

Ord. Dept. Desc. of Colt's Double-Action Revolver, cal. 38...

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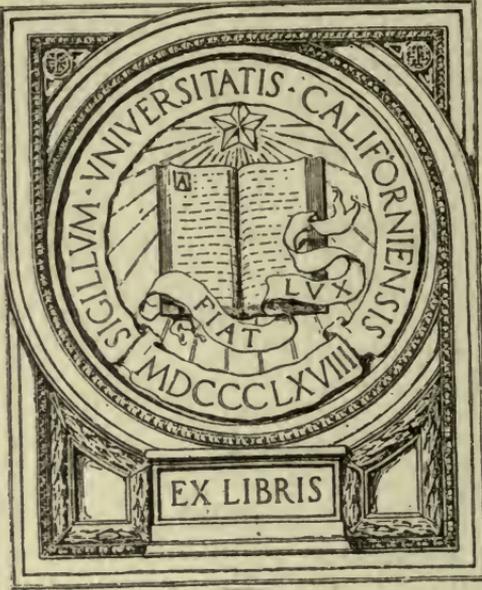
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DESCRIPTION

OF THE

Colt's Double-Action Revolver

CALIBER .38

WITH RULES FOR MANAGEMENT, MEMORANDA
OF TRAJECTORY, AND DESCRIP-
TION OF AMMUNITION

(FOUR PLATES)

APRIL 1, 1905
REVISED OCTOBER 3, 1908
REVISED JUNE 19, 1917



WASHINGTON
GOVERNMENT PRINTING OFFICE

1917

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U.S. Ordnance dept.

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WAR DEPARTMENT,
OFFICE OF THE CHIEF OF ORDNANCE,
Washington, June 19, 1917.

This manual is published for the information and government of the Regular Army and National Guard of the United States.

By order of the Secretary of War:

WILLIAM CROZIER,
Brigadier General, Chief of Ordnance.

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DESCRIPTION OF COLT'S DOUBLE-ACTION REVOLVER, CALIBER .38.

(4 PLATES.)

DIFFERENT MODELS IN SERVICE.

The Colt's double-action revolvers, caliber .38, in service are marked Army, models 1894, 1896, 1901, and 1903. The first model issued was that of 1892, but all the revolvers of that model were altered into model of 1894 by the addition of the *locking lever*, which is pivoted by its screw in a recess in the left side of the frame and prevents the hammer being cocked until the cylinder is positively closed and locked. The models of 1894 and 1896 are identical. The model of 1901 differs from the previous models in having the *butt swivel* for lanyard. The model of 1903 differs from the model of 1901 in having the diameter of the bore reduced to insure better accuracy and in having a smaller and better-shaped handle. The model of 1901 revolvers last made have the thinner stocks

COMPONENT PARTS.

PART I, CLASS VII, SECTION 2.

Crane bushing.
Crane lock.
Crane-lock screw.
Cylinder and ejector, assembled.
Cylinder bolt with spring, assembled.
Cylinder-bolt spring.
Ejector rod.
Ejector-rod head.
Ejector spring.
Gauge for space between cylinder and barrel.
Hammer with strut, strut pin, and strut spring, assembled.
Hammer pin.
Hammer stirrup.
Hammer-stirrup pin.
Hammer-strut spring.
Hand and spring, assembled.
Hand spring.
Latch pin.
Latch spring.
Locking lever.
Locking-lever screw.
Mainspring.
Mainspring tension screw.
Punch and set for replacing recoil plates.

Range rod for testing alignment of the barrel and chambers of cylinder.
 Rebound lever.
 Rebound-lever pin.
 Rebound-lever spring.
 Rebound-lever-spring pin.
 Recoil plate.
 Screw driver.
 Side-plate screw.
 Stock, right ¹ (model of 1901 or model of 1903).
 Stock, left ¹ (model of 1901 or model of 1903).
 Stock pin.
 Stock screw.
 Trigger (includes rebound-lever arm pin).
 Trigger pin.

OPERATION OF THE PARTS.

Plate I is a side view of the revolver.

Plate II shows the revolver with the side plate and stock removed, and with cylinder and other parts cross-sectioned to show construction.

Plate III shows the component parts except the barrel, sight, and frame.

In the plates, parts are given the same numbers as in the list of component parts and in the description that follows.

The barrel (1) is firmly screwed to the frame (17). Until the adoption of the model 1903 the exact diameter of the bore was 0.363 inch. It is now 0.357 inch, and all new barrels used in the repair of revolvers of whatever model are of this size. The front sight (42) is brazed on the barrel. The rear sight is merely a longitudinal groove in the upper surface of the frame.

The lock mechanism is contained in the frame and consists of the hammer (18) with its stirrup (20), stirrup pin (21), strut (22), strut pin (23), and strut spring (24); the trigger (47) with its pin (48); the rebound lever (34) with its spring (37); the hand (25) with its spring (26); the cylinder bolt (9) with its spring (10); the locking lever (30); and the mainspring (32).

The hammer (18), trigger (47), and rebound lever (34) are pivoted on their respective pins, which are fastened in the left side of the frame (17). The lower end of the mainspring (32) fits into a slot in the frame and its upper end engages the hammer stirrup (20). The mainspring tension screw (33) regulates the intensity of the blow of the hammer.

The lower end of the rebound-lever spring (37) is secured to the frame by the rebound-lever-spring pin (38), and the free end bears under the rear end of the rebound lever so that the latter, when the

¹ Includes escutcheons, plain and threaded. Model should be stated.

trigger (47) is released after firing a shot, carries the hammer back to its safety position and forces the trigger forward.

The revolver may be used either single action or double action. In firing double action, pressure upon the trigger (47) causes its upper edge to engage the hammer strut (22) and thereby raises the hammer (18) until nearly in the full-cock position, when the strut will escape from the trigger, and the hammer, under action of the mainspring (32), will fall and strike the cartridge. In firing single action, the hammer (18) is first pulled back with the thumb until the upper edge of the trigger (47) engages in the full-cock notch in the front end of the lower part of the hammer. Pressure on the trigger will release the hammer which, under the action of the mainspring (32), will fall and strike the cartridge. A projection on the upper part of the trigger, working in a slot in the frame prevents the cylinder from making more than one-sixth of a revolution at a time by entering one of the grooves nearest the rear end of the surface of the cylinder. When the cylinder is swung out of the frame the slot in the rear end of the crane pivot is turned so that the projection on the forward part of the trigger can not enter it, which locks the trigger and prevents cocking of the hammer.

The cylinder bolt (9) is pivoted on the trigger pin (48), and its spring (10), bearing on the rebound-lever arm, causes the nose of the bolt to project through a slot in the frame ready to enter one of the rectangular cuts in the surface of the cylinder. During the first part of the movement of the trigger in cocking the revolver, the nose of the bolt is withdrawn from the cylinder, permitting free rotation thereof. The object of the cylinder bolt is to prevent rotation of the cylinder in transportation, and its omission would not disable the revolver.

The hand (25) is attached by its pivot to the trigger, and as the latter swings on its pin when the hammer is being cocked, the hand is raised, revolves the cylinder, and serves to lock the cylinder in proper position at the time of firing—i. e., the axis of the chamber containing cartridge to be fired coinciding with the axis of the bore of the barrel. The hand spring (26) insures the engagement of the hand with the ratchet. An abutment on the side plate supports the hand spring in rear.

The locking lever (30) is pivoted by its screw (31) in the left side of the frame, and its head enters a recess in the latch (27), so that its lower end, when the latch is pushed to the rear, moves forward until it is immediately over that part of the pivot of the hand (25) projecting on the left side of the trigger (47). The trigger is thereby locked, and it is impossible to cock the hammer until the cylinder is positively closed and locked by the latch.

The cylinder (8) has six chambers. It revolves around and is supported on a central arbor of the crane (4). The crane fits into a recess in the frame below the barrel and turns on its pivot arm, which rotates in a hole in that part of the frame below the opening for the cylinder, and is secured by the crane lock (6) and crane-lock screw (7). The ejector rod (12) passes through the center of the arbor of the crane supporting the cylinder, and, projecting under the barrel, is terminated by the ejector-rod head (13). The ejector (11), of which the ratchet forms a part, is screwed on the rear end of the ejector rod with a left-handed thread and then firmly secured by upsetting the metal. The ejector spring (14) is coiled around the ejector rod within the cylinder arbor of the crane, the front end bearing on a shoulder of the rod and the rear end on the crane bushing (5), which is screwed with a left-handed thread into and closes the cylinder arbor.

The thumb piece of the latch (27) slides longitudinally on the left side of the frame, and the barrel of the latch works in a hole in the frame. The latch spring (29) is coiled inside of the barrel of the latch, and is retained therein by the latch pin (28). The latch pin also secures the latch and limits its play. When the cylinder is swung into the frame, the barrel of the latch, under the action of the latch spring, is forced into a recess in the ejector and locks the cylinder in position for firing.

The recoil plate (39) is driven into its recess in the frame and secured therein by slightly upsetting the rim.

TO EJECT THE SHELLS AND LOAD.

To eject the shells and load, push the latch to the rear and swing the cylinder to the left, out of the frame; pressure against the front end of the ejector-rod head will empty the chambers, and the cylinder is then ready to be loaded; swing the cylinder into the frame, taking care that it is revolved so that the cylinder bolt will enter one of the rectangular cuts in its surface.

TO DISMOUNT AND ASSEMBLE REVOLVER.

To dismount the revolver, remove the parts in the following order: (a) Crane-lock screw (7) and crane lock (6); (b) crane (4) with cylinder (8); (c) stock screw (46) and stocks (43) and (44); (d) side plate screws (41) and side plate (40); (e) hand (25) and hand spring (26); (f) mainspring (32); (g) hammer (18); (h) rebound lever (34); (i) rebound-lever spring (37); (j) cylinder bolt (9) and spring (10); (k) trigger (47); (l) locking-lever screw (31) and locking lever (30); (m) latch pin (28) and then latch (27) and latch spring (29).

The crane and cylinder should not be further dismounted or the recoil plate removed except at ordnance depots. The crane and cylinder are dismounted as follows: (a) Unscrew ejector (11) from

ejector rod (12), left-handed thread; (b) remove cylinder (8) from crane arbor; (c) unscrew ejector-rod head (13) from ejector rod (12); (d) unscrew crane bushing (5), left-handed thread; (e) remove ejector rod (12) and spring (14).

To assemble reverse the above order.

PARTS ISSUED FOR REPAIRS.

TO ORDNANCE OFFICERS OF POSTS AND REGIMENTS.

For making repairs to these revolvers in the hands of troops in field and garrison the following spare parts are issued to ordnance officers of posts and regiments. The number opposite each part is the maximum for 100 revolvers, which has by experience been found necessary for ordinary repairs per year. Repairs involving the replacement of parts other than these can only be properly made at depots by expert workmen with the proper tools.

In making requisition for spare parts, it is imperative that the model or models for which the parts are required be stated.

Name of component parts.	Number.
Crane lock.....	5
Crane-lock screw.....	10
Cylinder bolt with spring, assembled.....	5
Cylinder-bolt spring.....	10
Ejector-rod head.....	10
Hammer with strut, strut pin, and strut spring, assembled.....	5
Hammer stirrup.....	5
Hammer-stirrup pin.....	5
Hammer-strut spring.....	10
Hand spring.....	10
Latch pin.....	5
Latch spring.....	10
Locking lever.....	3
Locking-lever screw.....	3
Mainspring.....	8
Mainspring tension screw.....	8
Rebound lever.....	5
Rebound-lever spring.....	8
Rebound-lever-spring pin.....	5
Side-plate screw.....	20
Stock, right ¹ (model of 1901 or model of 1903).....	10
Stock, left ¹ (model of 1901 or model of 1903).....	10
Stock screw.....	5
Trigger (includes rebound-lever arm pin).....	10
Appendage: Screw driver.....	20

¹ Includes escutcheons, plain and threaded. Model should be stated.

TO ORDNANCE DEPOTS.

In addition to the above, the following parts and special gauges and tools are issued to ordnance depots:

Crane bushing.
Cylinder and ejector, assembled.
Ejector rod.
Ejector spring.
Hammer pin.
Hand and spring, assembled.
Gauge for space between cylinder and barrel.

Punch and set for replacing recoil plates.
Range rod for testing alignment of the barrel and chambers of cylinder.
Rebound-lever pin.
Recoil plate.
Stock pin.
Trigger pin.

In replacing a hand in a revolver, it is important that it be so adjusted that the upward movement of the hand will not begin to revolve the cylinder before the trigger withdraws the cylinder bolt. To insure this it may be necessary to file the hand slightly at the end which first engages the ratchet, and as this may bring the two points of the hand which engage the teeth of the ratchet too near together, the lower projection may also have to be slightly filed. The length and thickness of this lower projection must be adjusted so as to bring the cylinder in proper position for firing. This can be done only by expert workmen at a factory.

PARTS NOT ISSUED.

The following parts are not issued:

Barrel.	Frame.
Crane.	Latch.
Cylinder without ejector and ejector rod.	Side plate.
Ejector without cylinder.	Sight.

In the case of breakage or injury, disabling the revolver, to parts other than those that may be issued for repairs as designated, either separately or assembled, the revolver must be returned to an arsenal for repairs.

IMPORTANT POINTS.

(1) *The revolver should be kept clean, free from rust, and properly oiled. The oil should not be used in excess. Waste oil left in the mechanism will cause the parts to gum and work stiffly.*

(2) *The tension screw should never be screwed in tightly unless the mainspring fails to explode the primer, and if screwed in too much pierced primers will result, and the pull, especially on the double-action, be greatly increased.*

(3) *The lock mechanism must not be tampered with. The side plate should not be removed except under the supervision of a noncommissioned officer.*

(4) *Never attempt to remove the side plate by prying it out of place. It should be jarred out of place by smart blows struck with a piece of wood on the left side of the frame where it is covered by the stock.*

(5) *The side plate must be replaced from the rear so as to put its pin in rear of the hand spring. If this pin be placed in front of the hand spring, the spring will be destroyed upon cocking the hammer.*

(6) *The crane and cylinder must not be dismantled unless suitable tools are available.*

(7) *Never attempt to open the cylinder when the hammer is cocked.*

(8) *Never attempt to cock the hammer until the cylinder is fully closed and locked in the frame.*

DIMENSIONS.

Weight.....	{pounds.. 2	
	{ounce... 1	
Total length.....	inches.. 11.5	
Barrel:		
Length.....	do.... 6	
Diameter of bore..	{models 1894, 1896, and 1901.....do.... .363	
	{model 1903.....do.... .357	
Rifling, number of grooves.....	6	
Grooves:		
Width.....	inches.. .156	
Depth.....	do.... .003	
Twist, one turn in.....	do.... 16	
Lands, width.....	do.... .03406	
Cylinder:		
Length.....	do.... 1.499	
Diameter.....	do.... 1.52	
Chambers:		
Number.....	6	
Diameter.....	inches.. .3825	
Front sight, height above axis of bore.....	do.... .6045	

EXTERIOR BALLISTICS.

1. RAPIDITY OF FIRE.

This pistol can be fired 18 times in 44 seconds, loading each chamber separately, and beginning and ending with cylinder closed and chambers empty. Using the "loading pack" furnished by the Colt's Patent Fire Arms Manufacturing Co., 18 shots have been fired in 29 seconds, beginning and ending as above stated. This was firing without aim.

Aiming at 25 yards' distance, at a figure slightly smaller than that of an average man and using the pistol as a self-cocker, the chambers being loaded separately, 18 shots have been fired in 1 minute and 24 seconds, giving 13 hits. Using the pistol as a "single-action" weapon the same number of hits in 18 shots have been obtained in 1 minute and 27 seconds.

Aiming at the same figure, and at the same distance with the loading pack, 16 hits out of 18 shots have been made in 1 minute, using the pistol as a self-cocker, and in 1 minute and 25 seconds as a "single-action" weapon.

2. ACCURACY.

Deviations.	25 yards.	50 yards.	75 yards.	100 yards.	150 yards.	200 yards.
	<i>Inch.</i>	<i>Inches.</i>	<i>Inches.</i>	<i>Inches.</i>	<i>Inches.</i>	<i>Inches.</i>
Mean horizontal..	0.668	0.604	2.278	2.400	2.762	4.600
Mean vertical.....	.515	1.400	1.612	1.994	7.296	6.990
Mean radial.....	.903	1.553	2.884	3.656	8.018	9.255

3. DRIFT.

The drift or deviation due to the rifling is, in this arm, to the left, but is more than neutralized by the pull of the trigger when the pistol is fired from the right hand.

Careful firings made with a pistol with right-hand, and one with left-hand rifling of the service pitch, the weapons being carefully sighted and clamped in a fixed rest, gave the following as the drift:

At 25 yards.	At 50 yards.	At 75 yards.	At 100 yards.	At 150 yards.
<i>Inch.</i> 0.75	<i>Inches.</i> 1.09	<i>Inches.</i> 1.57	<i>Inches.</i> 2.24	<i>Inches.</i> 7.80

The result of these firings indicated that but little reliance could be placed on results obtained at over 75 yards. A very slight variation in the ammunition produced such widely varying results at the longer ranges as to render even an average of many results unreliable and misleading.

4. RECOIL.

Weight of revolver.	Weight of powder charge.	Weight of ball.	Recoil (theoretical).
<i>Pounds.</i> 2.06	<i>Grains.</i> 16	<i>Grains.</i> 150	<i>Foot-pounds.</i> 1.998

5. PENETRATION IN WHITE PINE.

Range in yards.	25	50	75	100	150	200
Depth in inches.....	4.97	4.35	4.26	3.64	3.05	2.90

A penetration of 1 inch in white pine corresponds to a dangerous wound.

6. VELOCITY.

The muzzle velocity of this weapon with the Frankford Arsenal cartridge, with about $3\frac{1}{2}$ grains of smokeless powder and 148-grain bullet, is 750 feet per second. The instrumental velocity was obtained by means of the Le Boulengé chronograph, taking a mean of 20 shots. The remaining velocities at the various ranges were calculated by the aid of the formulæ and tables in Ingalls's Handbook of Problems in Direct Fire.

REMAINING VELOCITY.

At 25 yards.	At 50 yards.	At 75 yards.	At 100 yards.	At 125 yards.	At 150 yards.	At 175 yards.	At 200 yards.
<i>Ft. sec.</i> 689.9	<i>Ft. sec.</i> 671.9	<i>Ft. sec.</i> 654.5	<i>Ft. sec.</i> 637.5	<i>Ft. sec.</i> 620.9	<i>Ft. sec.</i> 604.8	<i>Ft. sec.</i> 589.09	<i>Ft. sec.</i> 573.8

7. FORCE OF IMPACT.

At 25 yards.	At 50 yards.	At 75 yards.	At 100 yards.	At 125 yards.	At 150 yards.	At 175 yards.	At 200 yards.
<i>Ft. lbs.</i> 155.2	<i>Ft. lbs.</i> 147.2	<i>Ft. lbs.</i> 139.7	<i>Ft. lbs.</i> 132.5	<i>Ft. lbs.</i> 125.7	<i>Ft. lbs.</i> 119.3	<i>Ft. lbs.</i> 113.2	<i>Ft. lbs.</i> 107.4

8. DANGEROUS SPACE.

The following tables show the dangerous space for this arm, at ranges from 25 to 200 yards, under the varying conditions of the weapon being used by both mounted and foot troops and against each of these:

The height of a mounted man is, as usual in determinations of dangerous spaces, taken to be 96 inches, and the height of a foot soldier 68 inches. The weapon is supposed to be fired from the height of the eye, or 92 inches for a mounted man and 64 inches for a foot soldier. The points aimed at with mounted and foot soldiers, respectively, are 84 and 34 inches from the ground.

The determination of dangerous spaces was made by firing the revolver from a fixed rest, through screens, and by means of the holes made by the bullet determining the actual trajectory. A number of these were measured and the mean trajectory taken. By graphical representation the dangerous spaces were then laid off and measured.

INFANTRY AGAINST CAVALRY.

Distance.	Ascending branch of trajectory.	Descending branch.		Maximum continuous dangerous space.	Total dangerous space.
		Before object.	Beyond object.		
<i>Yards.</i>	<i>Yards.</i>	<i>Yards.</i>	<i>Yards.</i>	<i>Yards.</i>	<i>Yards.</i>
25	.....	All	56.8	81.8	81.8
50	.....	All	63.2	113.2	113.2
75	.....	All	57.4	132.4	132.4
100	.....	All	52.5	152.5	152.5
150	.....	All	51.0	201.0	201.0
200	24.2	80.8	45.0	125.8	150.0

INFANTRY AGAINST INFANTRY.

25	.....	All	25.6	50.6	50.6
50	.....	All	49.3	99.3	99.3
75	.....	All	39.9	114.9	114.9
100	.....	All	34.75	134.75	134.75
150	12.25	49.2	34.6	83.8	96.05
200	7.0	43.1	30.6	73.7	80.7

CAVALRY AGAINST INFANTRY.

25	.....	14.2	13.8	27.0	27.0
50	.....	27.8	24.25	52.05	52.05
75	.....	39.4	27.3	66.7	66.7
100	.....	43.4	27.0	67.4	67.4
150	.....	36.9	28.9	65.8	65.8
200	.....	35.5	27.2	62.7	62.7

CAVALRY AGAINST CAVALRY.

25	All	All	25.0	50.0	50.0
50	All	All	40.2	90.2	90.2
75	All	All	42.0	117.0	117.0
100	All	All	41.2	141.2	141.2
150	27.5	80	40.3	120.3	147.8
200	8.0	59	39.8	98.8	106.8

AMMUNITION FOR COLT'S DOUBLE-ACTION REVOLVER, CALIBER .38.

BALL CARTRIDGE.

(Plate IV.)

This consists of a cylindrical brass case containing a suitable charge of smokeless powder, an exterior primer containing 0.3 grain of igniting composition, and a lubricated lead bullet weighing 148 grains.

PRIMER.

The primer consists of a cup which contains the primer composition (a), and an anvil (b) for resisting the blow of the firing pin. The anvil is pierced with two vents, by which the flame is communicated to the charge. Ignition is produced by crushing the composition between the cup and anvil by blow of firing pin.

POWDER.

The powder at present used is a nitroglycerin sporting powder similar to that used in shotguns. The charge varies with the kind and lot. At present about $3\frac{1}{2}$ grains are used.

BULLET.

The form of the bullet is a cylinder surmounted by a conical frustum, which is surmounted by a spherical segment. Two rectangular cannelures contain the lubricant. There is a dished cavity in the base, by which the bullet is brought to proper weight without change of exterior form.

	Inches.
Length of bullet.....	0.72
Diameter of cylindrical part of bullet.....	.357
Total length of cartridge.....	1.362

LUBRICANT.

The lubricant is Japan wax. The bullet enters the case beyond the cannelures to entirely cover and protect the lubricant. To render the cartridge waterproof the case is tightly crimped around the bullet.

PACKING.

The cartridges are packed in pasteboard boxes containing 20 cartridges each. One hundred pasteboard boxes, or 2,000 cartridges are packed in one zinc case, hermetically sealed, with handle for tearing open. The whole is inclosed in a wooden box, the cover of which is fastened with thumbscrews and sealed with wire.

	Pounds.
Weight of 100 cartridges.....	3
Weight of 2,000 cartridges, packed.....	72

BLANK CARTRIDGE.

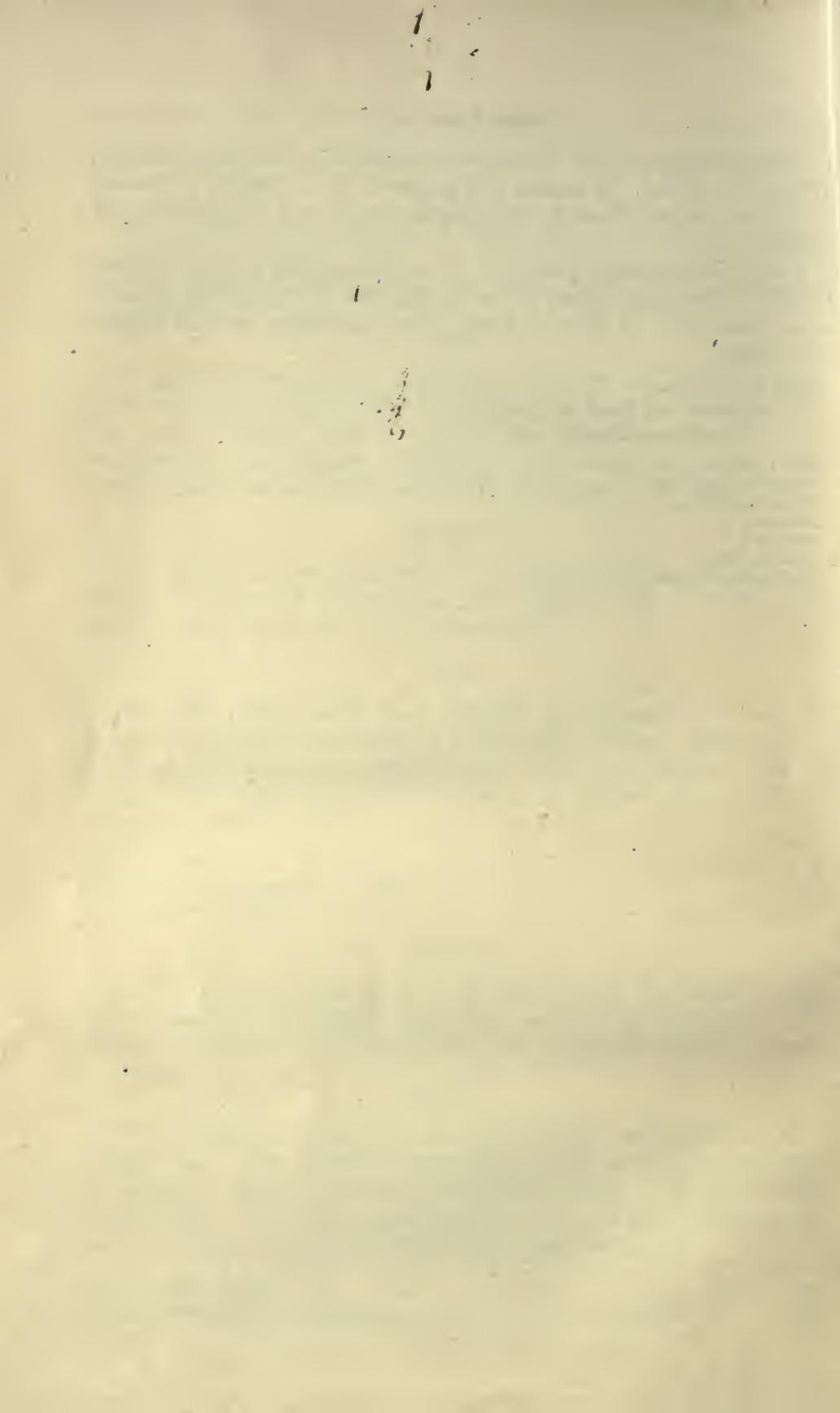
This cartridge has the same case and primer as the ball cartridge. There is no bullet. A charge of 7 grains of E. C. powder is pressed in the case and held there by crimping the case over a cup of shellacked paper.

These cartridges are packed in a manner similar to the ball cartridges. The packing-box cover has not the quick-opening thumb-screw fastening. A box of 2,000 blank cartridges packed weighs 30 pounds.

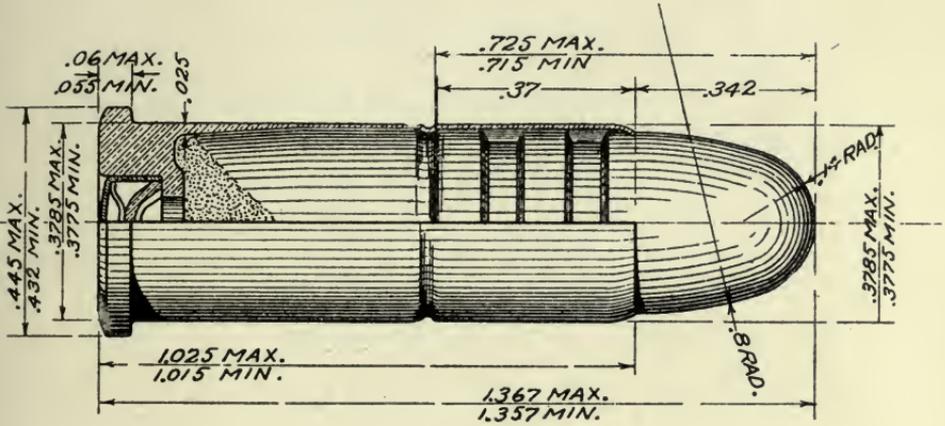
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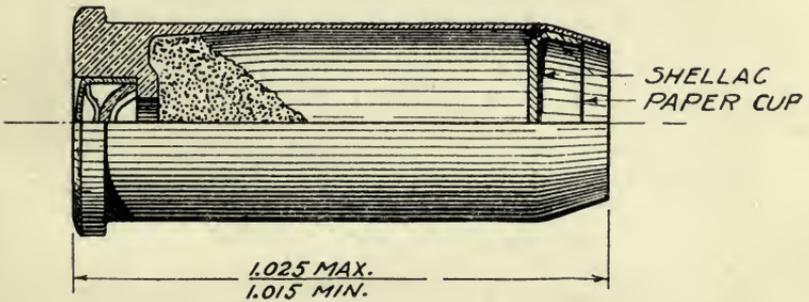




.38 CALIBER REVOLVER CARTRIDGES.



BALL CARTRIDGE.



BLANK CARTRIDGE.

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