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RAPID REVOLVER LOADER

Filed Jan. 28. 1969

Fig. 1

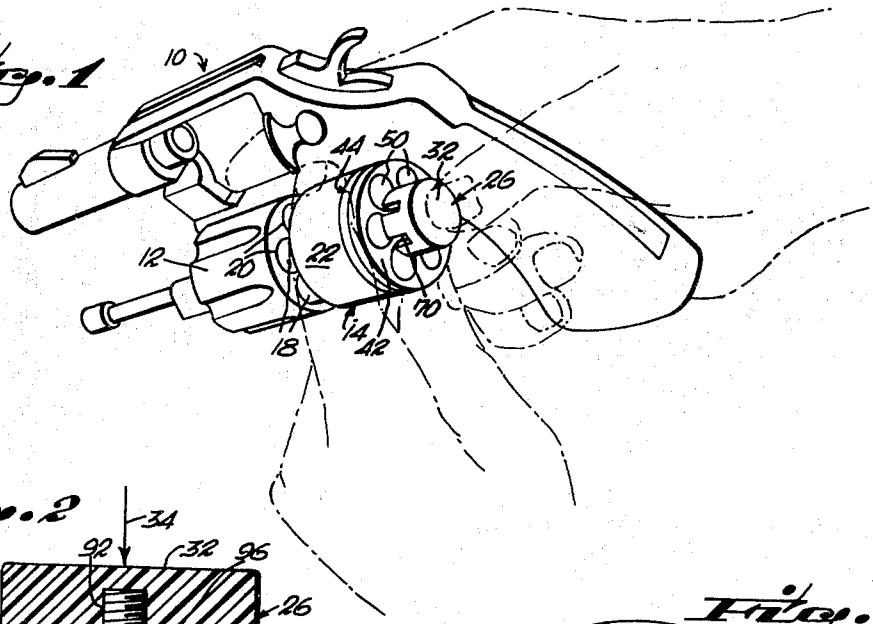


Fig. 2

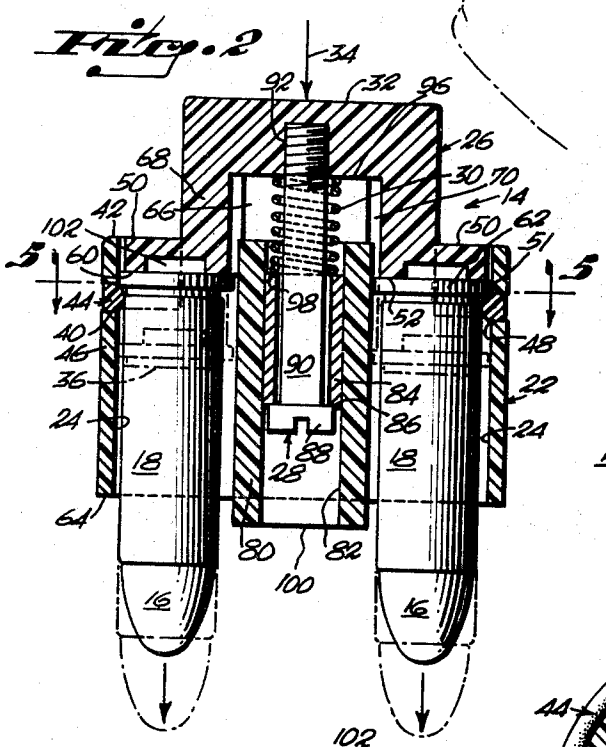


Fig. 3

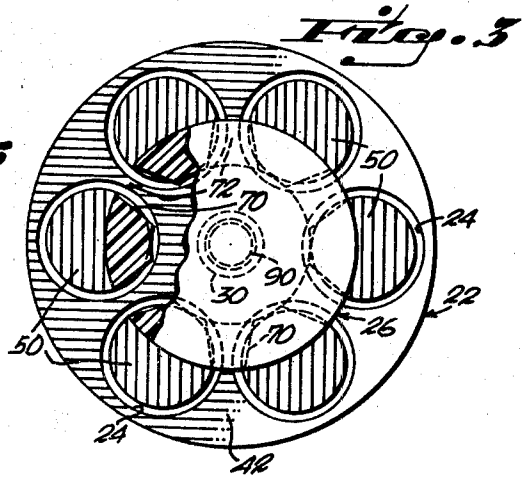


Fig. 5

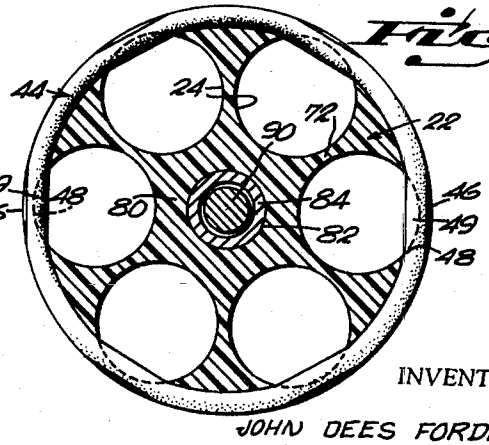
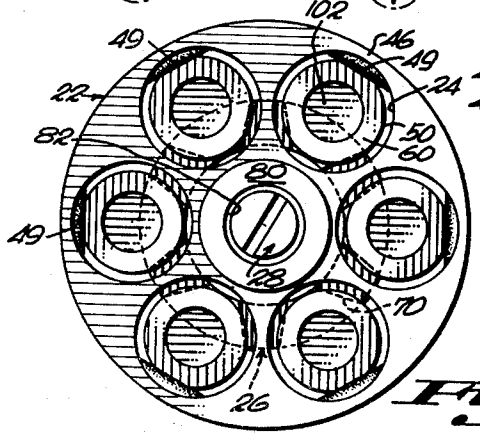


Fig. 4



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RAPID REVOLVER LOADER

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ABSTRACT OF THE DISCLOSURE

A device for the rapid loading of a full complement of cartridges into the loading chambers of the cylinder of a revolver at one time. The device includes a first cylindrical body which provides a plurality of cartridge receiving chambers which are spaced to register with the loading chambers in the revolver, each chamber of the device being adapted to receive and temporarily captivate a cartridge therein until released in a loading operation. The device also includes a second cylindrical body for coaxial reciprocal, telescopic movement in the cartridge receiving chambers to dislodge the full complement of cartridges at one time by releasing holding means in the chambers and to provide a substantial, positive, longitudinal movement to all of said cartridges simultaneously in the cylindrical chambers. The holding means comprises a single O-ring set in an annular groove which partially spans each of the cylindrical chambers to define a pocket to receive the flange portion of a cartridge yieldable so that the cartridge can pass the O-ring in loading the device and in loading a revolver with the device by displacement of said O-ring portion radially outwardly.

This invention relates to a rapid loading device for revolvers whereby a full complement of cartridges may be simultaneously loaded into the cylinder chambers of a revolver in a few seconds of time.

Various devices of this type have been developed without a great measure of success because it is extremely important that the device be foolproof and positive in its operation because the life of the user may depend on its operation. As a loading device of this type must be manually pre-loaded, some type of holding means must be incorporated in its structure to hold the cartridges therein until they are released during the loading or reloading of a revolver. Therefore, a holding means as well as a release means are common to most devices of this nature; and the release means generally requires the application of a manual force directed axially inwardly or outwardly in some manner. One of the factors contributing to the unreliability of devices of this type has been that the release force, when applied in haste, very often may be directed off center or in some manner so as to cause one or more of the cartridges to become misaligned or cocked in the loading device, and as these loading devices generally depend on the forces of gravity to carry the cartridges into the revolver cylinder chambers after being released by the loading means, this often results in one or more of the cylinder chambers not receiving a cartridge, because, the moment the release force is relaxed by the user, the holding means will generally reengage any cartridges which did not immediately fall into a chamber of the revolver cylinder. The instant device overcomes this difficulty by providing an initial positive, longitudinal movement of the cartridges as a group. It has been determined that a man experienced with a gun can, with practive, withdraw a rapid loading device of the instant invention from a cartridge belt or the like and completely load a revolver in a few seconds with assurance that all of the cylinder chambers of the revolver will receive a cartridge.

One of the principal objects of the present invention, therefore, it to provide means to provide an initial positive longitudinal movement to all of the cartridges therein as a group with the same force which is used to release the cartridges from the holding means. In this manner, all of the cartridges are positively moved substantially beyond the holding means before the force is relaxed and even if the force is applied off center or in some manner so as to cause one or more of the cartridges to become tilted or cocked, it or they cannot become re-engaged by the holding means when the force is relaxed, but on the contrary, are freed by the relaxation of the force and proceed to fall simultaneously or as a group load into the cylinder chamber or chambers.

Another problem with some devices of this type has been caused by the utilization of resilient washers or the like which require a very substantial degree of flexing during operation and, consequently, suffer from fatigue very rapidly and become inoperable.

Another object of the present invention is, therefore, to provide a cartridge holding means which consists of a single O-ring seated in an annular groove in the outer annular face of a cylindrical body which includes a plurality of annularly spaced, parallel cylindrical chambers for receiving the cartridges. The O-ring is utilized in a manner so as to partially restrict each of the cylindrical chambers, and each cartridge, when it is inserted into one of said chambers, flange end first, must displace or move a portion of the O-ring radially outwardly as the flange passes thereby. After passage thereof, the O-ring contracts and engages the somewhat reduced diameter portion of the cartridge behind the flange to provide a holding means for the cartridge. The release force when applied moves the entire complement of cartridges outwardly past the O-ring holding means, again deflecting or moving the O-ring portions radially outwardly as the cartridge flanges pass thereby, with the same release force being utilized to positively move said complement of cartridges a substantial distance beyond the O-ring holding means before being relaxed.

Another object of the invention is to provide a single O-ring as a holding means for cartridges which is utilized in a manner so as to provide a minimal percentage of expansion during the passage thereby of the flange portions of cartridges. Quality O-rings generally are extremely long lived when the percentage of expansion is below ten percent; however, when once expanded over this amount, fatigue sets in very rapidly, but as utilized in the instant invention, the percentage of expansion is very slight and thereby provides a very dependable structure for constant usage for a long period of time. As an added precaution, when the rapid loading device is being used by policemen or the like, it may be desirable to change the O-ring holding means periodically. This can be accomplished at a small cost and without any special tools in a matter of seconds, a small pen knife or the like being sufficient as no other parts need be removed to effect the change.

A still further object of the instant invention is to provide a fast, accurate revolver loading device as a safety factor so that a revolver in many instances need not be kept loaded when not in use. When the need arises it can be completely loaded in a matter of a few seconds.

In accordance with these and other objects and advantages which will become more fully apparent hereinafter, the instant invention will now be described with reference to the accompanying drawings in which:

FIG. 1 is a perspective view of a revolver with the rapid loading device of the instant invention in its operative position;

FIG. 2 is a longitudinal sectional view of the rapid loading device of the present invention illustrating two cartridges in place therein;

FIG. 3 is a rear end view thereof;

FIG. 4 is a front end view thereof with no cartridges in place; and

FIG. 5 is a cross-sectional view taken along the line 5—5 of FIG. 2 and looking in the direction of the arrows;

With reference to the drawings in which like reference numerals designate like or similar parts throughout the various views, the numeral **10** generally indicates a revolver with the cartridge cylinder **12** thereof in an open position and the rapid revolver loading device **14** of the present invention in operative engagement therewith. The forward or bullet ends **16** of the cartridges **18** are illustrated projecting into respective cylinder chambers **20** while the body portion of the cartridges **18** are held in position in the rapid loading device **14**.

Generally, the rapid loading device **14** of the instant invention comprises a first cylindrical body **22** containing a plurality of annularly spaced, parallel, cylindrical chambers **24**, each of which extends longitudinally therethrough and is adapted to receive a cartridge **18** as illustrated in FIG. 2. A second cylindrical body **26** is axially reciprocally and telescopically held relative to the first cylindrical body member **22** by a screw means **28** and a compression spring **30** interposed between said first and second bodies to normally hold the second cylindrical body **26** in the extended position illustrated in FIG. 2. When inward forces are applied to the outer end wall **32** of the second body **26** as indicated by the arrow **34**, the second body is moved inwardly and each cartridge **18** is moved from a confined position illustrated in full lines to a free position illustrated in broken lines at **36** and will thereafter slide from the cylindrical chamber **24** into a cylinder chamber of the revolver under the forces of gravity when the revolver is slanted downwardly as illustrated in FIG. 1.

In more detail and with further reference to FIG. 2 as well as to FIG. 5, the first cylindrical body **22** is provided with an annular groove **40**, inwardly of one end wall **42**, which carries a resilient O-ring **44**. As the annular groove **40** is deeper than the thickness of the wall portions **46** formed by the cylindrical chambers **24**, the groove **40** intersects each chamber **24** forming a through opening **48**. As best illustrated in FIG. 5, the O-ring spans each of the openings **48** and, because the O-ring **44** is preferably snug fitting in the annular groove **40**, the portion **49** spanning each of the openings **48** becomes substantially straight and forms a partial, yieldable obstruction in its respective cylindrical chamber **24**.

The second cylindrical body **26** includes a plurality of foot portions **50** extending radially outwardly from its inner wall **52**, said foot portions conforming in number and spacing to the cylindrical chambers **24** and are sized relative thereto to be freely, slidably received therein through the end wall **42**. In its extended position relative to the first cylindrical body **22**, each foot portion **50** of the second cylindrical body member **26** is positioned in a respective cylindrical chamber **24**, as illustrated in FIG. 2, with the inner face **60** thereof closely adjacent to a respective O-ring portion **49** to form a pocket **51**, to captivate or snugly hold the flange portion **62** of a cartridge **18**. One cartridge is inserted into each cylindrical chamber **24**, flange end first, through the end wall **64** which causes the respective O-ring portion **49** to be deflected radially outwardly as the cartridge flange **62** passes thereby into abutting engagement with the face **60** of a foot portion **50** at which time the O-ring portion **49** contracts to a restricting position in back of the flange **62** to captivate the cartridge **18** in the pocket **51**.

With reference to FIG. 2, it is seen that the second cylindrical body member includes a central cavity **66** extending inwardly from the end wall **52** and the annular wall **68** surrounding the cavity **66** is slotted as at **70**,

FIGS. 1 and 3. The central cavity **66** is adapted to telescopically receive a central hub portion **80** of the first cylindrical body member **22** when the second cylindrical body member is depressed as indicated by the arrow **34** and the slots **70** are adapted to similarly receive the wall portions **72** which separate the cylindrical chambers **24**.

As best illustrated in FIGS. 2 and 4, the central hub portion **80** includes an axial through bore **82** which is provided with a sleeve **84** press fitted therein to provide a shoulder or seat **86** for the head **88** of a screw **90**. The screw passes through the sleeve **84** and is threaded into the second cylindrical body member **26** as at **92**. The compression spring **30** surrounding the inner portion of the screw **90** and extending between the base **96** of the cavity **66** and a shoulder **98**, formed by the outer end of the sleeve **84**, maintains the second cylindrical body member in its extended position as illustrated in FIGS. 1 and 2.

The central hub portion **80** preferably extends beyond the face **64** of the first cylindrical body member **22** as at **100** and, in use, bears against the propelling mechanism, not shown, of the revolver cylinder. Recesses **102** may be provided in the face **60** of each of the foot portions **50** in the area of the cartridge primers.

In use, a cartridge is inserted into each cylindrical chamber **24** by inserting the flange end **62** through the chamber opening in the face **62** and by moving it axially inwardly until the flange **62** abuts the face **60** of a foot portion **50**. The cartridge will then be held or captivated in the pocket **51** of the chamber **24** by the O-ring in the manner previously described. After the rapid loading device has received a full complement of cartridges, they are loaded into the empty cylinder chambers of a revolver in the manner illustrated in FIG. 1. The cylinder is moved to its open position and the bullet ends **16** of cartridges **18** are inserted into the cylinder chambers. An axial force is applied to the end wall **32** of the second cylindrical body member **26** as by the thumb **104** to move the plurality of foot portions **50** inwardly telescopically of their respective cylindrical chambers **24** to dislodge the flanges of the cartridges **62** from their captivated positions in the pockets **51**. It is to be noted particularly that the foot portions **50** also advance the cartridges a substantial distance beyond the O-ring sections **49** as indicated by the broken lines in FIG. 2. This has a particular advantage over devices of this type which simply release the cartridges without providing an initial longitudinal movement thereto, because, if the pressure is applied off center to the end wall **32** or to corresponding parts of similar devices, one or more cartridges may become tilted or cocked in the chambers and tend to stick therein. In devices of this type wherein no positive initial movement is provided to the cartridges, the holding means will re-engage the flange when the pressure is released; however, in the device of the instant invention, when the pressure is released, any tilted or cocked cartridges are immediately freed and fall by the forces of gravity into the cylinder chambers of the revolver because said cartridges have been initially advanced well beyond the holding device comprised of the O-ring sections **49**.

What is claimed is:

1. A device for the rapid loading of a full complement of cartridges, each having a flanged end, into a revolver having a cylinder with loading chambers, comprising:

(A) a first cylindrical body having a first and a second opposing end wall, an outer cylindrical surface, and a plurality of cylindrical chambers in the body, each having a longitudinal opening extending through said body and both of said end walls with said cylindrical chambers being spaced from one another in a circular pattern, and an annular O-ring seat in the outer cylindrical surface of a depthwise radius slightly less than the radius of a circle tangent to the outside radius of the cylindrical chamber pattern;

(B) a resilient O-ring in the seat and including a portion extending into each of said cylindrical chambers presenting an obstruction to define a receiving pocket in each cylindrical chamber near said first end wall;
(C) a second cylindrical body;
(D) means to interconnect said bodies to permit a fixed range of coaxial, reciprocal, telescopic movement of said second cylindrical body from a normal extended position to a depressed position;
(E) said second cylindrical body including,
(1) outer and inner end walls,
(2) a plurality of foot portions, each extending radially outwardly from said inner wall, of a number and spacing the same as that of the cylindrical chambers of said first cylindrical body and each of said foot portions being sized relative to one of said cylindrical chambers to be freely and slidably received therein through the openings in said first end wall,
(F) said means to interconnect said bodies including biasing means to hold said second cylindrical body in said normal extended position with each of said foot portions positioned in an associated cylindrical chamber adjacent to a restricting portion of said O-ring and defining a movable inner floor for the pocket,
(G) said seated O-ring portion being positioned between said foot portion and second end wall and said O-ring being adapted to expand and yield radially outwardly in response to passage by the flanged end of a cartridge into the pocket when the cartridge is inserted in said cylindrical chamber through the opening in said second end wall and moved axially therethrough into abutting relation with said movable floor of the foot portion to provide a hooked-up engagement of the flanged end on contraction of said O-ring portion to normal after passage of the flanged end,
(H) the second cylindrical body being responsive to axial forces on said outer end wall to move said second cylindrical body to said depressed position, to move each of said foot portions axially to dislodge the flange of the cartridge in its associated cylindrical chamber from the pocket and to provide positive movement of the complement of cartridges as a group outwardly a substantial distance beyond said O-ring restricting portion to fall clear of said cylindrical chamber by the force of gravity and into the loading chambers.

2. A rapid loading device as set forth in claim 1 in which said first cylindrical body includes a central through bore including a reduced diameter portion providing a first shoulder facing said first end wall and a second shoulder facing said second end wall.

3. A rapid loading device as set forth in claim 2 including a central cavity extending inwardly from said inner end wall of said second cylindrical body in axial alignment with said central through bore.

4. A rapid loading device as set forth in claim 3 in which said means to interconnect said bodies includes attachment means having an enlarged head portion engaged against said second shoulder and a shank portion extending axially through said reduced diameter portion of the central through bore and central cavity with its outer end fixed in the base of said central cavity of the second cylindrical body.

5. A rapid loading device as set forth in claim 4 in which said biasing means comprises a compression spring, circumposed about the inner portion of the shank of said attachment means, under compression between said first shoulder and said cavity base to maintain said second cylindrical body in said normal extended position.

6. A rapid loading device as set forth in claim 5 including slot means in the annular cavity wall of said second cylindrical body to co-operate with said cavity to

provide clearance for said reciprocal telescopic movement thereof relative to said first cylindrical body, said fixed range of reciprocal telescopic movement being established by the depth of said cavity and slots.

7. A rapid loading device as set forth in claim 1 including a recess extending inwardly from the inner end wall of each of said foot portions in the area occupied by a cartridge primer when said cartridge is seated against said inner end wall.

8. A device for the rapid loading of a full complement of cartridges, each having a flanged end, into a revolver having a cylinder with loading chambers, comprising:
(A) a first cylindrical body having a first and a second opposing end wall, an outer cylindrical surface, and a plurality of cylindrical chambers in the body, each having a longitudinal opening extending through said body and both of said end walls with said cylindrical chambers being spaced from one another in a circular pattern, and an annular holding means seat in the outer cylindrical surface of a depthwise radius slightly less than the radius of a circle tangent to the outside radius of the cylindrical chamber pattern;
(B) a resilient holding means in the seat and including a portion extending into each of said cylindrical chambers presenting an obstruction to define a receiving pocket in each cylindrical chamber near said first end wall;
(C) a second cylindrical body;
(D) means to interconnect said bodies to permit a fixed range of coaxial, reciprocal, telescopic movement of said second cylindrical body from a normal extended position to a depressed position;
(E) said second cylindrical body including,
(1) outer and inner end walls,
(2) a plurality of foot portions, each extending radially outwardly from said inner wall, of a number and spacing the same as that of the cylindrical chambers of said first cylindrical body and each of said foot portions sized relative to one of said cylindrical chambers to be freely and slidably received therein through the openings in said first end wall,
(F) said means to interconnect said bodies including biasing means to hold said second cylindrical body in said normal extended position with each of said foot portions positioned in an associated cylindrical chamber adjacent to a restricting portion of said holding means and defining a movable inner floor for the pocket,
(G) said seated holding means portion being positioned between said foot portion and second end wall and said holding means being adapted to expand and yield radially outwardly in response to passage by the flanged end of a cartridge into the pocket when the cartridge is inserted in said cylindrical chamber through the opening in said second end wall and moved axially therethrough into abutting relation with said movable floor of the foot portion to provide a hooked-up engagement of the flanged end on contraction of said holding means portion to normal after passage of the flanged end,
(H) the second cylindrical body being responsive to axial forces on said outer end wall to move said second cylindrical body to said depressed position, to move each of said foot portions axially to dislodge the flange of the cartridge in its associated cylindrical chamber from the pocket and to provide positive movement of the complement of cartridges as a group outwardly a substantial distance beyond said holding means restricting portion to fall clear of said cylindrical chamber by the force of gravity and into the loading chambers.

9. The rapid loading device as set forth in claim 8 wherein said first cylindrical body includes a central through bore including a reduced diameter portion providing a first shoulder facing said first end wall and a second shoulder facing said second end wall.

10. The improvement as set forth in claim 8 including a recess extending inwardly from the inner end wall of each of said foot portions in the area occupied by a cartridge primer when said cartridge is seated against said inner end wall.

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