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

OF

JOHN DEELEY, THE YOUNGER,
AND
FREDERICK JAMES PENN.

IMPROVEMENTS IN THE COCKING
MECHANISM OF DROP DOWN
SMALL ARMS.

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A.D. 1885, 23rd APRIL. N° 5049.

PROVISIONAL SPECIFICATION.

**Improvements in the Cocking Mechanism of Drop-down
Small Arms.**

We JOHN DEELEY the younger of the Poplars Ward End Aston in the County of Warwick Gun Manufacturer and FREDERICK JAMES PENN of Frederick Villa Linwood Road Handsworth in the County of Stafford Gun Action Maker do hereby declare the nature of the nature of the said Invention for "IMPROVEMENTS IN THE COCKING MECHANISM OF DROP-DOWN SMALL ARMS" to be as follows :—

- Our invention consists in constructing and arranging in the manner hereinafter described the parts of the cocking mechanism of drop down small arms whereby the cocking of the gun or small arm is automatically effected on raising the breech ends of the barrels for charging.
- 10 We connect the upper branch of the main spring to the extreme end of the tumbler of the hammer by means of a swivel or connecting link. The lower branch of the main spring is at its extreme end turned down at right angles the turned down end engaging in a notch or recess in the front of the tumbler at a point between the centre on which the hammer turns and the swivel joint. Near the end
- 15 of the lower branch of the main spring is a slot through which the swivel passes and in which it works. In the body of the gun and nearly parallel with the main spring is a nearly horizontal arm or lever the free end of which is turned towards the joint on which the barrels turn. The free end of the said lever carries a vertical projection which protrudes through and works in a slot in the body and
- 20 near the joint on which the barrels turn so that when the barrels are shut down they press upon the projection and depress the free end of the lever. On the underside of this lever and at about one third of its length from its fulcrum is a projection which bears upon the upper branch of the main spring near the joint of the swivel.
- 25 On the shutting down of the barrels the said lever is depressed its projection depresses the upper or swivel branch of the main spring thereby putting the said main spring into a state of tension so that when the hammer is released by pressure upon the trigger it is urged forward by the main spring and the gun is discharged. On lifting the breech ends of the barrels for charging the gun the
- 30 lever is permitted to rise and the upper branch of the main spring being no longer pressed down by it the said upper branch rises; the tumbler part of the hammer is thereby raised by the swivel and the head of the hammer thrown back such a

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distance that the sear snapping into its bent holds it at full cock. When the barrels are shut down the main spring is again brought into a state of tension for the discharge of the hammer when released.

The lever and its projecting end may be dispensed with and the swivel itself extended upwards so as to work through a slot in the body and be acted upon by the barrels in the same way as the projection on the lever is acted upon. 5

Or the compression of the main spring may be effected by dispensing with the lever and substituting in place of the said lever a sliding rod the fore end of the said rod having on its underside an incline bearing on the top of the swivel. The other end of the sliding rod extends to the fore end of the gun by which the requisite advancing sliding motion is given to it on the shutting down of the barrels to cause its incline to depress the swivel and put the main spring into a state of tension. 10

Dated this twenty third day of April 1885.

W. T. WHITEMAN,
Agent for the Applicants.

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COMPLETE SPECIFICATION.

Improvements in the Cocking Mechanism of Drop Down Small Arms.

We JOHN DEELEY the younger of the Poplars, Ward End, Aston in the County of Warwick, Gun Manufacturer and FREDERICK JAMES PENN of Frederick Villa, Linwood Road, Handsworth in the County of Stafford, Gun Action Maker, do hereby declare the nature of our Invention for "IMPROVEMENTS IN THE COCKING
5 MECHANISM OF DROP DOWN SMALL ARMS" and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement:—

Our invention consists in constructing and arranging in the manner hereinafter described, the parts of the cocking mechanism of drop-down small arms, whereby
10 the cocking of the gun or small arm is automatically effected on raising the breech ends of the barrels for charging.

We connect the upper branch of the main spring to the extreme end of the tumbler of the hammer by means of a swivel or connecting link. The lower branch of the main spring is at its extreme end turned down at right angles, the turned
15 down end engaging in a notch or recess in the front of the tumbler at a point between the centre on which the hammer turns and the swivel joint. Near the end of the lower branch of the main spring is a slot through which the swivel passes and in which it works. In the body of the gun and nearly parallel with the main spring is a nearly horizontal arm or lever the free end of which is
20 turned towards the joint on which the barrels turn. The free end of the said lever carries a vertical projection which protrudes through and works in a slot in the body and near the joint on which the barrels turn so that when the barrels are shut down they press upon the projection and depress the free end of the lever. On
25 the underside of this lever and at about one third of its length from its fulcrum, is a projection which bears upon the upper branch of the main spring near the joint of the swivel.

On the shutting down of the barrels the said lever is depressed, its projection depresses the upper or swivel branch of the main spring thereby putting
30 the said main spring into a state of tension so that when the hammer is released by pressure upon the trigger it is urged forward by the main spring and the gun is discharged. On lifting the breech ends of the barrels for charging the gun, the lever is permitted to rise and the upper branch of the main spring being no longer pressed down by it the said upper branch rises; the tumbler part of the hammer is thereby raised by the swivel and the head of the hammer thrown back such a
35 distance that the sear snapping into its bent holds it at full cock. When the barrels are shut down the main spring is again brought into a state of tension for the discharge of the hammer when released.

The lever and its projecting end may be dispensed with and the swivel itself extended upwards so as to work through a slot in the body and be acted upon by
40 the barrels in the same way as the projection on the lever is acted upon.

Or the compression of the main spring may be effected by dispensing with the lever and substituting in place of the said lever a sliding rod the fore end of the said rod having on its underside an incline or roller bearing on the top of
45 the swivel. The other end of the sliding rod extends to the fore end of the gun by which the requisite advancing sliding motion is given to it on the shutting down of the barrels to cause its incline or roller to depress the swivel and put the main spring into a state of tension.

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Figures 1 and 2 of the accompanying Drawings represent partly in side elevation and partly in longitudinal section, the section being taken through one of the locks, the breech end of a double barrel drop down gun containing one of the arrangements of cocking mechanism constituting our invention. In Figure 1 the barrels are represented shut down and the hammer cocked, the upper branch of the main spring being in a compressed state ready for the discharge of the gun and in Figure 2 the barrels are represented raised from the break off, the hammer cocked and the upper branch of the main spring in a relaxed or uncompressed state: Figure 3 represents in side elevation and plan one of the hammers of the gun together with its main spring and swivel or connecting link; Figure 4 represents the main spring and connecting link detached from the hammer and Figure 5 represents the horizontal arm or lever by the action of which the hammer is cocked and the main spring compressed. As the cocking mechanism of each barrel of the double gun is alike in construction and action we will only describe that in connection with one barrel: *a* is the hammer; *b* the ordinary sear and *c* the safety sear, the said safety sear constituting no part of our invention; *d*, *d*² is the main spring the upper branch *d* of which is connected to the extreme end of the tumbler of the hammer *a* by the swivel or slotted connecting link *e*, a pin passed through the said tumbler taking into a slot in the said connecting link as represented. The lower branch *d*² of the main spring is slotted for the passage through it of the link *e* (see Figure 3) The said lower branch *d*² of the main spring is connected to the tumbler of the hammer by its turned down extreme end engaging in a notch or depression between the centre on which the hammer turns and the swivel joint; *f* is the nearly horizontal arm or lever by which the cocking of the hammer and the compression of the main spring are effected. The hooked rear end of the said arm or lever *f* is engaged in a notch or depression *g* in the body of the gun and upon the said hooked end the arm or lever turns as a centre; *f*² is a projection at the free end of the arm or lever *f*, which projection *f*² protrudes through and works in a slot *h* in the body of the gun and near the joint on which the barrels turn. On the underside of the arm or lever *f* is a projection which bears on the upper branch *d* of the main spring near the swivel or link *e* as represented.

The action of the cocking mechanism is as follows:—When the gun is ready for discharge, the horizontal arm or lever *f*, *f*² and link *e* are in the lowered positions represented in Figure 1, the main spring being in a compressed state. On pulling the trigger the hammer *a* is liberated and falls by the action of the main spring; the pin on the tumbler of the hammer passing to the bottom of the slot in the swivel or connecting link *e*. On lifting the breech ends of the barrels for recharging the gun, the lever *f* being no longer held down by the barrels is forced upwards by the rising of the upper branch *d* of the main spring *d*, *d*². As the upper branch *d* of the main spring rises it carries with it the link *e* which acting upon the tumbler end of the hammer *a* raises the said tumbler end and the head of the hammer is thrown back such a distance that the sear *b* snapping into its bent holds the hammer at full cock, the several parts now occupying the respective positions represented in Figure 2. On shutting down the barrels the lever *f* *f*² is depressed by the action of the barrels upon its head *f*² and as the said lever descends the projection on its underside depresses the upper branch *d* of the main spring, thereby putting the said main spring into a state of tension as represented in Figure 1 and the gun is ready to be discharged in the manner hereinbefore described.

Figures 6 and 7 represent the arrangement of our invention in which the arm or lever of the first described arrangement is omitted and the swivel or link is prolonged upwards for the barrels to act upon. In Figure 6 the barrels are represented shut down the hammer cocked and the upper branch of the main spring compressed ready for the discharge of the gun and in Figure 7 the barrels are represented raised, the hammer cocked and the upper branch of the main spring in a relaxed or uncompressed state.

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The prolonged part of the link or swivel e is marked e^2 , the said prolonged part passing through and working in a slot i in the body of the gun. The said prolonged part e^2 of the link or swivel e is acted upon by the barrels in the same way as the projection f^2 of the lever f in the arrangement first described is acted upon by the barrels. That is to say, on lifting the barrels for reloading the gun the rising of the upper branch d of the main spring d, d^2 lifts the link or swivel e, e^2 and causes it to cock the hammer a and on shutting down the barrels they depress the link e, e^2 and cause the upper branch d of the main spring to be compressed ready for the discharge of the gun.

10 Figures 8 and 9 represent the arrangement of our invention in which the compression of the main spring is effected and the upper branch of the main spring permitted to rise by the action of a sliding rod, Figure 8 representing the parts of the gun ready for discharge and Figure 9 representing the same after the barrels have been raised and the main spring brought into a relaxed state; k is the sliding rod having at its ends anti friction rollers. The end of the rod k most distant from the joint on which the barrels turn, bears when in its advanced position over the top of the swivel or link e and the other end of the said rod k extends to and takes a bearing upon an incline l on the "fore end" m of the gun. On lifting the barrels for reloading the gun the upper branch d of the main spring d, d^2 rises and the rear end of the sliding rod k travels up the incline l on the fore end and the hammer is cocked in the manner hereinbefore described and represented in Figure 9. When the barrels are shut down, an advancing motion is given to the rod k by the incline l and the front end of the said rod is thereby made to travel along the upper branch d of the main spring onto the top of the link e , depressing the said upper branch and link and putting the main spring into a state of tension ready for the discharge of the gun as represented in Figure 8.

Having now particularly described and ascertained the nature of our said invention and the manner in which the same is to be performed we declare that we claim as our Invention of "Improvements in the cocking mechanism of drop down small arms"

30 First.—The combination of the sliding slotted swivel or connecting link e , by which the upper branch of the main spring is connected to the extreme end of the tumbler of the hammer, with the horizontal arm or lever f, f^2 for effecting the cocking of the hammer on the lifting of the breech ends of the barrels for recharging the gun and for putting the main spring into a state of tension on shutting down the breech ends of the barrels, the said parts e and f, f^2 being arranged or combined with the other parts of the lock mechanism and acting substantially as hereinbefore described and illustrated in Figures 1. 2. 3. 4 and 5 of the accompanying Drawings.

Secondly.—The modification herein before described and represented in Figures 6 and 7 of the accompanying Drawings in which the lever f, f^2 is omitted and the link e is prolonged upwards and is acted upon directly by the closing barrels.

Thirdly.—The combination with the swivel or connecting link e , of the sliding rod k acted upon by the incline l on the fore end of the gun for effecting the cocking of the hammer and the compression of the main spring substantially as herein before described and illustrated in Figures 8 and 9 of the accompanying Drawings.

Dated this Eighteenth day of December 1885.

JNO. DEELEY, JUN.
FREDERICK JAMES PENN.

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