No. 829,091. PATENTED AUG. 21, 1906.

J. A. STONE.

CHAIN BELT TIGHTENER.

APPLICATION FILED JAN. 29, 1906.

Fig. 3.

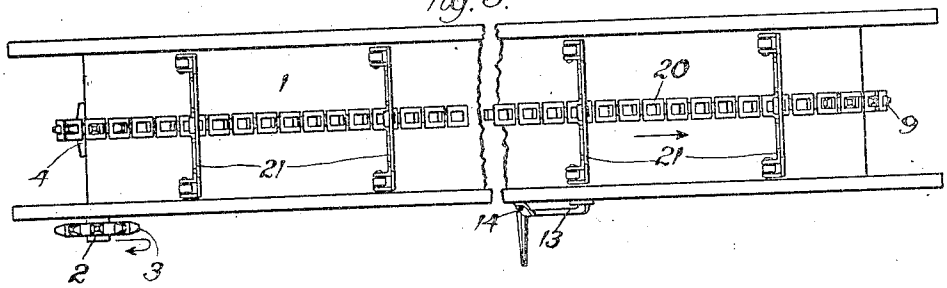


Fig. 1.

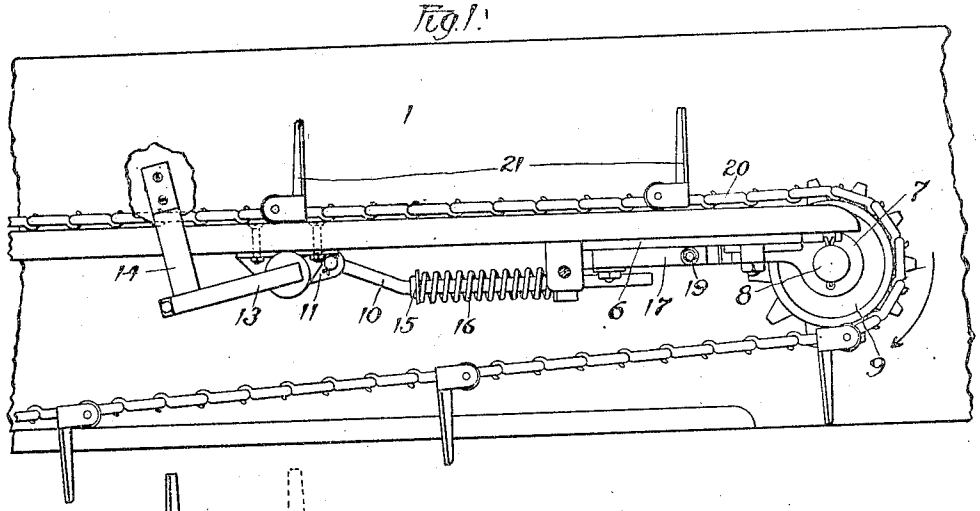
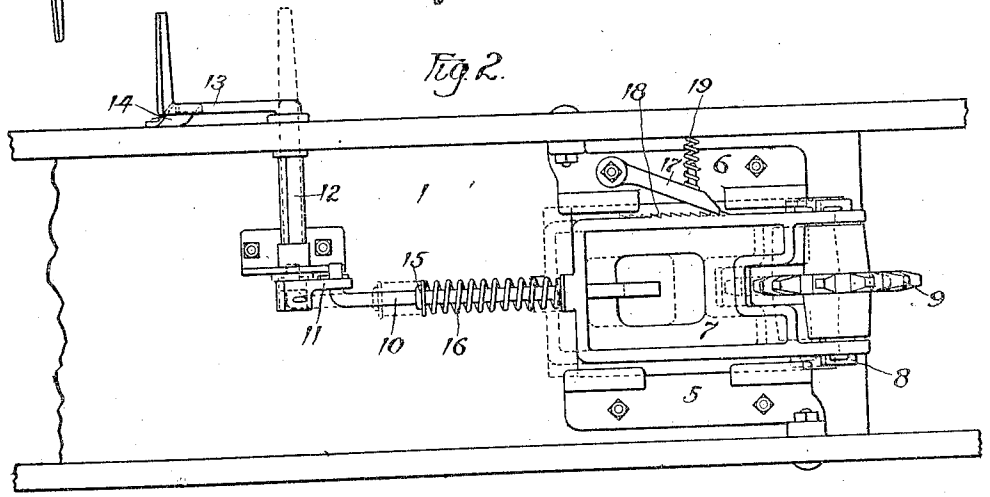


Fig. 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

JOHN A. STONE, OF CHICAGO, ILLINOIS, ASSIGNOR TO INTERNATIONAL HARVESTER COMPANY, A CORPORATION OF NEW JERSEY.

CHAIN-BELT TIGHTENER.

No. 829,091. Specification of Letters Patent. Patented Aug. 21, 1906.

Application filed January 29, 1906. Serial No. 298,413.

To all whom it may concern:

Be it known that I, JOHN A. STONE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Chain-Belt Tighteners, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

My invention relates to belt-tighteners in general, and is designed to be used in connection with what are commonly called "chain belts;" and it consists in a sliding frame in which is journaled a shaft, upon which a sprocket-wheel is mounted and adapted to receive a chain belt, and means for yieldingly adjusting the slide in a direction to tighten the belt, and means for securing the slide against backward movement under stress of the belt, its object being to provide a mechanism that will automatically adjust itself in a direction to maintain a proper tautness of the belt and means for positively retaining it in such adjustment.

Referring to the drawings, Figure 1 represents a side view of a part of a chain-belt mechanism embodying my invention. Fig. 2 is a plan view of the bottom of Fig. 1, and Fig. 3 represents a chain-belt carrier mounted upon suitable driving and driven sprockets and to which my invention is applicable.

Like reference-numerals denote the same parts throughout the several views.

1 represents a conveyer-trough having at one end a cross-shaft 2, suitably mounted therein, to which is secured a sprocket-wheel 3, that may receive motion from any source of power and which is designed to be driven in the direction indicated by the arrow, and 4 is a sprocket-wheel secured to the shaft intermediate the sides of the trough. At the opposite end of the trough and secured to opposite sides thereof are guideways 5 and 6, and 7 is a rectangular frame adapted to slide longitudinally along the ways and to be guided thereby. A shaft 8 is journaled in the outer end of the frame, and a sprocket-wheel 9 is secured thereto, and at the opposite end of the frame a link 10 is slidably connected therewith, the opposite end of the link being pivotally connected with a lever 11, secured to one end of a rock-shaft 12, suitably mounted in the trough and having at its opposite end a hand-lever 13, and 14 is a spring-latch secured to the side of the trough and adapted to secure the lever against movement in one direction. The link 10 is provided with a collar 15 intermediate its ends, and a coiled spring 16 operates between said collar and the frame 7 in a manner to slide the frame along the guideways. Mounted upon one of the guideways is a pawl 17, adapted to engage with teeth 18 upon the frame 7 in a manner to hold it in the direction of movement caused by the spring 16, and 19 is a coiled spring operative to press the pawl toward said teeth. A chain belt 20 is mounted upon the sprocket-wheels 4 and 9, and 21 represents flights secured thereto. The chain is given motion in the direction of the arrow in Fig. 1 and is driven from the opposite end of the conveyer-trough by means of the sprocket-wheel 3.

When conveyer chains or belts have been heretofore driven as herein described, an unsatisfactory result has been attained, caused by the carrying member of the belt buckling and moving irregularly, due to what is usually termed the "pushing force" of the driving sprocket or pulley, and where the common form of spring-actuated tightener was used any undue strain upon the belt operated to draw the tightener in a direction to loosen the belt. My invention removes the difficulty experienced by automatically taking up any slackness of the belt and positively preventing its return when undue strain is applied thereto. The effective throw of the lever 11 upon the rock-shaft 12 is sufficient to cause the link 10 to move the frame 7 a distance greater than the length of one of the links of the chain belt, and the operator may adjust the length thereof in a manner to allow the reactionary force of the spring 16 to move the frame 7, and thereby maintain the effectiveness of the mechanism.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A chain-belt tightener comprising, in combination, a fixed support, a frame mounted to slide upon said fixed support, a sprocket-wheel journaled in said frame, a rock-shaft mounted upon said fixed support, a lever secured to said rock-shaft, a link having sliding connection with said frame and pivotal connection with said lever, a spring surrounding said link and operative to slide the frame thereon in one direction, a pawl mounted

upon the fixed support and adapted to lock the frame against movement in an opposite direction, and means for rocking said rock-shaft.

2. A chain-belt tightener comprising, in combination, a fixed support, guideways secured to opposite sides of said support, a frame mounted to slide upon said guideways, a sprocket-wheel journaled in said frame, a rock-shaft mounted upon said fixed support, a lever secured to said rock-shaft, and a link having one end pivotally connected with said lever and its opposite end slidably connected with said frame, a spring surrounding said link and operative to move the frame in one direction, a pawl pivotally mounted on one of said ways and operative to lock said frame against movement in an opposite direction, a hand-lever secured to said rock-shaft, and a spring-latch adapted to engage said hand-lever in a manner to lock it in operative position.

In witness whereof I hereto affix my signature in presence of two witnesses.

JOHN A. STONE.

Witnesses:
THOMAS B. REED,
OSCAR A. ANDERSON.