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BELT TIGHTENER FOR AUTOMATIC FOLDERS

Original Filed April 27, 1949

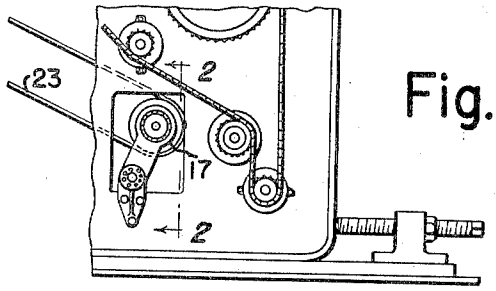
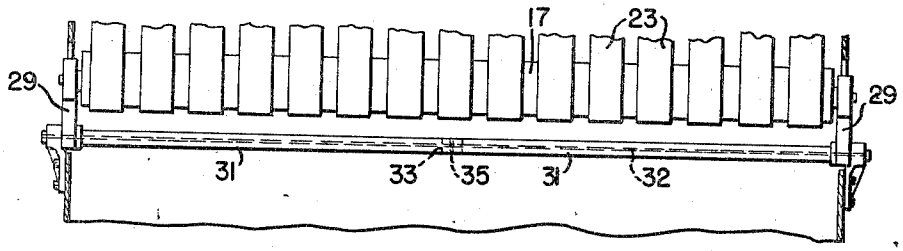


Fig. 1

Fig. 2



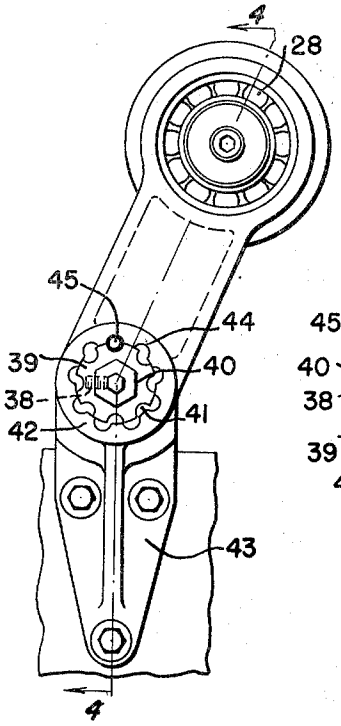


Fig. 3

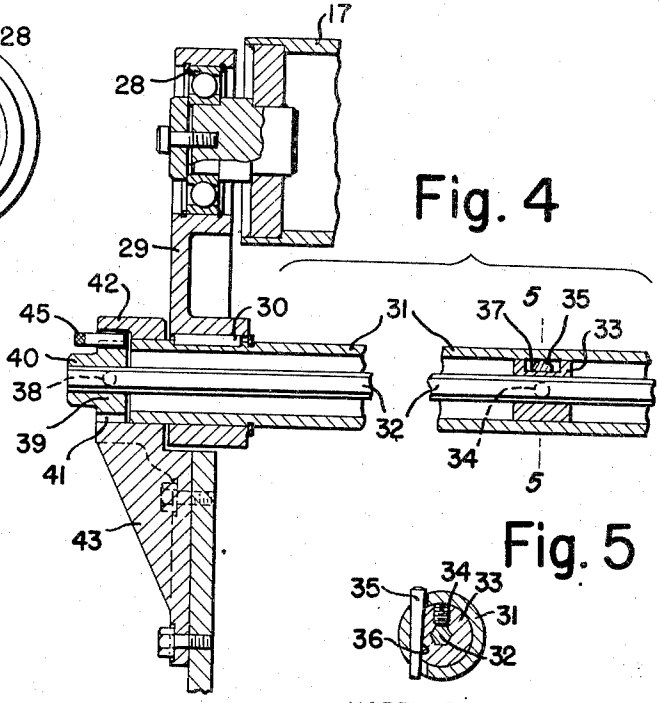


Fig. 4

Fig. 5

HARRY D. ABELL
HOMER E. ABELL &
NORMAN R. HEALD
Inventors

by Edward Taylor
Attorney

United States Patent Office

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BELT TIGHTENER FOR AUTOMATIC FOLDERS

Harry D. Abell and Homer E. Abell, St. Albans, and Norman R. Heald, Chester Depot, Vt., assignors, by direct and mesne assignments, to Fisher & Christen, Washington, D. C., a firm

Original application April 27, 1949, Serial No. 89,904. Divided and this application June 28, 1952, Serial No. 296,185

3 Claims. (Cl. 198—208)

This invention relates to belt tighteners, particularly such as are intended for use in connection with automatic folders for laundries. In machines of this type the material to be folded is carried between sets of spaced parallel tapes or belts. Since the material is frequently of considerable width there are generally a large number of tapes arranged in spaced parallel relation and each passing around a series of rollers disposed so as to give the tapes the course of travel desired to convey the goods past the folding mechanism. Due to the length of the rolls which carry the tapes the usual types of belt tightening devices do not satisfactorily keep the roller which is fitted with the tightening device parallel with the other rollers of the set as it shifts its position with the gradual elongation of the tapes. It is the object of the present invention to produce a belt tightener which will avoid the difficulties mentioned and which will possess a simple and compact structure. The present application is a division of our prior application Ser. No. 89,904, filed April 27, 1949.

The invention will now be described with reference to the accompanying drawings, in which:

Fig. 1 is a detail of a laundry folder showing one set of conveying tapes;

Fig. 2 is a view taken on line 2—2 of Fig. 1;

Fig. 3 is an enlarged detail of a portion of Fig. 1;

Fig. 4 is a section on line 4—4 of Fig. 3; and

Fig. 5 is a section on line 5—5 of Fig. 4.

In Figs. 1 and 2 a series of parallel tapes 23 are shown as spaced along and passing around a roller 17. While the tapes obviously pass around other rollers in their course these are fixed in positions determined by the path which the material is to take. Only the roller 17 needs to be moved in order to keep the proper tension on the tapes, and for this reason it is the only one illustrated.

Each end of the roller 17 is carried in bearings 28 on an arm 29 keyed at 30 to a pipe 31 extending across the machine. Through the pipe extends a polygonal (preferably hexagonal) bar 32 of steel heat treated as a spring. At the center of the pipe (Figs. 4 and 5) the bar passes through a hexagonal hole in a round

plug 33 in which a set screw 34 is threaded to fasten the bar and plug together. The plug is secured in the pipe as by a tapered pin 35 having a flat side 36 which bears on a flat 37 (Fig. 4) formed on the plug. At the ends of the pipe the bar 32 is held by a set screw 38 to a block 39 having a hexagonal end 40 and a plurality of semi-circular notches 41 in its periphery. The block fits snugly within an annular portion 42 of a bracket 43 firmly secured to the machine frame. Semi-circular notches 44 are formed interiorly of the annular portion, one more in number than the number of notches 41. By turning the block 39 with a wrench the bar 32 will be twisted and an elastic force applied to pipe 31 and arms 29 tending to keep the take-up roll 11 constantly and elastically tensioning its belts. Block 39 can be held in the position giving the desired tension by inserting a pin 45 between whatever pair of notches 41, 44 are in alignment. By having one more notch in one set than in the other a Vernier action is given which permits very fine adjustment.

It will be apparent from an examination of the structure described that when both blocks 39 are set to the same adjustment position a very uniform tension will be exerted on both of arms 29 due to the fact that the tension is supplied in both cases by the uniform bar 32 which is anchored to the stationary pipe 31 at its center, which is of course at equal distances from the two blocks 39.

What we claim is:

1. A belt tightening device adapted for use with a series of spaced parallel conveying tapes, comprising a frame, a roller around which said tapes pass, a pair of arms rotatably supporting the ends of said roller, a tube extending between and secured to said arms, and rotatably mounted in said frame, a rod extending through the tube and secured thereto midway between the arms, and adjustable means for securing each end of the rod to the frame.

2. A belt tightening device as claimed in claim 1 in which said adjustable means comprises at each end of the rod an annulus having internal substantially semi-circular grooves parallel to the rod, a circular block secured to the rod and having external substantially semi-circular grooves parallel to the rod, and a pin receivable in aligned grooves in the annulus and block to lock the annulus and block together.

3. A belt tightening device as claimed in claim 2 in which there is a difference of one between the number of grooves in the annulus and the number of grooves in the block.

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