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REPEATING FIREARM WITH BOLT ACTION AND CASE MAGAZINE

Filed May 20, 1932 2 Sheets-Sheet 1

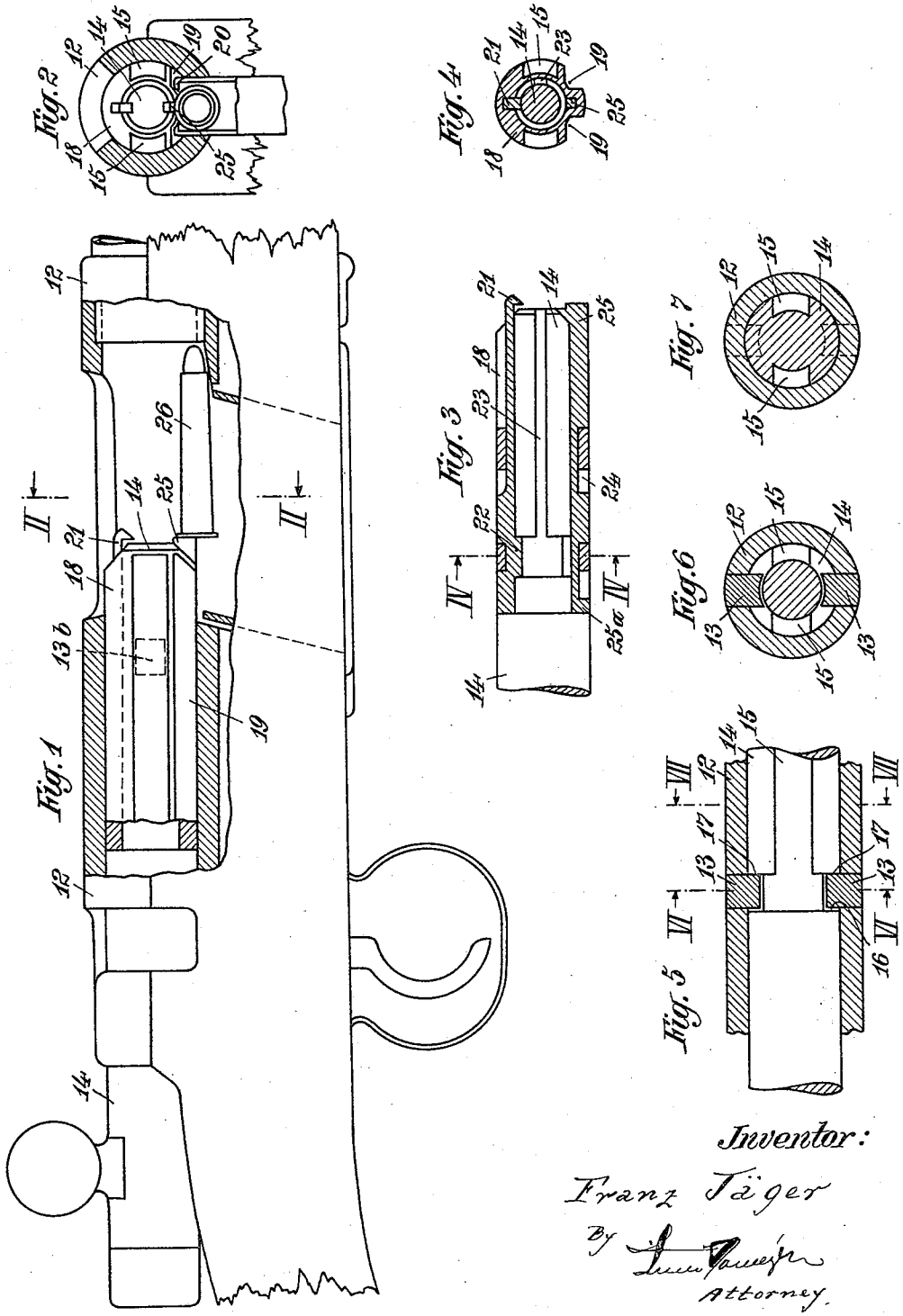

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Fig. 8

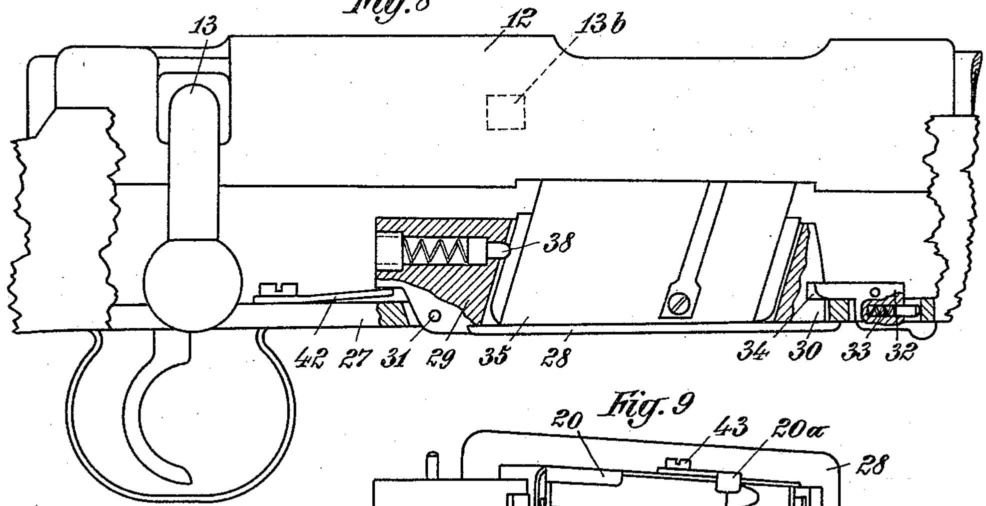


Fig. 9

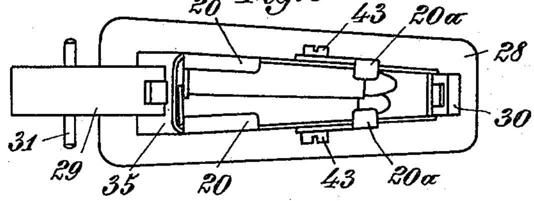
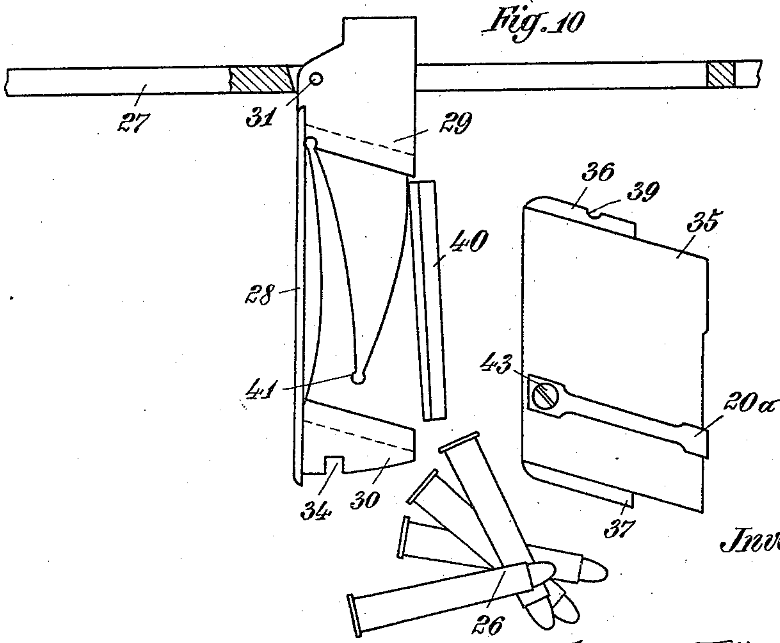


Fig. 10



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UNITED STATES PATENT OFFICE

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REPEATING FIREARM WITH BOLT ACTION AND CASE MAGAZINE

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The present invention relates to a repeating firearm with bolt action and case magazine.

Repeating guns with bolt actions and magazines of different kinds are known per se. The hitherto known arrangements are however not well suited for cartridges with projecting rims. When cartridges of this type are use, the same must be so positioned in the case magazine, that the rim of each cartridge lies in front of the rim of the next underlying cartridge, since the loading action will be disturbed if the rim of a cartridge lies behind the rim of the underlying cartridge. On account of this drawback therefore usually rimless cartridges are used in repeating guns with case magazines.

Several types of cartridges can however, on account of the small diameter of the bottom of the cartridge shell or from other causes only be manufactured with projecting rims. Lately the use of such cartridges has increased steadily and the invention is particularly adapted for use in connection with cartridges of this kind, but the novel arrangement may also with advantage be utilized in connection with cartridges of other forms.

In repeating firearms with case magazines it is of great importace that the magazine is located in such a manner that the lips of the same lie on as high a level as possible and the magazine lies near the axis of the bore in the barrel. This high position of the magazine prevents that the cartridges have a too great inclination when they are introduced into the barrel and therefore disturbances of the loading action are prevented. Moreover, when the magazine lips are located on a high level a better impact with the front face of the bolt or feeding member is secured, since a larger part of the bottom area of the ascending cartridge comes into contact with the front face of the bolt.

The higher mounting of the magazine, the lips of which project into the bore for the bolt, is however not possible without structural changes, since the bolt would have to be equipped with longitudinal grooves, which in combination with the magazine lips would prevent the necessary rotating movement when the bolt is locked.

According to the present invention the higher mounting of the magazine lips is made possible by arranging on the front part of the bolt, (which for this purpose has a smaller diameter than the rest of the bolt), a rotatable sleeve, which does not partake in the rotation of the bolt. It is known per se to use rotatable rings, bolt heads and the like as carriers for the extractor and other parts of the mechanisms. According to the present invention the rotatable sleeve is of greater length than the magazine and the magazine lips. The sleeve is further formed with longitudinal grooves adapted to receive the high mounted magazine lips, which also are of a corresponding length.

It is also very important, particularly at cartridges with projecting rims, that the cartridges are securely held by the magazine lips in points which are situated as near the ends of the cartridges as possible. For this purpose and in order to ensure that the cartridges when repeating will leave the magazine unobstructed, the magazine lips are according to the invention subdivided or interrupted in longitudinal direction.

The rear lip elements are hereby rigidly connected to the magazine, whereas the front lip elements are yieldingly movable in lateral direction.

In order that the magazine may be rapidly and easily filled in correct manner, the magazine is connected to the gun in such a manner that it may be swung out about a pivotal point in the rear part of the same into a position in which it lies fully unobstructed.

Hereby the magazine is arranged in such a manner that the gun must be held in correct position, i. e. with the muzzle pointing upward or outward, when the cartridges are filled in.

Hitherto the front end of the locking bolt carried the locking lugs, which cooperated with corresponding grooves in the front part of the receiver, but this arrangement can not be employed in guns according to the present invention, since the rotatable sleeve is arranged on the front end of the bolt. The elder arrangement also involves considerable

drawbacks. When the cartridges are introduced into the barrel the grooves in the receiver are passed and through this contact the loading action may be disturbed. When cartridges with projecting rims are used disturbances of this kind are unavoidable.

According to the present invention the locking lugs are not arranged on the bolt but in the interior of the receiver behind the magazine. Hereby the manufacturing process is facilitated to a high degree, since the hitherto used interior grooves in the receiver are dispensed with and are replaced by easily produced outer grooves in the bolt.

The machining of the interior of the receiver may be still more simplified by inserting the locking lugs into the smooth bore of the receiver and fastening the same in any convenient manner, for instance by welding. This arrangement of the locking lugs has the same importance for nonrepeating firearms.

A constructional form of the invention is shown by way of example in the accompanying drawings.

Fig. 1 is a partially sectional lateral view showing a gun with the bolt in open position.

Fig. 2 is a vertical section taken on a line II—II of Fig. 1.

Fig. 3 is a sectional view showing the front part of the bolt and the rotatable sleeve mounted on the same.

Fig. 4 is a vertical section taken on line IV—IV of Fig. 3.

Fig. 5 is a horizontal sectional view showing the central part of the lock.

Figs. 6 and 7 are cross-sections taken on the lines VI—VI and VII—VII of Fig. 5.

Fig. 8 is a partially sectioned fragmentary elevation showing a locked gun and the magazine therein.

Fig. 9 is a plan view of the magazine.

Fig. 10 shows the magazine in open position and the magazine case detached from the bottom of the magazine.

According to Figs. 1 to 8 the receiver 12 is equipped with locking lugs 13 and the bolt 14 is arranged in such a manner within the receiver, that it in released position may be moved in axial direction, the locking lugs thereby being guided in the longitudinal grooves 15. In the locked position shown in Fig. 5 the slot 16 in the bolt 14 allows the usual rotating movement at which the corresponding support faces of the locking lugs and the bolt 17 are brought into such mutual relation that the device is locked. In Figs. 1 and 8 13*b* denoted the positions taken up by the locking lugs. The bolt sleeve 18 is arranged in such a manner on the thinner fore part of the bolt 14 that it may be rotated on the same. The sleeve 18 is formed with longitudinal grooves 19 into which the magazine lips 20, 20*a* project and the bolt 14 with the sleeve 18 may therefore be moved lengthwise in spite of the high level of the magazine lips. When the device is brought into locking position the rotating movement of the bolt 14 is not transmitted to the sleeve. In a longitudinal interrupted slot in the bolt sleeve 18 the extractor 21 is mounted in such a manner that a projection 22 of the same is seated in a groove in the bolt 14. This arrangement prevents lateral displacements and forward movements of the bolt sleeve. For the purpose of mounting or detaching the sleeve 18 with the extractor 21 the front part of the bolt is formed with a longitudinal slot 23 adapted to guide the projection 22 of the extractor when this together with the sleeve is pushed into operative position or removed. On the opposite side of the sleeve 18 another longitudinal slot 24 is formed in which the ejector 25 is arranged in such a manner that it may be shifted in the length direction, thereby ejecting the cartridge shell when its rear end 25*a* at the withdrawal of the chamber abuts against a projecting member of suitable kind. The ejector 25 may simultaneously serve as feeding member for the cartridges. As it will appear from Fig. 1 the cartridge will on account of this arrangement ascend to a relatively high position already at the commencement of the feeding or loading movement.

In the frame-shaped plate 27 the magazine bottom 28 (Figs. 8 and 9) with upstanding parts 29 and 30 are pivotally arranged on the pin 31. In closed state (Fig. 8) the bottom 28 is held by a slide 32, which is influenced by the spring 33 and catches into the aperture 34 in the upstanding member 30. The magazine case 35 is held in position by a locking pin 38 which catches into an aperture 39, the parallel ribs 36, 37 of the case hereby projecting into corresponding slots in the members 29 and 30. The cartridge feeding device 40 with the spring 41 is hereby fixed to the magazine bottom 28 in the usual manner.

When the locking pin 32 is pressed forward the magazine will turn on its pivot 31 under the influence of the spring 42 and take up the position shown in Fig. 10. When in this position the magazine can be inspected with ease during the loading operation and a false placing of cartridges with projecting rims is prevented. If nevertheless a cartridge should get into a false position the magazine case 35 can be opened by a single manipulation (Fig. 10) whereby the cartridges 26 will drop out of the magazine, so that the latter is discharged. The emptying of the gun after use is also a very simple operation.

The magazine case 35 is equipped with rigid rear lips 20 and laterally yielding fore lips 20*a*. The latter lips are held by means of screws 43. When the cartridges are introduced into the barrel the lips 20*a* are de-

flected laterally at the proper moment and do therefore not form any obstacle for the projecting rims of the cartridges.

I claim:—

1. A fire-arm with bolt action, comprising in combination a bolt, a case magazine with lips, a barrel, a rotatable sleeve on the end of the bolt lying adjacent the barrel and longitudinal slots in said sleeve adapted to serve as seats for the said magazine lips and having a greater length than the distance between the outer edges of the magazine lips.

2. A firearm with bolt action, comprising in combination a bolt, a case magazine with lips, a barrel, a rotatable sleeve on the end of the bolt lying adjacent the barrel, longitudinal slots in said sleeve, adapted to serve as seats for the said magazine lips and having a greater length than the distance between the outer edges of the magazine lips and a cartridge extractor arranged in the rotatable sleeve and adapted to prevent axial displacement of the sleeve in relation to the bolt.

3. A firearm with bolt action, comprising in combination a bolt, a case magazine with lips, a barrel, a rotatable sleeve on the end of the bolt lying adjacent the barrel, longitudinal slots in said sleeve, adapted to serve as seats for the said magazine lips and having a greater length than the distance between the outer edges of the magazine lips and means for inserting and ejecting the cartridges located in said rotatable sleeve in such a manner that they may be shifted in axial direction.

4. A firearm with bolt action, comprising in combination a bolt, a case magazine, rigid rear lips and laterally yielding front lips on said magazine, a barrel, a rotatable sleeve on the end of the bolt lying adjacent the barrel and longitudinal slots in said sleeve, adapted to serve as seats for the said magazine lips and having a greater length than the distance between the outer edges of the magazine lips.

5. A firearm with bolt action, comprising in combination, a bolt, a pivotally arranged case magazine with subdivided lips, a barrel, a rotatable sleeve on the end of the bolt lying adjacent the barrel and longitudinal slots in said sleeve, adapted to serve as seats for the said magazine lips and having a greater length than the distance between the outer edges of the magazine lips.

6. A firearm with bolt action, comprising in combination, a bolt, a pivotally arranged case magazine with subdivided lips, a support member to which the case proper of said magazine is detachably connected, a barrel, a rotatable sleeve on the end of the bolt lying adjacent the barrel and longitudinal slots in said sleeve, adapted to serve as seats for the said magazine lips and having greater length than the distance between the outer edges of the magazine lips.

7. A firearm with bolt action, comprising in combination a bolt, longitudinal slots and annular slots in said bolt, a receiver surrounding the bolt, inwardly projecting locking lugs symmetrically arranged in said receiver and adapted to cooperate with said slots in the bolt for guiding and locking the latter, a case magazine with lips, a barrel, a rotatable sleeve on the end of the bolt lying adjacent the barrel end longitudinal slots in said sleeve, adapted to serve as seats for the said magazine lips and having a greater length than the distance between the outer edges of the magazine lips.

8. A firearm with bolt action, comprising in combination a bolt, longitudinal slots and annular slots in said bolt, a receiver surrounding the bolt, inwardly projecting locking lugs inserted into and fastened to said receiver and adapted to cooperate with said slots in the bolt for guiding and locking the latter, a case magazine with lips, a barrel, a rotatable sleeve on the end of the bolt lying adjacent the barrel and longitudinal slots in said sleeve, adapted to serve as seats for the said magazine lips and having a greater length than the distance between the outer edges of the magazine lips.

In testimony whereof I affix my signature.

FRANZ JÄGER.