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BRNO-ZABOESKY,

State of

CZECHOSLOVAKIA,

Invention

AUTOMATIC FIREARMS

ORIGINAL

RENEWED

APPLICATION FILED COMPLETE

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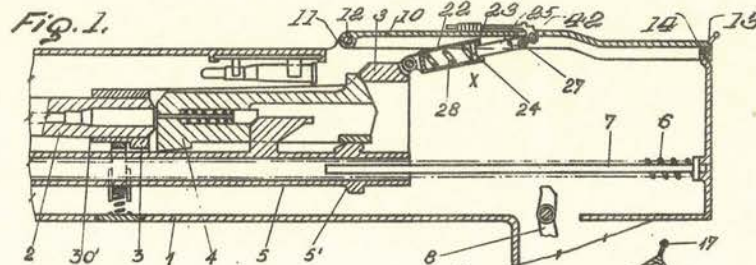
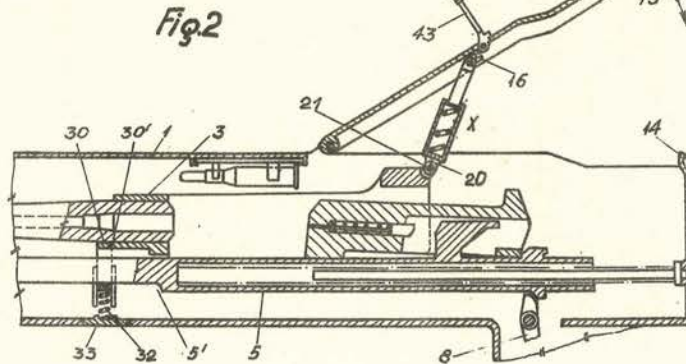
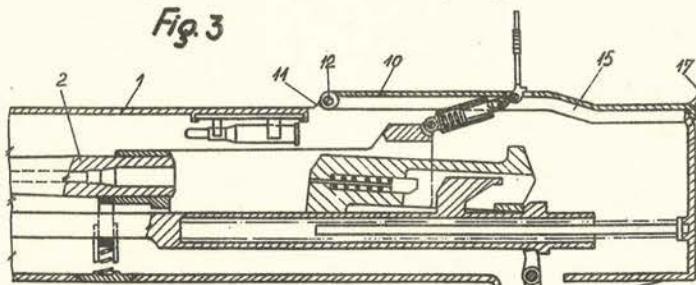
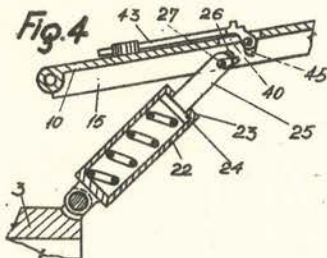
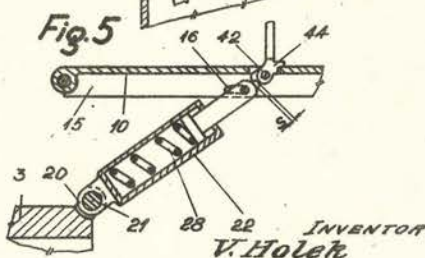
Nov. 26, 1940.

V. HOLEK

2,223,004

AUTOMATIC FIREARM

Filed Feb. 8, 1938



INVENTOR  
V. Holek  
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## UNITED STATES PATENT OFFICE

2,223,004

## AUTOMATIC FIREARM

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Application February 8, 1938, Serial No. 189,427  
 In Czechoslovakia February 12, 1937

## 5 Claims. (Cl. 42-4)

This invention relates to automatic firearms and more particularly to automatic firearms of the kind provided with recoiling barrels and having a device adapted to cock the barrel prior to firing, the cocking of the barrel being necessary either on account of the particular functioning of the breech mechanism in view of the locking or for some other reason. Hitherto, the cocking of the barrel has been effected by means of a special automatic mechanism or directly by means of the breech mechanism. The construction of a special mechanism, however, complicated the firearm and rendered the working thereof difficult on account of the addition of further components which projected from the firearm. The cocking of the barrel by means of the breech mechanism is not advantageous, especially if the casing of the breech mechanism is connected with the barrel, since it is necessary to overcome great frictional resistances due to the considerable weight of the moving masses and the arrangement of the lever transmission of the breech mechanism is unsuitable for the transmission of great forces. In addition, the cocking of the barrel is not suitable for breech mechanism comprising swinging breech blocks, in which case the functioning of the breech block causes difficulties in the construction of the cocking device.

The above mentioned disadvantages are obviated by the present invention, in which there is provided an automatic firearm comprising a casing, a recoiling barrel, breech mechanism, an aperture in said casing, an openable closure for said aperture, and means connecting said closure and said barrel, said means permitting cocking of the barrel upon movement of the closure to open said aperture without interfering with the normal recoil movements of said barrel when said aperture is closed.

The firearm according to the present invention is considerably simplified, as, on account of the utilisation of the opening movement of the closure for the purpose of cocking the barrel, no further special cocking mechanism is necessary. In addition, the cocking of the barrel is readily effected, as the closure, which is of relatively large dimensions with a view to permitting, when desired, the removal of the firearm components, constitutes a substantial lever transmission. A further advantage is that, on opening the closure, substantially only frictional resistances are overcome on the recoil movement of the barrel with the casing of the breech mechanism, whilst the compression of the return

spring of the barrel is effected on the closing of the closure, so that the action of the forces is distributed over the two movements of the lid.

The device according to the invention is especially suitable for firearms of large calibre in which the barrel with the casing is of considerable weight and for the cocking of which considerable transmission of energy is necessary.

In order that the said invention may be clearly understood and readily carried into effect, the same will now be described more fully, by way of example, with reference to the accompanying drawing, in which:

Figure 1 is a fragmentary longitudinal sectional view of an automatic firearm embodying the invention, with the operative parts at rest;

Figure 2 is a similar view to Figure 1 but showing the cocking closure opened and the barrel cocked;

Figure 3 is a similar view to Figure 2 but showing the cocking closure closed;

Figures 4 and 5 are fragmentary detail sectional views, on an enlarged scale, showing the cocking closure in two positions and having mounted thereon a sighting device.

Referring to the drawing, 1 denotes the firearm casing in which the barrel 2, which is rigidly connected with the casing 3 of the breech mechanism, is movably mounted. The breech mechanism includes a swinging breech block 4 which is operated and controlled by a breech-block carrier 5. The said carrier is extended forward in the form of a rod having a piston adapted to be acted upon in known manner within a cylinder to which the exhaust gases pass from the barrel after firing. The breech-block carrier 5 is loaded by a return spring 6 which rests against the back wall of the casing 1 or against a collar on a guiding rod 7 which is fixed in the casing and around which the return spring is concentrically arranged. 8 denotes the sear of the firing mechanism which co-operates with the breech-block carrier.

The casing 3 of the breech-block carrier co-operates with a device which permits firing to be effected during the forward movement of the barrel. The said device comprises a frame 30 which is displaceably mounted in the casing 1 of the firearm and is loaded by a spring 32 one end of which rests against a removable lid 33. Through the frame 30 is passed an extension of the breech-block carrier 5 a projection 5' on which, during the movement of the breech-block carrier, controls the movements of the frame 30 with which a stop face 30' of the casing 3 of the

breech mechanism co-operates in known manner.

The casing 1 is open at the top and covered by a closure or lid 10 which is rotatable on a pin 12 mounted in bearings 11 on the said casing. The other end of the lid is provided with a projection 13 which, when the lid is closed, engages with a counter-projection 14 formed on the back wall of the casing 1. Handles 17 permit the lid to be operated readily.

The lid 10 forms the cocking member for the barrel 2 which is rigidly connected with the casing 3 of the breech mechanism. For this purpose, the casing 3 is connected with the lid by means of a device x which is also constituted as a damping and returning device for the barrel. The said device comprises a hollow cylinder 22 which is hingedly connected with the casing 3 by means of a pin 21 and eyes 20. In the cylinder there is displaceably mounted a piston 24 provided with a rod 25 which terminates in an eye through which a pin 27 mounted in ribs 15 on the lid 10 passes for half the length of the lid in order that a suitable arm for efficient transmission may be obtained.

The piston 24 is loaded by a spring 28 located within the cylinder 22 and maintained therein by means of stops 23 on the cylinder 22, the said stops also affording means by which, when the lid is opened, the force of the lid is transmitted to the casing 3 and consequently also to the barrel 2.

On the lid 10 a frame sight 43 is arranged in a hinged or foldable manner so as to provide against its being an obstacle and also against being damaged in transit. The mounting of the foldable sight is such that the connecting device x forms the setting and securing device for the frame sight. For this purpose, the lid 10 is provided with an opening 40 through which passes the hub 44 of the sight 43, which hub is rotatably mounted on a pin 42 fixed in eyes on the lid. The hub 44 is provided with a projection 45 which co-operates with a counter-projection 26 at the outer extremity of the piston rod of the device x.

When the firearm is in the condition of rest, its individual components are in the position shown in Figure 1. The barrel 2 with the casing 3 and the breech mechanism are in the forward position. The frame 31 is out of engagement with the face 30' since it is kept in a bottom inoperative position by the thickened part of the breech-block carrier 5. The lid 10 is closed and the sight is folded down. Before firing is commenced, the breech mechanism is first cocked against the action of the return spring 6 by means of a cocking device which is not shown. On cocking the breech mechanism, the projection on the breech-block carrier releases the frame 30, which is pressed upward by the action of the spring. In the cocked position, Figures 2 and 3, the sear 8 engages the breech-lock carrier and holds it until the sear is actuated by the trigger.

After the breech mechanism is cocked, the lid 10, Figure 2, is opened and during this movement the piston 24 of the device x strikes and stops 23 and the movement is transmitted by means of the cylinder 22 and the hinged connection to the casing 3 of the breech mechanism and consequently also to the barrel 2 which is rigidly connected with the said casing. The casing 3 then participates in a sliding movement with the barrel, during which movement the stop face 30' of the casing 3 of the breech

mechanism passes over the frame 30 which, under the action of the spring 32, is caused to be in the path of the casing, so that the barrel together with the casing is caught by the frame and retained in the position shown in Figures 2 and 3.

On folding down the lid 10 into the closed position, Figure 3, the spring 28 is compressed so that there is stored in the said spring the energy necessary to cause the forward movement of the barrel upon firing.

The foldable sight 43 is set into the operative position by being rotated about the pin 42. The rotation of the sight can be effected both when the lid is open and when it is closed. During the rotation of the sight from the folded down position, the projection 45 strikes the projection 26 on the piston rod which is displaced through a distance "s" and, during this displacement, compresses the spring 28. Owing to the pressure of the compressed spring, the projection 26 is caused to engage the projection 45 on the sight in such manner that the sight is locked in the upright position. The displacement of the piston rod 25 in the axial direction of the cylinder 22 during the action of the projection 45 on the projection 26 on the rotation of the sight is rendered possible by slots 16 which are formed in the ribs 15 of the lid 10 and in which the pin 27 of the piston rod 25 is mounted.

After the trigger is pressed, the sear 8 releases the breech-block carrier 5 which, under the action of the compressed return spring 6, is moved forward, the breech block being brought into the locked position during such movement. During the forward movement of the carrier 5, the projection 5' thereon strikes the frame 30 and depresses it, so that the path of the cocked barrel 2 with the casing 3 of the breech mechanism, which likewise are moved forward under the action of the compressed spring 28, is freed. During this forward movement, firing takes place with the breech block locked and the energy of the parts which are moving forward overcomes the energy of the recoil resulting from the firing. The barrel with the casing of the breech mechanism recoil without reaching the foremost fixed stops. Although the recoil energy, which is considerably smaller owing to the action of the energy imparted in the forward movement, is sufficient to open the breech mechanism, it is not great enough to produce harmful blows; on the contrary, as far as the barrel and the casing of the breech mechanism are concerned, it is so small that the comparatively weak spring 28 of the device x is sufficient for the accumulation of energy and for braking the components that recoil back. On series or continuous firing, the breech mechanism, after recoil, carries out the forward movement, during which the breech-block carrier controls the frame 30 in known manner and the operation is repeated. After firing, the sight is folded down into the normal position, in which it is retained by the action of the spring 28 when the lid is closed.

The firearm described and shown in the drawing is obviously only one example of an embodiment of the invention, and the details thereof, whether they are concerned with the cocking device or with the device for damping the recoil movements of the barrel may be modified in various ways without affecting the scope of the invention.

What I claim is:

1. An automatic firearm, comprising a casing, 75

said casing having an aperture therein, a recoiling barrel, breech mechanism including a breech casing rigidly connected with said barrel, an openable closure for said aperture and means including a device for damping the recoil of said barrel and the recoiling parts connected therewith connecting said closure and said breech casing, in such manner that said barrel may be cocked upon movement of the closure to open said aperture without interfering with the normal recoil movements of said barrel when said aperture is closed.

2. An automatic firearm, comprising a casing, a recoiling barrel, breech mechanism, said casing having an aperture therein, an openable closure for said aperture and means connecting said closure and said barrel, in such manner that said barrel may be cocked upon movement of the closure to open said aperture without interfering with the normal recoil movements of said barrel, when said aperture is closed and said means comprising a cylinder, a piston in said cylinder, and stop means on said cylinder to co-operate with said piston for transmitting force in one direction.

3. An automatic firearm, comprising a casing, said casing having an aperture therein, a recoiling barrel, breech mechanism including a breech casing rigidly connected with said barrel, an openable closure for said aperture, a cylinder hingedly connected with said breech casing, a piston in said cylinder hingedly connected with said closure, and stop means on said cylinder to co-operate with said piston for transmitting force in one direction, whereby the barrel is cocked upon movement of the closure to open said aperture but normal

recoil movements of said barrel are permitted when said aperture is closed.

4. An automatic firearm, comprising a casing, said casing having an aperture therein, a recoiling barrel, breech mechanism including a breech casing rigidly connected with said barrel, an openable closure for said aperture, a cylinder hingedly connected with said casing, a piston in said cylinder hingedly connected with said closure, a spring interposed between one end of said cylinder and said piston, and stop means on said cylinder to co-operate with said piston for transmitting force in one direction, whereby the barrel is cocked upon movement of the closure to open said aperture but normal recoil movements of said barrel are permitted when said aperture is closed.

5. An automatic firearm, comprising a casing, said casing having an aperture therein, a recoiling barrel, breech mechanism including a breech casing rigidly connected with said barrel, an openable closure for said aperture, a cylinder hingedly connected with said breech casing, a piston in said cylinder hingedly connected with said closure, a spring interposed between one end of said cylinder and said piston, stop means on said cylinder to co-operate with said piston for transmitting force in one direction, a sighting device hingedly mounted on said closure, means on said sighting device adjacent the hinge connection thereof with said closure and co-operating means adjacent the hinge connection of said piston with said closure for retaining said sighting device in operative or inoperative position.

VÁCLAV HOLEK. 35

S P E C I F I C A T I O N .  
-----

TO ALL WHOM IT MAY CONCERN:

BE IT KNOWN THAT I, VÁCLAV HOLEK, a citizen  
of the Republic of Czechoslovakia, Technical Clerk,  
residing at 41, Hybešova, Brno-Žabohřensky, Czechoslovakia,  
have invented certain new and useful improvements in  
automatic firearms of which the following is a specifi-  
cation:-

- 150
- This invention relates to automatic firearms and more particularly to automatic firearms of the kind provided with recoiling barrels and having a device adapted to cock the barrel prior to firing, the cocking
5. of the barrel being necessary either on account of the particular functioning of the breech mechanism in view of the locking or for some other reason. Hitherto, the cocking of the barrel has been effected by means of a special automatic mechanism or directly by means of the
10. breech mechanism. The construction of a special mechanism, however, complicated the firearm and rendered the working thereof difficult on account of the addition of further components which projected from the firearm. The cocking of the barrel by means of the breech mechanism is not
15. advantageous, especially if the casing of the breech mechanism is connected with the barrel, since it is necessary to overcome great frictional resistances due to the considerable weight of the moving masses and the arrangement of the lever transmission of the breech mechanism is unsuitable for
20. the transmission of great forces. In addition, the cocking of the barrel is not suitable for breech mechanism comprising swinging breech blocks, in which case the functioning of the breech block causes difficulties in the construction of the cocking device.

The above mentioned disadvantages are obviated by the present invention, in which there is provided an automatic firearm comprising a casing, a recoiling barrel, breech mechanism, an aperture in said casing, an openable  
5 closure for said aperture, and means connecting said closure and said barrel, said means permitting cocking of the barrel upon movement of the closure to open said aperture without interfering with the normal recoil movements of said barrel when said aperture is closed.

10 The firearm according to the present invention is considerably simplified, as, on account of the utilisation of the opening movement of the closure for the purpose of cocking the barrel, no further special cocking mechanism is necessary. In addition, the cocking of  
15 the barrel is readily effected, as the closure, which is of relatively large dimensions with a view to permitting, when desired, the removal of the firearm components, constitutes a substantial lever transmission. A further advantage is that, on opening the closure, substantially  
20 only frictional resistances are overcome on the recoil movement of the barrel with the casing of the breech mechanism, whilst the compression of the return spring of the barrel is effected on the closing of the closure, so that the action of the forces is distributed over the  
25 two movements of the lid.

The device according to the invention is especially suitable for firearms of large calibre in which the barrel with the casing is of considerable weight and for the cocking of which considerable transmission of energy is necessary.

In order that the said invention may be clearly understood and readily carried into effect, the same will now be described more fully, by way of example, with reference to the accompanying drawing, in which:

5            Figure 1 is a fragmentary longitudinal sectional view of an automatic firearm embodying the invention, with the operative parts at rest;

            Figure 2 is a similar view to Figure 1 but showing the cocking closure opened and the barrel cocked;

10            Figure 3 is a similar view to Figure 2 but showing the cocking closure closed;

            Figures 4 and 5 are fragmentary detail sectional views, on an enlarged scale, showing the cocking closure in two positions and having mounted thereon a sighting device.

15            Referring to the drawings, 1 denotes the firearm casing in which the barrel 2, which is rigidly connected with the casing 3 of the breech mechanism, is movably mounted. The breech mechanism includes a swinging breech block 4 which is operated and controlled by a breech-block carrier 5. The said carrier is extended forward in the form of a rod having a piston adapted to be acted upon in known manner within a cylinder to which the exhaust gases pass from the barrel after firing. The breech-block carrier

20            5 is loaded by a return spring 6 which rests against the back wall of the casing 1 or against a collar on a guiding rod 7 which is fixed in the casing and around which the return spring is concentrically arranged. 8 denotes the sear of the firing mechanism which co-operates with the

25            breech-block carrier.

30

The casing 3 of the breech-block carrier co-operates with a device which permits firing to be effected during the forward movement of the barrel. The said device comprises a frame 30 which is displaceably mounted in the casing 1 of the firearm and is loaded by a spring 32 one end of which rests against a removable lid 33. Through the frame 30 is passed an extension of the breech-block carrier 5 a projection 5' on which, during the movement of the breech-block carrier, controls the movements of the frame 30 with which a stop face 30' of the casing 3 of the breech mechanism co-operates in known manner.

The casing 1 is open at the top and covered by a closure or lid 10 which is rotatable on a pin 12 mounted in bearings 11 on the said casing. The other end of the lid is provided with a projection 13 which, when the lid is closed, engages with a counter-projection 14 formed on the back wall of the casing 1. Handles 17 permit the lid to be operated readily.

The lid 10 forms the cocking member for the barrel 2 which is rigidly connected with the casing 3 of the breech mechanism. For this purpose, the casing 3 is connected with the lid by means of a device x which is also constituted as a damping and returning device for the barrel. The said device comprises a hollow cylinder 22 which is hingedly connected with the casing 3 by means of a pin 21 and eyes 20. In the cylinder there is displaceably mounted a piston 24 provided with a rod 25 which terminates in an eye through which a pin 27 mounted in ribs 15 on the lid 10 passes for half the length of the lid in order that a suitable arm for efficient transmission may be obtained.



The piston 24 is loaded by a spring 28 located within the cylinder 22 and maintained therein by means of stops 23 on the cylinder 22, the said stops also affording means by which, when the lid is opened, the force of the lid is transmitted to the casing 3 and consequently also to the barrel 2.

On the lid 10 a frame sight 43 is arranged in a hinged or foldable manner so as to provide against its being an obstacle and also against being damaged in transit. The mounting of the foldable sight is such that the connecting device x forms the setting and securing device for the frame sight. For this purpose, the lid 10 is provided with an opening 40 through which passes the hub 44 of the sight 43, which hub is rotatably mounted on a pin 42 fixed in eyes on the lid. The hub 44 is provided with a projection 45 which co-operates with a counter-projection 26 at the outer extremity of the piston rod of the device x.

When the firearm is in the condition of rest, its individual components are in the position shown in Figure 1. The barrel 2 with the casing 3 and the breech mechanism are in the forward position. The frame 31 is out of engagement with the face 30' since it is kept in a bottom inoperative position by the thickened part of the breech-block carrier 5. The lid 10 is closed and the sight is folded down. Before firing is commenced, the breech mechanism is first cocked against the action of the return spring 6 by means of a cocking device which is not shown. On cocking the breech mechanism, the projection on the breech-block carrier releases the frame 30, which is pressed upwards by the action of the spring. In the cocked position, Figures 2 and 3, the sear 8 engages the breech-block carrier and holds it until the sear is actuated by the trigger.

After the breech mechanism is cocked, the lid 10, Figure 2, is opened and during this movement the piston 24 of the device x strikes and stops 23 and the movement is transmitted by means of the cylinder 22 and the hinged  
5 connection to the casing 3 of the breech mechanism and consequently also to the barrel 2 which is rigidly connected with the said casing. The casing 3 then participates in a sliding movement with the barrel, during which movement the stop face 30' of the casing 3 of the breech mechanism  
10 passes over the frame 30 which, under the action of the spring 32, is caused to be in the path of the casing, so that the barrel together with the casing is caught by the frame and retained in the position shown in Figures 2 and 3.

15 On folding down the lid 10 into the closed position, Figure 3, the spring 28 is compressed so that there is stored in the said spring the energy necessary to cause the forward movement of the barrel upon firing.

The foldable sight 43 is set into the operative position by being rotated about the pin 42. The rotation of the sight can be effected both when the lid is open and when it is closed. During the rotation of the sight from the folded down position, the projection 45 strikes the projection 26 on the piston rod which is displaced through a distance "s" and, during this displacement, compresses the spring 28. Owing to the pressure of the compressed spring, the projection 26 is caused to engage the projection 45 on the sight in such manner that the sight is locked in the upright position. The displacement of the piston rod 25 in the axial direction of the cylinder 22 during the action of the projection 45 on the projection 26 on the rotation of the sight is rendered possible by slots 16 which are formed in the ribs 15 of the lid 10 and in which the pin 27 of the piston rod 25 is mounted.

After the trigger is pressed, the sear 8 releases the breech-block carrier 5 which, under the action of the compressed return spring 6, is moved forward, the breech block being brought into the locked position during such movement. During the forward movement of the carrier 5, the projection 5' thereon strikes the frame 30 and depresses it, so that the path of the cocked barrel 2 with the casing 3 of the breech mechanism, which likewise are moved forward under the action of the compressed spring 28, is freed. During this forward movement, firing takes place with the breech block locked and the energy of the parts which are moving forward overcomes the energy of the recoil resulting from the firing. The barrel with the casing of the breech mechanism recoil without reaching the foremost fixed stops. Although the recoil energy, which is considerably smaller owing to the action of the energy imparted in the forward movement, is sufficient to open the breech mechanism, it is not great enough to produce harmful blows; on the contrary, as far as the barrel and the casing of the breech mechanism are concerned, it is so small that the comparatively weak spring 28 of the device x is sufficient for the accumulation of energy and for braking the components that recoil back. On series or continuous firing, the breech mechanism, after recoil, carries out the forward movement, during which the breech-block carrier controls the frame 30 in known manner and the operation is repeated. After firing, the sight is folded down into the normal position, in which it is retained by the action of the spring 28 when the lid is closed.

The firearm described and shown in the drawing is obviously only one example of an embodiment of the invention, and the details thereof, whether they are concerned with the cocking device or with the device for damping the recoil  
5 movements of the barrel, may be modified in various ways without affecting the scope of the invention.

9 What I claim is:

1. An automatic firearm, comprising a casing, a

*Para A*  
 " " ~~recoiling barrel, breech mechanism, an aperture in said casing, an operable closure for said aperture, and means connecting said closure and said barrel, said means permitting cocking of the barrel upon movement of the closure to open said aperture without interfering with the normal recoil movements of said barrel when said aperture is closed.~~  
 5 " " *having an aperture therein in such manner that said barrel may be cocked.*

" 10 " 2. An automatic firearm, comprising a casing, ~~an aperture in said casing, a recoiling barrel, breech mechanism including a breech casing rigidly connected with said barrel, an openable closure for said aperture and means connecting said closure and said breech casing,~~  
 " " *having an aperture therein*  
 " " *in such manner that said barrel may be cocked*  
 15 " *Para B* ~~said means permitting cocking of the barrel upon movement of the closure to open said aperture without interfering with the normal recoil movements of said barrel when said aperture is closed.~~

*Para A*  
 " 20 " 3. An automatic firearm, comprising a casing, ~~an aperture in said casing, a recoiling barrel, breech mechanism including a breech casing rigidly connected with said barrel, an openable closure for said aperture and means including a device for damping the recoil of said barrel and the recoiling parts connected therewith connecting said closure and said breech casing, said~~  
 " " *having an aperture therein*  
 25 " *in such manner that said barrel may be cocked*  
 " *A* ~~means permitting cocking of the barrel upon movement of the closure to open said aperture without interfering with the normal recoil movements of said barrel when said aperture is closed.~~

*lead*

4. An automatic firearm, comprising a casing, a

recoiling barrel, breech mechanism, ~~an aperture in said~~

*having an aperture therein*  
casing, an openable closure for said aperture, a device

for permitting firing during the forward movement of said

5 barrel, and means connecting said closure and said barrel,

*in such manner that said*  
~~said means permitting the cocking of the barrel upon~~

movement of the closure to open said aperture without

interfering with the normal recoil movements of said

11 barrel when said aperture is closed, and *means* also effecting

10 the setting preparatory to firing both in the case of

the first shot and subsequent shots.

5. An automatic firearm, comprising a casing, a

recoiling barrel, breech mechanism, ~~an aperture in said~~

*having an aperture therein*  
casing, an openable closure for said aperture, and means

15 comprising elements movable relatively to each other

*in such manner that said*  
connecting said closure and said barrel, ~~said means~~

*may be cocked*  
~~permitting cocking of the barrel upon movement of the~~

*Per*  
closure to open said aperture without interfering with

the normal recoil movements of said barrel when said

20 aperture is closed.

6. An automatic firearm, comprising a casing, a

recoiling barrel, breech mechanism, ~~an aperture in said~~

*having an aperture therein*  
casing, an openable closure for said aperture and means

*in such manner that said*  
connecting said closure and said barrel, ~~said means~~

*may be cocked*  
~~permitting cocking of the barrel upon movement of the~~

closure to open said aperture without interfering with

the normal recoil movements of said barrel, when said

*said means comprising*  
aperture is closed and including a cylinder, a piston

in said cylinder, and stop means on said cylinder to

30 co-operate with said piston for transmitting force in

one direction.

*Para 3*  
*" "*

7. ~~An automatic firearm, comprising a casing, an aperture in said casing, a recoiling barrel, breech~~ *having an aperture therein*

mechanism including a breech casing rigidly connected with said barrel, an openable closure for said aperture,  
 5 a cylinder hingedly connected with said breech casing, a piston in said cylinder hingedly connected with said closure, and stop means on said cylinder to co-operate with said piston for transmitting force in one direction, whereby the barrel is cocked upon movement of the closure  
 10 to open said aperture but normal recoil movements of said barrel are permitted when said aperture is closed.

*Para 4*  
*" "*

8. ~~An automatic firearm, comprising a casing, an aperture in said casing, a recoiling barrel, breech~~ *having an aperture therein*

mechanism including a breech casing rigidly connected with said barrel, an openable closure for said aperture,  
 15 a cylinder hingedly connected with said casing, a piston in said cylinder hingedly connected with said closure, a spring interposed between one end of said cylinder and said piston, and stop means on said cylinder to co-operate with said piston for transmitting force in one direction,  
 20 whereby the barrel is cocked upon movement of the closure to open said aperture but normal recoil movements of said barrel are permitted when said aperture is closed.

*Add*  
*A'*

*A'*

*free*

Pat A 5 5  
 " " ~~9.~~

An automatic firearm, comprising a casing, ~~an~~ *having an aperture therein*  
~~aperture in said casing,~~ a recoiling barrel, breech

mechanism including a breech casing rigidly connected  
 with said barrel, an openable closure for said aperture,  
 5 a cylinder hingedly connected with said breech casing,  
 a piston in said cylinder hingedly connected with said  
 closure, a spring interposed between one end of said  
 cylinder and said piston, stop means on said cylinder  
 to co-operate with said piston for transmitting force in  
 10 one direction, a sighting device hingedly mounted on  
 said closure, means on said sighting device adjacent  
 the hinge connection thereof with said closure and  
 co-operating means adjacent the hinge connection of said  
 piston with said closure for retaining said sighting  
 15 device in operative or in-operative position.

*Wm Victor Holik*

6618

189427

PETITION AND POWER OF ATTORNEY.  
-----

TO THE COMMISSIONER OF PATENTS:-

004

Your petitioner, VÁCLAV HOLEK, a citizen of the Republic of Czechoslovakia, Technical Clerk, residing at Brno-Žabořsky, Czechoslovakia, and whose post office address is 41, Hybešova, Brno-Žabořsky, Czechoslovakia, prays that Letters Patent may be granted to him for the improvements in automatic firearms set forth in the annexed specification.

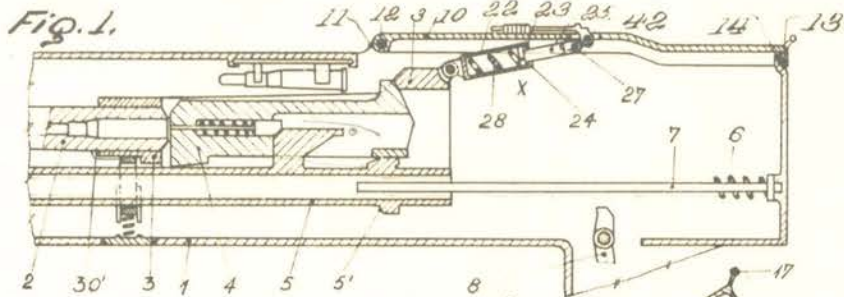
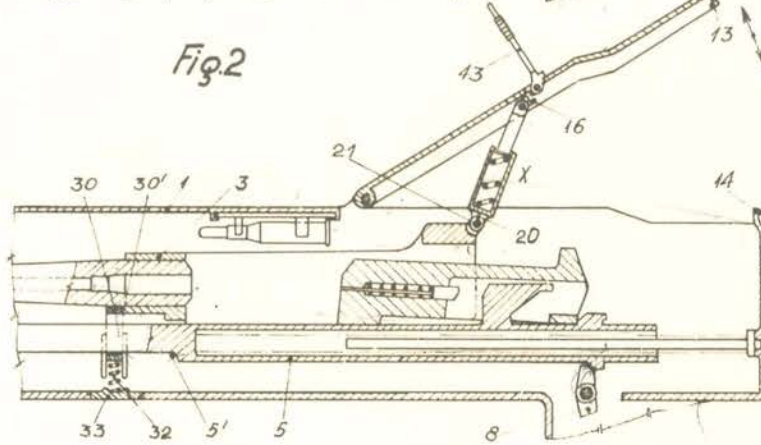
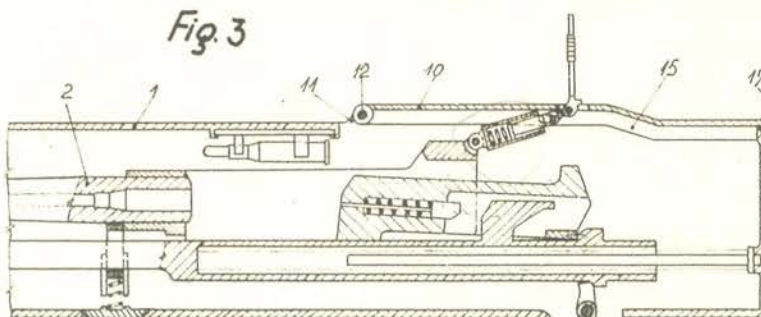
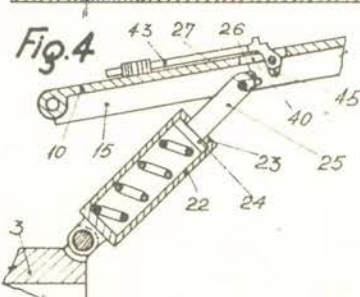
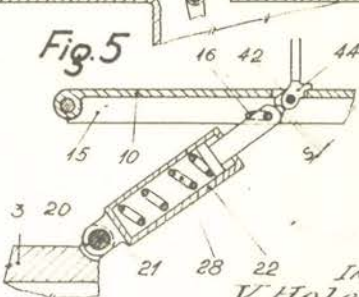
And he hereby appoints E. F. WENDEROTH of 900 F. Street N.W., Washington, D.C., Register No. 11284, Attorney, with full power of substitution and revocation, to prosecute this Application, to make alterations and amendments therein, to sign the drawings, to receive the Letters Patent, and to transact all business in the United States Patent Office connected therewith.

Signed at *Prague, Czechoslovakia,*  
this *26th*, day of *January* 1938.

*Václav Holék*

004  
11-26

Print of drawing as  
originally filed.



INVENTOR  
V. Holek

BY E. F. Kunderoth

ATTORNEY

Mr. Linn, blamed in front of us on last time of  
the can be over.

#2



6633

IN TESTIMONY WHEREOF I have signed my name to this  
specification.

Republic of Czechoslovakia  
City of Praha  
Consulate General of the  
United States of America } SS

*Václav Holík* 17

O A T H.

Republic of Czechoslovakia  
City of Praha  
Consulate General of the  
United States of America } SS

VÁCLAV HOLEK, the above-named petitioner, being duly sworn deposes and says that he is a citizen of the Republic of Czechoslovakia, residing at 41, Hybešova, Brno-Zabohřesky, Czechoslovakia, that he verily believes himself to be the original first and sole inventor of the improvements in automatic firearms described and claimed in the annexed specification; that he does not know and does not believe that the same was ever known or used before his invention or discovery thereof, or patented or described in any printed publication in any country before his invention or discovery thereof, or more than two years prior to this application, or in public use or on sale in the United States for more than two years prior to this application; that said invention has not been patented in any country foreign to the United States on an application filed by him or his legal representatives or assigns more than twelve months prior to this application; and that no application for patent for said improvements has been filed by him or his representatives or assigns in any country foreign to the United States except as follows:-

Czechoslovakia, Application No. P. 920-37 filed 12th February 1937.

*Václav Holík*

Sworn to and subscribed before me this *26th* day of  
*January* 1938.



*John H. Bruins*  
John H. Bruins  
Consul of the United States  
of America at Praha, Czechoslovakia.

SERVICE No. *740*  
FEE No. *31*  
\$ *2.00* - *60.00* CROWN



827

## FINAL FEE PAID TO THE COMMISSIONER OF PATENTS

(Be careful to give correct Serial No.)

OCT-29-40

79180

✓L Check —

30.00

Serial No. 189,427

## INVENTOR:

Vaclav Holek

## PATENT TO BE ISSUED TO

as of record

## NAME OF INVENTION, AS ALLOWED:

Automatic firearms

## DATE OF PAYMENT:

October 29, 1940

## FEE:

\$30.00

## DATE OF FILING:

February 8, 1938

9 cl.

## DATE OF CIRCULAR OF ALLOWANCE:

August 19, 1940

5 "

The Commissioner of Patents will please apply the accompanying fee as indicated above.

Attorney.

## SEND PATENT TO

E. F. WENDEROTH

PATENT ATTORNEY

900 F STREET, N. W.

WASHINGTON, D. C. U.S.A.

Final fees will not be received from other than the applicant, his assignee or attorney, or a party in interest as shown by the records of the Patent Office, NOR WILL THEY BE APPLIED IN PENDING APPLICATIONS.

ADDRESS ONLY  
THE COMMISSIONER OF PATENTS  
WASHINGTON, D. C.

181

Serial No. 189,427

DEPARTMENT OF COMMERCE  
UNITED STATES PATENT OFFICE  
WASHINGTON

Vaclav Holec

August Nineteenth, 1940

AUG 19 1940

Your APPLICATION for a patent for an IMPROVEMENT in

## AUTOMATIC FIREARMS,

filed Feb. 8, 1938 has been examined and ALLOWED with 5 claims.

The final fee, THIRTY DOLLARS (\$30), WITH ONE DOLLAR (\$1) ADDITIONAL FOR EACH CLAIM ALLOWED IN EXCESS OF 20, must be paid not later than 6 MONTHS from the date of this present notice of allowance. If the final fee be not paid within that period, the patent will be withheld; SEE REVISED STATUTES, SECTION 4885 AS AMENDED BY ACT OF CONGRESS APPROVED AUGUST 9, 1939.

The office delivers patents upon the day of their date, on which date their term begins to run. The preparation of the patent for final signing and sealing will require about 4 weeks, and such work will not be begun until after payment of the necessary final fee.

When the final fee is paid, there should also be sent, DISTINCTLY AND PLAINLY WRITTEN, the name of the INVENTOR, TITLE OF THE INVENTION, AND SERIAL NUMBER AS ABOVE GIVEN, DATE OF ALLOWANCE (which is the date of this circular), DATE OF FILING, and, if assigned, the NAMES OF THE ASSIGNEES.

If it is desired to have the patent issue to an ASSIGNEE OR ASSIGNEES, an assignment containing a REQUEST to that effect, together with the FEE for recording the same, must be filed in this office on or before the date of payment of the final fee.

After issue of the patent, uncertified copies of the drawings and specifications may be purchased at the price of TEN CENTS EACH. The money should accompany the order. Postage stamps will not be received.

The final fee will NOT be received from other than the applicant, his assignee or attorney, or a party in interest as shown by the records of the Patent Office.

NOTICE.—WHEN THE NUMBER OF CLAIMS ALLOWED IS IN EXCESS OF 20, NO SUM LESS THAN THIRTY DOLLARS (\$30) PLUS ONE DOLLAR (\$1) ADDITIONAL FOR EACH CLAIM IN EXCESS OF 20 CAN BE ACCEPTED AS THE FINAL FEE.

Respectfully,

THIS APPLICATION CANNOT BE RENEWED



Commissioner of Patents.

E. F. Wenderoth  
900 F St N. W.  
Washington, D. C.

IN REMITTING THE FINAL FEE GIVE THE SERIAL NUMBER AT THE HEAD OF THIS NOTICE

UNCERTIFIED CHECKS WILL NOT BE ACCEPTED



*a*  
U. S. PATENT OFFICE  
PAPER NO. *4*

OCT 13 1938

DIVISION 22

IN THE UNITED STATES PATENT OFFICE

Div. 22 Room 5600

In re application of :  
Vaclav Holek :  
Filed Feb. 8, 1938 :  
Serial No. 189,427 :  
"Automatic firearms" \_\_\_\_\_ :

Hon. Commissioner of Patents,  
Washington, D. C.

Sir:

In response to the Office action dated  
April 12, 1938 please amend as follows:--

Claim 1, line 2; claim 2, lines 1 and  
2; claim 3, lines 1 and 2; claim 4, line 2; claim  
5, line 2; claim 6, line 2; claim 7, lines 1 and  
2; claim 8, lines 1 and 2 and claim 9, lines 1  
and 2, cancel "an aperture in".

Claim 1, line 3; claim 2, line 2; claim  
3, line 2; claim 4, line 3; claim 5, line 3;  
claim 6, line 3; claim 7, line 2; claim 8, line  
2 and claim 9, line 2, after "casing" insert  
--having an aperture therein--.

Claim 1, lines 4 and 5; claim 2, line  
6; claim 3, lines 7 and 8; claim 4, line 6; claim  
5, lines 5 and 6 and claim 6, lines 4 and 5, can-  
cel "said means permitting cocking of the" and

insert --in such manner that said--.

Claim 1, line 5; claim 2, line 6; claim 3, line 8; claim 4, line 6; claim 5, line 6 and claim 6, line 5, after "barrel" insert --may be cocked--.

Claim 4, line 9, cancel "also" and insert --means--.

Claim 6, line 8, cancel "including" and insert --said means comprising--.

Add the following claim:

a' 10. An automatic firearm, comprising a casing, a recoiling barrel, a breech housing, a breech mechanism therein, said casing having an aperture therein, an openable closure for said aperture and means connecting said closure and said breech housing in such manner that said barrel may be cocked upon movement of the closure to open said aperture without interfering with the normal recoil movements of said barrel when said aperture is closed.

#### R E M A R K S.

Claims 1 to 6 have been corrected as to functionality and all of these claims now set forth sufficient structure to support the functional recitation. As a matter of fact the functional recitation is now a portion of the means and limits the means called for.

These claims have also been corrected as to vagueness and indefiniteness.

The new claim submitted above is designed to cover the construction where the device x is disposed between the breech housing and the cover. The art cited by the Examiner is not pertinent for the following reasons.

The Pocci patent is not pertinent, as the drawing does not show that the gun can be provided with a foldable cover, and particularly one by means of which the gun can be cocked. The gun described and shown is provided with a recoiling barrel 1 with the locked breech k and with a trigger mechanism for single and continuous fire. The barrel cooperates with a spring which is mounted in the chamber  $l_2$  of the part  $l_1$ , whereby the latter part is connected with the barrel 1 and is supported against the wall of the fixed trigger housing. The barrel cooperates with the pawl m which is pivotally connected to the housing and which, by means of the projection  $n_1$ , is controlled independently of the movement of the breech. The cocking of the barrel takes place by means of a setting rod with the handle  $p_1$ . This involves an ordinary setting mechanism and not a foldable cover through which the barrel is set by means of the arrangement x between the cover and the housing or the barrel. The device x serves also as a damping device or for

advancing the barrel.

The Swiss patent also is not pertinent as it relates to a mechanism which is set by means of the pin 8 of a pivot member. The barrel is thus not set with the housing. Moreover, the levers 7 or 5 which are pivotally connected by means of the pin 8 can not be considered as a foldable cover.

A separate communication has been addressed to the Drafting Division to correct the drawings.

Reconsideration and allowance is requested.

Respectfully submitted,

Vaclav Holek

By E. F. Wenderoff  
Attorney.

Washington, D. C.  
October 12, 1938

*M.D.*



*Letter to Draftsman*

U. S. PATENT OFFICE  
PAPER NO. 5

OCT 13 1938

DIVISION 22

IN THE UNITED STATES PATENT OFFICE

Div. 22 Room 5600

In re application of :  
Vaclav Holek :  
Filed Feb. 8, 1938 :  
Serial No. 189,427 :  
"Automatic firearms" :

ATTENTION:  
CHIEF DRAFTSMAN

ACCOUNT

Hon. Commissioner of Patents,  
Washington, D. C.

Sir:

In the above entitled case kindly correct  
the lines which are blurred in parts and remove  
the dots on the lead lines which are objectionable.

Charge the cost thereof to the miscellan-  
eous account of the undersigned.

Respectfully submitted,

Vaclav Holek

By E. F. Wenderoth  
Attorney.

Washington, D. C.  
October 11, 1938

RECEIVED IN DIV. C

OCT 21 1938

CORRECTION  
ORDERED

DIV. C

NOV -1 1938

CORRECTED

ACCOUNT

DEC -6 1938

OK  
WPP 10-17-38

\$1.00

(B)

Address only  
"The Commissioner of Patents,  
Washington, D. C.,"  
and not any official by name

DEPARTMENT OF COMMERCE  
UNITED STATES PATENT OFFICE  
WASHINGTON

All communications respecting this  
application should give the serial number,  
date of filing, and name of  
the applicant

Please find below a communication from the EXAMINER in  
charge of this application.

11-8023

E.F.Wenderoth  
900 F St.N.W.  
City

Commissioner of Patents.

Applicant: V.Holek

Ser. No. 189,427  
Filed Feb. 8, 1938  
For Automatic  
Firearms

MAILED

JAN 25 1939

Responsive to amendment of Oct. 12, 1938.

Additional references:

|                |           |               |         |
|----------------|-----------|---------------|---------|
| Swedish Forbes | 4846      | Mar. 19, 1896 | 89-27.8 |
|                | 1 sh.drg. | 2 pp.spec.    |         |
| German Dienes  | 277,693   | Aug. 25, 1914 | 89-27.8 |
|                | 1 sh.drg. | 1 p.spec.     |         |

Claims 3, 6, 7, 8 and 9 are allowed.

Claims 1, 2, 4, 5 and 10 are again rejected as failing  
to patentably define over <sup>V<sub>2</sub> H</sup> Pucci for reasons of record.  
Applicant's arguments are to more limited structure than  
the claims. These claims only call for a handle connected  
to a cover so arranged that the gun will operate. This is  
clearly shown in Pucci.

WRR.

Examiner



*Settle*  
U.S. PATENT OFFICE  
PAPER NO. 7  
JUL 22 1939  
DIVISION 22

IN THE UNITED STATES PATENT OFFICE

Div. 22 Rm. 5600

In re application of :  
Vaclav Holek :  
Filed Feb. 8, 1938 :  
Serial No. 189,427 :  
"Automatic firearms" ..... :

Hon. Commissioner of Patents,  
Washington, D. C.

Sir:

In response to January 25, 1939 kindly  
note as follows:

R E M A R K S.

The references, particularly Pocci, are not pertinent, and it is not seen why they were cited. The essential feature of the invention consists in that firearms with sliding barrel and particularly with pre-priming are provided with a cover which can tense the barrel on opening. As known, this must be done by means of the handle in firearms which, however, is not necessary with firearms of the present invention. The cover, which is provided to uncover an opening for removing the lock or block members, serves also to set or tense the barrel, that is, to carry it

back to the rear position before firing the first shot. As seen from the specification, this setting is done to produce the so-called pre-priming (pre-ignition) at the first shot, that is, it must enter into action at the first shot. The essential feature of the invention thus consists in a member, that is, a cover, with which two functions are accomplished. This results in a considerable simplification in the construction of the gun, as an actuating member, the handle by which the barrel is set, and thereby also the necessary slide and cover are entirely superfluous. The cover of the invention is connected with the barrel so that it serves only for the setting and the further movements of the barrel during the firing are not transmitted to the cover.

Pocci describes a gun with sliding barrel in which a setting mechanism is provided for the lock assemblage. It is generally old, however, to provide any automatic firearm with a setting mechanism for the block or its mechanism; but these are not similar at all to the invention. Moreover, applicant does not desire patent protection for setting the sliding barrel, but only for a cover construction which is formed at the same time as a setting mechanism for the sliding barrel. The drawing of the reference does not show that the barrel is to be set, nor is there any-

thing said of the object of setting the barrel. It relates to an ordinary firearm in which the block or lock must be set before the first shot and the device therefor is similar to the usual constructions. In this connection attention is invited to page 2, lines 57-63 of the specification, wherein it is specifically stated that only the lock is set; but it is obvious that such setting device must be provided with a cover, which must be provided for the recess for the shoulder of the member actuating the setting device, in order to prevent penetration of dirt or the like to the interior of the gun. Such arrangements are well known, but such a cover can not be compared with that of the invention.

Swedish Patent No. 4846 is not pertinent, as it does not relate to a firearm but <sup>to</sup> a door, and a mechanism for locking a closed door. The reason for citing this reference is not understood.

German Patent No. 277,693 also is not pertinent, as no cover is provided that could set the sliding barrel. It relates merely to a cartridge ejector for the last cartridge which, in emergency, can be adjusted to eject the shells. The patent describes only a slide, which has nothing to do with the invention.

For the above reasons claims 1, 2, 4, 5 and 10 are clearly patentable over the art of record. The Examiner's statement that applicant's arguments are to a more limited structure than that claimed is not understood in that as is clearly apparent the claims call for far more elements in cooperation than merely for a handle connected to a cover.

The application is in condition for allowance and such action is requested at an early date.

Reconsideration and allowance is requested.

Respectfully submitted,

Vaclav Holek

By E. F. Weenderoth  
Attorney.

Washington, D. C.  
July 21, 1939

Address only  
"The Commissioner of Patents,  
Washington, D. C.,"  
and not any official by name

DEPARTMENT OF COMMERCE  
UNITED STATES PATENT OFFICE  
WASHINGTON

All communications respecting this  
application should give the serial number,  
date of filing, and name of  
the applicant

cc/b  
Please find below a communication from the EXAMINER in  
charge of this application.

11-8625

Commissioner of Patents.

Applicant: Vaclav Holek

E. F. Wenderoth,  
900 F St. N. W.,  
Washington, D. C.

Ser. No. 189,427  
Filed Feb. 8, 1938  
For Automatic Firearms

Responsive to letter filed July 21, 1939.

FEB 5-1940

Additional reference:

Bergman

468,127

Feb. 2, 1892

89-3

Claims 1, 2, 4, 5, and 10 are rejected as not presenting  
invention over Bergman. His device appears to meet all the  
structure claimed by applicant, member A being his closure,  
and member C being his breech housing.

Claims 3, 6, 7, 8, and 9 are allowed.

C. C.

BH Carpenter  
Acting Examiner.



13  
U. S. PATENT OFFICE  
PAPER NO. 9  
JUL 9 1940  
DIVISION 22

IN THE UNITED STATES PATENT OFFICE

In re Application of :  
VACLAV HOLEK :  
SER. NO. 189,427 :  
FILED: FEBRUARY 8, 1938 : DIV. 22 ROOM 5600  
FOR: AUTOMATIC FIREARMS :

.....

Hon. Commissioner of Patents  
Washington, D. C.

Sir:

In response to the Office Action of February  
5, 1940, kindly amend as follows:  
Cancel claims 1, 2, 4, 5 and 10, without  
prejudice.

R E M A R K S

The above amendment places the application  
in condition for allowance and such action is requested  
at an early date.

Reconsideration and allowance is requested.

Respectfully submitted,

VACLAV HOLEK

By C. F. Weenderoth  
Attorney

Washington, D. C.  
July 8, 1940

MD.