May 27, 1947. J. C. CANTLEY 2,421,052

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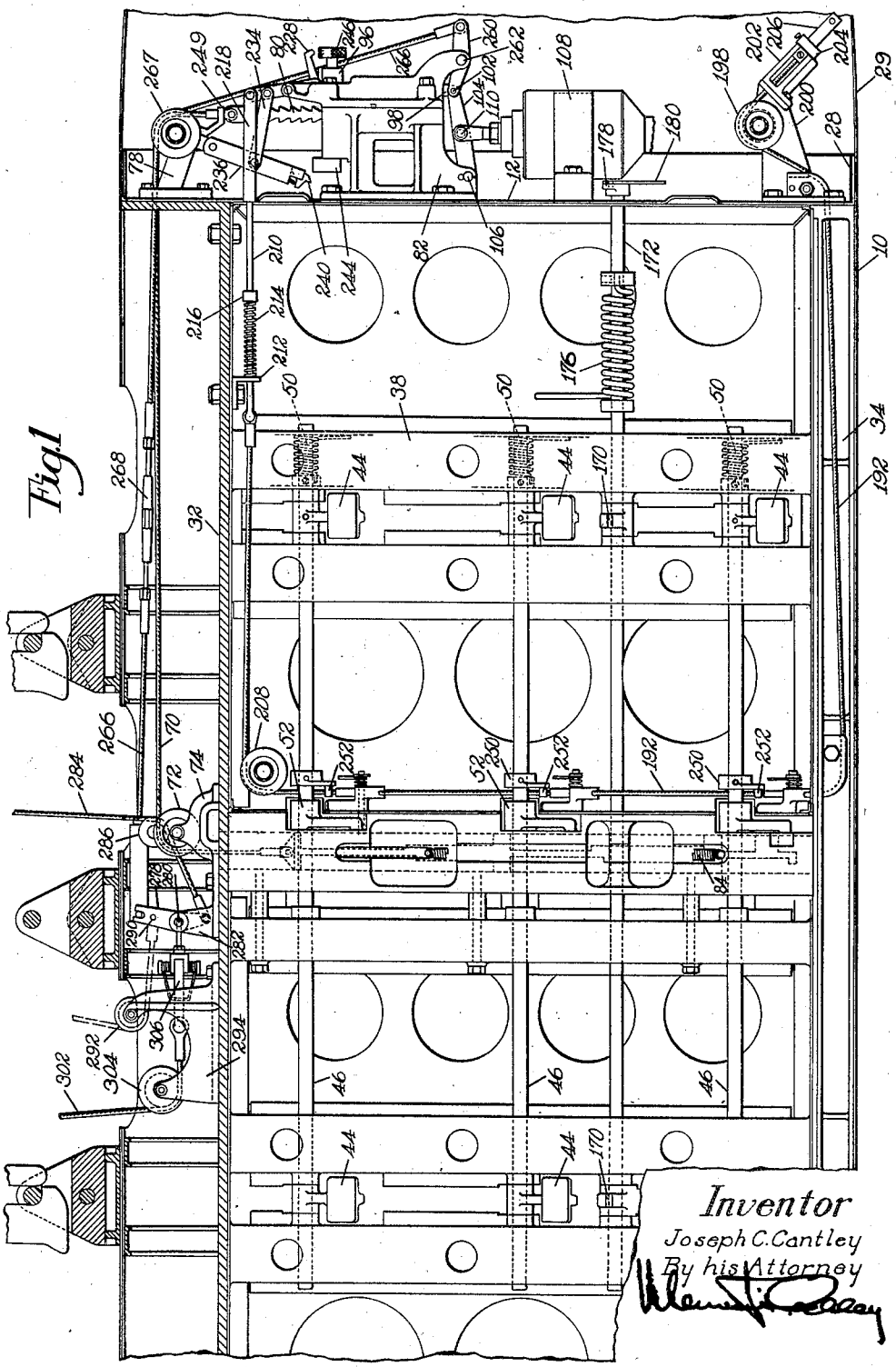


Fig. 1

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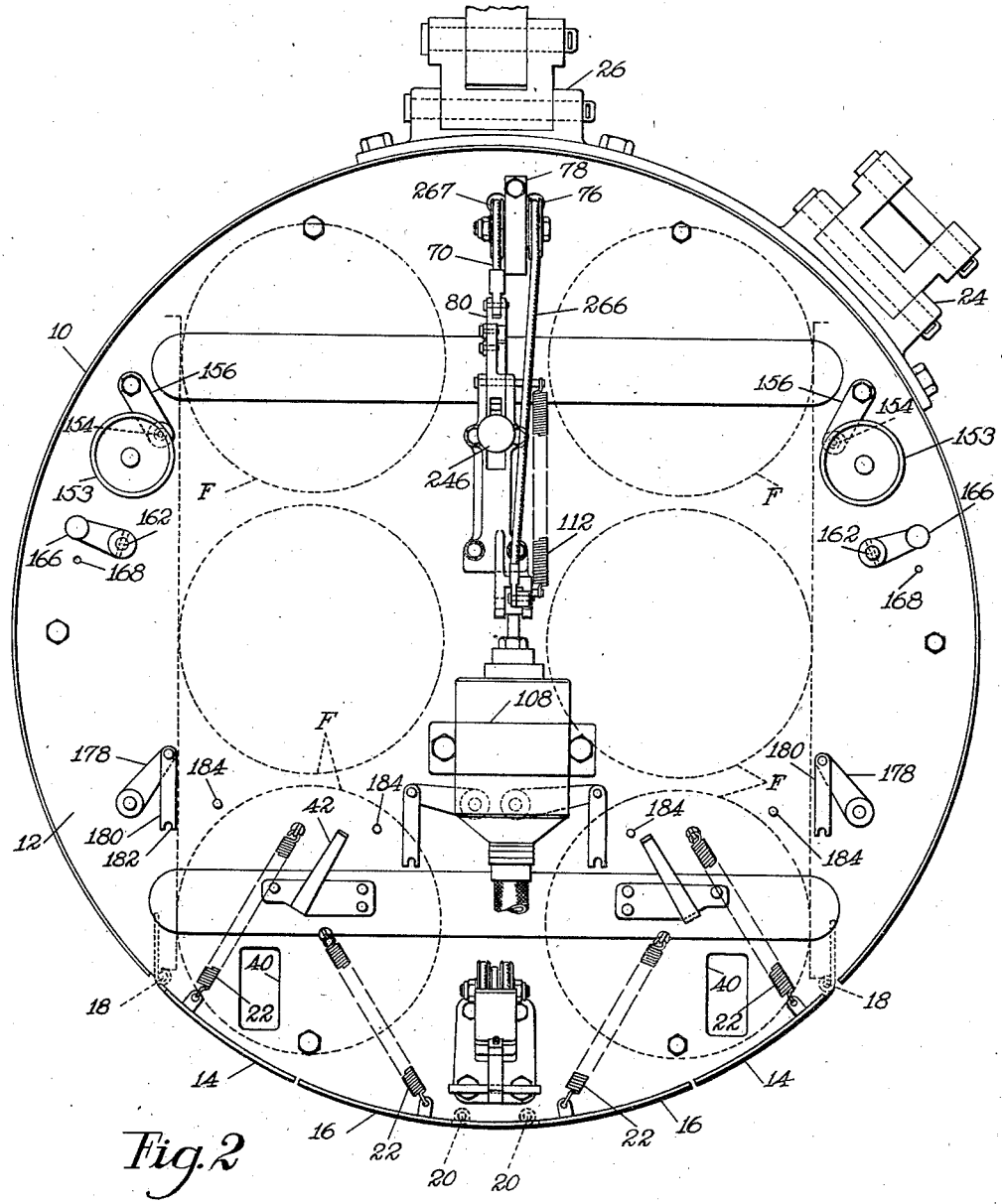


Fig. 2

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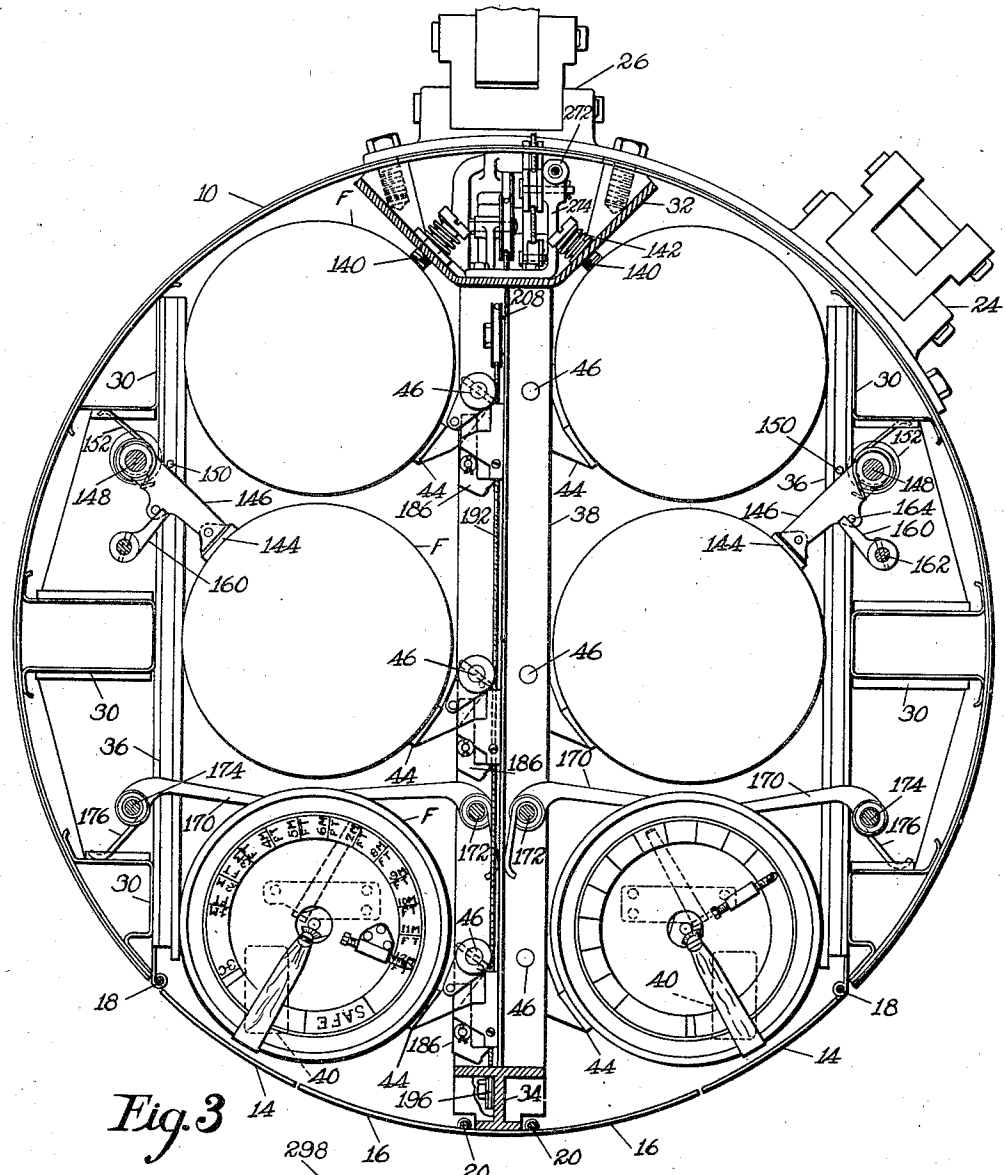


Fig. 3

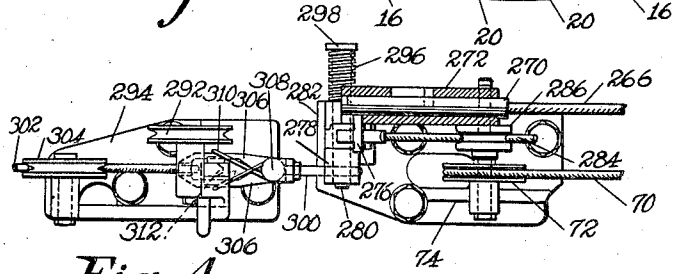


Fig. 4

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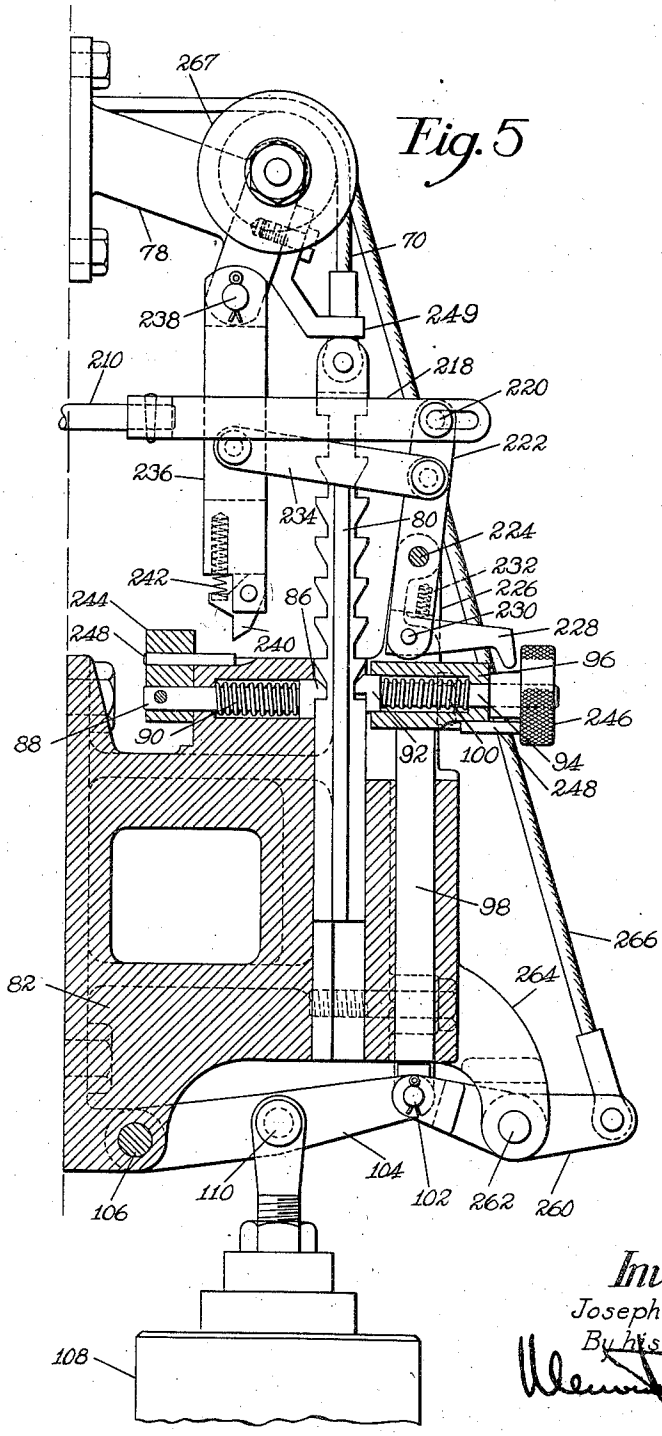
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Fig. 5



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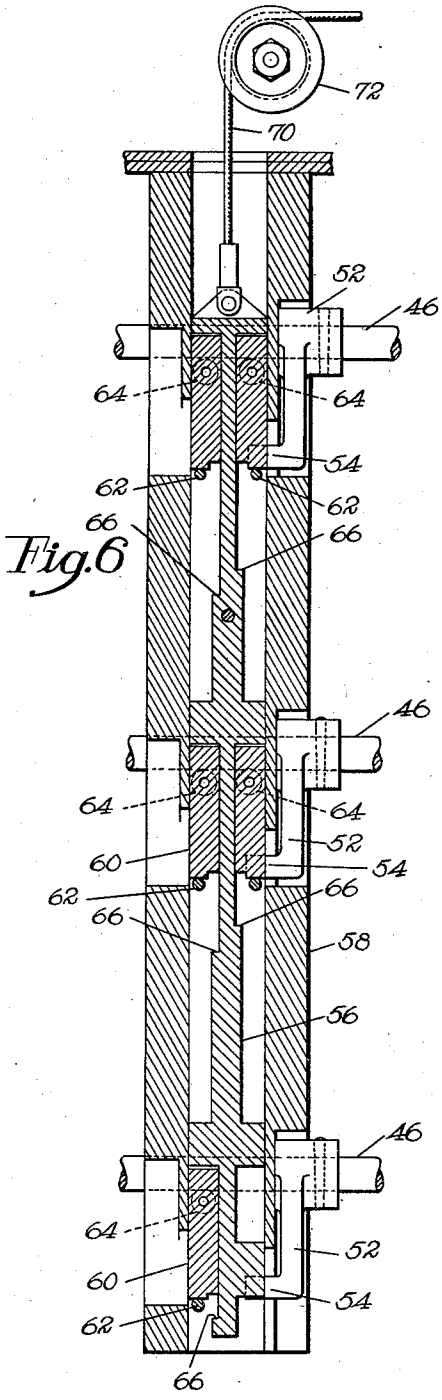


Fig.6

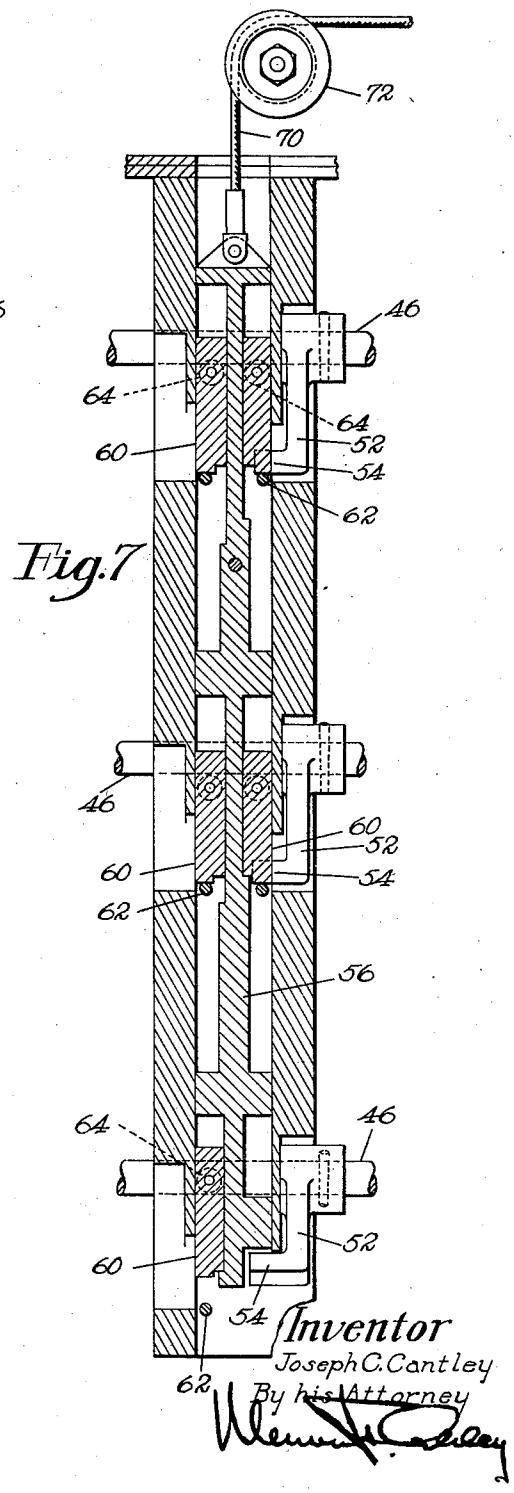


Fig.7

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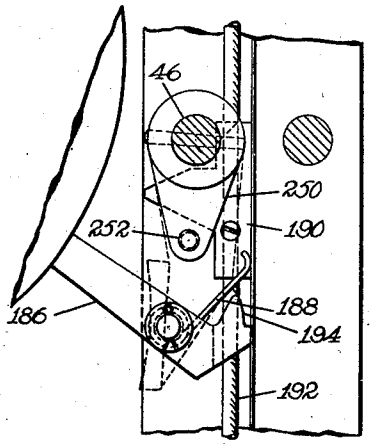


Fig. 9

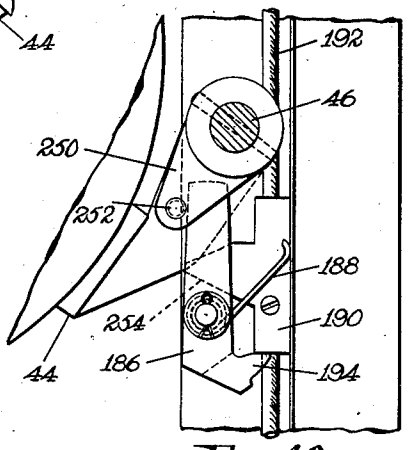


Fig. 10

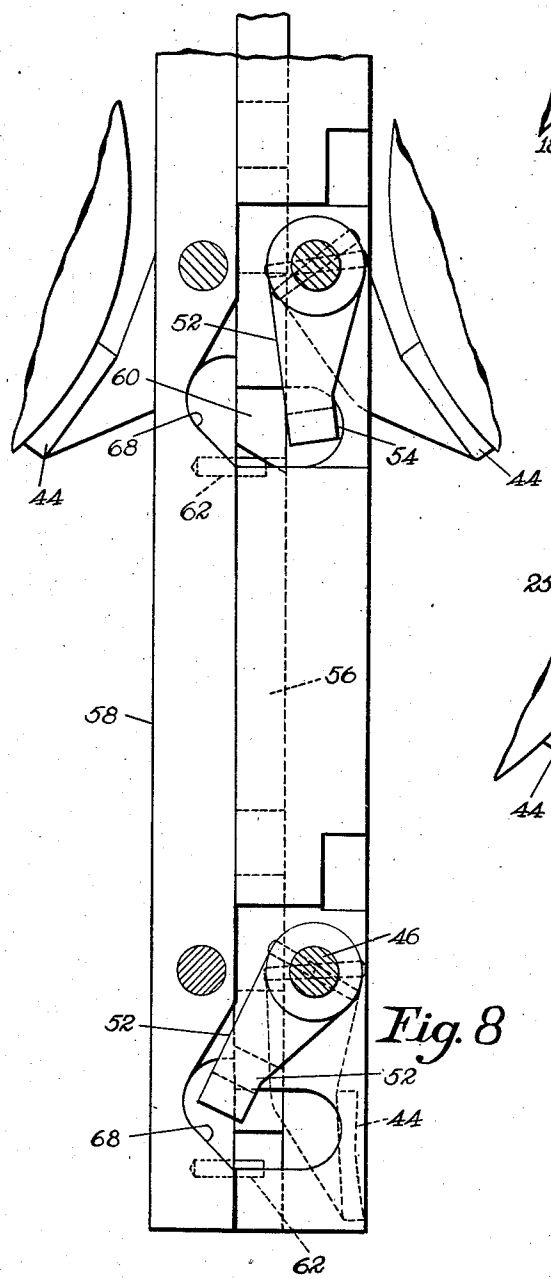


Fig. 8

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UNITED STATES PATENT OFFICE

2,421,052

MAGAZINE

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Application October 19, 1944, Serial No. 559,450

16 Claims. (Cl. 89—1.5)

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This invention relates to magazines for supporting articles to be released from aircraft, and is herein illustrated as embodied in a flare magazine, although it will be understood that the magazine may be employed to carry other articles such as bombs or the like which are to be released when desired from the magazine.

An object of the invention is to provide a magazine in which a plurality of flares and the like are supported therein and in which improved mechanism is provided for causing release of the flares from the magazine rapidly in a predetermined sequence.

To this end, and in accordance with a feature of the invention, the flares are supported within the magazine in horizontal superposed relation by a plurality of flare-supporting arms which are urged by springs to retracted positions and are held in operative positions by latches associated with the supporting arms and released by a vertically movable bar. To reduce the frictional resistance of the bar to movement and accordingly the power required for releasing the flares from the container, the latches are normally held in operative positions by individual vertically movable blocks which are successively lifted in response to successive movements of the bar by shoulders formed on the bar and engageable successively with the blocks. By this arrangement slidable movement between only one block and a latch occurs at one time during the release of the flares from the container so that a minimum of power is required to effect their release.

The bottom of the container is normally closed by doors held in closed positions by springs which permit the doors to open upon impact of a flare therewith when the supporting arms are retracted and the flare is allowed to fall. Whereas the force exerted by those flares located above the lowermost ones will be ample to open the doors because of the momentum required by the flares, provision is made to insure the opening of the doors upon release of the lowermost flares. This is accomplished in accordance with another feature of the invention by provision of spring-pressed arms engaged with the upper surface of these flares, these arms acting to force the flares downwardly when the associated supporting arms are released whereupon the flares will strike the doors with sufficient impact to insure their opening.

In order to prevent movement or vibration of the flares within the magazine while they are retained therein by their supporting arms, other

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members engageable with the upper surfaces of the flares are provided for holding the flares securely in contact with the supporting arms. Provision is made for retracting these flare-engaging members to permit loading of the flares within the container.

The above and other features of ths invention, including various novel combinations of parts and details of construction, will now be described in connection with the drawings and pointed out in the claims. In the drawings,

Fig. 1 is a vertical longitudinal section through one form of flare container embodying the invention;

Fig. 2 is a right end elevation of the container;

Fig. 3 is a vertical transverse section through the right end of the container;

Fig. 4 is a plan view partly in section of a portion of the mechanism permitting release of the container from the airplane;

Fig. 5 is a vertical section through that portion of the mechanism, mounted on the right end of the container, by which the flares are released;

Fig. 6 is a vertical section through the latch release bar by which the flare supports are retracted, the bar being shown in its initial position with the container fully loaded;

Fig. 7 is a similar view with the latch bar raised sufficiently to release the two lowermost flares;

Fig. 8 is a side elevation illustrating a pair of flare-supporting arms in operative positions and a third arm in retracted position and illustrating the latches by which the positions of these arms are controlled;

Fig. 9 is a detail view partly in section of one of the temporary flare-supporting arms and associated mechanism with the arm in supporting position, and

Fig. 10 is a similar view with the temporary supporting arm retracted and the flare being held by the regular supporting arm.

The magazine is illustrated in Figs. 1, 2 and 3 as comprising a cylindrical container 10 having end plates 12 (only one of which is shown) and two sets of doors 14, 16 in the under side thereof. These doors are hinged at 18, 20 and are normally maintained in closed positions by springs 22 (Fig. 2) but open upon impact therewith by a flare F to permit egress of the flare from the magazine. Secured to the upper portion of the container are brackets 24, 26, the first of which may be utilized to support the magazine from the bomb rack or shackle in the bomb bay of an airplane

with the longitudinal axis of the container inclined at 45° to the vertical. The bracket 26 permits the magazine to be suspended vertically from the wing of an airplane. Circular flanges 28 (Fig. 1) project outwardly from opposite ends of the magazine to permit the attachment of nose and tail fairings 29, when the magazine is suspended from the wing thereby to minimize air resistance.

The container is reinforced by longitudinally extended struts 30 (Fig. 3) in the sides thereof, a strut 32 along the top and a strut 34 in the bottom. Secured to the struts 30 are vertical bars 36 forming the outer walls of a pair of flare compartments. A central wall or partition 38 divides the container and completes the compartments for the flares. As illustrated in Fig. 3 each compartment is designed to hold three flares in superposed relation but it will be understood that the magazine may be designed to contain any desired number thereof. The end walls of the container having openings 40 in the lower portions thereof through which the lanyards from the flares pass, the outer ends of the lanyards engaging hooks 42 (Fig. 2) whereupon the lanyards are broken when the flares drop from the container, thus effecting a proper functioning of the flares.

For holding the flares within the container each flare rests on a pair of spaced supporting arms 44 which are pinned to shafts 46 journaled in the central partition 38. As noted in Fig. 3, six such shafts are provided, each of which carries a pair of supporting arms for one of the flares. These supporting arms are urged out of engagement with the flares into the confines of the partition 38, as indicated at the lower portion of Fig. 8, by torsion springs 50 (Fig. 1) secured between the shafts and the partition 38. For holding the supporting arms in engagement with the flares against the action of these springs each of the shafts 46 carries a latch 52 (Figs. 1, 6 and 7), these latches having at their lower ends angular extensions 54 engageable with members which act to lock the shafts 46 in positions with the flare-supporting arms in engagement with the flares. These members include a latch release bar 56 vertically slidable in a post 58 in the central partition 38, and vertically movable blocks 60. These blocks are slidably held between the latch release bar 56 and the interior of the post 58 and, with the container fully loaded these blocks rest on pins 62 in which positions they are held by spring pressed detents 64. It will be noted in Figs. 6 and 7 that five of these blocks 60 are provided, the sixth latch 52 being held outwardly by the lower portion of the latch release bar 56 itself. The latch release bar is provided with steps 66 so spaced as to lift the blocks 60 successively first on one side of the post and then on the other starting with the lowermost block. Thus as the latch release bar 56 is progressively raised the latch 52, at the lower right hand portion in Figs. 6 and 7, will first be released whereupon one of the lowermost pair of flares drops from the container. Upon further upward movement the lowermost block 60 is lifted as indicated in Fig. 7 so that the latch 52 on the opposite side is released to permit dropping the other lowermost flare. As the latch release bar 56 continues its upward movement by mechanism which will hereinafter be described the blocks 60 of the middle pair are successively raised after which the uppermost blocks are successively raised. By employing blocks separate from the latch release bar 56 only one block is raised at a time, there being relative movement between only one latch and its block at a time and the frictional resistance to the upward movement of the latch release bar 56 is considerably less than if the blocks were made integral portions of the latch release bar, so that the force required to release the flares is minimized. As shown in Fig. 8, the lower surfaces of the blocks 60 are inclined so that as soon as each block has been raised to clear the portion 54 of the latch 52, the latch is free to move instantly into retracted position under the influence of spring 50. The center post is recessed at 68 to accommodate the latches when in their released positions. For lifting the latch release bar 56 step by step successively to release the flares, the mechanism shown in Fig. 5 is employed. The upper end of the latch release bar is connected by a cable 70 (Fig. 1) passing over a pulley 72 carried by a block 74 secured to the upper strut 32 and thence over a second pulley 76 (Fig. 2) carried by a bracket 78 secured to the right end of the container. The outer end of the cable is connected to a vertically slidable rack bar 80 guided for movement in a support 82 secured to and extending outwardly of the end wall 12 at the right end of the casing. The latch release bar is normally held in its lowermost position by a spring 84 (Fig. 1) with the rack bar 80 (Fig. 5) in its uppermost position in which it is held by a locking pawl 86. This locking pawl is carried at the end of a pin 88 horizontally slidable in a bore formed in the upper portion of the support 82, and a spring 90 acts between the pawl 86 and the support to urge the pawl into locking engagement with the rack bar. For moving the rack bar downwardly in a step by step manner, thereby to cause successive release of the flares from the container a pawl 92 is provided engageable with the teeth at the opposite side of the rack bar from the locking pawl 86. The pawl 92 is carried by a pin 94 slidable in a casing 96 mounted at the upper end of a vertically slidable bar 98 in the support 82. The pawl 92 is normally maintained in engagement with the rack bar 80 by a spring 100 acting between the casing 96 and the pawl 92. The lower end of the bar 98 is connected by a pin 102 to one end of a lever 104 the other end of which is pivoted at 106 to the lower portion of the support 82. The armature of a solenoid 108 carried by the end wall 12 is pivotally connected at 110 to an intermediate portion of the lever 104 so that upon energization of the solenoid the outer end of the lever 104 is moved downwardly thus moving the bar 98 and the pawl 92 downwardly, the motion of the pawl being transmitted to the rack bar 80. It will be noted that a plurality of teeth are formed at opposite sides of the rack bar and the downward movement of the pawl 92 is sufficient to index the rack bar one step or until the locking pawl 86 engages the next tooth thereon. Upon deenergization of the solenoid 108 the pawl 92 is returned to the position shown in Fig. 5 by a spring 112 (Fig. 2) to engage the next uppermost tooth on the rack bar upon another energization of the solenoid.

The supporting arms 44 hold the flares F in engagement with the vertical bars 36 of the outer walls of the compartments. For additionally supporting the flares against vibration in the container the uppermost flares are held in engagement with screws 140 (Fig. 3) threaded through the upper strut 32. Springs 142, between the strut and the head of the screws 140, act to maintain the screws in their properly adjusted positions. The middle pair of flares is held by the

supporting arms in engagement with the articulated ends 144 of arms 146 secured to and depending inwardly and downwardly from shafts 148 journaled in the end walls of the container. Two sets of arms are provided for each of the center flares, the arms being held normally against pins 150 carried by the vertical bars 36 by torsion springs 152 surrounding the shafts 148 and acting between the arms and the upper side strut 30. In order to adjust the position of the arms 146 within the container so that the flares will be properly supported therein, the ends of the supporting shafts 148 by which they are carried by the end walls are eccentrically disposed and carry handles 153 (Fig. 2) by which the shafts may be turned thereby to shift the positions of the shafts and accordingly the arms 146. The handles 153 are maintained in adjusted positions by detents 154 carried by arms 156 and engageable with recesses formed in the inner surface of the handles.

In order to permit loading of the container the arms 146 must be retracted so that the uppermost flares may be positioned within the container. For this purpose arms 160 carried by the shafts 162 engage pins 164 carried by the arms 146 so that upon turning of the shaft 162 in directions to move the upper ends of the arms 160 upwardly, the arms by their engagement with the pins 164 move the arms 146 into retracted positions. The shafts 162 carry handles 166 secured to the shafts outwardly of the right end wall 12 by which the shafts may be moved manually. Detents carried by the handles 166 engage recesses 168 in the end wall 12 thereby to hold the shafts 162 in either of two positions. It will be apparent that during release of the flares the arms 146 will swing inwardly upon release of the uppermost flares upon impact of the flares with the arms so as not to impede the movement of the flares.

The lowermost flares are each engaged by two sets of arms 170 carried by shafts 172 and 174 carried respectively by the center partition 38 and the outer walls of the flare compartment. Torsion springs 176 act on the shafts 172, 174 to urge the arms 170 downwardly thereby to force the lowermost flare outwardly of the container upon withdrawal of their supporting arms 44. Thus an impulse, in addition to that imparted to the flares by the force of gravity, is effective to insure that the doors 14, 16 at the bottom of the container will open against the force of the springs 22 upon release of the bottom flares. No such additional impulse is imparted to the other flares when they are released inasmuch as they will fall far enough within the container and engage the doors 14, 16 with sufficient impact to insure that the doors will open. In loading the container, after the top four flares have been loaded, the shafts 172, 174 are rotated in directions to hold the arms upwardly and are temporarily locked in these positions. For thus locking the shafts in these positions during loading of the container arms 178 (Fig. 2) are secured to the outer ends of the shafts and to these arms are pivoted arms 180 having recessed ends 182 arranged to receive pins 184 when the arms 178 are swung upwardly. At the completion of the loading operation the arms 180 are removed from the pins 184 whereupon the torsion springs are effective to force the arms 170 firmly into engagement with the top surfaces of the lowermost flares.

For supporting the flares within the container during the loading operation during which time it will be understood that the supporting arms 44 are in inoperative positions within the confines of the center partition 38, temporary supporting arms 186 are provided. These arms are pivoted to the center partition and are urged into operative positions as illustrated in Fig. 9 by springs 188 acting between the arms and the supporting structure. During operation of the container the arms 186 are held in retracted positions as shown in Fig. 10 by blocks 190 carried by cables 192 and engageable with angular extensions 194 formed at the inner ends of the arms 186. These cables 192, of which only one is shown in Fig. 1 pass over pulleys 196 (Fig. 3) carried by the lower strut 30 to pulleys 198 (Fig. 1) carried by a bracket 200 extending outwardly of the end wall 12. Also carried by the bracket 200 is a bracket 202 comprising a pair of spaced walls forming between them a slot to receive a bar 204 carried by a handle 206. When the handle is turned through 90° from the position shown in Fig. 1 it may move upwardly with respect to the bracket 202. With the handle in the position shown, the bar 204 rests on the outer ends of the walls of the bracket 202. The cable is attached to the inner end of the handle 206. At its upper end the cable extends over a pulley 208 to a rod 210 supported by a bracket 212 and the end wall 12 of the container. The rod is urged toward the right as viewed in Fig. 1 by a spring 214 acting between the bracket 212 and a collar 216 carried by the rod thereby to move the cable 192 upwardly when permitted by turning of the handle 206 90° from the position shown. This movement of the cable releases the temporary supporting arms 186 by carrying the blocks 190 out of engagement with the portions 194 of the arms 186 whereby the arms are moved outwardly by the springs 188 into positions to support the flares as they are loaded. It will be obvious that the arms are movable inwardly to permit passage of the flares as they are loaded into the container.

The rod 210 connected to the upper end of the cable 192 is connected at its outer end to a bar 218 which is in turn connected through a pin and slot connection 220 (Fig. 5) to a lever 222 pivoted at 224 to an upwardly extending portion 226 of the support 82. The lever 222 carries a latch 228 the function of which is to release the pawl 92 at the proper time during the loading of the container. The latch 228 is pivoted at 230 to the lower end of the lever 222 and the outer end of the latch is normally urged downwardly by a spring 232 acting between the latch and the lever. During release of the flares from the container, the latch 228 is in the position shown in Fig. 1 but is moved into the position shown in Fig. 5 under the action of the spring 214 in moving the rod 210 to the right during upward movement of the cable 192 to permit movement of the temporary supporting arms into their operative positions. The lever 222 is connected by a link 234 to an arm 236 pivoted at 238 to the bracket 78 and depending therefrom. To the lower end of the arm 236 is pivoted a latch 240 urged by a spring 242 into the position shown in Fig. 5 with respect to the arm 236. This arm and the latch carried thereby are in the positions shown in Fig. 1 during normal operations of the magazine but the lever 222 moves the latch 228 into the position shown in Fig. 5 which acts through its connection 234 to move the arm 236 and latch 240 likewise into the positions shown in Fig. 5. The latches are capable of yielding with respect to their supporting arms to permit them to pass over the handles 244, 246 associated with the

locking pawl 86 and the indexing pawl 92. Pins 248, carried by the handles, cooperate with recesses formed in the support 82 and the casing 96 to prevent rotative movement of the pawls 86 and 92.

It will be apparent that the movement of the latches 228 and 240 into the positions shown in Fig. 5 from those of Fig. 1 will have no effect on the pawls 86 and 92 but when the latches are returned to the positions shown in Fig. 1 they will momentarily withdraw the pawls from the indexing rack bar 80 whereupon this bar is moved upwardly by the spring 112 (Fig. 2) into the position shown in Fig. 5 in engagement with a stop 249 carried by the bracket 78, returning the latch release bar 56 into its initial position. This return movement of the latches 228 and 240 into the positions shown in Fig. 1 is effected after the container has been fully loaded and the cable 192 drawn downward by outer movement of the handle 206 and locked in this position by turning the handle back to the position shown in Fig. 1. This movement of the cable also causes the regular supporting arms 44 to move into engagement with the flares. For this purpose arms 250 (Figs. 9 and 10) are carried by the shafts 46 and are provided with pins 252 arranged to be acted upon by inclined extensions 254 of the blocks 190. Thus as the blocks 190 are moved downwardly from the position shown in Fig. 9 to that of Fig. 10, the portions 254 of the blocks act on the pins 252 to swing the arms 250 thereby causing the shafts 46 to rock, thus moving the supporting arms 44 into their operative positions. This movement of the supporting arms 44 takes place before the bar 218 (Fig. 5) has been moved far enough to the left to take up the lost motion at the connection 220. However, this lost motion is taken up after the supporting arms have returned to operative positions whereupon lever 222 is swung in a counterclockwise direction and latch 226 retracts the pawl 92 and simultaneously the arm 236 is moved in a clockwise direction so that latch 240 retracts the locking pawl 86. The rack bar 80 is now free to move upwardly returning the latch release bar 56 into its lowermost position. Upon continued movement of the cable 192 the blocks 190 engage the portions 184 of the temporary supporting arms 186 thereby moving them into inoperative positions as shown in Fig. 10 during which time the latches 228 and 240 pass beyond the handles 244 and 246 of the pawls 86 and 92 as shown in Fig. 1 whereby these pawls return into engagement with the rack bar 80 as shown in Fig. 5. The arms 146 (Fig. 3) are now returned to operative positions by movement of the handles 166 into the positions shown in Fig. 2 and the arms 180 are moved out of engagement with the pins 184 so that the torsion springs 176 (Figs. 1 and 3) are effective to urge the arms 170 into engagement with the lowermost flares. The magazine is now ready for operation.

Provision is made for causing manual operation of the indexing pawl 92 in the event of an electrical failure. For this purpose a lever 260 (Fig. 5) pivoted at 262 to a bracket 264 extending downwardly from the support 82 is connected at one end to the pin 102 which connects the bar 98 and the lever 104. The outer end of the lever 260 is connected by a cable 266 passing over a pulley 267 carried by the bracket 78, through an adjustable connection 268 (Fig. 1) to a rod 270 (Fig. 4) slidable in a tube 272 carried by a bracket 274 (Fig. 3) supported by the upper strut 32. The rod 270 carries at its left end a pin 276 received in a recess formed at the upper end of a lever 278 (Fig. 1) pivoted on a pin 280 carried by a bracket 282 supported by the upper strut 32. The lower end of the lever 278 is connected by a cable 284 passing over a pulley 286, the upper end of the cable being accessible within the plane so that by successive pulls on the cable 284 the lever 278 is moved in a counterclockwise direction causing the cable 266 to move the lever 260 in a counterclockwise direction and imparting downward movement to the pawl 92 similar to that imparted to it upon energization of the solenoid 108. In some types of mountings it may be more convenient to attach a cable to the lever 278 at the point 290 in which case the cable passes around a pulley 292 carried by a bracket 294.

It may be desirable under certain conditions to release the entire magazine from the airplane in which case the connection between the cable 284 and the magazine is broken. This is effected in the illustrated form of the invention by removal of the pivot pin 280 by which the lever 278 is connected to the bracket 282. With this pin removed the lever 278 becomes disconnected from the magazine whereupon the magazine is free to be dropped. As shown in Fig. 4 the pivot pin 280 is urged outwardly by a spring 296 acting between the bracket 282 and a head 298 of the pin 280. The pivot pin is normally held in operative position by a locking pin 300 passing through the pivot pin 280 and the lever 278. It will be apparent that upon withdrawal of the locking pin 300 the spring is effective to withdraw the pivot pin 280. For thus withdrawing the locking pin 300 a cable 302 accessible from the interior of the plane passes downwardly around a pulley 304 carried by the bracket 294 and is connected between a pair of arms 306 pivoted on a stud 308 carried by the outer end of the locking pin 300. Springs 310 normally hold the outer ends of the arms 306 in engagement with the lower end of the cable 302. Between the arms 306 is a stationary cam member 312 effective upon moving the pin 300 outwardly to act on inclined surfaces of the arms 306 to spread the outer ends against the force of the springs 310 thereby to release their hold upon the cable 302. Thus it will be seen that as the cable 302 is pulled upwardly to remove the locking pin 300, after the pin has been moved sufficiently to release the pivot pin 280 the cable itself is released from the arms 306 whereupon both cables 302 and 284 are released from the magazine which is thereupon free to be jettisoned.

Having thus described the invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. In an aircraft flare magazine, a container, means for supporting individually a plurality of flares in horizontal superposed relation in the container, means for successively releasing said supporting means, a pair of doors at the bottom of the container arranged to open upon impact therewith by a flare after it is released by the supporting means to permit egress of the flare from the container, springs normally maintaining said doors closed, and means arranged to act directly upon a flare supported by the lowermost supporting means to force said flare downwardly upon release of said lowermost supporting means.

2. In an aircraft flare magazine, a container, a plurality of vertically spaced arms for supporting a plurality of flares in the container in horizontal superposed relation, a pair of doors at the

bottom of the container arranged to open upon impact therewith by a flare after it is released by the retraction of said arms to permit egress of the flare from the container, means for retracting said arms, springs normally maintaining said doors closed, means cooperating with said supporting arms to hold the flares rigidly in the container, said means including retractable arms engageable with the flares opposite to the points of engagement with the supporting arms, and means urging the arms engageable with the lowermost flare downwardly forcibly to eject the flare upon retraction of the associated supporting arms.

3. In an aircraft flare magazine, a container, a plurality of vertically spaced arms for supporting a plurality of flares in the container in horizontal superposed relation, a pair of doors at the bottom of the container arranged to open upon impact therewith by a flare after it is released by the retraction of said arms to permit egress of the flare from the container, means for retracting said arms, springs normally maintaining said doors closed, means cooperating with said supporting arms to hold the flares rigidly in the container, said means including retractable arms engageable with the flares opposite to the points of engagement with the supporting arms, means urging the arms engageable with the lowermost flare downwardly forcibly to eject the flare upon retraction of the associated supporting arms, and means rendering said last named means ineffective during loading of the container.

4. In an aircraft flare magazine, a container, a plurality of vertically spaced arms for supporting a plurality of flares in the container in horizontal superposed relation, means for retracting said arms sequentially thereby to permit dropping of the flares through the bottom of the container, means for temporarily supporting the flares in the container during the loading operation, and means for retracting said temporary supporting means and resetting the supporting arms after the loading of the container has been completed.

5. In an aircraft flare magazine, a container, a plurality of vertically spaced arms for supporting a plurality of flares in the container in horizontal superposed relation, means normally urging said arms into retracted positions, latches associated with said arms for holding the arms in flare-supporting positions, a latch release bar arranged sequentially to release said latches thereby to permit retraction of the supporting arms sequentially, a plurality of arms arranged to support the flares in the container during the loading operation, and single means for returning the first named supporting arms into operative positions, retracting said last named arms, and returning the latch release bar into initial position.

6. In an aircraft flare magazine, a container having a central vertical wall dividing said container into two flare compartments in each of which may be supported a plurality of flares in horizontal superposed relation, flare-supporting arms carried by said central wall, means for retracting said arms in a predetermined sequence to permit release of the flares from the magazine, and a plurality of flare-engaging members carried by the outer walls of the container for holding the flares rigidly therein.

7. In an aircraft flare magazine, a container having a central vertical wall dividing the container into two compartments arranged to support a plurality of flares in horizontal superposed relation, a plurality of flare-supporting arms carried by said central wall, means retracting said arms in a predetermined sequence to permit release of the flares from the magazine, each of said compartments having an egress opening in the bottom thereof, doors normally closing said openings and being arranged to open upon impact therewith by a flare in response to its release by retraction of the associated supporting arms, means carried by the outer walls of the container engageable with the upper surfaces of the flares for holding them rigidly within the compartments, said means including pivoted arms and springs acting thereon urging the arms downwardly thereby forcibly to eject the lowermost flares from the container upon retraction of the supporting arms.

8. In an aircraft flare magazine, a container having a pair of vertical walls arranged to hold between them a plurality of flares in horizontal superposed relation, a pair of flare-supporting arms carried by one of said walls, a plurality of temporary supporting arms carried by said wall and arranged to hold the flares within the container during loading thereof, means carried by said wall for sequentially retracting the first named flare-supporting arms, and means in said wall for moving the temporary supporting arms into operative positions following the emptying of the magazine and for subsequently retracting the temporary supporting arms and returning the first named supporting arms into flare-supporting positions.

9. In an aircraft flare magazine, a container having a pair of spaced vertical walls arranged to hold between them a plurality of flares in horizontal superposed relation, a plurality of vertically spaced horizontal shafts carried by one of said walls, flare-supporting arms carried by said shafts, springs acting on said shafts to retract the flare-supporting arms, latches carried by said shafts, means carried by said one of said walls for holding said latches in positions to lock the shafts with the flare-supporting arms in operative positions, a plurality of temporary flare-supporting arms carried by said one of said walls, mechanism for sequentially releasing said latches thereby to permit sequential release of the flares from the container, and means carried by said one of said walls for moving said temporary supporting arms into operative positions to permit loading of the container and for subsequently moving said first supporting arms into operative positions, retracting the temporary supporting arms and returning said latch release mechanism into initial position.

10. In an aircraft flare magazine, means for supporting a plurality of flares therein, means urging said supporting means to inoperative positions, latches movable with said supporting means, a movable abutment cooperating with each latch for locking the associated supporting means in operative position, and a movable bar having a plurality of shoulders engageable with said abutments for sequentially moving the abutments out of engagement with said latches to permit sequential movement of the supporting means to inoperative positions.

11. In an aircraft flare magazine, a plurality of vertically disposed flare-supporting arms, horizontally extending shafts carrying said arms, springs acting on said shafts to move the arms to inoperative positions, latches carried by said shafts, vertically slidable blocks cooperating with said latches to hold the shafts with the flare-

supporting arms in supporting positions, and a vertically movable bar having a plurality of shoulders engageable sequentially with said blocks upon vertical movement of the bar for moving the blocks out of engagement with said latches to permit sequential movement of the supporting arms to inoperative positions whereupon the flares are released one at a time from the magazine.

12. In an aircraft flare magazine, a plurality of vertically disposed flare-supporting arms, horizontally extending shafts carrying said arms, springs acting on said shafts to move the arms to inoperative positions, latches carried by said shafts, vertically slidable blocks cooperating with said latches to hold the shafts with the flare-supporting arms in supporting positions, a vertically movable bar having a plurality of shoulders engageable sequentially with said blocks upon vertical movement of the bar for moving the blocks out of engagement with said latches to permit sequential movement of the supporting arms to inoperative positions whereupon the flares are released one at a time from the magazine, and other means for holding the shafts with the arms in flare-supporting positions to permit return of the blocks and the vertically movable bar to initial positions.

13. In an aircraft flare magazine, a plurality of vertically disposed flare-supporting arms, horizontally extending shafts carrying said arms, springs acting on said shafts to move the arms to inoperative positions, latches carried by said shafts, vertically slidable blocks cooperating with said latches to hold the shafts with the flare-supporting arms in supporting positions, a vertically movable bar having a plurality of shoulders engageable sequentially with said blocks upon vertical movement of the bar for moving the blocks out of engagement with said latches to permit sequential movement of the supporting arms to inoperative positions whereupon the flares are released one at a time from the magazine, a solenoid and means operated by the solenoid in response to repeated energizations thereof for moving the bar in a step by step manner to cause successive release of the flares.

14. In an aircraft flare magazine, a container having a vertical central partition therein forming a pair of flare compartments for containing flares in horizontal superposed relation, a plurality of pairs of horizontal vertically spaced shafts carried by said partition, arms carried by said shafts for supporting the flares within the compartments, a vertically movable bar carried by said central partition, means for imparting vertical step by step movement to said bar, and means operative in response to movement of the bar for turning the shafts to withdraw the flare-supporting arms thereby to permit release of the flares from the magazine alternately from the two compartments.

15. In an aircraft flare magazine, a container divided by a central vertical partition into a pair of flare compartments in each of which a plurality of horizontally disposed flares may be supported in superposed relationship, a plurality of pairs of horizontally extending shafts carried by said partition in vertically spaced relationship, flare-supporting arms carried by said shafts for holding the flares within the compartments, springs acting on said shafts to withdraw the supporting arms from engagement with the flares, latches carried by said shafts, vertically movable blocks engageable with said latches to hold the arms in operative positions, a vertically movable bar carried by said partition and having a plurality of shoulders for lifting the blocks sequentially out of engagement with the latches in response to vertical movements of the bar, and means for imparting step by step movement to said bar thereby to lift the blocks successively out of engagement with the latches whereupon the flares are released in a predetermined sequence from the magazine.

16. In an aircraft flare magazine, a container divided by a central vertical partition into a pair of flare compartments in each of which a plurality of horizontally disposed flares may be supported in superposed relationship, a plurality of pairs of horizontally extending shafts carried by said partition in vertically spaced relationship, flare-supporting arms carried by said shafts for holding the flares within the compartments, springs acting on said shafts to withdraw the supporting arms from engagement with the flares, latches carried by said shafts, vertically movable blocks engageable with said latches to hold the arms in operative positions, a vertically movable bar carried by said partition and having a plurality of shoulders for lifting the blocks sequentially out of engagement with the latches in response to vertical movements of the bar, a solenoid, and means connecting said solenoid to said bar to move the bar in a step by step manner in response to successive energizations of the solenoid thereby to lift the blocks successively out of engagement with the latches whereupon the flares are released in a predetermined sequence from the magazine.

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