FIG. 3 for the sake of simplicity; and

FIG. 4 is a fragmentary side view, partially in section, illustrating a fourth embodiment of the invention, parts illustrated in FIG. 1*a* being omitted for the sake of simplicity.

Description of the preferred embodiments

Referring now to the drawings, and particularly to FIGS. 1*a*, 1*b* and 1*c*, the invention is applied to a printer having an ordinal set of printing units, only one of which is shown in the drawing. Each printing unit includes a support lever **6** carrying meshing gears **2**, **3** and **4**, gear **4** being fixed to a type carrier wheel **5** having ten digit types and being turnable on support lever **6** between ten digital positions in which different types are located opposite a printing area of a platen **15**.

Each support lever **6** is mounted on a bracket **10** on the frame of the machine for angular movement about a pivot **9** turnable between the position of readiness illustrated in FIG. 1*a* and the printing position illustrated in FIG. 1*c*.

Gear **2** of each ordinal type carrier means meshes with an ordinal setting rack bar **1** which is operated by known apparatus to assume a selected digital position for setting the type carrier wheel **5** to the corresponding digital position. For example, setting rack bars **1** may sense the position of set pins of a pin carriage. The movement of the setting rack bars **1** is carried out while the type carrier **5** is spaced from the platen **15**, as shown in FIG. 1*a*. A printing lever **8** is mounted on support lever **6** for pivotal movement about a pivot **7**, and can move a small angular distance between the position shown in FIG. 1*a* in which its engaging portion **14** is spaced from gear **4**, and the position shown in FIG. 1*b* in which engaging portion **14** engages a notch between two teeth of gear **4** to arrest type carrier wheel **5** in a selected digital position. During further movement of support lever **6** with type carrier wheel **5** to the printing position shown in FIG. 1*c*, printing lever **8** moves with support lever **6**.

All printing levers **8** have projections **11** cooperating with a common control bar **12** which is operated by the drive means of the machine to perform a reciprocating motion for moving the printing levers **8** from the operative position shown in FIG. 1*c* to the initial position shown in FIG. 1*a* in which support levers **6** abut a common stop bar **43**. Each printing lever **8** has a coupling portion **16** located in an elongated opening **23** of a lost motion member **19** which has two lateral walls **20** and **21** and a connecting wall **22**, as best seen in FIGS. 1*b* and 1*c* in which the lost motion member **19** is illustrated in a perspective view. Each lost motion member **19** is connected by a biasing spring **17** to a prong of a stop comb **18** which is secured to the frame of the machine. In the position of FIG. 1*a*, one end of the opening **23** engages coupling portion **16** of printing lever **8**, and the respective spring **17** urges the printing lever **8** to turn in clockwise direction, but since printing lever **8** is blocked by control bar **12**, and only limited angular movement is possible between support lever **6** and printing lever **8**, support lever **6** remains in the position shown in FIG. 1*a* as long as the respective printing lever **8** is blocked by control bar **12**.

Each printing lever **8** has a transverse projection **24** engaged by a shoulder of an angular trigger lever **25** under the action of a spring **35** connecting each trigger lever **25** with a releasing lever **28**. All trigger levers **25** are mounted for turning movement about a shaft **27**, and all releasing levers **28** are mounted for turning movement about a shaft **29**. Shaft **29** is mounted on a U-shaped part **30** which is turnable about a fulcrum **31**. Shaft **29** is engaged by the arm **33** of a rotary cam **32** which is driven from the main shaft of the machine during each machine cycle to lower shaft **29** with all release levers **28**.

In the initial position of the setting rack bars **1**, a projecting stop **34** on each rack bar engages the corresponding release lever **28** so that the same assumes the position shown in FIG. 1*a* in which a coupling portion **36** is spaced from a corresponding coupling portion **26** on the respective trigger lever **25**.

When the setting rack bars **1** are moved to the right to a digital position to set the carrier wheels **5** to corresponding digital positions, stop **34** moves away from release lever **28** so that the respective release levers are turned by springs **35** to a position in which coupling portion **36** is located above coupling portion **26**. Consequently, during operation of cam **32**, when cam fingers **33** move shaft **29** downward together with release levers **28**, coupling portions **36** engage coupling portions **26** and turn trigger levers **25** in counterclockwise direction so that the same release projecting portions **24** of the printing levers **8** in the same order, permitting the biasing means **17** to turn through lost motion coupling means **19**, **16**, the respective printing unit to the printing position as soon as control means **12** has moved to the right as viewed in FIG. 1*a* under the action of cam means which operate in synchronism with cam **32**.

Before the printing operation is carried out, the ordinal setting rack bars **1** are moved to the right to digital positions which may be different in each order so that the type carrier wheels **5** assume corresponding digital positions. Printing levers **8** are held by control means **12** so that springs **17** cannot turn printing levers **8** through lost motion coupling means **19**, **16**.

Before the setting rack bars are displaced to set the type carrier wheels **5**, the stops **34** hold the release levers **28** in the position illustrated in FIG. 1*a* so that springs **35** hold the trigger levers in the illustrated position locking the printing levers **8**. After the type carrier wheels **5** have been set by the setting rack bars **1**, the release levers **28** are no longer held by stops **34** and turn to a position, not illustrated, in which coupling portions **36** are located directly above coupling portions **26**.

Following the shifting of the setting rack bars **1** and the setting of type carrier wheels **5**, cam means, not shown, move control bar **12** to the right as viewed in FIG. 1*a*, and shortly thereafter, cam fingers **33** move shaft **29** with releasing levers **28** downward so that coupling portions **36** engage coupling portions **26** of trigger levers **25** which are turned in counterclockwise direction to release projections **24**, permitting printing lever **8** to turn in clockwise direction under the action of biasing means **17** and lost motion coupling means **19** until engaging portion **14** engages gear **4** and turns the respective support lever **6** with the type carrier wheel **5**. Coupling means **19**, **16** first turns printing levers **8** about pivot **7** until engaging portion **14** engages a notch in gear **4**, whereupon further turning of coupling portion **16** of printing lever **8** results in turning of support lever **6** so that type carrier wheel **5** approaches the printing area of platen **15**.

Before the printing operation can take place, lost motion members **19** engage stops **40** so that the entire force of springs **17** is transmitted to stops **40** and no longer acts on the type carrier means **2** to **8**. However, the inertia of the masses of the type carrier means **2** to **8** causes continued movement of the same, while coupling arm **16** of printing lever **8** moves freely in the elongated opening **23** of lost motion member **19**. While the type carrier means **2** to **8** is thus completely discon-

nected from the respective spring **17**, the selected type on type carrier wheel **5** makes an imprint on the printing area of platen **12**, as shown in FIG. 1*c*. The greater part of the kinetic energy of the type carrier means is consumed by the impact, and the remaining part causes motion of the type carrier means away from the printing area. Preferably, the elongated opening **23** has such a length that coupling portion **16** does not engage any part of lost motion member **19** during the recoil of the type carrier means **2** to **8**. However, should the recoil be unusually strong, coupling portion **16** will engage the end portion of opening **23** whereby the remaining kinetic energy is consumed, and type carrier wheel **5** can under no circumstances engage the printing area a second time.

Stop **40** is part of a bracket having elongated slots **41** through which screws **42** pass to secure stop **40** to the frame of the machine. Stop **40** is thus adjustable so that exact moment in which lost motion member **19** is stopped by stop **40** can be exactly determined. In this manner, the distance through which the type carrier means **2** to **8** move due to inertia only, can be selected.

After the imprints have been made, control bar **12** performs a reciprocating stroke in the opposite direction, engaging projections **11** of printing levers **8** and returning the same first to the position in which engaging portions **14** are spaced from gear **4**, and then to the position shown in FIG. 1*a* in which trigger levers **25** snap over projections **24** on printing levers **8**, holding the same and thereby the type carrier means **2** to **8** in the position of readiness. During such return movement, support levers **6** first turn with printing levers **8** until abutting stop **43**, whereupon engaging portion **14** is separated from gear **4** during further movement of the respective printing lever **8**.

Coupling portions **16** of printing levers **8** move lost motion member **19** away from stop **40** and remain tensioned by spring **17** ready for the next following operation.

In the embodiment of FIG. 2, each printing unit includes a type bar **48** having types spaced along the length thereof, and a setting lever **45** turnable about a shaft **46** for setting the respective type bar to a digital position in which a selected type having a selected digit thereon is located opposite the printing area of platen **15**. A setting lever **45** is provided for each order so that the type bars **48** form an ordinal set. Levers **45** may have gear segments, not shown, controlled by the gears of a register.

A common shaft **51** supports an ordinal set of printing levers **50**. Each printing lever **50** is associated with one of the type bars **48** and has a hammer portion located in the region of the operative type **49** which is located opposite the printing area of the platen. A control bar **52** extends across all printing levers **50**, and cooperates with arms of the same to hold the same in the illustrated position of readiness against the action of springs **17** which are connected to coupling arms **55**, respectively, by lost motion members **19**, as described with reference to FIG. 1*a*. An adjustable stop **40** is provided for each lost motion member **19**.

Each printing lever **50** has another arm formed with a transverse projection **54** corresponding to projection **24** of the embodiment of FIG. 1*a*. Projection **54** of each printing lever is engaged by a trigger lever **53** which cooperates with a release lever, not shown, in the manner described for trigger lever **25** and release lever **28** of FIG. 1*a*, a spring, not shown, connecting the release lever with the trigger lever **53** in each order. The common shaft **29** of the release levers **28** is operated by cam means **32**, **33**, as described with reference to FIG. 1*a*, but not shown in FIG. 2. In the position of readiness illustrated in FIG. 2, type bar **48** with types **49** is spaced from the printing area, and the hammer portion of each printing lever **50** is spaced from the type bar since the printing levers are held by the common control bar **52**, and by the individually acting trigger levers **53**, against the action of biasing springs **17** which are connected with the respective printing means by the lost motion coupling means **19**, **55**.

At the beginning of the machine cycle, setting levers **45** are operated to move to digital positions for setting the type carriers **48** of the several orders to selected digital positions. At the same time, a cam, not shown, moves control bar **52** to the right as viewed in FIG. 2, so that printing levers **50** are only held by trigger levers **53**, abutting projections **54**. When all type bars **48** are in the desired digital positions, cam **32** operates the release levers, as explained with reference to FIG. 1*a*, so that all trigger levers **53** release the printing levers **50** which are urged by biasing springs **17** to turn in clockwise direction so that the hammer portions of the printing levers engage, respectively, a shoulder of the respective type bar **48** to turn the same about pivot **47** toward the printing position. Shortly before a type face engages the printing area of platen **15**, lost motion member **19** reaches stop **40** so that the force of biasing springs **17** no longer acts on the printing levers **50** which, however, continue the movement due to inertia together with type bars **48** so that the same assume the printing position engaging the printing area.

By adjustment of the position of stops **40**, it is possible to provide just sufficient kinetic energy in the moving members **50** and **48** that the impact force is consumed by the impact. At the moment of impact, coupling portion **55** is spaced from the ends of the elongated opening in lost motion member **19**, and if a printing lever **50** bounces back, coupling portion **55** is stopped by the end of the elongated opening in lost motion member **19** so that it cannot make a second imprint on the printing area. When the printing operation has been completed, control bar **52** is again moved to the left as viewed in FIG. 2 and turns all printing levers **50** so that springs **17** are tensioned until trigger levers **53** again engage portions **54** and lock the printing levers in a position ready for the next following operation.

In the embodiment of FIG. 3, type carrier levers **59** have segment shaped portions provided with a series of digital types **60**. Each type carrier lever **59** has a pivot pin at one end located in a guideway **63** of a U-shaped supporting means **62** which is turnable about a shaft. Consequently, each carrier lever is turnable about pivot **61** between digital positions in which different types are located opposite the printing area, and also movable in the direction of the guideway **63** toward and away from platen **15**.

Each carrier lever is connected by a link **58** to the setting lever **56** of the respective order, all setting levers **56** being mounted on a common shaft **57** and operated in a conventional manner to set the ordinal set of carrier levers to the required digital positions.

Each segment portion has an arcuate slot **67** in which a transverse lug **66** of a printing lever **64** is guided. The center of the arc of slot **67** is located in pivot **61** so that the carrier levers can be turned to the selected digital positions without influencing the position of the respective printing lever **64**.

All printing levers **64** are mounted on a common shaft **65** and have coupling portions located in elongated openings of a lost motion member **19** which is connected by spring **17** to a fixed point of the frame. Each lost motion member **19** is spaced from the adjustable stop **40** in the position of readiness of the device shown in FIG. 3.

Each printing lever **64** has an arm with a transverse projection engaged by a trigger lever **68**, all trigger levers **68** being mounted on a common shaft **69** and controlled by release levers and a cam of the machine as described with reference to FIG. 1*a*.

After all carrier levers have been set to selected digital positions by setting levers **56**, a control bar **71**, cooperating with all printing levers **64** is moved to the left, so that printing levers **64** are held in the position of readiness only by trigger levers **68**. During the machine cycle, a cam

controls release levers **68** to release the trigger levers **68**, as explained with reference to FIG. 1*a*, so that springs **17** move lost motion members **19** toward stop **40** whereby the printing levers **64** are turned to move carrier levers toward the printing position engaging the printing area, while pivot pin **61** moves in guideway **63**. Shortly before the respective selected type of the carrier levers **59** engages the printing area, lost motion member **19** abuts stop **40** so that springs **17** no longer act on the printing levers and carrier levers. The movement into the printing position takes place due to the inertia of printing levers **64** and carrier levers **59**, and by adjusting the position of stops **40**, the kinetic energy of the moving masses can be determined so that the kinetic energy is completely or almost completely consumed by a single impact and no ghost imprints are produced.

In the embodiment of FIG. 4, a type bar **73** has a digital set of type pins **72** mounted in bores for shifting movement between the position of readiness shown in FIG. 4 and a printing position in which the type on the head of the respective type pin engages the printing area on platen **15**.

A set of printing levers or printing hammers **74** is mounted on a common shaft **75**. Each printing hammer **74** has a portion **78** cooperating with a trigger lever **77**, and a coupling arm **79** located in an elongated opening of a lost motion member **19** which is biased by spring **17** toward an adjustable stop **40**. Each type bar **73** has elongated slots through which guide rods pass, so that the type bars **73** are guided for rectilinear movement between digital positions.

When a printing operation is started, setting means, not shown, which may be constructed in the manner of setting levers **56**, and are connected with the type bars **73**, are operated to set each type bar **73** to a selected digital position in which a selected type pin **72** is located opposite the printing area. Thereupon, control bar **76** is moved by the cams of the machine toward the right as viewed in FIG. 4 so that printing hammers **74** on which the forces of spings **17** act, are held only by the trigger levers **77**. At a proper moment of the machine cycle, trigger levers **77** release printing hammers **74** which are urged by springs **17** to hit the respective type pin **72** which is in the position of readiness located opposite the printing area at the level of the head of the printing hammer **74**.

Before the type face of the respective type impinges the printing area, lost motion member **19** is stopped by stop **40** so that the last part of the movement of the printing hammers **74** and of type pins **72** takes place due to the inertia of the moving masses.

As in the other embodiments, stops **40** are adjusted so that the kinetic energy of the moving masses is sufficient to produce a single imprint.

It will be understood that each of the elements described above, or two or more together, may also find a useful application in other types of multi order printers differing from the types described above.

While the invention has been illustrated and described as embodied in a printer with ordinal type carriers and printing means provided with spring loaded lost motion coupling means in each order, it is not intended to be limited to the details shown, since various modifications and structural changes may be made without departing in any way from the spirit of the present invention.

Without further analysis, the foregoing will so fully reveal the gist of the present invention that others can by applying current knowledge readily adapt it for various applications without omitting features that, from the stand-point of prior art, fairly constitute essential characteristics of the generic or specific aspects of this invention and, therefore, such adaptations should and are intended to be comprehended within the meaning and range of equivalence of the following claims.

What is claimed as new and desired to be protected by Letters Patent is set forth in the appended claims.

I claim:

1. A printer comprising, in combination, an ordinal set of printing units, each printing unit including a type carrier means having a plurality of types and being settable to a plurality of digital positions in which different selected types are located opposite a printing area, and a printing means having an inoperative position and an operative position engaging said type carrier means; means mounting each printing unit for movement between a position of readiness in which said type carrier means is spaced from said printing area and said printing means is in said inoperative position, and a printing position in which the selected type engages the printing area and said printing means is in said operative position; biassing means; movable lost motion coupling means connecting said printing means with said biassing means so that the same urges said printing means toward said operative position; control means movable between a holding position for holding said printing means in said inoperative position and said printing unit in said position of readiness, and a releasing position; means supporting said control means for movement; means for actuating said control means to release said printing means so that said biassing means moves said lost motion means which move said printing means to said operative position whereby said printing means in said operative position move said type carrier means to engage said printing area in said printing position; and stop means for stopping said lost motion coupling means before said type carrier means engage said printing area so that the force of said biassing means acting on said lost motion coupling means is taken up by said stop means while said lost motion coupling means permits said printing means with said type carrier means to move by inertia together to said printing position in which said printing means are separated by said lost motion coupling means from said biassing means whereby bouncing of said type carrier means on said printing area does not cause a second imprint.

2. A printer as claimed in claim **1** comprising means mounting said stop means for adjusting movement so that said lost motion coupling means is stopped when said type carrier means is spaced a selected distance from the printing area whereby the impact force can be adjusted.

3. A printer as claimed in claim **2** wherein said lost motion coupling means includes a member connected with said biassing means and having a slot, and wherein each printing means has a coupling portion located in said slot and abutting one end of the same in said position of readiness, and being in said printing position located intermediate the ends of said slot spaced such a distance from said one end that bouncing of said type carrier means with said printing means cannot cause reengagement of said one end with said printing member.

4. A printer as claimed in claim **2** wherein said biasing means include an ordinal set of biasing members; and wherein said lost motion coupling means include an ordinal set of lost motion couplings respectively connected with said printing units.

5. A printer as claimed in claim **2** wherein said stop means includes an ordinal set of stops, each stop being adjustable to determine the moment in which inertia movement of said printing units toward said printing position starts.

6. A printer as claimed in claim **2** wherein said type carrier means includes a support lever mounted for pivotal movement, and a type carrier wheel mounted on said support lever for turning movement, said support lever being movable with said type carrier wheel between said position of readiness and said printing position; and wherein said printing means in said operative position engage said type carrier wheels for aligning the types of the same.

7. A printer as claimed in claim **3** wherein each printing means includes a printing lever mounted for pivotal movement on each support lever and engaging in said

operative position the respective type carrier wheel; and wherein said lost motion coupling means includes an ordinal set of lost motion couplings respectively connecting said printing levers with said biasing means.

8. A printer as claimed in claim 2 wherein said type carrier means includes a type bar having said types spaced along the length thereof and being longitudinally shiftable between said digital positions; comprising a shaft mounting said printing means for turning movement, each printing means having an engaging portion abutting in said operative position said type bar in the region of the selected type.

9. A printer as claimed in claim 8 wherein said lost motion coupling means include an ordinal set of lost motion couplings respectively connected with said printing means; and wherein said stop means include an ordinal set of adjustable stop means respectively cooperating with said lost motion couplings.

10. A printer as claimed in claim 2 wherein each type carrier means includes a carrier lever having a pivot at one end and a type carrier segment on the other end; comprising supporting means having a guide way for said pivot so that said carrier lever turns between said digital positions about said pivot, and moves to said printing position with said pivot moving along said guide way; and wherein each printing means icnludes a printing lever having an engaging portion abutting said type segment in said operative position in the region of the selected type; and comprising a shaft supporting said printing levers for turning movement; said printing levers being connected with said lost motion coupling means.

11. A printer as claimed in claim 10 wherein said lost motion coupling means include an ordinal set of lost motion couplings respectively connected with said printing levers; and wherein said stop means includes an ordinal set of adjustable stops respectively cooperating with said lost motion couplings.

12. A printer as claimed in claim 2 wherein said type carrier means includes a type bar mounted for longitudinal movement between said digital positions and having a plurality of digital type pins mounted thereon for movement between said position of readiness and said printing position; comprising a shaft; and wherein each printing means includes a printing lever mounted on said shaft for turning movement and connected with said lost motion coupling means, each printing lever having an engaging portion engaging in said operative position the selected type pin for moving the same to said printing position, said printing levers moving by inertia when said type pin arrives in said printing position.

13. A printer as claimed in claim 12 wherein said lost motion coupling means include an ordinal set of lost motion couplings respectively connected with said printing levers; and wherein said stop means includes an ordinal set of adjustable stops respectively cooperating with said lost motion couplings.

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