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COMPLETE SPECIFICATION.

Improvements in Ejector Mechanism for Breech-loading Small-arms.

I, THOMAS SOUTHGATE, of 6, Burton Crescent, in the County of London, Gun-maker, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

5 My Invention relates to certain improvements in Ejector Mechanism for single and double-barrelled breech-loading smallarms, and is a development of and improvement upon my previous Invention described in my Specification No. 12,314, of A.D. 1889. In my present invention I use the same form of ejecting tumbler, ejecting spring, sliding rod and projection on the firing tumbler as before; but I add a spring to act
10 upon the sliding rod which forms the means of communication between the firing and ejecting tumblers. The object of this spring is to obviate the moving of the sliding rod by the fall of the tumbler which is objectionable because such moving of the sliding rod by the fall of the firing tumbler lessens the blow given by the said tumbler to the striker. I cause the spring which I now introduce to hold the rod
15 always as far forward as the ejecting tumbler will allow and therefore out of the way of the projection on the firing tumbler at the moment of firing.

My Invention will be understood by reference to the accompanying drawings. Figs. I. and II. shew my invention as applied to the Rogers action and Figs. III. and IV. shew the application of my invention to the Anson-Deeley action.

20 In Fig. I. the gun is shewn as having been fired, and in Fig. II. as having been opened after firing, and the various parts of the mechanism are shewn separately.

The gun having been fired the various parts of the mechanism will be in the positions shewn. The sliding rod *a* is pressed forward by the spring *g* and held against the ejector tumbler *c*. The spring *g* takes its abutment against the
25 nut *h*, through which the rod is free to move longitudinally and has also a slight amount of freedom in a vertical direction. On the firing tumbler is a projection *b* having a bent *b*¹ cut in it. The rod *a* extends from this projection *b* to the ejector tumbler *c*. It will be seen that the rod *a* being held forward by the spring *g* is never moved by the fall of the firing tumbler. On opening the gun after firing the following
30 operations ensue:—As the barrels and fore-end are turned downwards the ejector tumbler presses upon the front end of the rod *a*, but cannot push the rod back because of the resistance to any backward movement offered by the projection *b* on the firing tumbler. Hence the resistance of the rod *a* turns the ejector tumbler *c* on its axis and so causes the said ejector tumbler to push back the extractor, and further, the ejector
35 spring *d* at the same time slides along the circular part of the tumbler *c*, until on reaching the flat part of the tumbler the said spring causes the tumbler to be jerked round and to give the extractor the sudden impulse needed for ejection of the cartridge case. These movements are so timed that the act of ejection takes place when the chamber of the barrel has risen clear of the standing breech. Should the
40 gun be opened with the firing tumbler at full cock the rod *a* will be pushed back into the bent *b*¹ in the projection *b* and as a result the ejecting tumbler *c* will be turned far enough on its axis to press back the extractor to the unloading position but not far enough to bring the spring *d* to act on the flat of the ejector tumbler. Therefore no ejection of the cartridge will take place.

45 Figs. III. and IV. shew the application of my improved ejector mechanism to the Anson-Deeley action. Fig. III. shews the gun closed and fired, and Fig. IV. shews the gun as opened after firing. On sheet 3 the parts of the mechanism are also shewn separately. Similar parts in Figs. III. and IV. bear the same letters of reference as in Figs. I. and II. It will be observed that the projection *b* with the bent *b*¹ on the

Southgate's Improvements in Ejector Mechanism for Breech-loading Small-arms.

firing tumbler, the ejector tumbler *c*, and the ejector spring *d* are similar to those already described; but the sliding bar *a* is modified in form as is also the spring for actuating the same. The sliding bar *a* as before reaches from the projection *b* to the ejector tumbler *c*. Attached to the bar *a* is a spring *g* of the form shewn bearing against the stud *h*. This spring holds the bar *a* downwards and also presses it forwards against the ejector tumbler. The gun having been fired and the mechanism being in the position shewn in Fig. III., on opening the gun ejection will ensue by a series of movements exactly analogous to those described in relation to Figs. I. and II: that is to say the resistance of the bar *a* abutting against the projection *b* will turn the ejector tumbler first to the unloading position of the extractor, and then bringing the ejector spring on to the flat of the ejector tumbler will cause the extractor to receive the sudden impulse which causes the ejection of the cartridge case, and the parts will then be in the position shewn in Fig. IV.

Should the gun be opened with the firing tumbler at full cock no ejecting action will ensue as previously described; on closing the gun the parts will assume the position shewn in Fig. III. except that the firing tumbler will be at full cock and the rear end of the bar *a* will be opposite the bent *b*¹.

Having now particularly described and ascertained the nature of my said Invention, and in what manner the same is to be performed, I declare that what I claim is:

First. The combination with a firing tumbler having a projection *b* and bent *b*¹, an ejector tumbler *c* of the form shewn, and ejector spring *d*, of the rod *a*, Figs. I. and II., held forward by the spring *g* for the purposes described.

Secondly. The bar *a* with a spring *g* bearing on the stud *h* in combination with the tumbler projection *b* having a bent *b*¹ and the ejector tumbler *c* and spring *d* for the purposes described and illustrated in Figs. III and IV.

Dated this 14th January 1890.

THOMAS SOUTHGATE.