

[54] REVOLVER LOADER

[76] Inventor: Paul P. Kubik, 304 Llewellyn Rd., Ambler, Pa. 19002
[22] Filed: June 28, 1973
[21] Appl. No.: 374,383

Primary Examiner—Samuel Feinberg
Assistant Examiner—C. T. Jordan
Attorney, Agent, or Firm—Woodcock, Washburn, Kurtz & Mackiewicz

[52] U.S. Cl. 42/89
[51] Int. Cl. F42b 39/04
[58] Field of Search 42/89

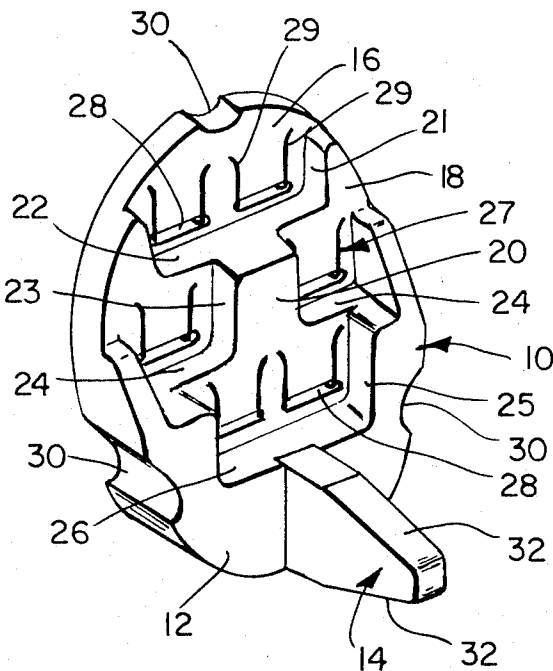
[56] References Cited

UNITED STATES PATENTS			
837,929	12/1906	Hawley	42/89
1,964,171	6/1934	Pflaume	42/89
1,971,526	8/1934	Kempf	42/89
2,896,353	7/1959	Hunt	42/89
3,150,459	9/1964	Van Schoick	42/89
3,182,417	5/1965	Hamilton	42/89
3,203,130	8/1965	Diaz	42/89
3,503,150	3/1970	Brunhuber et al.	42/89

[57] ABSTRACT

A revolver loader having a base element with self-entrapped retaining elements placed so as to secure ammunition thereto. In a preferred embodiment, a camming element projects from the base member and during the coaxial loading thrust of the loader toward the revolver cylinder the camming element will cause the ammunition to be released from the retaining elements as it is deposited in the revolver cylinder ammunition chambers. In another preferred embodiment, the base element is stepped to secure ammunition at three levels to assist in its initial placement into the revolver cylinder chambers.

16 Claims, 12 Drawing Figures



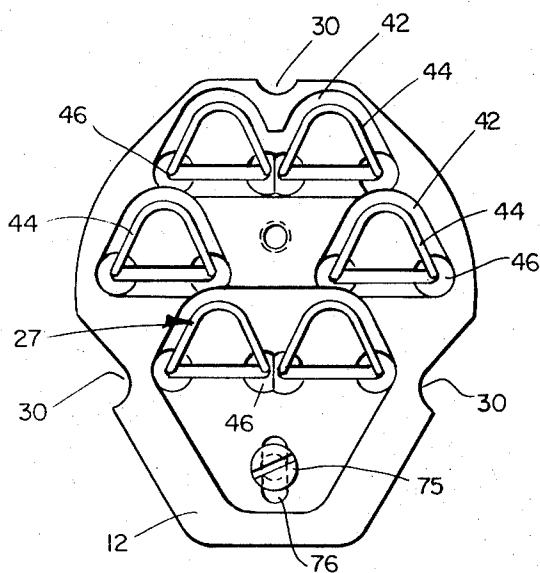


Fig. 4

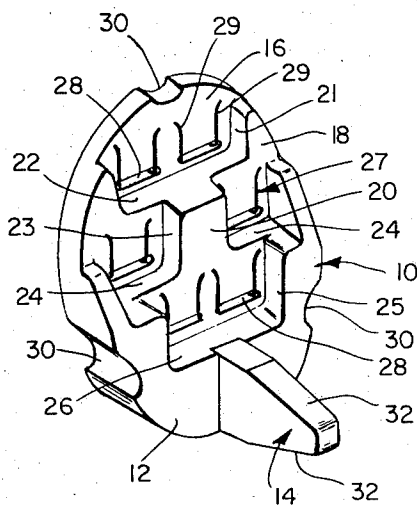


Fig. 1

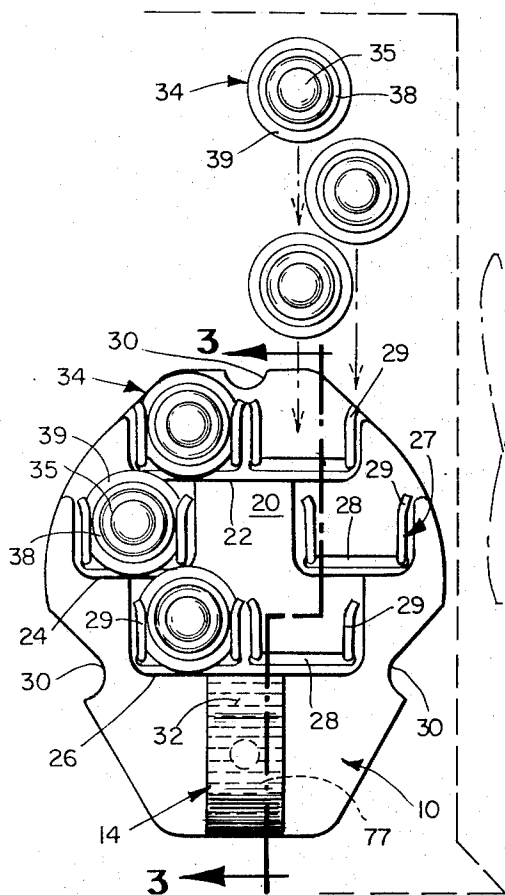


Fig. 2

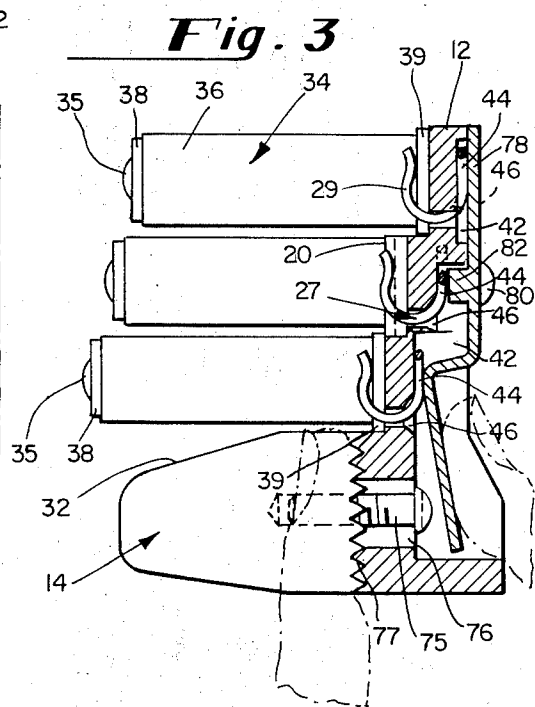


Fig. 3

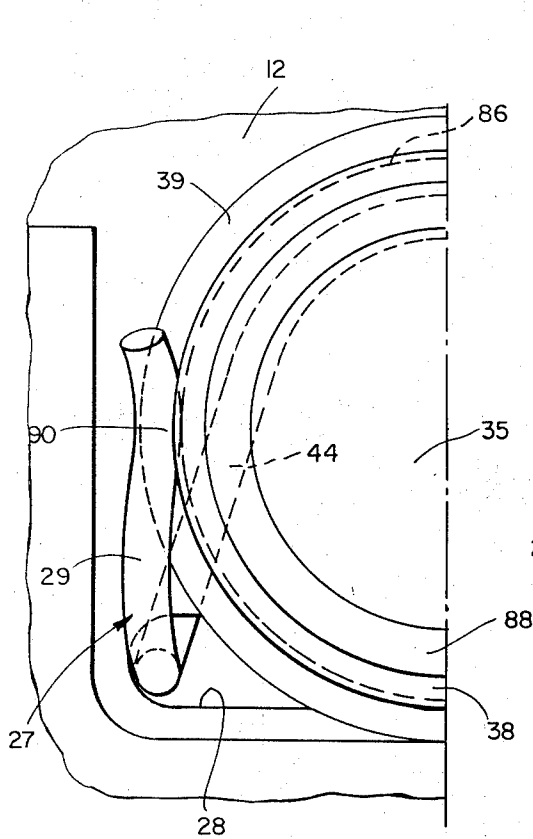


Fig. 4a

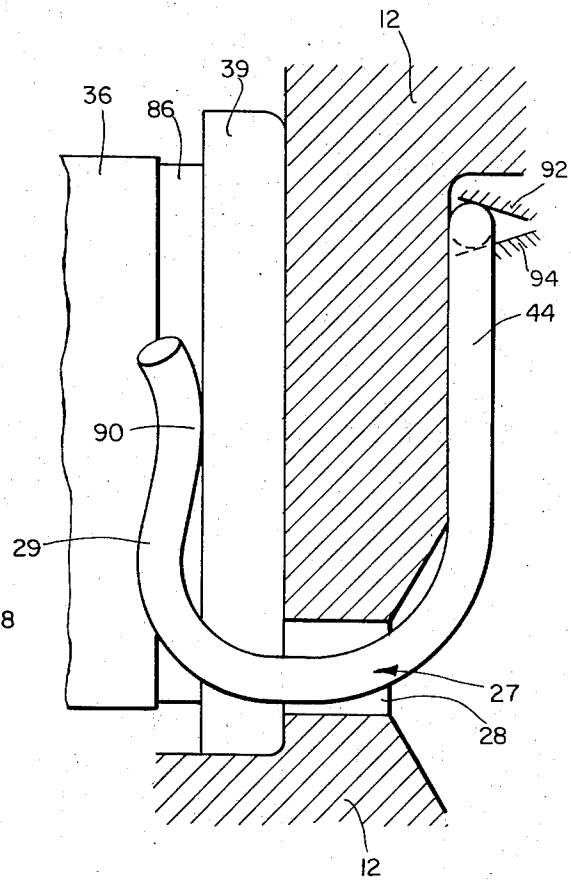


Fig. 4b

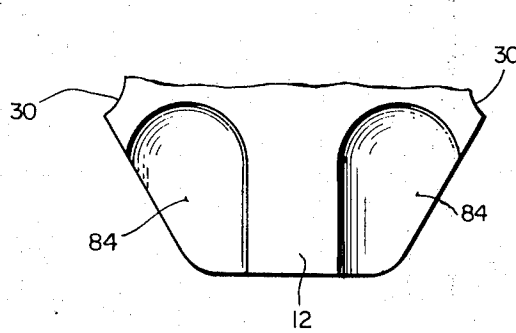


Fig. 4c

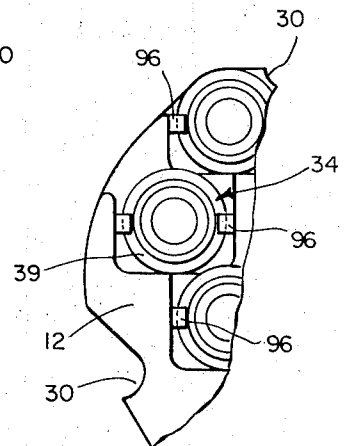


Fig. 4d

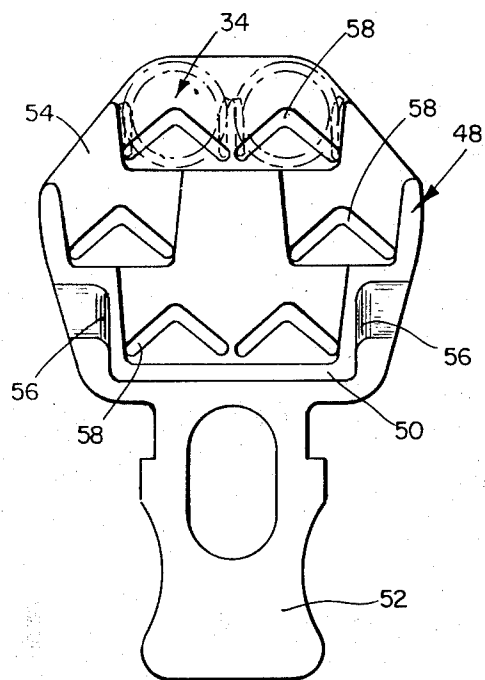


Fig. 5

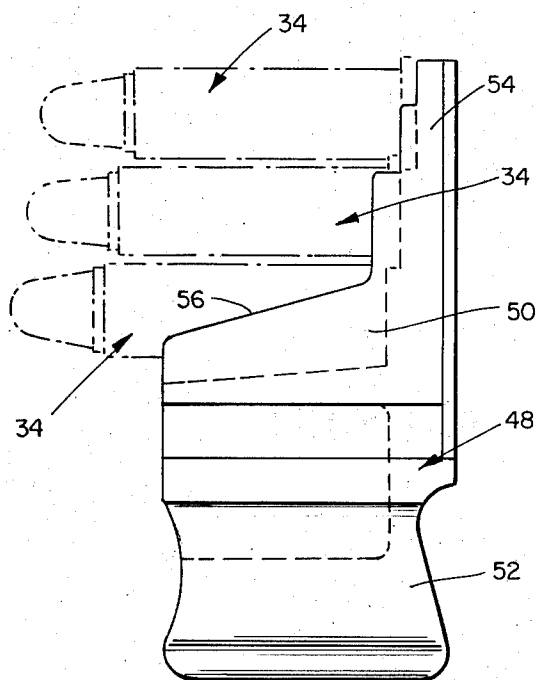


Fig. 6

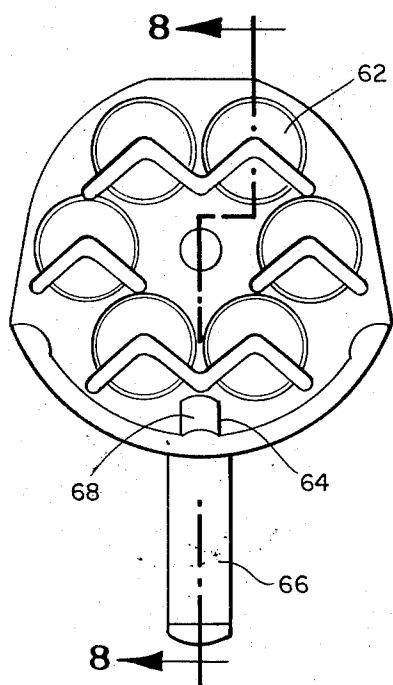


Fig. 7

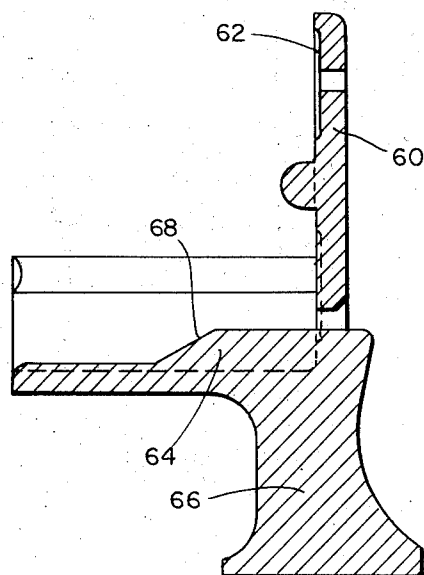


Fig. 8

REVOLVER LOADER**BACKGROUND OF THE INVENTION****1. Field of the Invention**

The invention pertains to a revolver loader to facilitate the loading of ammunition into revolver cylinder chambers. Reloading revolvers by manual means requires inserting each piece of ammunition individually into a cylinder chamber and is extremely slow. A revolver loader such as disclosed in the subject invention is designed to insert ammunition a full load at a time and thus speed up the loading process. The loaders have utility in practice, training and competitive shooting as well as for law enforcement and military use. Of critical importance is the speed in which rounds of ammunition may be loaded and the reliability of loading devices used. Before a loader is acceptable for any of the above uses, it must prove to be dependable and capable of satisfactorily aligning all standard types of ammunition for insertion into a revolver cylinder.

As for standard types of ammunition, two primary types are used, i.e., duty ammunition and wadcutter ammunition. Duty cartridges have rounded noses and present less of a loading problem than wadcutter cartridges which have blunt noses. However, a considerable amount wadcutter ammunition is used since it is particularly popular for practice, training and competitive shooting. One reason for this popularity is that its impact against the target leaves better defined hits and makes scoring easier. Thus, it is important for a revolver loader to be capable of loading the wadcutter cartridges as well as duty cartridges.

Additionally, an effective revolver loader enables a home owner, who keeps a revolver for protection, to leave the revolver unloaded with the confidence that it may quickly be loaded if the need presents itself. In this respect, the danger of leaving loaded revolvers in accessible places is avoided.

A dependable revolver loader is also of value to hunters and other sportsmen who must load firearms in inclement weather where handling individual cartridges is difficult.

2. Prior Art

Various types of reloading devices have been used, however, they have for the most part been unable to provide a dependable means to load firearms accurately and expeditiously, particularly where blunt nosed wadcutter ammunition is used, without the need to manually align the ammunition in the cylinder chambers. In some present loaders, when the ammunition is inserted into the chambers of the revolver cylinders, a strap or other projecting means is pulled normal to the periphery which serves to spin the revolver cylinder and release the ammunition from the loading device.

Existing revolver loaders of this nature have been particularly inefficient if not useless in loading blunt wadcutter ammunition. In the case of duty ammunition having rounded noses, there is some margin for error for alignment since the ammunition will assist in camming itself into the cylinder chambers as aided by the rounded nose surfaces without the need for perfect alignment. This is not true in the case of the wadcutter ammunition where the alignment must be perfect or the blunt forward faces of the ammunition will impact against the surface of the revolver cylinder and not slip into the chambers. Only by visually guiding the ammunition into the loader or by manually adjusting the am-

munition can this problem be eliminated with existing revolver loaders.

Various patents in the past, see for example U.S. Pat. No. 3,203,130 - Diaz; U.S. Pat. No. 1,971,526 - Kempf; and U.S. Pat. No. 2,896,353 - Hunt, have provided recessed pocket and/or stepped surfaces for the revolver loader base plate in an effort to position the ammunition and align it for chamber entry. In the case of the Diaz patent, a manually operated retaining latch is used to prevent transverse removal of the cartridges by bearing against the outer two pieces of ammunition thus loosely trapping the remaining ammunition. The accuracy of the positioning of ammunition by such means is insufficient to permit wadcutter type ammunition to be inserted into cylinder chambers with the ease and speed desirable. Further in Diaz, the cartridges are inserted within grooves and as such are secured by the walls of the grooves. This is an undesirable feature since the tolerances of cartridge flanges vary among different manufacturers and the precise positioning necessary is therefore difficult to achieve.

With respect to the Kempf patent, fabrication costs involved with attaching the spring members to the base plate as shown make the device infeasible and it becomes an important object off the subject invention to provide a high performance loader in which production costs are drastically reduced.

Thus, it may be summarized that existing devices do not provide a practical means by which ammunition can first be accurately positioned for entry into revolver cylinder chambers and then can be actually inserted in such a manner that the alignment will not be lost during the loading thrust and as the ammunition is released or stripped from the loader.

SUMMARY OF THE INVENTION

Accordingly, it is an object of the subject invention to provide a revolver loader with an improved means of securing ammunition to a revolver loader base element so that it is accurately aligned for insertion into the revolver cylinder chambers.

It is a further object of the subject invention to provide a revolver loader in which the alignment of ammunition to corresponding revolver cylinder chambers is of sufficient precision to enable the loading of wadcutter ammunition.

It is yet another object of the subject invention to provide a revolver loader which utilizes retaining elements to secure ammunition to the loader base element in a heretofore undisclosed manner by taking advantage of the shaped structure of the base element to position the ammunition and to accurately align it for subsequent insertion into the cylinder chambers.

It is still another object of the subject invention to provide a revolver loader having the means to simultaneously allow the ammunition to be guided into the chambers of the revolver cylinder while causing it to be released from its retaining elements as it is inserted into the cylinder chambers.

It is still a further object of the subject invention to provide a revolver loader which can be fabricated at a reduced cost from existing devices yet which will enable the ammunition to be positioned with that high degree of precision necessary for wadcutter ammunition.

It is one more object of the subject invention to provide a revolver loader which has an optical cam ele-

ment which may be used to assist in releasing the ammunition from the loader as it is inserted into the revolver cylinders.

It is yet another object of the subject invention to provide a revolver loader with an adjustable camming element for use with revolvers having cylinders of varying circumferences.

It is still another object of the subject invention to provide a revolver loader with gripping means which are improved over those of prior devices.

It is one further object of subject invention to provide a revolver loader in which the retaining elements are self-entrapped but are not rigidly connected to the loader structure thus facilitating the replacement of the retaining elements when necessary.

In accordance with the above objects, the subject invention discloses a revolver loader which in the preferred embodiment, utilizes a stepped base element in which wall structures of the base element and retaining elements are used jointly for positioning the ammunition in alignment for loading. While the design may vary, in the preferred embodiment, three steps having space for two rounds of ammunition per step, in the case of six shot revolvers, are arranged so that the rounds will be in a generally circular configuration to align with the cylinder chambers. The base element is provided with slots in which the retaining elements, which may be wire springs, can be secured in such a manner as to clamp the ammunition to the base element by engaging the rear flange of each cartridge. The retaining elements are self-entrapped and not rigidly secured to the base element. The base element is further provided with a camming element for use in releasing the ammunition from the base element as it is inserted into the revolver chambers. The camming element may be adjustable to promote its use with revolver cylinders of various circumferences and in fact its use may be considered optional. The base element is also designed to provide gripping means including a recessed portion for the thumb to facilitate its handling.

The camming element when used projects upwardly from the base element and may be of such a configuration that it will contact the revolver cylinder in several places around its circumference as the ammunition is being loaded or it may be a narrow stud type projection which will contact the cylinder at only one place.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an isometric view showing a preferred embodiment of the revolver loader of the subject invention;

FIG. 2 is a front elevational view of the revolver loader of FIG. 1 looking toward the loader from the position of revolver cylinder chambers to be filled;

FIG. 3 is a side sectional view taken along the lines 3—3 of FIG. 2;

FIG. 4 is a rear view of the revolver loader of FIG. 1;

FIG. 4a is a detail partial view showing a wire spring clamping the flange of a cartridge;

FIG. 4b is a detail side view of the wire spring and cartridge in the clamping position of FIG. 4a;

FIG. 4c is a cutaway view of a modified gripping means which may be used on the embodiment shown in FIG. 2;

FIG. 4d is a cutaway view showing a modified spring retaining means;

FIG. 5 is a front elevational view of an alternate embodiment which has a modified cam element for engaging the revolver loader;

FIG. 6 is a side elevational view of the revolver loader embodiment of FIG. 5;

FIG. 7 is a front elevational view of a further embodiment of the revolver loader in which stepped areas are eliminated from the design; and

FIG. 8 is a side cross sectional view taken along the lines 8—8 of FIG. 7.

DETAILED DESCRIPTION

The revolver loader which will be now described in detail comprises generally a base element with means of retaining ammunition and in the preferred design a cam means for engaging the revolver cylinder to facilitate the release of ammunition during loading.

With reference to FIG. 1, the revolver loader 10 shown therein comprises a base element 12 and a camming element 14. The base plate 12 has three stepped surfaces 16, 18 and 20 which are positioned in ascending order toward the camming element 14. Shaped structural pocket-like areas for the ammunition are provided and are confined by wall structure comprising side walls 21, 23 and 25 and rear walls 22, 24 and 26 at each level which are constructed in such a manner as to provide ammunition wells on the steps 16, 18, 20 for the ammunition. The wells are symmetrical in a generally circular configuration which is necessary for inserting the ammunition into the revolver cylinder chambers. Apertures such as slots 28 are provided to permit retaining elements shown as wire springs 27 to extend upwardly through the base element 12 and by means of their extending spring legs 29 straddle clamp the ammunition in position as can be seen from FIG. 2 and which will be described in detail subsequently. Six such slots 28 are provided and the shape of element 12 in FIG. 1 is such that it is configured for loading a six round cylinder. This configuration should not be deemed limiting and the base element 12 may be designed for five shot cylinders as well. The base element 12 of FIG. 1 has three notches 30 in its sides which may be helpful in packaging the device but which are clearly optional.

The camming element 14 has camming surfaces 32 which are designed to bear against the revolver cylinder as the loading is being accomplished. Since different revolver cylinder outer diameters may be encountered, the cam element 14 is reversible so that either of the camming surfaces 32, which are of different dimensions, may be used. It will be appreciated that the camming element 14 may be a separate member and attached by securing means, as shown, or it may be an integral part of the base element 12 and thereby not reversible. As shown in FIG. 4, the securing means comprises a screw 75 which threadably engages the camming element 14. A slotted aperture 76 is located in the base element 12 to permit the adjustment of the camming element 14. Matching serrations 77 on camming element 14 and base element 12 enable them to be secured firmly together at the desired adjustment position as seen in FIG. 2.

With further reference to FIG. 2, the six slots 28 are positioned so that when the ammunition 34 is placed on the base element 12, it will be precisely confined by the

combination of the stepped rear walls 22, 24, 26 and the spring legs 29. Three rounds of ammunition in FIG. 2 are shown removed from the loader 10 for clarity. As can better be seen from FIG. 3, wadcutters ammunition 34 is shown having blunted nose portions 35 which protrude slightly and which join the side casing 36 at ridge portions 38. The pieces of ammunition or cartridges 34 are secured to the base element 12 by spring legs 29 which clamp the cartridge flanges 39. In FIG. 3, the loader 10 is shown in alignment with a cylinder 42 of a revolver.

With reference again to FIG. 3, the side configuration of the base element 12 is shown and the recessed areas 42 provide an area for the rear portion 44 of the springs as shown in FIG. 4. The beveled portions 46 within the recessed areas 42 permit the springs to lie flush against the recessed areas 42 as further aided by the manner in which the springs are formed. The springs 27, it will be noted, are designed to not drop from the base element 12 once the ammunition is released and instead will maintain their alignment so that a new series of ammunition may be placed on the revolver loader 10 expeditiously when the loader 10 is resupplied. This alignment is further aided by a base plate 78 which is secured to the base element 12 by screw 80 and which bears against the rear portion 44 of the wire springs. Tabs 82 of the base plate 78 bears against the spring rear portion 44 of the intermediate level springs while the plate 78 itself is configured to bear against the springs of the two extreme levels. The bottom of the base element 12 can be seen in FIG. 4 since the base plate 78 is not shown.

Thus, with or without base plate 78, the retainer spring elements 27 are self entrapped by their configuration and will remain secured in relation to the base element 12 although when the base plate 78 is used its pressure on the back of the spring elements 27 will cause the spring legs 29 to remain in a relatively secure position to facilitate sliding the cartridge flange under the legs 29 in the loading operation. It is by this construction that the fabrication cost of loaders such as disclosed in the aforementioned Kempf U.S. Pat. No. 1,971,526 can be drastically reduced.

The lower portion of the base plate 78 as seen in FIG. 3 is indented to provide a gripping portion where the thumb shown in phantom may be placed. The loader may be gripped placing the thumb as shown and the index and middle fingers on either side of the camming element 14. The camming element 14 itself thus serves as an aid to gripping since pressure may be exerted on it by the two fingers enabling the loader to be gripped more firmly.

As shown in FIG. 4c, if the loader 10 is to be used without the camming element 14, finger wells 84 may be used to provide a good gripping means, it being recognized that the configuration of the base element 12 generally provides a loader which may be securely grasped as is so important to a quick sure loading thrust.

With reference to FIGS. 4a and 4b, details of the retaining elements are shown. The cartridge flange 39 has a slight undercut portion 86 which extends circumferentially around casing 36. The spring legs 29 are thin enough to fit into this groove-like undercut 86 thus providing a more secure clamping action on the cartridges. Further, it will be noted that this point of contact where the spring leg is bowed inwardly slightly at 90 to press

against the cartridge within the undercut 86, is slightly past where an imaginary line through the center point of the cartridge flange 39 drawn parallel to any of the rear walls 22, 24, 25 would fall as seen in FIG. 2. This helps to force the cartridges against the rear walls 22, 24 or 26 where they are thus precisely positioned and held securely by the spring clamping and biasing action. Of importance in this respect is the coaction between a flexible retaining means as described and the ammunition well structure and it is within the contemplation of the subject invention to provide the precise positioning as described herein with the use of the retaining means in combination with sidewalls 21, 23, 25 as well as with the rear walls 22, 24, 26. Thus the precise positioning of the ammunition is accomplished by one axis being located by a wall of the ammunition well structure while the second axis is determined by the symmetry of the spring element 27.

With reference to FIGS. 5 and 6, an alternate embodiment is shown in which the revolver loader 48 has a modified camming element 50 and a handle 52 to facilitate the loading operation. It will be noted that the camming element 50 extends around base element 54 in such a manner as to provide camming surfaces 56 at two points. These contact the revolver cylinder as the loading is accomplished in the manner of camming surface 32 of the embodiment of FIG. 1.

Also in FIG. 5, it will be noted that slots 58 are made of an angulated shape to provide a varied means for securing the springs 29 in position.

With reference to FIGS. 7 and 8, another alternate embodiment is shown in which the stepping of the base element 60 is eliminated as seen in FIG. 8. The base element 60 has pockets 62 into which the ammunition is secured by spring means (not shown) as previously described. The pocket 62 will be precisely located to correspond with the chamber alignment of the revolver cylinder and thus will accurately position each bullet. The camming element 64 and handle 66 are of different design from previously discussed embodiments, however, function similarly with camming element 64 having camming surfaces 68 to contact the revolver cylinder during loading.

Prior to the time when the ammunition is to be loaded in the revolver, it is placed upon any one of the revolver loaders described herein so that each cartridge is secured to the base element by the spring legs.

All of the above embodiments of the revolver loaders are used in a similar manner which is as follows:

In the case of the stepped base elements 12, 54 as shown in the embodiment of FIGS. 1 and 5, the cartridges closest to the camming surface will be at a higher height than the ammunition on the two descending steps. This facilitates the positioning of the ammunition in the cylinder and as may be appreciated the two cartridges on the top step may be placed first in two chambers of the cylinder to thereby effectively align the remaining cartridges with their respective chambers. These first two cartridges may be initially loaded coaxially to the cylinder chambers so that the longitudinal axes of the cartridges are parallel with the longitudinal axis of the cylinder chambers; or the cartridges may be placed at an angle to the longitudinal axis of the cylinder with the remaining cartridges being inserted by a rocking or pendulum type motion as the loader is thrust forward to pilot the ammunition into the chambers.

As the loader is pushed forward during the loading stroke, the camming element 14, 50, 64 with its camming surfaces 32, 56, 68 will contact the outer wall of the revolver cylinder causing the pieces of ammunition to be released from the retainer spring clips 27 as the ammunition is pushed inwardly into the chambers. This occurs since the camming element 14, 50, 64 causes the base element 12, 54, 60 to shift laterally while the cartridges can not, since they are by this time lodged in their respective chambers. This causes the cartridges to be released from the retainer springs 27.

The base element 12 may be used without the camming element 14 and can be shifted, pushed, or pulled laterally to cause the cartridges to be released from the retainer springs 27 once they have been inserted into the revolver cylinder chambers.

With further reference to FIG. 4b, either inclined surface 92 or 94 as alternative to each other may be fabricated to assist in trapping and securing the rear portion 44 of spring 27. Such a surface or structure similar thereto may be positioned anywhere along the underside of base element 12 to provide retention means for spring 27. Thus, the spring 27 will be more firmly held in an ammunition receiving position prior to the placement of cartridges on the base element 12.

While the springs 27 are shown as wire type springs, FIGS. 1-4b, and extend through the base element 12, an alternate type of spring such as flat tab-like clip springs 96, FIG. 4d, is contemplated within the scope of the invention. These flat springs 96 may extend through the base element 12 and thus be entrapped in a manner similar to the wire springs 27 or they may be entrapped and secured by surface structure on the face of base element 12 without extending therethrough. As shown they clamp the cartridge flange 39 on its outer edges pressing the cartridge against base element 12 and secure it in position against base element wall structure.

It is further within the contemplation of the subject invention that various types of retaining means, such as the type of wire spring used in FIGS. 1-4b, but not limited thereto, may be retained on the face side of base element 12 without extending therethrough and serve to position the ammunition with the assistance of wall structure as previously described herein.

While particular embodiments of the invention have been shown and described, it will of course be understood that various modifications may be made without departing from the principle of the invention. The appended claims are, therefore, intended to cover any such modifications within the spirit and scope of the invention.

I claim:

1. A revolver loader for inserting cartridges into chambers of a revolver cylinder comprising:

a base element having shaped structural areas to correspond to the chambers of the revolver cylinder; and

retainer means positioned relative to said shaped structural areas of said base element and configured to secure the cartridges in an upright position on said base element, by straddle clamping flanges of the cartridges against said base element and contacting with walls of said shaped structural areas of said base element to provide independent contact areas to enable precise positioning of said cartridges for insertion into the chambers.

2. The revolver loader of claim 1 wherein said base element has stepped surfaces of varying height upon which the cartridges are secured to facilitate their insertion into the chambers.

3. A revolver loader for inserting cartridges into chambers of a revolver cylinder comprising:

a base element having shaped structural areas to correspond to the chambers of the revolver cylinder;

retainer means positioned relative to said shaped structural areas of said base element and configured to secure the cartridges in an upright position on said base element, by clamping flanges of the cartridges against said base element and coating with said shaped structural areas of said base element to provide precise positioning of said cartridges for insertion into the chambers; and

a camming element protruding from said base element of a size and configuration to engage the external surface of the revolver cylinder to cam said base element laterally after the cartridges are partially inserted in said cylinder chambers thereby to release the cartridges from said retainer means.

4. The revolver loader of claim 3 wherein said base element has stepped surfaces which vary in height and which are in ascending order toward the camming element, said stepped surfaces being bounded on at least one side by a wall so that each cartridge is secured in place by the combination of said retainer means and the respective wall.

5. The revolver loader of claim 3 wherein said base element has recessed pockets corresponding with the chambers to ensure the accuracy of placement of the cartridges to correspond with cylinder chambers.

6. The revolver loader of claim 3 wherein the base element has apertures and the retainer means comprises a wire spring having at least one leg which protrudes through each said aperture and which is formed to clamp each cartridge flange against said base element.

7. The revolver loader of claim 3 further including gripping means by which said loader may be held during loading.

8. The revolver loader of claim 7 wherein said gripping means comprises a thumb recess on the underside of said base element.

9. The revolver loader of claim 7 wherein said gripping means comprises a handle which is adjacent said base element.

10. A revolver loader for inserting cartridges into chambers of a revolver cylinder comprising:

a base element upon which there is wall structure against which the cartridges abut;

retainer means attachable to said base element to in combination with said wall structure secure the cartridges in position to correspond with said chambers; and

a camming element protruding from said base element to engage the external surface of said revolver cylinder to cam said base element laterally after the cartridges are partially inserted in said chambers thereby to release the cartridges from said retainer means.

11. An ammunition loader for inserting cartridges into chambers of a revolver cylinder comprising:

9

a base element having designated areas where cartridges when placed at said designated areas will correspond with the chambers;

independent retainer means positioned relative to said designated areas which are self entrapped relative to said base element and which secure flanges of the cartridges to the base element.

12. The ammunition loader of claim 11 wherein the base element has apertures at the designated areas and the retainer means comprises wire springs which extend through the apertures and are secured to the base element solely by their configuration.

13. The ammunition loader of claim 12 further including a base plate which is secured to said base ele-

10

ment and assists in keeping the wire springs in alignment to receive cartridges for loading.

14. The ammunition loader of claim 11 further including gripping means.

15. The ammunition loader of claim 14 further including a camming element for engaging the revolver cylinder during loading to assist in releasing cartridges from said retainer means, said camming element also serving as a gripping means in combination with a thumb recess on said base element.

16. The ammunition loader of claim 14 wherein said gripping means solely comprises thumb and finger recesses on said base element.

* * * * *

15

20

25

30

35

40

45

50

55

60

65

UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,824,729 Dated July 23, 1974
Inventor(s) Paul P. Kubik

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 1, line 26, before the word "wadcutter" insert the word --of--.

Column 2, line 25, correct the spelling of the word --of--.

Column 5, line 30, the word "the" third occurrence should have a capital --T--.

Column 6, line 4, the number "25" should be --26--.

Column 8, line 14, the word "coating" should be --coacting--.

Signed and sealed this 5th day of November 1974.

(SEAL)
Attest:

McCOY M. GIBSON JR.
Attesting Officer

C. MARSHALL DANN
Commissioner of Patents

UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,824,729 Dated July 23, 1974
Inventor(s) Paul P. Kubik

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 1, line 26, before the word "wadcutter" insert the word --of--.

Column 2, line 25, correct the spelling of the word --of--.

Column 5, line 30, the word "the" third occurrence should have a capital --T--.

Column 6, line 4, the number "25" should be --26--.

Column 8, line 14, the word "coating" should be --coacting--.

Signed and sealed this 5th day of November 1974.

(SEAL)
Attest:

McCOY M. GIBSON JR.
Attesting Officer

C. MARSHALL DANN
Commissioner of Patents