May 24, 1927. 1,629,776

F. W. CUTLER

CONVEYER

Filed Oct. 5 1925 2 Sheets-Sheet 1

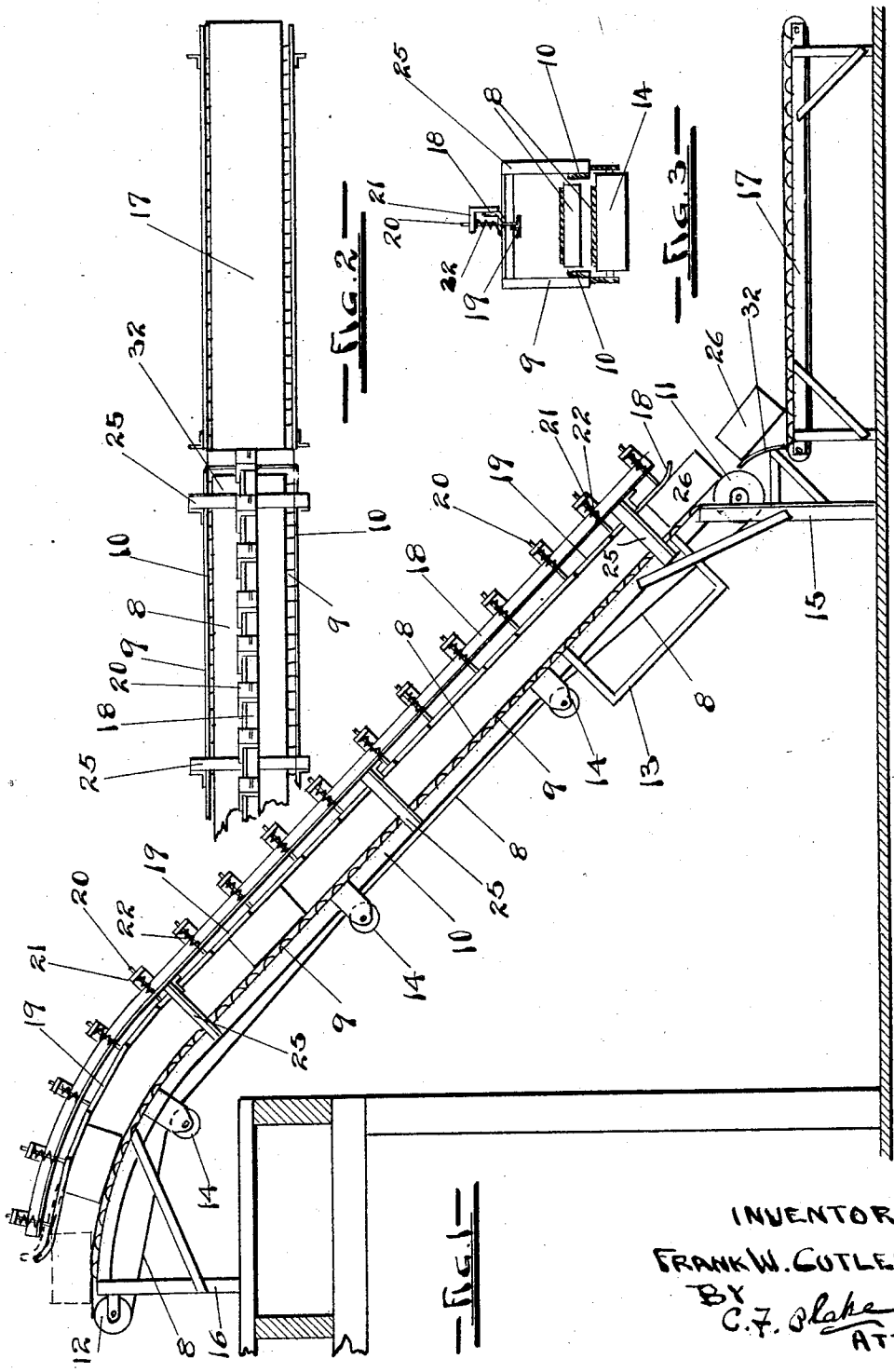

FIG. 1

FIG. 2

FIG. 3

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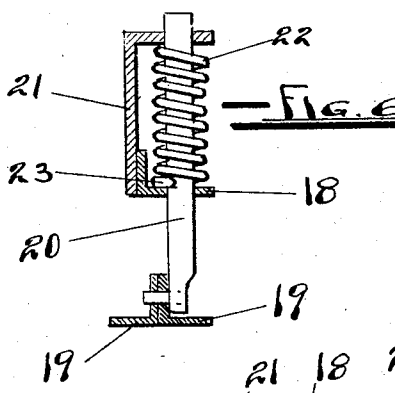
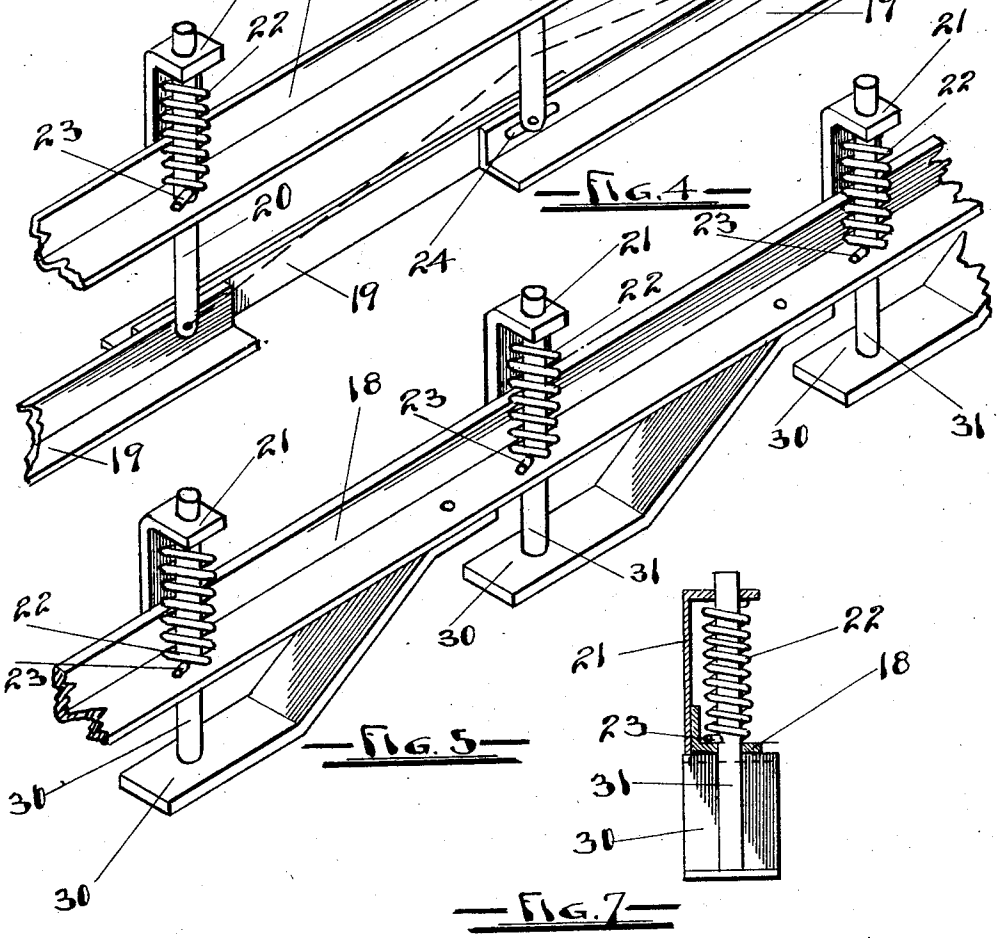


—Fig. 6—

—Fig. 4—



—Fig. 5—

—Fig. 7—

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Patented May 24, 1927. 1,629,776

UNITED STATES PATENT OFFICE.

FRANK W. CUTLER, OF PORTLAND, OREGON, ASSIGNOR TO CUTLER MANUFACTURING COMPANY, OF PORTLAND, OREGON, A PARTNERSHIP.

CONVEYER.

Application filed October 5, 1925. Serial No. 60,596.

My invention relates to conveyers in general, and particularly to belt conveyers adapted to receive and transport boxed goods, the object of my invention being to provide a structure that will lower such goods from one elevation to another, and do so without crowding or congestion at any point, and without damage to the goods. I accomplish this object, and other desirable results that will hereinafter appear, by means of the construction illustrated in the accompanying drawings, which are a part of this application for Letters Patent, like characters of reference indicating like parts throughout the several views thereof, and in which:—

Fig. 1 is a side elevation of my device.

Fig. 2 is a plan view thereof.

Fig. 3 is a transverse section of the same.

Fig. 4 is a fragmentary perspective view of the upper member of my device in preferred form.

Fig. 5 is a view similar to Fig. 4, but showing a modified form of construction.

Fig. 6 is a transverse section of the form shown in Fig. 5.

Fig. 7 is a transverse section of the modified form shown in Fig. 6.

In general my device consists of a traveling belt conveyer obliquely positioned to lower goods thereupon, and a member mounted upon said conveyer frame and having yieldable portions adapted to contact with the goods in passage and retard their movement to the velocity of the traveling conveyer, and thus to eliminate all crowding and congestion which occurs when goods are lowered on gravity conveyers.

For convenience of construction I mount my traveling conveyer 8 upon rollers 9 mounted upon side members 10 of a supporting frame. Return rollers 11 and 12 are provided at each end of the frame, and the roller 11 is driven by mechanism mounted within a yoke 13 upon the frame. The driving mechanism may be any of the well known and used devices, such as an electric motor and transmission gears or chains, and therefore is not shown in the drawing, forming no part of the invention. Supporting rollers 14 are provided for the return portion of the traveling conveyer. The whole is mounted conveniently upon supports 15 and 16, the former being upon the lower floor where the goods are to be deposited, and the latter upon the upper floor whence the goods are to be removed, as shown in Fig. 1. A receiving conveyer 17 is positioned to receive the goods from my device, and said conveyer is also driven from the mechanism mounted upon the yoke 13 and is not shown in the drawings.

Mounted parallel with the traveling conveyer, and most conveniently above the same, is a member 18, and upon this member are disposed devices of yieldable character adapted to contact with the boxes upon the traveling conveyer as they pass along. A preferred form of these devices is a series of connected articulated bars 19, most conveniently constructed of angle bars as shown. At their pivotal connecting points these bars are mounted upon stems 20, which stems are slidably mounted in said member 18 and in clips 21 secured thereupon. Springs 22 are mounted upon said stems between the clips 21 and pins 23 in said stems 20, said springs serving to retain the stems and their attached bars 19 in lowermost position, or position in which said bars are furthest removed from member 18. One end of each of said bars 19 is slotted as at 24 in Fig. 4, and these slotted ends are mounted adjacent each other upon one of the stems 20, thus allowing the bars to rise and fall as the stems are pressed upward. The member 18 is preferably mounted above the traveling conveyer, and is supported in place by yokes 25 mounted upon the side members 10 of the frame.

The distance between the bars 19 and the traveling conveyer 8 is made a trifle less than the depth of the boxes 26 to be transported and lowered with the device, the result being that as the boxes pass along down the device the bars contact in turn with the boxes, and said bars are moved thereby away from the conveyer compressing the springs 22. Thus the traveling boxes are retarded by the pressure of the bars 19 thereupon and crowding and congestion avoided, and furthermore when the member 18 and its attached parts is mounted above the traveling conveyer, as in the preferred construction, the traveling boxes are pressed upon the traveling conveyer by the bars 19, and the springs 22 may be compressed so that the boxes are caused to travel only as fast as the conveyer 8, thus eliminating the

crowding and congesting effect of gravity no matter how steep the incline of the device may be.

In the modified form of my device illustrated in Fig. 5, I provide spring members 30 secured upon the member 18 and bent away therefrom for a portion of their length, and then bent substantially parallel with said member 18, as shown in Fig. 5. In this construction the lower ends of the stems 31 simply contact with the spring members 30.

At the lower or discharge end of my device, where the boxes are deposited upon the conveyer 17 I provide an apron 32 mounted upon the lower end of the frame, and adapted to receive the rearward ends of the boxes as they leave the conveyer 8. The rearward ends of the boxes thus slide down the apron and do not subject the contents to any jar as the boxes are deposited upon the conveyer 17.

My invention may be made of any size, and constructed of any materials deemed convenient and suitable for a device of this character, and while I have illustrated and described a form of construction and arrangement of parts found desirable in materializing my invention, I wish to include in this application all mechanical equivalents and substitutes that may fairly be considered to come within the scope and purview of my invention as defined in the appended claims.

Having disclosed my invention so that others may be enabled to construct and to use the same, what I claim as new, and desire to secure by Letters Patent is:—

1. An endless traveling conveyer; a member parallel to said conveyer; and yieldably mounted articulated bars mounted upon said member and adapted to contact with material upon said conveyer.

2. An endless traveling conveyer; a member parallel to said conveyer; articulated bars mounted upon said parallel member and adapted to contact with material upon said conveyer; stems mounted upon said parallel member and coacting with said articulated bars; and springs upon said stems to return articulated bars to initial position after the passage of material thereby.

3. An endless traveling conveyer; a member mounted above said conveyer and parallel thereto; articulated bars upon said parallel member adapted to contact with material upon said conveyer; and spring actuated mechanism to yieldably hold said bars in operating position.

4. A traveling belt conveyer; a member parallel to said conveyer and adjacent thereto; a series of pivotally connected articulated bars; stems for mounting said bars at each of said pivotal connections; and springs upon said stems holding said bars at their extreme position from said member.

5. A traveling belt conveyer; a member parallel to said conveyer and adjacent thereto; a plurality of bars substantially parallel to said member and suspended therefrom to contact with material upon said conveyer; and spring actuated stems mounted upon said member and coacting with said bars to keep the latter at their extreme distance from said member.

In witness whereof I claim the foregoing as my own, I hereunto affix my signature at Portland, county of Multnomah, State of Oregon, this 9th day of Sept., 1925.

FRANK W. CUTLER.