

C. H. SEARS.
CAN CONVEYER FILE CHANGER.
APPLICATION FILED OCT. 11, 1915.

1,200,244.

Patented Oct. 3, 1916.

Fig. 1

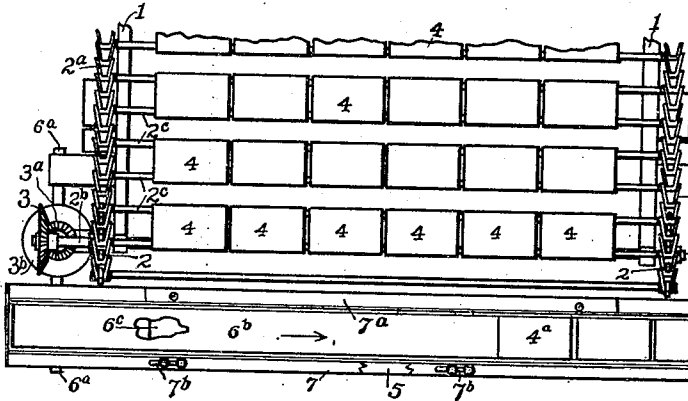


Fig. 2

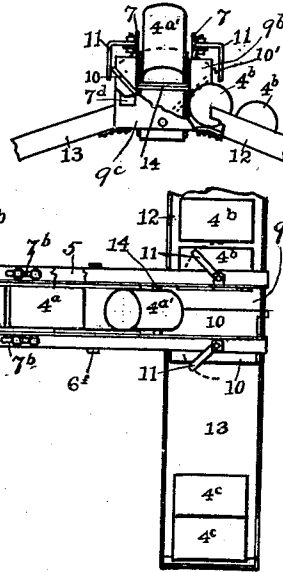


Fig. 3

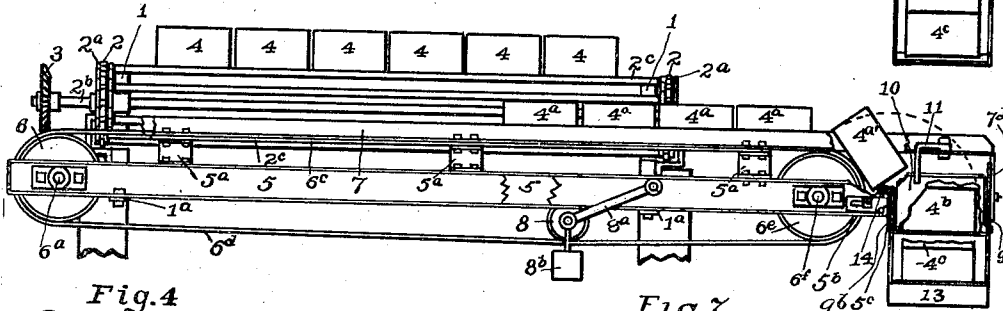


Fig. 4

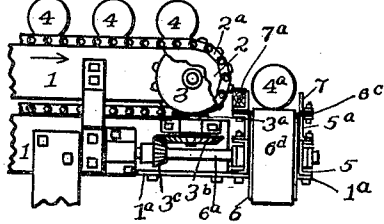


Fig. 7

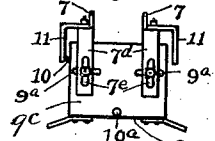


Fig. 8

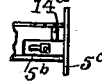


Fig. 9

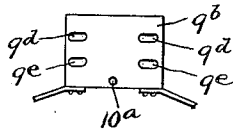


Fig. 5



Fig. 6



WITNESSES:

R. L. Simpson
John L. Thomas

INVENTOR

Charles H. Sears
BY David E. Lavin
ATTORNEY

UNITED STATES PATENT OFFICE.

CHARLES H. SEARS, OF BELLINGHAM, WASHINGTON.

CAN-CONVEYER FILE-CHANGER.

1,200,244.

Specification of Letters Patent.

Patented Oct. 3, 1916.

Application filed October 11, 1915. Serial No. 55,147.

To all whom it may concern:

Be it known that I, CHARLES H. SEARS, a citizen of the United States, and a resident of Bellingham, in the county of Whatcom and State of Washington, have invented certain new and useful Improvements in Can-Conveyer File-Changers, of which the following is a specification.

My invention relates to improvements in file changers for can conveyers and the object of my invention is to provide a mechanism to change the order in which cans are conveyed from a plurality in file moving sidewise to single file moving sidewise. The mechanism by which I accomplish this object is illustrated in the accompanying sheet of drawings in which—

Figure 1 is a plan view of the rear of a can lacquering machine and my mechanism attached thereto, Fig. 2 is an end elevation of the delivery end of my attachment, Fig. 3 is an end-elevation view of Fig. 1, Fig. 4 is an elevation view of the left-hand side of Fig. 1, Fig. 5 is a view of a bracket used as a structural part of my machine, Fig. 6 is a perspective view of a stop bar, Fig. 7 is the same view as Fig. 2 with none of its parts broken into, Fig. 8 is a view of a portion of my apparatus and Fig. 9 is a separated side elevation of my can receiver from the left.

Similar characters refer to similar parts in the several views. Certain parts are broken into in order to show other parts hidden thereby.

The sides of the framework of a lacquering machine are shown at 1. The rear sprocket wheels 2, 2 of said machine are attached to shaft 2^b which is mounted for rotation in bearings attached to said sides 1, 1. Said sprocket wheels bear endless conveyer chains 2^a, 2^a. And to said chains are connected the conveyer bars 2^c, 2^c, etc., which bear the cans 4, 4, etc., all in the usual way. Bars 1^a, 1^a are attached to the bottom edge of sides 1, 1 and extend rearward and furnish supports to which the parallel channel bars 5, 5 are attached. Said channel bars have a set of bearings at each end in which are mounted for rotation shafts 6^a and 6^c of conveyer pulleys 6^c and 6^c respectively. On pulleys 6^a and 6^c is the endless conveyer belt 6^a which is held tense by a belt tightener comprising pulley 8, a pair of links 8^a—only one of which is shown—and a counter-weight 8^b. Shaft 6^a is extended beyond its

inner bearing on channel bar 5 and bears a rigidly-attached bevel gear 3^c. Shaft 2^b is also extended beyond its bearing on frame 1 and has the bevel gear 3 rigidly attached near its end. A pair of bevel gears 3^a and 3^b are rigidly attached to a vertical shaft which is suitably mounted in bearings for rotation. Said pair of gears form a connection between gears 3 and 3^c. In this way shaft 2^b drives pulley 6 and the travel of conveyer belt 6^b is accurately timed with the travel of conveyer bars 2^c. A supporting board 6^c is retained underneath the upper part of belt 6^b on top of channel brackets 5^a, 5^a, etc., which are attached on top of channel bars 5, 5. On top of said board 6^c and attached to said brackets 5^a are the two guide-rail, angle bars 7, 7 on either side of belt 6^b. The angle of the inner guide rail 7 is filled with wooden rail 7^a. Attached to the outer ends of channel bars 5 by the brackets 5^b 5^c, 5^b 5^c—only one of which is shown—is a receiver comprising a bottom 9 and two sides 9^b and 9^c. Said receiver 9 is also attached to the bent-over ends of the horizontal flanges of angle bars 7, 7 designated as 7^a, 7^a. The receiver is occupied by a deflector 10 hinged along its lower edge at 10^a to the sides of said receiver near the bottom thereof. This deflector may lie against either of adjustable stops 11, 11 which are attached to guide rails 7, 7. A bar 14 is placed across the space between the channel bars 5, 5 beyond pulley 6^c. Bar 14 is of square cross section and has a hole lengthwise therethrough. It is fastened with a bolt through said hole and slots 14^a, Fig. 8, in said channel bars. From one side of receiver 9 leads the roll-way chute 13 used as a temporary can storage, while from the other side of said receiver leads the roll-way chute 12 to a can labeling machine—not shown.

The operation of this machine is as follows: As illustrated, continuous ranks of cans 4, 4, etc., are advanced on the conveyer bars 2^c, 2^c in files of six and dumped on conveyer belt 6^b. The speed of belt 6^b is timed with that of conveyer 2^c, by gears 3, 3^a, 3^b and 3^c, so that a lot of six cans will be moved past the end of the lacquering machine before another lot is dumped thereon. The cans while on conveyer 6^b are designated as 4^a. These are carried endwise on said conveyer and turned off of the same over pulley 6^c. A can 4^a is shown in Figs. 1, 2 and 3

in the position of leaving conveyer 6^b over said pulley. Can 4^a is shown with its forward end tilted downward and in contact with stop bar 14. When the forward and downward progress of this end of can 4^a is stopped by bar 14 the momentum of said can turns its rear end over, in the path indicated by an arc in dotted outline in Fig. 3, and said can falls into receiver 9 striking sidewise on inclined deflector 10. Here the can is designated as 4^b. From said deflector can 4^b is projected sidewise and rolls out of said receiver and into and down chute 12 and thence into the labeling machine. An operator is stationed at receiver 9. When the cans roll down chute 12 faster than the labeling machine has capacity to receive them, said operator turns deflector 10 to its dotted position, shown in Fig. 2, at 10' when the cans 4^a are caused to enter chute 13. Here they are stored until the labeling machine's capacity increases beyond that of the lacquering machine when said operator removes the cans that have accumulated in chute 13 and places them by hand into chute 12, and returns deflector 10 to its full-line position. In this manner my machine operates to receive the cans as they come in files of six advancing sidewise from the lacquering machine and mechanically changes their order to that of single file advancing sidewise and delivers them into the chute leading into the labeling machine.

The relative locations of pulley 6^a, stop bar 14, deflector 10, and receiver 9, to insure proper operation, is determined by the speed of the conveyer 6^b. Once these locations are obtained they need not be changed until said speed is materially altered. In order to provide for these changes of relative location referred to, stop bar 14 has a vertical adjustment by means of slot 14^a Fig. 8, angle bars 7, 7 are adjustable endwise by means of slots 7^b, 7^c, etc., arms 5^b of brackets 5^b 5^c have horizontal slots, arms 5^c of brackets 5^b 5^c have vertical slots, the receiver side 9^b to which said arms 5^c are attached has horizontal slots 9^a, 9^a and 9^c, 9^c Fig. 9 registering with said slots in said arms 5^c, bent-over ends 7^a of angle bars 7, 7 have vertical slots, the side 9^c of said receiver to which said bent-over ends are attached has horizontal slots 9^a, 9^a registering with said slots in said bent-over ends see Fig. 7, and stops 11, 11 can be clamped in any desired position in the arcs shown in dotted lines in Fig. 1. So that stop bar 14 is adjustable vertically, receiver 9 is adjustable laterally, transversely and vertically, and stops 11, 11 can be adjusted to retain deflector 10 at different angles.

Although I have confined the description,

of this application of my improvements, to a mechanical conveyer and file changer connecting a lacquering machine with a labeling machine, in which use it has proved satisfactory, my invention is of general use in the art.

I claim—

1. In mechanism of the character described, the combination of a plurality-file can conveyer, and a single-file can conveyer operable transversely with and below the delivery end of said plurality-file conveyer, with means to deflect the cans delivered by said single-file conveyer in single file transversely therewith.

2. In mechanism of the character described, the combination of a plurality-file can conveyer, a single-file can conveyer located below the delivery end of said plurality-file conveyer, and means to connect said plurality-file conveyer with said single-file conveyer for simultaneous and timed rate of operation, with means to deflect the cans delivered by said single-file conveyer into passages transversely therewith.

3. In mechanism of the character described, the combination of a plurality-file can conveyer adapted to carry cans sidewise, a single-file can conveyer located transversely with and behind the same, means to connect said plurality-file conveyer with said single-file conveyer for simultaneous and timed operation, a can stop beyond and below the delivery end of said single-file conveyer, a receptacle beyond said stop, and an inclined deflector in said receptacle, with a passage way leading from said receptacle.

4. In mechanism of the character described, the combination of a plurality-file can conveyer adapted to carry cans sidewise, a single-file can conveyer located transversely with and behind the same, means to connect said plurality-file conveyer with said single-file conveyer for simultaneous and timed action, a can stop beyond and below the delivery end of said single-file conveyer, a receptacle beyond said can stop, an inclined deflector in said receptacle, a passage-way leading from said receptacle substantially at right angles with said single-file conveyer, and means to change the relative location of said can stop and said receptacle with each other and with the delivery end of said single-file conveyer, with means to change the angle of said inclined deflector.

Signed at Bellingham, in the county of Whatcom and State of Washington this 6th day of October, A. D. 1915.

CHARLES H. SEARS.

Witnesses:

J. B. BENNETT,
A. J. ROGERS.