

- [54] **AUTOMATIC SHOTGUN CHOKE**
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- [51] Int. Cl. **F41c 21/00**
- [58] Field of Search **42/79**

[56] **References Cited**

UNITED STATES PATENTS

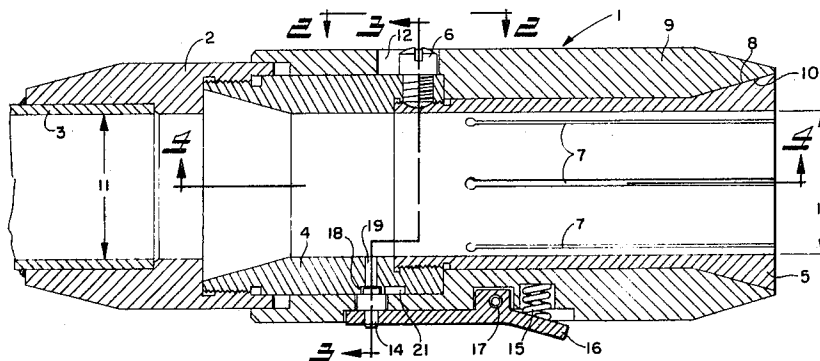
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[57] **ABSTRACT**
 An automatic shotgun choke characterized in the provision of a choke member adapted to be secured to

the muzzle end of a shotgun barrel; a recoil and spring actuated choke operating sleeve around said choke member; and a gas pressure actuated latch on said choke sleeve engaged in a first recess in the choke member which retains said sleeve and choke member with the latter in open bore condition until after the initial shot is fired, at which time, the latch is actuated by the gas pressure of the initial shot to automatically release the sleeve and choke member for relative spring and recoil actuation to full choke position. In the full choke position, the latch engages a second recess in the choke member so that the second and succeeding shots will be fired under full choke conditions. Whenever desired, the latch may be disengaged from the second (full choke) recess and the choke sleeve moved against spring pressure to open bore position at which it is latched and exposed to gas pressure when the next shot is fired. The automatic shotgun choke herein is further characterized in that the choke sleeve may, upon disengagement of the latch from the first (open bore) recess, be rotated to open bore position and whereat the latch engages a third recess in the choke member but is not exposed to gas pressure and hence the choke assembly will remain in open bore position for any number of shots until such time that the choke sleeve is manually shifted to automatic choke position with the latch engaged in the first (open choke) recess.

6 Claims, 4 Drawing Figures



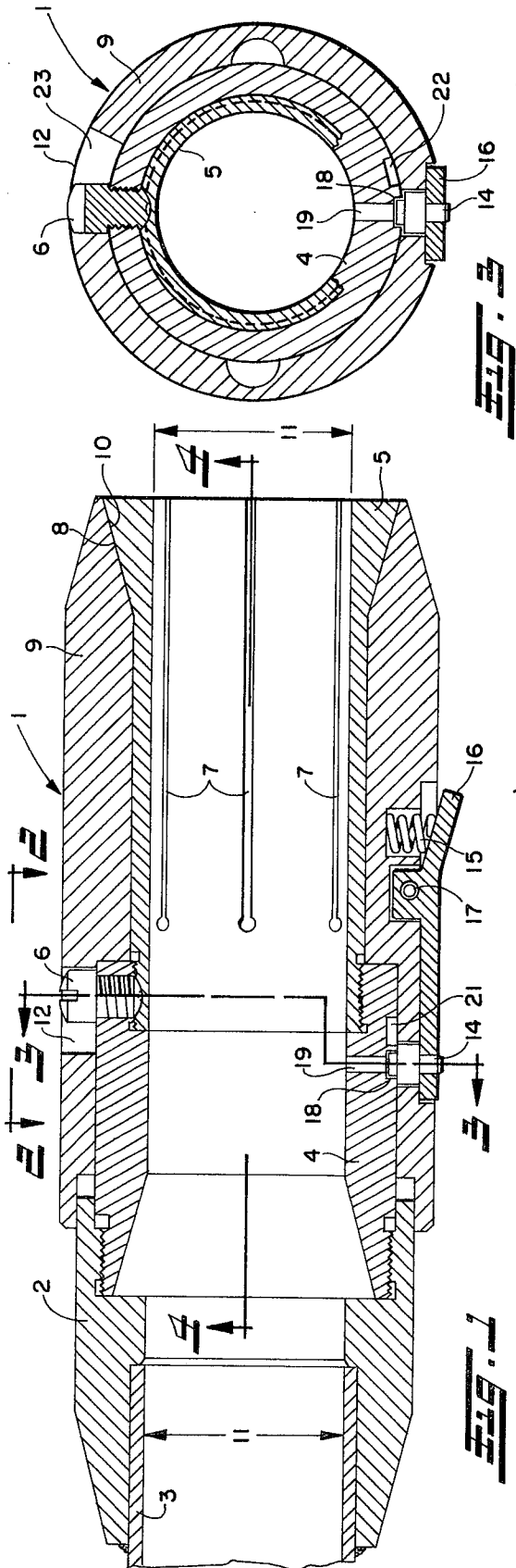


FIG. 1

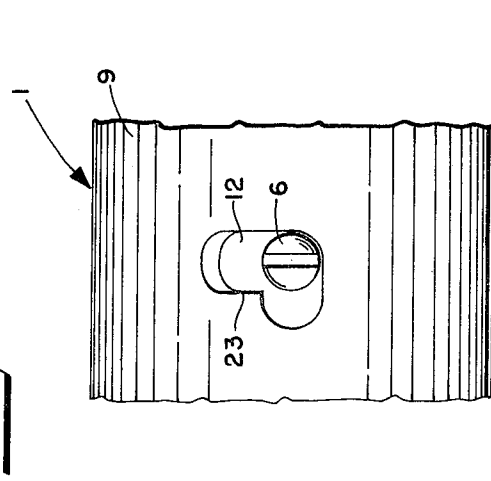


FIG. 2

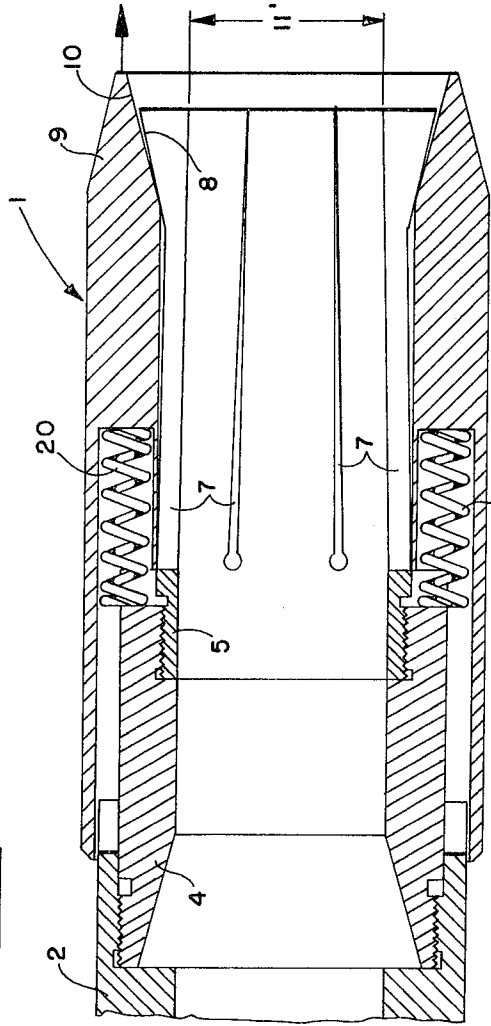


FIG. 4

FIG. 3

AUTOMATIC SHOTGUN CHOKE

SUMMARY OF THE INVENTION

It is a principal object of the present invention to provide an automatic shotgun choke which is of simple and easy to manufacture construction and which includes a latch on the choke operating sleeve which may be placed in three different latching positions in recesses in the choke member to latch the choke operating sleeve in an open bore (no-choke) position, or in a full choke position, or in an automatic position. When the latch is in automatic position, the latch will be automatically released by explosion gas pressure for movement of the choke operating sleeve by recoil and by spring pressure from open bore to full choke position after the first shot is fired with the choke member being retained in full choke position for the second and succeeding shots until the latch is released and the choke operating member shifted back to automatic or open bore position.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a central longitudinal cross-section view of the automatic shotgun choke herein as secured on the muzzle end of the shotgun barrel and showing the choke in its automatic position;

FIG. 2 is a top plan view as viewed along the line 2—2, FIG. 1;

FIG. 3 is a cross-section view taken substantially along the line 3—3, FIG. 1; and

FIG. 4 is a cross-section view taken substantially along the line 4—4 except showing the choke in the full choke position which it assumes after the first shot.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

The automatic shotgun choke assembly 1 herein is adapted to be screwed into an adaptor ring 2 which may be soldered or otherwise secured to the muzzle end of a shotgun barrel 3, said adaptor ring 2 having screwed thereinto the tubular member 4 of assembly 1 into which the choke member 5 is screwed and locked by set screw 6. The choke member 5 is axially slotted as at 7 and is provided with a tapered cam surface 8.

Axially slidably guided on the choke member 5 and tubular member 4 is a choke operating member 9 in the form of an outer sleeve surrounding choke member 5 which is provided with an internal cam surface 10 which mates with the choke member cam surface 8. When the choke operating member 9 is in the position shown in FIG. 1, the diameter of the bore 11 of the choke member 5 is equal to the diameter of the bore of the shotgun barrel 3 and hence this is the open bore or no-choke position and, when the choke operating member 9 is advanced to the right with respect to the choke member 5 as shown in FIG. 4, the choke member 5 will have a constricted bore as represented by the reference numeral 11' which preferably is the full choke position, although it is to be understood that the amount of constriction may be varied to provide a modified choke or some other intermediate choke position as well known in the art.

The choke operating member 9 is provided with an L-shaped slot 12 radially therethrough in which the head of the set screw 6 is disposed. The choke operating member 9 is shown in FIG. 1 as being latched in the

automatic position wherein the latch pin 14 secured to the spring 15 actuated latching lever 16 which is pivoted to the choke operating member 9 by the roll pin 17 is engaged in a recess 18 covering the gas port 19 which leads to the bore of the member 4. The choke operating member 9 is normally spring biased to the right as viewed in FIG. 1 by the springs 20 but is held by the latch pin 14 in the FIG. 1 position until after the initial shot is fired whereby the initial shot will be a no-choke shot through the open bore of the choke member 5 to provide the normal open bore or no-choke shot pattern. When the first shot is fired the explosion gas pressure in the gas port 19 acting on the latch pin 14 will move the latter out of engagement with the recess 18 and the combined effect of the shotgun recoil and the pressure of the springs 20 will shift the choke operating sleeve 9 to the FIG. 4 position to contract the choke member 5 which in this case is the full choke position with the choke member 5 constricted to the diameter 11'. In this position, the latch pin 14 will engage in the recess 21 in the member 4 to retain the choke operating member 9 in the FIG. 4 position for the second and succeeding shots until the latch pin 14 is manually disengaged from the recess 21 and the choke operating member 9 forced back against spring 20 pressure to re-engage the latch pin 14 in the automatic recess 18 to cover the gas port 19.

In the event that it is desired to retain the choke in open bore or no-choke position for the first and succeeding shots, all that is necessary to do is to disengage the latch pin 14 from the automatic recess 18 as shown in FIG. 1 and to turn the choke operating member 9 in a counterclockwise direction as viewed in FIG. 3 so that the latch pin 14 may engage in the open bore or no-choke recess 22. In this last-mentioned position the latch pin 14 is not exposed to explosion gas pressure and hence the choke operating member 9 will remain in the FIG. 1 position. Moreover, in the open bore or no-choke position the head of the set screw 6 is disposed in the circumferentially extending portion 23 of the L-shaped slot 12 in the choke operating member 9 and hence the latter cannot move from open bore to choke position. If it be desired to set the choke in a choke position for the first and succeeding shots, all that it is necessary to do is to remove the latch pin 14 from either the open bore recess 22 or the automatic recess 18 and permit the springs 20 to urge the choke operating member 9 toward the right as viewed in FIG. 4 while permitting the latch pin to engage in the choke recess 21 and hence the choke operating member 9 will remain in the FIG. 4 choke position for the first and succeeding shots until the latch pin 14 is manually disengaged and the choke operating member pressed toward the left to engage in the automatic recess 18 or further rotated to permit engagement of the latch pin 14 in the open bore or no-choke position recess 22.

We claim:

1. An automatic shotgun choke comprising a choke member adapted to be secured to the muzzle of a shotgun barrel to constitute an extension of the barrel and having resilient fingers at its end remote from the muzzle; a choke operating member axially movably supported on said choke member from an open bore position to a choke position whereat the bore within said fingers is unconstricted and constricted respectively; latch means on said choke operating member selectively engageable in a first recess and a second recess

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in said choke member to retain said choke operating member in the respective open bore and choke positions; said choke member having a gas port communicating the bore of said choke member with said first recess through which said latch means is exposed to explosion gas pressure upon firing of the initial shot to release said choke operating member for movement to choke position with said latch means engaged in said second recess to retain said choke operating member in choke position for the second and succeeding shots.

2. The automatic shotgun choke of claim 1 wherein said choke operating member is rotatable on said choke member, upon manual disengagement of said latch means from the first recess, for engagement of said latch means in a third recess in said choke member to retain said choke operating member in open bore position for the first and succeeding shots until said latch means is disengaged from said third recess and rotated for re-engagement with said first recess.

3. The automatic shotgun choke of claim 1 wherein spring means between said choke operating member and said choke member tends to move said choke operating member from open bore position to choke position, said spring means and recoil of the shotgun and choke member being effective conjointly to actuate said choke operating member to choke position.

4. The automatic shotgun choke of claim 1 wherein said choke member comprises a first part adapted to be secured to said muzzle, a second part having screw-threaded engagement with said first part and having said first and second recesses in axially spaced-apart relation, and a third axially slotted part providing said resilient fingers and having threaded engagement with

said second part; set screw means locking said second and third parts together; said choke operating member having an L-shaped slot cooperating with said set screw means to guide said choke operating member for predetermined axial movement between open bore and choke positions with said latch means selectively engaged in said first and second recesses and for predetermined rotative movement for engagement of said latch means with a third recess in said second part to retain said choke operating member in open bore position for the first and succeeding shots until said latch means is disengaged from said third recess and said choke operating member is rotated for engagement of said latch means with said first recess; said choke operating member being axially movable from said rotated position for engagement of said latch means with said second recess.

5. The automatic shotgun choke of claim 4 wherein spring means interposed between said choke operating member and said second part tends to move said choke operating member axially from open bore to choke position while guided by the axial portion of said L-shaped slot.

6. The automatic shotgun choke of claim 5 wherein said latch means comprises a spring biased lever pivotally mounted between its ends on said choke operating member about an axis radially spaced from and transverse to the axis of said choke operating member, and a latch pin carried on one end of said lever for radial movement into and out of engagement selectively with said first, second, and third recesses.

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