

A.D. 1859, 21st JUNE, N° 1491.

Shears.

LETTERS PATENT to William Edward Newton, of the Office for Patents, 66, Chancery Lane, in the County of Middlesex, Civil Engineer, for the Invention of "AN IMPROVEMENT IN TAILORS' AND OTHER SHEARS." – A communication from abroad by James H. Roome, of New York, in the United States of America.

Sealed the 15th November 1859, and dated the 21st June 1859.

PROVISIONAL SPECIFICATION left by the said William Edward Newton at the Office of the Commissioners of Patents, with his Petition, on the 21st June 1859.

I, WILLIAM EDWARD NEWTON, of the Office for Patents, 66, Chancery Lane, in the County of Middlesex, Civil Engineer, do hereby declare the nature of the said Invention for "**AN IMPROVEMENT IN TAILORS' AND OTHER SHEARS,**" to be as follows: –

This Invention of an improvement in tailors' and other shears, consists in combining one limb of a pair of shears with a handle forming part of a separate lever, and of combining the said limb and handles with the other limb of the shears, whereby the leverage exerted by the thumb or hand in cutting is gradually increased as the shears close, and a drawing cut is produced.

The essential feature of novelty in the Invention consists in combining one limb of a pair of shears with its handle, which forms part of a separate lever, this limb and handle is combined with the other limb of the shears by means of an arm attached to the lever, which connects the first limb and handle together; this is made to operate on the rear portion of the first mentioned limb. A link connects the first limb with the lever, and there is a moveable fulcrum connection between the lever and the other limb, and the whole operated to cause the power of the said lever to increase as the shears close, and to make a draw cut.

SPECIFICATION in pursuance of the conditions of the Letters Patent, filed by the said William Edward Newton in the Great Seal Patent Office on the 21st December 1859.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, WILLIAM EDWARD NEWTON, of the Office for Patents, 66, Chancery Lane, in the County of Middlesex, Civil Engineer, send greeting.

WHEREAS Her most Excellent Majesty Queen Victoria, by Her Letters Patent, bearing date the Twenty-first day of June, in the year of our Lord One thousand eight hundred and fifty-nine, in the twenty-third year of Her reign, did, for Herself, Her heirs and successors, give and grant unto me, the said William Edward Newton, Her special license that I, the said William Edward

Newton, my executors, administrators and assigns, or such others as I, the said William Edward Newton, my executors, administrators, and assigns, should at any time agree with, and no others, from time to time and at all times thereafter during the term therein expressed, should and lawfully might make, use, exercise, and vend, within the United Kingdom of Great Britain and Ireland, the Channel Islands, and Isle of Man, an Invention for “**AN IMPROVEMENT IN TAILORS’ AND OTHER SHEARS,**” being a communication from abroad, upon the condition (amongst others) that I, the said William Edward Newton, by an instrument in writing under my hand and seal, should particularly describe and ascertain the nature of the said Invention, and in what manner the same was to be performed, and cause the same to be filed in the Great Seal Patent Office within six calendar months next and immediately after the date of the said Letters Patent.

NOW KNOW YE, that I, the said William Edward Newton, do hereby declare the nature of the said Invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement, reference being had to the Drawing hereunto annexed, and to the letters and figures marked thereon (that is to say): –

This Invention of An Improvement in Tailors’ and other Shears,“ consists in combining one limb of a pair of shears with a handle forming part of a separate lever, and of combining the said limb and handle with the other limb of the shears, whereby the leverage exerted by the thumb or hand in cutting is gradually increased as the shears close, and a drawig cut in produced.

In the accompanying Drawing Figs. 1 and 2 are views of the opposite sides of a pair of shears constructed according to the present Invention; Fig. 3 is a top view of the same; Fig. 4 is a transverse section of the same taken in line x, x, of Fig. 1. Similar letters of reference indicate corresponding parts in the several Figures.

A is the blade, and B the handle, which together form the lower limb of the shears, this limb is made in one piece, and of such form that the handle as well as the blade may rest upon the cutting board or table during the cutting operation. At the junction of the blade and handle this limb is made much deeper than is common in other shears in order that the pin *a*, on which the upper blade works, may be arranged some distance above the edge of the lower blade. C, C, is the upper limb made in the form of a lever, of which the upper blade C constitutes one arm, and the other arm D is extended rearward from the blade, and from the point where this limb is attached to the lower limb by the pin *a* this upper limb C is made deep enough below the point where it receives the pin *a* to reach nearly to the bottom of the limb A, B, as shown in Fig. 1; and below the pin *a* it contains a slot *b*, having the form of an arc described from the pin *a*, the said slot receiving a broad headed screw *c*, which screws into the lower limb. The part of the upper limb surrounding the said slot is rather thicker at that end of the slot nearest the blade than at the other end thereof, so that in the closing of the shears the faces of the blades will be drawn towards each other or gradually pressed tightly against each other. The arm D contains a slot *d* to receive a pin *e*, which is carried by an arm *f* which is attached to the lever, or which the upper handle forms a part, and whose duty will be hereinafter explained. E is the upper handle constituting a portion of a lever E, G, and attached to the lower limb of the shears by a fulcrum

pin *g*, which is situated much nearer to the front end than to the rear end, which terminates in the thumb bow. A slot *h* is provided in the lever E, G, for the fulcrum pin *g* to pass through, to allow the handle to have a longitudinal as well as a lever-like movement, and the pin *g* is fitted with an antifriction roller within the slot *h*. The front end of the lever E, G, is connected with the upper limb C, D, by a link F and two joint pins *i*, *j*; the pin *j* attaches the said link to the said limb, and is arranged a little in rear of and some distance below the pin *a*; the other pin *i* which attaches the link F to the lever E, G, is so arranged that when the shears are closed the link will be parallel or nearly so with the edges of the blades. The arm *f* is attached to the front extremity of the lever E, G, and stands up nearly at a right angle to the portion of the handle that is in front of the fulcrum pin *g*, and the arm is made of forked form, as shown in Fig. 4, to receive the arm D of the upper limb. The fork of the arm *f* also contains a roller *k*, which turns on a pin *l*, inserted through the arm *f*, and above the roller *k* is the before-mentioned pin *e*, working in the slot in the arm D of the upper limb for the purpose of forcing up the arm D and bringing down the blade C to effect the cutting operation by the depression of the handle E; and the pin *e* is for the purpose of drawing down the arm D to open the shears as the handle E is raised. To provide for wear by the grinding away of the blades by repeated sharpenings of the shears, and to insure the proper closing of the shears and their cutting to the points when ground away, the arm *f* is made detached from the lever E, G, and is secured thereto by a screw *m*, passing through a slot *n* in the arm *f*, and screwing into the lever E. The slot *n* permits the adjustment of the arm *f* higher or lower; and to keep the arm steady and prevent it from being forced out of place by the force applied to it in cutting, there is a steady pin *p*, projecting from the lever E, G, into the slot *n*, and there are a series of teeth and notches *q*, *q*, provided in the arm, as shown in Figs. 1 and 4, and in the face of the lever to which it is attached. H is a spring secured to the lower limb A, B, of the shears, and pressing against an anti-friction roller *r*, attached to the lever E, G, for the purpose of raising and throwing forward the rear or bowed end of the lever, and so opening or assisting in opening the shears when the lever is relieved from the pressure of the thumb or hand. In operating with these shears the lower limb is allowed to rest on the cutting board or table, and the cut is produced by depressing the upper handle, and at the same time pulling or pressing it in a backward direction from the position shown in Fig. 2, and in black outline in Fig. 1. This movement of the handle causes the front end of the lever E, G, which is connected with the upper limb, to rise, and the arm *f* to move backward, and so causes the roller *k* to pass along the lower edge of the arm D of the upper limb, and so depress the upper blade C, but at the same time the end of the link F, which is attached to the rising front end of the lever E, G, is raised by the lever, and the link F is forced bodily backward by the movement of the limb C, D, and so caused to force back the lever bodily on its fulcrum *g*, thus gradually increasing the length of the lever behind the pin and diminishing its length in front thereof, and so increasing its power as the blade C descends; and while this increase of power of the lever is taking place, the roller *k* is gradually receding from the pin *a* or fulcrum of the upper limb C, D, is also causing the power applied by the lever to act with increased effect on the blade, and thus the power exerted by the hand is increased as the cutting takes place farther from the pin or fulcrum *a*, and so offers a greater resistance to the closing of the blades. This operation is illustrated in Fig. 1 by the representation of the shears in a closed condition in red outline. The operation of the shears is also greatly assisted by the "drawing cut" that is caused by the elevated position of the pin *a*.

