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PROVISIONAL SPECIFICATION.

Improvements in Break-down Guns, Rifles, and the like.

We, HENRY ALFRED ALEXANDER THORN, trading as Charles Lancaster, of 151, New Bond Street, Gunmaker, and WILLIAM FREDERICK WILKINSON, of 41, Upper Kennington Lane, Gun-action Filer, both in the County of London, do hereby declare the nature of this invention to be as follows :—

This invention relates to guns, rifles and the like and especially to guns of the kind having a flat spring-lever pivotted at the front end of the action at or near the knuckle joint.

Hitherto such flat spring-lever has had a projection extending into a slot in the "fore-end" in such a manner that when the barrel is tilted the hammer will be cocked.

This arrangement for cocking the hammer limits the extent to which the barrel can be tilted and necessitates the very accurate timing of ejecting mechanism relatively with the drop in order to prevent the ejected cartridge case being obstructed by the top of the breech.

According to this invention the flat spring-lever does not project into the fore-end (which can thus be made solid so that it possesses greater strength than when slotted) but is provided with a curved surface the curvature of which corresponds with the curvature of the knuckle joint, the said spring-lever being so pivotted that its curved surface is at one side capable of projecting above the surface of the knuckle joint into a slight depression in the fore end but is partially rotated by the action of the fore end upon its pivot when tilting the barrels and remains in this position while the barrels are being tilted to the required extent without further actuating the spring-lever thus obviating the necessity for providing for an excessive overdraft of the tumbler.

In the curved surface of the fore end a concave pin can be used or a piece of steel can be dovetailed to form a bearing surface.

Dated this 11th day of April 1894.

G. F. REDFERN & Co.,
4, South Street, Finsbury, London, Agents for the Applicants.

COMPLETE SPECIFICATION.

Improvements in Break-down Guns, Rifles, and the like.

We, HENRY ALFRED ALEXANDER THORN, trading as Charles Lancaster, of 151, New Bond Street, Gunmaker, and WILLIAM FREDERICK WILKINSON, of 41, Upper Kennington Lane, Gun-action Filer, both in the County of London, 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 :—

This invention relates to guns, rifles and the like and especially to guns of the kind having a main spring in the form of a flat spring-lever pivotted at the front end of the action at or near the knuckle joint.

[*Price 8d.*]

Hitherto such flat spring-lever has had a projection extending into a slot in the "fore-end" in such a manner that when the barrel is tilted the hammer will be cocked by the impingement of the barrel against the projecting end.

This arrangement for cocking the hammer limits the extent to which the barrel can be tilted and necessitates the very accurate timing of the ejecting mechanism relatively with the drop in order to prevent the ejected cartridge case being obstructed by the top of the breech.

According to this invention the flat spring-lever does not project through the fore-end (which can thus be made solid so that it possesses greater strength than when slotted) but is provided with a curved surface the curvature of which approximately corresponds with the curvature of the joint surface of the fore-end, the said spring-lever being so pivotted that its curved surface is at one side of its pivot capable of projecting beyond the surface of the knuckle joint into a slight depression in the fore end but is partially rotated upon its pivot by the action of the fore-end when tilting the barrels and remains in this position while the barrels are being tilted to the required extent without further actuating the spring-lever thus obviating the necessity for providing for an excessive overdraught of the tumbler.

To enable our invention to be fully understood we will describe the same by reference to the accompanying drawings, in which :—

Figure 1 is a sectional elevation of so much of a fire-arm as is necessary to illustrate our invention, the parts being shewn with the breech closed and the hammer cocked ; and,

Figure 2 is a view similar to Figure 1 but shewing the position of the parts when the breech is opened :

Figure 3 is a view of the main spring detached :

Figures 4, 5 and 6 are views similar to Figures 1, 2 and 3 illustrating a modification of our invention ; and,

Figure 7 is a view of a spring illustrating another slight modification.

Similar letters of reference indicate similar or corresponding parts in the several figures.

a indicates the barrel, *b* the fore-end, *c* the cross pin of the knuckle joint, *d* the hammer, *e* the sear, and *f* the main spring. By referring to Figures 1 to 3 it will be observed that the rear end of the main spring *f* is curved to approximately correspond with the curvature of the fore-end, a slight projection being formed at f^1 which when the breech is closed lies in a corresponding depression *g* formed in the fore-end, as shewn in Figure 1, the upper end *h* of the curved end of the main spring being out of contact with the fore-end to an extent approximately corresponding with that to which the end *f* projects into the depression *g*.

When with this arrangement the barrel is dropped to open the breech and eject the empty cartridge case, the part of the surface of the fore-end at *i* immediately above the depression *g* acts against the part f^1 of the main spring *f* which projects into the said depression and slightly rotates the main spring on its pivot *j*, whereby the free end of the said spring is moved sufficiently to cock the hammer *d* whilst the barrel may be dropped to any extent without causing any further overdraught of the hammer than is usual, the joint surface of the fore-end sliding over the part f^1 of the main spring, as will be readily understood by reference to Figure 2.

With the arrangement shewn in Figures 1 to 3 there is a very slight margin for wear and tear of the parts, that is to say, if owing to continual use the barrels should become slightly loose on the cross pin *c* or the curved surface of the end of the main spring *f* or the corresponding surface in the fore-end which comes in contact with the main spring be worn, sufficient movement of the said main spring might not be obtained in order to cock the hammer. In order to overcome this we advantageously adopt the arrangement shewn in Figures 4, 5 and 6, that is to say, we somewhat enlarge the projecting part f^1 of the main spring and correspondingly enlarge the depression *g* in the fore-end and we also raise the pivot *j* of the main spring more or less above the axis of the cross pin *c* ; by which arrangement in

dropping the barrel we move the main spring to the position shewn in Figure 5, that is a distance considerably in excess for that required for cocking the hammer.

In order that with this arrangement the bending of the main spring *f* (which would take place when the barrels were opened unless an excessive overdraught of the hammer were provided) shall be obviated, we cut away the part of the hammer above the notch with which the said main spring engages as shewn at *k*, Figures 4 and 5, thus allowing the free end of the spring to move out of engagement with the hammer.

In order to render a main spring of the kind described in the last modification as "lively" as possible, we advantageously construct the same as shewn in Figure 7, that is to say, we form a recess at *l* so as to carry the root of the spring as near as possible to the fore end. The spring shewn in Figure 7 is adapted to be pivotted immediately above the axis of the cross pin *c*.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. In a break-down gun, rifle or the like a main spring the rear end of which is curved to approximately correspond with the curvature of the fore-end, a portion of the curved surface of the said spring lying when the gun is closed in a corresponding depression in the fore-end in such a manner that when the gun is opened, the movement of the barrel, relatively with the body serves to push the said projecting part of the main spring out of the said depression, substantially as described.

2. In a fire-arm in which the main spring is at one end shaped and adapted to come into contact with an approximately corresponding surface on the fore-end, pivotting the said main spring above the axis of the knuckle joint upon which the barrels move, substantially as, and for the purpose, described.

3. The manufacture and use of fire-arms having the main springs constructed, arranged and operated to cock the hammer substantially as hereinbefore described and illustrated in Figures 1 to 3 and Figures 4 to 6 of the accompanying drawings for the purpose specified.

Dated this 11th day of February 1895.

G. F. REDFERN & Co.,
4, South Street, Finsbury, London, Agents for the Applicants.

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