M. L. JOHNSTON.

COOLER FOR FIREARMS.

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1,296,193.

Patented Mar. 4, 1919.

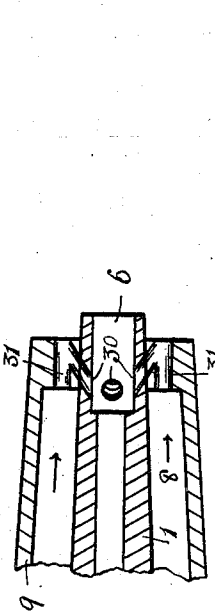


Fig 4

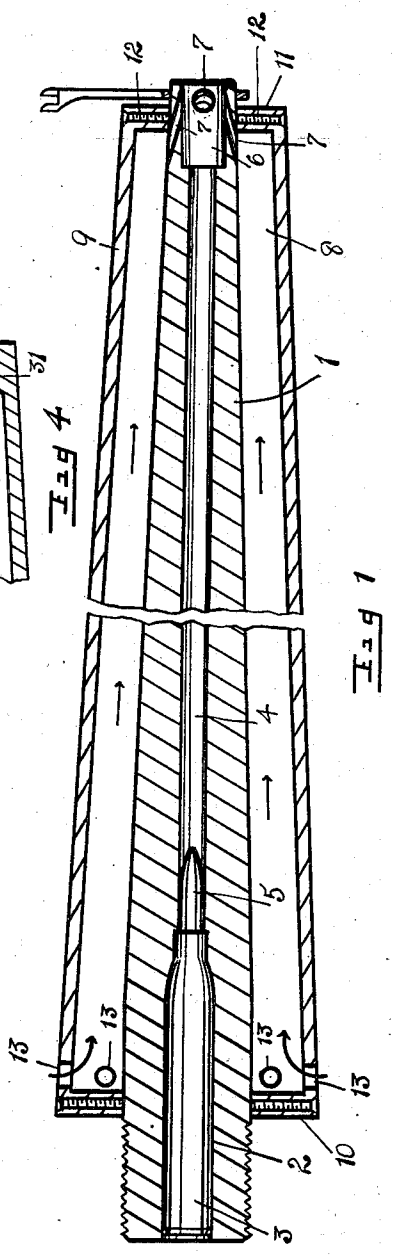


Fig 1

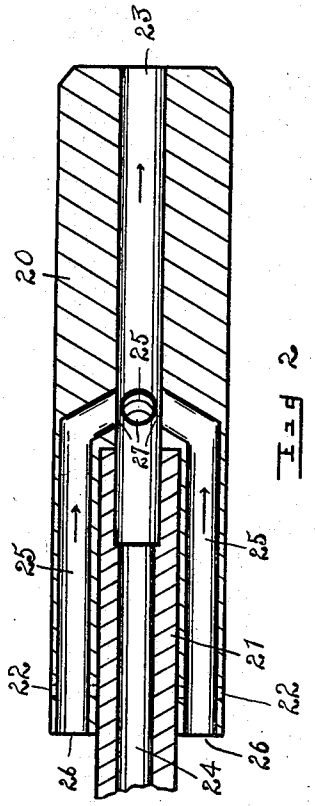


Fig 2

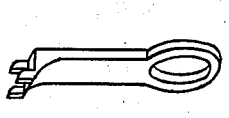


Fig 3

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COOLER FOR FIREARMS.

1,296,193. Specification of Letters Patent. Patented Mar. 4, 1919.

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To all whom it may concern:

Be it known that I, MILLARD L. JOHNSTON, a citizen of the United States, residing at Utica, in the county of Oneida and State of New York, have invented certain new and useful Improvements in Coolers for Firearms, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to a cooler for firearms, and I declare the following to be a full, concise, and exact description thereof sufficient to enable anyone skilled in the art to which it appertains to make and use the same reference being had to the accompanying drawings in which like reference characters refer to like parts throughout the specification.

The object of the invention is to provide a simple, efficient device for cooling the barrel of any gun when the same is being fired especially in a rapid manner. The invention will be found particularly useful in connection with automatic reloading firearms and machine guns.

This object will be understood by referring to the drawings in which:

Figure 1 is a central longitudinal sectional view of the cooler and of the barrel of a firearm to which it is attached;

Fig. 2 is a central longitudinal section of a modified form of the cooler assembled to the muzzle end of a barrel of a firearm;

Fig. 3 is a perspective view of a front sight employed.

Fig. 4 is a fragmentary view in section of a still further modified form of the cooler.

Referring more particularly to the drawings, the barrel of an ordinary firearm is represented by —1— and is provided with the chamber 2 for the reception of the cartridge 3 and the duct 4 of any given caliber for the projection of the bullet 5. The duct or channel 4 has the usual spiral grooves with a certain number of turns, whereby to effect a rotation of the bullet 5 in its projection, and also the channel 6 of larger diameter than the channel 4, adjacent its muzzle end. The channel 6 is provided with the ports 7 whose walls are disposed on an incline toward the rear of the barrel —1—, in order to furnish a lead for the air that is sucked through the said ports 7 in the wake of the bullet 5 and the propelling gases. The ports 7 are as numerous as desired to effect a given draft of air therethrough, that will be sufficient to cool the barrel —1— of the gun. The ports 7 lead or open into the chamber 8 that surrounds the barrel —1—.

The chamber 8 is slightly larger adjacent the rear end of the barrel —1— than it is adjacent the front or muzzle end, and is inclosed by the casing 9 having the end members 10 and 11 provided with suitable orifices for the reception of the respective portions of the barrel —1—. The casing 9 is held in assembled position upon the barrel —1— by the set screws 12 that are threaded in the apertures in the end members 10 and 11. Furthermore, the casing 9 has a plurality of ports 13 giving access to the outer air. The ports 13 are abundantly numerous to admit of a sufficient quantity of air for circulation through the chamber 8.

The operation of the invention is effected, whereby to cool the barrel —1—, when the gun is being fired, by causing a circulation or draft of air along the outer surface of the barrel —1— in the direction, as indicated by the arrows in Fig. 1. This draft is secured automatically by means of the suction that follows in the wake of the bullet 5 and of the onrushing or propelling gases.

The cartridge 3 having been discharged, the bullet 5 will be forced through the channel 4 by the expanding gases. Immediately, however, the bullet 5 reaches the larger channel 6, the gases will be released and rush forward and out through the muzzle of the gun. The result of this momentum of the gases and the projected bullet will cause a suction of air or draft through the ports 13, the chamber 8, the ports 7, the channel 6 to the outer air, and thereby keep the barrel —1— of the gun cool, so that the gun can be fired rapidly for comparatively long periods of time without becoming overheated.

Fig. 2 shows a modification embodying a member 20, which may be held to the muzzle end of the barrel 21 by the set screws 22. The member 20 has a channel 23 that is in alinement with the bore 24 of the barrel 21, although somewhat larger in diameter, so as to release the expanding gases in the rear of the charge. The four branch channels 25 are provided, being open to the outer air as at 26 and communicating with the channel 23, adjacent or just in advance of the end of the muzzle of the barrel 21, at 27.

In operation, the charge, when exploded

will create a suction of air along the outer surface of the barrel 21 in the direction indicated by the arrows, whereby to cool the said barrel.

Fig. 3 shows a perspective view of a novel front sight which combines the arrangement of the usual or customary front and rear sights in one. This sight is employed in connection with a rear sight of well known construction.

Fig. 4 shows a still further modification in which the forward enlarged channel 6 of the barrel —1— is provided with the channels 30 that are disposed in opposite position to the corresponding ports 7 of Fig. 1, and communicate with the channels 31 formed in the forward end of the casing 9. The channels 31 communicate with the interior of the casing 9 or with chamber 8 and with the open air.

By this arrangement of the channels 30 and 31, the suction of air along the barrel —1— is effected both before and after the passage of the charge from the barrel of the firearm. Before, because of the pressure of air in advance of the bullet 5, and after because of the suction that follows in the wake of the charge.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a cooler for firearms, a casing, a barrel, and ports in said barrel alining with ports in said casing, whereby to permit a draft of air both before and after the charge to chill the barrel of the firearm.

2. In a cooler for firearms, a barrel having a channel for the projection of a bullet, a larger channel communicating with said first named channel, a casing surrounding said barrel, and ports in said barrel and said casing, whereby to permit the passage of air for cooling said barrel.

3. In a cooler for firearms, a barrel having a channel for the projection of a bullet, a casing surrounding said barrel, channels formed on an incline in said barrel, and channels formed in said casing to meet the channels in said barrel, whereby a suction of air along said barrel is effected both before and after the passage of the charge, to cool said firearm.

4. In a cooler for fireams, a barrel having a channel for the projection of a bullet, a casing surrounding said barrel, channels formed on an incline in said barrel, other channels formed in said casing and adapted to aline with said channels in said barrel, and means whereby to cause a suction of the air along the barrel both before and after the passage of the charge, whereby to cool the firearm.

5. In a cooler for firearms, a barrel having a channel for the projection of a bullet, a larger channel communicating with said first named channel, a casing surrounding said barrel, channels formed on an incline in said barrel, other channels formed in said casing on an incline to aline with the channels in said barrel, and still other channels formed in said casing to communicate with the air, whereby the passage of the bullet along the channel in the barrel will cause a suction of air along the barrel, both before and after the passage of said bullet, to cool said firearm.

In testimony whereof I have affixed my signature.

MILLARD L. JOHNSTON.