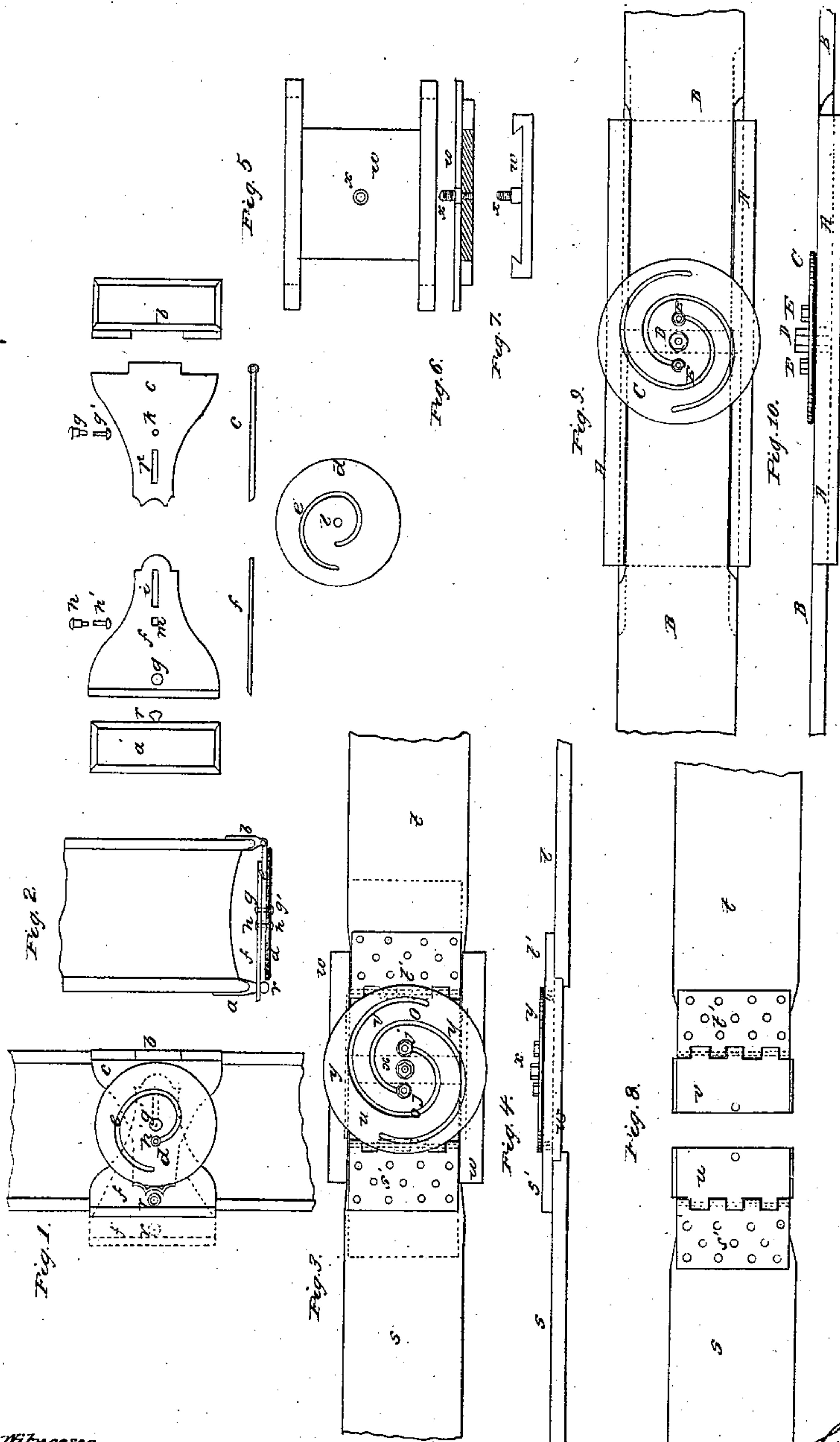


White & Chamberlain,

Belt Clasp.

N^o 59,332.

Patented Oct. 30, 1866.



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UNITED STATES PATENT OFFICE.

GEORGE FREDERICK WHITE, OF HORNSEY, COUNTY OF MIDDLESEX, AND
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IMPROVEMENT IN CLASPS FOR BELTING, &c.

Specification forming part of Letters Patent No. 59,332, dated October 30, 1866.

To all whom it may concern:

Be it known that we, GEORGE FREDERICK WHITE, of Hornsey, in the county of Middlesex, and HARVEY CHAMBERLAIN, of Falcon Square, in the city of London, have invented new and useful Improvements in Apparatus for Elongating and Contracting Waist and other Belts, which apparatus is also applicable for other purposes; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

The apparatus of our invention consists of a disk or circular plate of metal or other material having one or more volute grooves, such plate being mounted on a central pin, on which it rotates. This pin may either be on one end of the parts to be drawn closer to or thrust asunder, or it may be on an independent piece, and the grooved disk arranged to operate on and intermediate of the two parts to be drawn together or thrust asunder, for elongating or contracting purposes. The volute groove receives a pin of the part to be contracted or drawn closer by the disk. By rotating this disk in one direction or the other the required expansion or contraction will be effected. By employing two volute grooves in the disk, whose axis is mounted on a piece intermediate of the two parts it is desired to separate, elongate, or contract, the extent and rate of motion will be multiplied twofold.

Figures 1 and 2 of the accompanying plate of drawings represent our invention applied as a book-clasp, Fig. 1 showing a face view of the clasp and the opening-edge of the book, while Fig. 2 represents an end view of the same.

The small figures represent the several parts of the clasp detached, all indicated by the letters of reference. *a b* are the parts of the clasp affixed to the book-covers, which are the same as in ordinary clasps. The part *b* is hinged to plate *c*, while on plate *c* is superposed the disk *d*, having the volute groove or slot *e*. The plate *f* is placed under the part *c*, and the three parts, *c*, *d*, and *f*, are secured to each other by socket-pins *g* and *h*, and have female screws, corresponding respectively with the

screwed pins with heads *g' h'*. The pin *g* forms the axis on which the disk *d* rotates, and is inserted from underneath the plate *f*, passing through slot *i*, through hole *k* in plate *c*, and through the hole *l* in disk *d*, and is secured in place by the screw-pin *g'*, screwed in from above. It will be observed that the neck of pin *g* is square, to fit the slot *i*, and rounded for the remainder of its length, to fit the holes *k* and *l*.

In like manner pin *h* is passed from underneath, first through plate *f*, then plate *c*, and through disk *d*, but passing through the groove *e* therein. The square neck of this pin *h* is longer than that of *g*, as seen. It is inserted through the square hole *m* in *f*, and through the slot *p*, in which it traverses in *c*, while the round part occupies the thickness of the disk *d* in the volute *e*. It is fixed in position by the screwed pin *h*. By this combination the parts *c*, *d*, and *f* are firmly secured to each other, while the parts *c* and *f* may slide one on the other to an extent nearly equal to the length of the slots *i* and *p*, and the combined plates *c* and *f* be lengthened or shortened to that extent. This lengthening or shortening is readily effected by rotating the disk *d* on its axis. The slot *e* taking effect on the pin *h* causes it to traverse in the slot *p*, while the pin *g* is also free to traverse in slot *i*. Instead of the pins *g h g' h'*, as described, simple rivets may be used. The part *f* of the clasp has a hole, *q*, which is passed over the knob *r* on part *a*, to clasp the book in the usual manner, or this connecting part may be a hook or otherwise arranged.

By the application of the parts according to our invention to book-clasps they can be made tighter or looser, as may be desired, or, after clasping, may be tightened up, or slackened before unclasping.

A similar application of this invention may be made to glove-fastenings for the purpose of lengthening or shortening the connection or fastening. The parts will, of course, be very much smaller and less expensively put together, and will be provided with a hook or button for effecting the attachment of the one part of the glove to the other, the elongating parts, according to this invention, being simply introduced for varying the length of such

connection. It is equally applicable to waist-belts, tabs and waist-fastenings of waistcoats and trowsers, as also surgical bandages and otherlike purposes, and more especially to driving-belts, which we have illustrated in Figs. 3, 4, 5, 6, 7, and 8 of the drawings, and, like this example, the others herein above enumerated may be made double-acting, instead of single, as in the former illustration—that is to say, with two volute grooves instead of one, and operating simultaneously.

Fig. 3 represents a face view of the driving-belt connection; Fig. 4, an edge view of the same, while Figs. 5, 6, 7, and 8 represent all the parts detached except the disk, which is sufficiently indicated in Figs 3 and 4. *s t* are the ends of the belt or strap to be united. These are riveted to two pieces of metal, *s' t'*, which are hinged to two pieces, *u v*, of metal, dovetailed and sliding in the body-piece *w*, seen separately in plan at Fig. 5, longitudinal section at Fig. 6, and in end view at Fig. 7. In the body *w* a pin, *x*, is fixed, on which the disk *y* is placed and rotates as a center.

The parts *w* and *u* are furnished with pins *j j*, which are received in the double volute or snail grooves or slots *o o* of disk *w*. The pins *j j* and *x* are furnished with screws and nuts, as seen, to keep the several parts in place. We mill or roughen the periphery of the disk *y* to afford gripe to turn it.

It will be obvious that by turning the disk in one direction the parts *u* and *v* will be caused to separate from each other by the traverse of the pins *j j* in the volute grooves, and that by turning it in the opposite direction these pieces *u* and *v* will be constrained to approach each other, and so cause the endless band or driving-strap in which such is interposed to be lengthened or shortened, and so tightened or loosened as may be required.

A third illustration represents in Fig. 9 a plan; and Fig. 10, an edge view, shows the invention applied to lengthening or shorten-

ing bars, connecting rods, and other like purposes.

A A is a dovetailed bed or junction piece, into which are fitted to slide the two ends of the parts to be connected, B B. The cross-section of A would be the same as represented at Fig. 7. On parts A and B is superposed the disk C, mounted on the central stud-pin D, on which it is to be rotated. Like the last arrangement, this has two volute grooves, receiving pins E E, fixed in parts B B. By rotating the disk C the parts B B will be caused to approach or recede from each other, and thereby lengthen or shorten the extent of the two parts B B, as may be desired.

The metal disk C, like the last described, is milled on the edge, to afford the necessary gripe; or it may be six, eight, or more sided, and a spanner applied for the purpose of turning it. Greater or less pressure may be exerted on the disk by the nuts of pins D and E E, either to fix it in position when it has been adjusted, or to generate the necessary friction to prevent its rotation when not required.

In all cases the friction or other obstruction to the rotation of the disk should be such that the force or tension applied to the rod, belt, or other article to which this apparatus is applied shall not be overcome and so as to cause the rotation of the disk.

What we claim as our invention, and desire to secure by Letters Patent of the United States of America, is—

The apparatus, constructed and operating substantially as herein described, and represented in the drawings, when applied to the elongation and contraction of articles, in the manner and substantially as specified.

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