No. 668,605. Patented Feb. 19, 1901.

W. C. RUST.

BELT TIGHTENER.

(No Model.) (Application filed Aug. 16, 1900.)

2 Sheets—Sheet 1.

Fig. 1

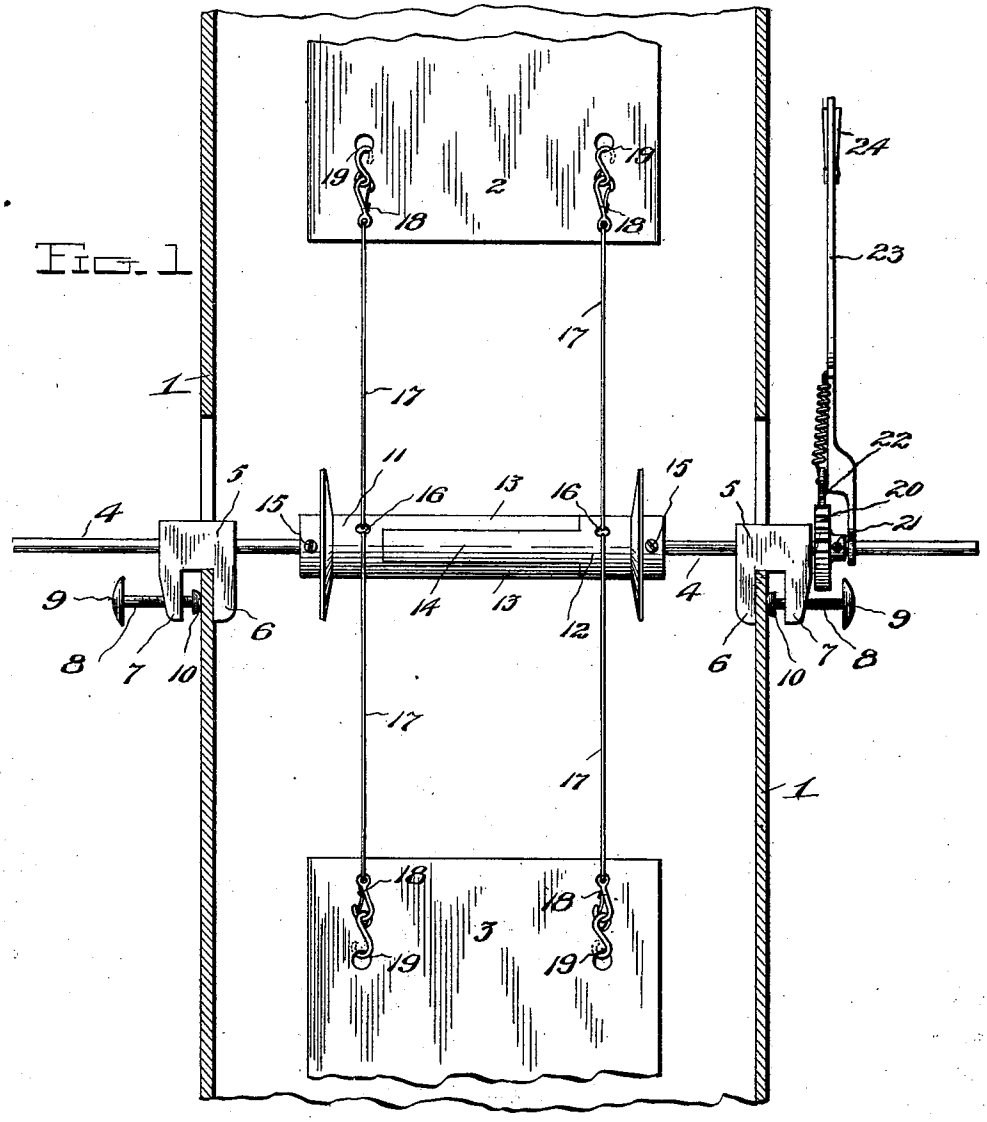


Fig. 4

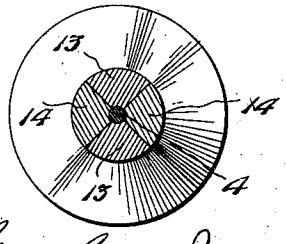
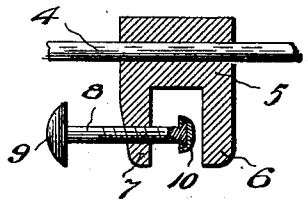


Fig. 5



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Fig. 2

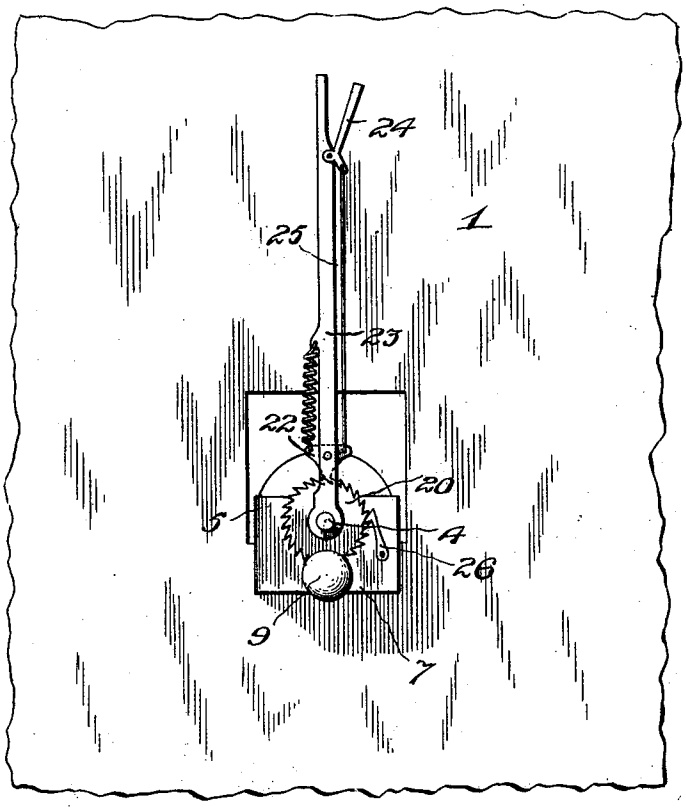
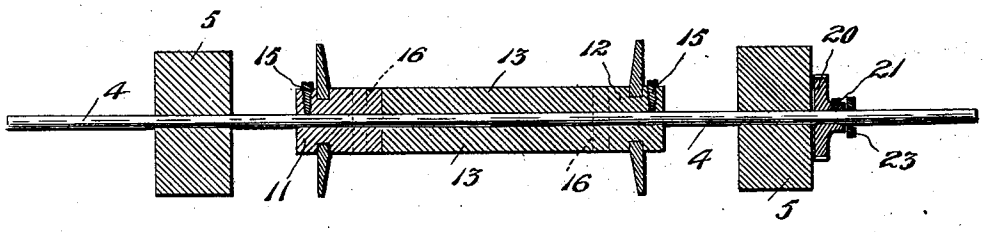


Fig. 3



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UNITED STATES PATENT OFFICE.

WILLIAM C. RUST, OF BLUE EARTH CITY, MINNESOTA.

BELT-TIGHTENER.

SPECIFICATION forming part of Letters Patent No. 668,605, dated February 19, 1901.

Application filed August 16, 1900. Serial No. 27,053. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM C. RUST, a citizen of the United States, residing at Blue Earth City, in the county of Faribault and State of Minnesota, have invented certain new and useful Improvements in Belt-Tighteners; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in belt-tighteners, and has for its object to provide a belt tightening and adjusting device which may be readily applied to and removed from the belt-frame, which is adjustable to suit different widths of belts and frames, and which is simple of construction, effective in use, and easily operated.

With this and other minor objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be hereinafter more fully described, and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a sectional view through the frame of an elevator-belt, showing the application of my invention. Fig. 2 is an end view looking toward the operating-lever and connections. Fig. 3 is a longitudinal section through the belt-tightener. Fig. 4 is a cross-section through the winding-spool. Fig. 5 is a detail sectional view of one of the bearing-boxes and clamps.

Referring now more particularly to the drawings, in which like reference characters designate corresponding parts throughout the several views, the numeral 1 represents the frame or housing of an elevator-belt, and 2 3 the meeting ends of the belt.

The belt tightening and adjusting device comprises in its construction a winding-shaft 4, journaled in bearing-boxes 5, which also serve the function of clamps, said boxes being provided with parallel arms 6 and 7, adapted to bear upon opposite sides of the frame or housing 1. The outer arm 7 of each bearing-box has mounted therein a screw-shaft 8, provided at its outer end with a hand-knob 9, and swiveled at its inner end in a clamping-head 10. By adjusting the screws 8 the heads 10 and arms 6 are caused to clamp or release the wall of the housing, and the swivel connection between said screws and heads 10 prevents the latter from turning during this operation. The winding-shaft 4 extends transversely through the frame or housing and projects beyond the same, and upon the intermediate portion of said shaft in said housing is mounted an extensible winding spool or drum composed of two parts or sections 11 and 12, having corresponding dovetailed tongues and grooves 13 and 14, whereby they are slidably mounted on each other and may be adjusted longitudinally on the shaft 4 to lengthen or shorten the spool or drum to adapt it for use in connection with belts of different widths. The sections of the spool are provided with set-screws 15 to impinge against the shaft and hold them fixed in adjusted position thereon and also with eyes 16, to which are connected cords, cables, or like flexible connections 17, provided at their free ends with snap-hooks 18, adapted to engage hooks or eyes 19 upon the meeting ends 2 and 3 of the belt. Any other suitable kind of connections between the cords and belt ends may, however, be employed. Upon one of the projecting ends of the shaft is mounted an adjustable ratchet-wheel 20, provided with a set-screw 21 to hold it in adjusted position, and with this ratchet-wheel engages a spring-pressed pawl 22, carried by an operating-lever 23, pivotally mounted upon the shaft. The pawl is adapted to be retracted by a pivoted handpiece 24, connected thereto by a rod, wire, or cord 25. By moving this lever in one direction the shaft is turned in that direction and winds up the cord 17 to bring the meeting ends of belt 2 and 3 together. When it is desired to turn the spool in one direction, the lever 23 is moved in that direction to the end of its stroke. Then the pawl 22 is released or left in engagement, as desired, as it will slip over the notches of the ratchet-wheel when a backward stroke is taken, and thus works automatically. All that is necessary is to move the lever back and forth until the belt is tightened to the desired extent. To hold the ratchet-wheel against retrograde rotation when the lever is thus moved, a dog 26 is provided.

From the foregoing description, taken in connection with the accompanying drawings,

the construction and mode of operation of the device will be readily understood, and it will be seen that by providing an extensible spool and adjustably mounting the bearings and operating means upon the shaft the parts may be adjusted for use in connection with belts of different widths and applied to belt frames or housings of different sizes and said parts also conveniently applied to and removed from the shaft for cleaning, repairs, storage, or transportation. The device is also simple of construction and adapted to be easily operated.

While the preferred form of the invention is as herein disclosed, it will of course be understood that changes in the form, proportion, and details of construction may be resorted to within the scope of the invention without departing from the spirit or sacrificing any of the advantages thereof.

Having thus fully described my invention, what I claim as new and useful, and desire to secure by Letters Patent of the United States, is—

1. In a belt-tightener, the combination of a winding-shaft, an extensible spool or drum composed of adjustable sections slidably mounted on said shaft, means for holding the spool or drum sections fixed in adjusted position, and means for operating the shaft and drum, substantially as set forth.

2. In a belt-tightener, the combination of a winding-shaft, an extensible spool or drum slidably mounted on said shaft and composed of sections having mating dovetailed tongue-and-groove connections, means for holding the spool or drum sections fixed in adjusted position, and means for operating the shaft and drum, substantially as set forth.

3. In a belt-tightener, the combination of a winding-shaft, a winding-spool, means for securing it to the shaft, combined bearings for said shaft, and clamps for holding the device in place, and operating mechanism for imparting motion to the shaft, said spool, bearing and operating mechanism being slidably mounted on said shaft, substantially as set forth.

4. In a belt-tightener, the combination of a winding-shaft, a winding-spool thereon, means for securing it to said shaft, bearings for the shaft provided with clamping means, a ratchet-wheel mounted on the shaft, a dog to prevent retrograde movement of the ratchet-wheel, and an operating-lever carrying a pawl to engage the ratchet-wheel, substantially as set forth.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILLIAM C. RUST.

Witnesses:
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CHARLOTTA C. HAYES.