

G. A. CLENDENNING.
BELT STRETCHING DEVICE.
APPLICATION FILED MAY 24, 1909.

980,490.

Patented Jan. 3, 1911.

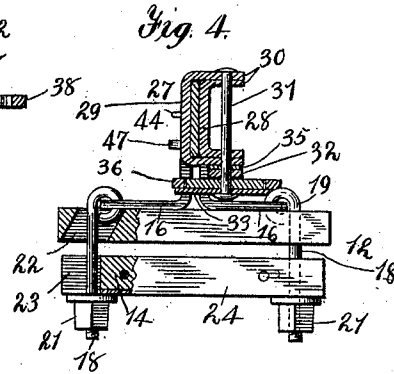
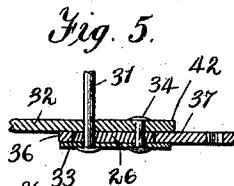
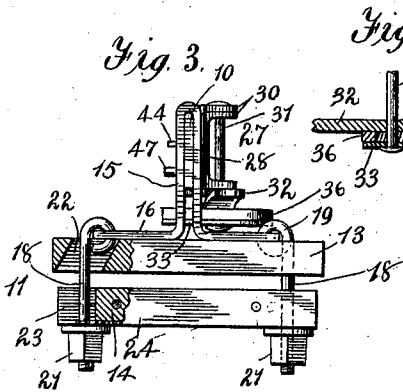
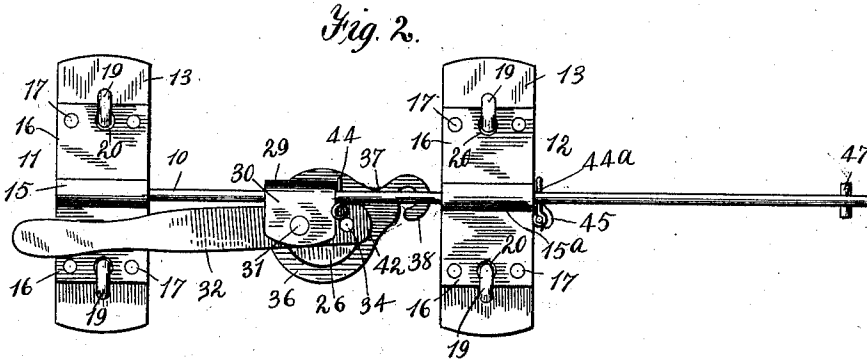
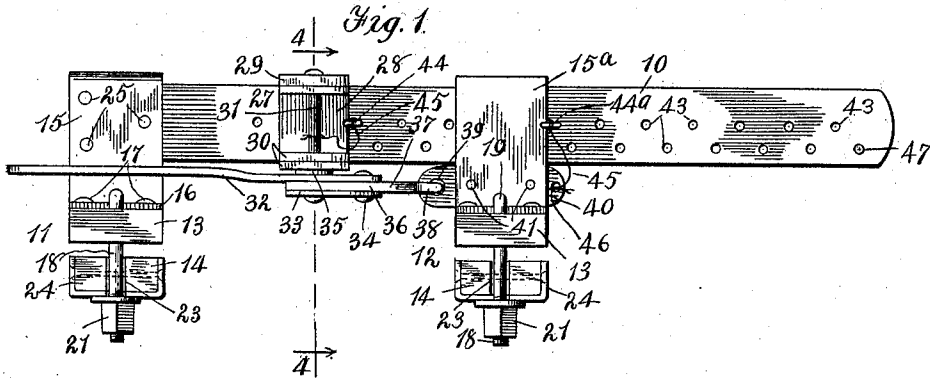
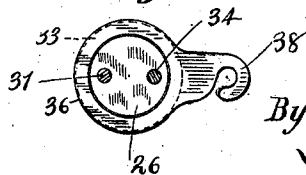


Fig. 6.



Witnesses:

Chas. F. Bassett
M. A. Milord

Inventor
George A. Clendenning
By
Frederick Benjamin
Atty.

UNITED STATES PATENT OFFICE.

GEORGE A. CLENDENNING, OF MULBERRY, INDIANA.

BELT-STRETCHING DEVICE.

980,490.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, GEORGE A. CLENDENNING, citizen of the United States, residing at Mulberry, in the county of Clinton and State of Indiana, have invented certain new and useful Improvements in Belt-Stretching Devices, of which the following is a specification.

My invention relates to stretching appliances and has particular reference to devices applicable to the stretching of belts to facilitate the operation of lacing or splicing their ends together.

The chief objects of the improvements which constitute the subject matter of this application are:—to provide a simple and efficient apparatus for gripping the ends of a belt, and to supply traction mechanism, having a relatively powerful leverage, that will permit of properly stretching belts of large size with the expenditure of a comparatively small amount of muscular force.

Other objects of the invention, stated in detail, are:—to provide a novel take-up mechanism that can be quickly and easily manipulated; to furnish convenient and rapid means for applying and removing the cooperating belt clamping members, and to form the jaw engaging faces of a material that will afford an adequate amount of friction without injury to the substance composing the belt.

Further objects of this invention are to produce a belt clamping and stretching contrivance that can be manufactured economically, the machine being designed as to construction and material so that a large proportion of the parts may be formed by the ordinary process of stamping; to furnish a device having adequate strength and durability, so arranged mechanically as to avoid a heavy construction thus rendering the device easily handled and producing a practical clamping and stretching appliance that can be applied to belts of the largest size and efficiently operated by a single person.

I accomplish the desired results, by employing the apparatus illustrated in the accompanying drawing, which forms a part of this application, the important details of construction being disclosed in the several views designated as follows:—

Figure 1 is a side elevation of my improved belt stretching device; Fig. 2 is a top plan view; Fig. 3 is an end elevation, with a portion of the clamping blocks

broken away to show the bolt slots; Fig. 4 is a sectional view on the line 4—4 of Fig. 1; Fig. 5 is a fragmentary sectional view, showing the eccentric and manner of mounting, and Fig. 6 is a top plan view of the eccentric and strap.

Referring to the details of the drawing, the numeral 10 indicates a flat connecting or take-up beam upon which are mounted a pair of clamping members 11, 12. These members are similarly constructed each consisting of cooperating clamping blocks or jaws 13, 14, arranged one above the other transversely to the take-up beam or bar 10. The upper blocks 13 are suspended from the said beam by yokes 15, 15^a, formed of flat bars or strips bent to embrace the take-up beam, and having its ends bent at right angles to form attaching flanges 16, which lie flat upon the upper surfaces of the blocks 13 and are secured thereto by bolts or rivets 17. The under jaws or blocks 14 are supported by bolts 18, having their upper ends turned to form eyes 19, which engage holes 20 in the margins of the flanges 16. The bolts thus hingedly connected to the yoke then pass through the said jaws or blocks 13, 14, and are provided with washer-nuts 21. One end of each block 13 is furnished with a diagonal slot 22 which the corresponding eye-bolt traverses, and each end of the lower block 14 has a marginal notch 23 for the passage of the bolt. The purpose of these slots and notches is to permit one bolt in each clamping member to be inclined outwardly in its slot and notch when the nuts 21 are loosened, so that the lower block 14 can be readily detached without removing the nuts 21 entirely from the bolts. I prefer to make the said blocks 13, 14, of wood since this material will have a greater holding power when in frictional contact with the belt to be stretched, besides being lighter and cheaper to manufacture than if made of metal and will be less likely to score the face of the belt than if made of metal. In order to render the lower members 14 more durable, since they are engaged by the washer nuts 21 and therefore subject to greater wear than the cooperating upper members 13, I protect them upon three faces with a comparatively thin metallic shell, or casing 24. The rear yoke 15 is fixed on the connecting or take-up beam 10 by rivets 25, while the front yoke 15^a is loosely mount-

ed so that it may be adjusted by sliding it along the supporting beam.

The yoke 15^a with its suspended clamping member, is moved upon the bar or beam 10 by means of an eccentric 26, mounted upon a hanger or bracket 27, which slides upon the bar 10. The said slidable bracket 27 is composed of flanged plates 28, 29, nested as shown in Figs. 1 and 4, so that they embrace the beam and have their flanges 30 in apposition. A pivot pin 31 passes through said flanges and projects below the bracket or hanger passing through an operating lever 32 near its forward end, the eccentric 26, and a supporting plate 33, the extremity of said pin 31 being then upset or headed to retain the plate 33. This pivot pin 31 is fixed in the traveling bracket 27, and the other structures through which it passes arranged to turn thereon, although the reverse arrangement may be employed, the pivot being loosely mounted in the bracket. The forward end of the said lever 32 is attached to the eccentric 26 and supporting plate 33 by means of a rivet 34, and a washer 35 is interposed between the lower flanges 30 of the bracket and said lever. The eccentric 26 is surrounded by a ring or strap 36, provided with an integral extension 37 forming a link, bearing a hook 38 at the extremity, which is adapted to engage an eye 39, in the end of a draw bar 40, the latter being interposed between the side members of the yoke 15^a, and secured by rivets 41. The plate 33 laps over the strap or ring 36, completely covering the eccentric upon the under side, and the end 42 of the lever 32 extends upon the ring or strap assisting to retain the strap and eccentric in operative relation. The bar or beam 10 is furnished with two longitudinal rows of spaced holes 43, arranged in staggered relation in the opposite rows, to give a finer adjustment. These holes serve for the insertion of locking or retaining pins 44, 44^a, which form adjustable stops to limit the movements of the sliding yoke 15^a and the traveling bracket 27, when operated in the manner hereinafter described. As these pins are removable and liable to become mislaid or lost, I prefer to secure each pin to some portion of the machine by means of a chain or cord 45, one of said cords being conveniently fastened to the rivet pin 31, and the other to an eye 46 formed in the end of the draw bar 40 for that purpose. To prevent the movable members from becoming dislodged from the beam I provide a stop 47, which engages one of the holes 43 near the end of the beam.

The operation of the appliance is as follows:—If the belt to be stretched has its ends already connected, the lower jaws or blocks 14 are removed by loosening the nuts

21 and inclining the bolts which are in the slots 22 sufficiently to permit the said blocks to be disengaged. The slidable clamp 15^a is then placed at the required distance from the fixed clamp 15 and the device then placed with the upper blocks 13 resting upon the belt at the desired point, so that the belt lies between the bolts 18. The lower blocks 14 are then replaced and the nuts 21 tightened by means of an ordinary wrench, thus clamping the belt firmly in two places. The operating lever 32 being in the position shown in the drawings a stop pin 44 is then inserted in one of the holes 43 in proximity to the right hand edge of the bracket 27 as indicated at *a* to form a fulcrum. The operator then moves the eccentric by swinging the lever 32 over toward the right, and as the slidable bracket is fixed by the said stop pin 44, this movement of the eccentric will slide the yoke 15^a toward the said bracket, stretching the clamped belt to a corresponding degree. The pin 44^a is then inserted in one of the holes to the right of the slide yoke 15^a, as close to the margin of the yoke as possible, thus furnishing a stop for the said yoke, and permitting the lever 32 to be swung back to its initial position without losing the amount taken up by the lever movement. Carrying the lever back to its starting point will, of course, cause the bracket to travel toward the fixed yoke to an extent equal to the throw of the eccentric, where it is retained by moving the pin 44 to the proper hole. This step by step movement of the slides is continued until the belt is stretched to the required degree. To remove the device while the belt is at maximum tension it is only necessary to increase the tension by means of the main lever sufficiently to permit the removal of the stop pin 44^a. The lower blocks 14 are then detached by loosening the nuts 21, as before, after which the machine can be lifted clear of the belt.

Having thus described my invention what I claim as new is:—

1. In a belt stretching device, the combination with a supporting beam having a fixed and a movable clamping member mounted thereon, of a bracket slidable on said beam, a pin supported in said bracket, an eccentric pivoted on said pin, an eccentric strap operatively connected to said movable clamping member, a lever pivoted on said pin and fixed on said eccentric, and means for locking the bracket and movable clamping member when adjusted.

2. In a belt stretching device, the combination with a supporting beam provided with a series of spaced holes, of a fixed and a movable clamping member mounted upon said beam, each of said clamping members comprising a yoke embracing said beam, a fixed clamping block supported upon said

yoke transversely to said beam, a removable clamping block arranged below said fixed block, slots in the ends of said removable block, eye bolts supporting said removable block, said bolts arranged in said slots, and having their upper ends passing through the said fixed blocks and hingedly connected to the said yoke.

3. In a belt stretching device, the combination with a supporting beam provided with a series of spaced holes, of a fixed and a movable clamping member mounted upon said beam, each of said clamping members comprising a yoke suspended on the beam, an upper clamping block fixed on said yoke

below the beam, bolts hingedly connected to the yoke and passing through the said block, one of said bolts being adapted to swing laterally upon its hinge, a removable clamping block, and slots in the ends of the said removable block to receive said bolts, and means for sliding said movable clamping member upon the beam.

In testimony whereof I affix my signature in the presence of two witnesses.

GEORGE A. CLENDENNING.

Witnesses:

FLOYD S. EARHART,

WILLOUGHBY CLENDENNING.