Jan. 23, 1934. L. E. DUPUY 1,944,734

CONVEYER

Filed June 9, 1931 2 Sheets-Sheet 1

FIG. 2

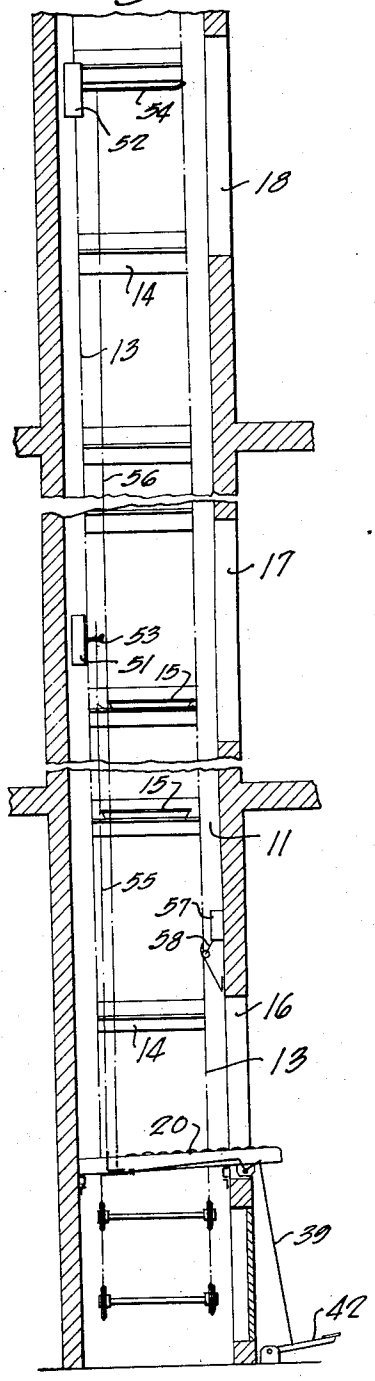
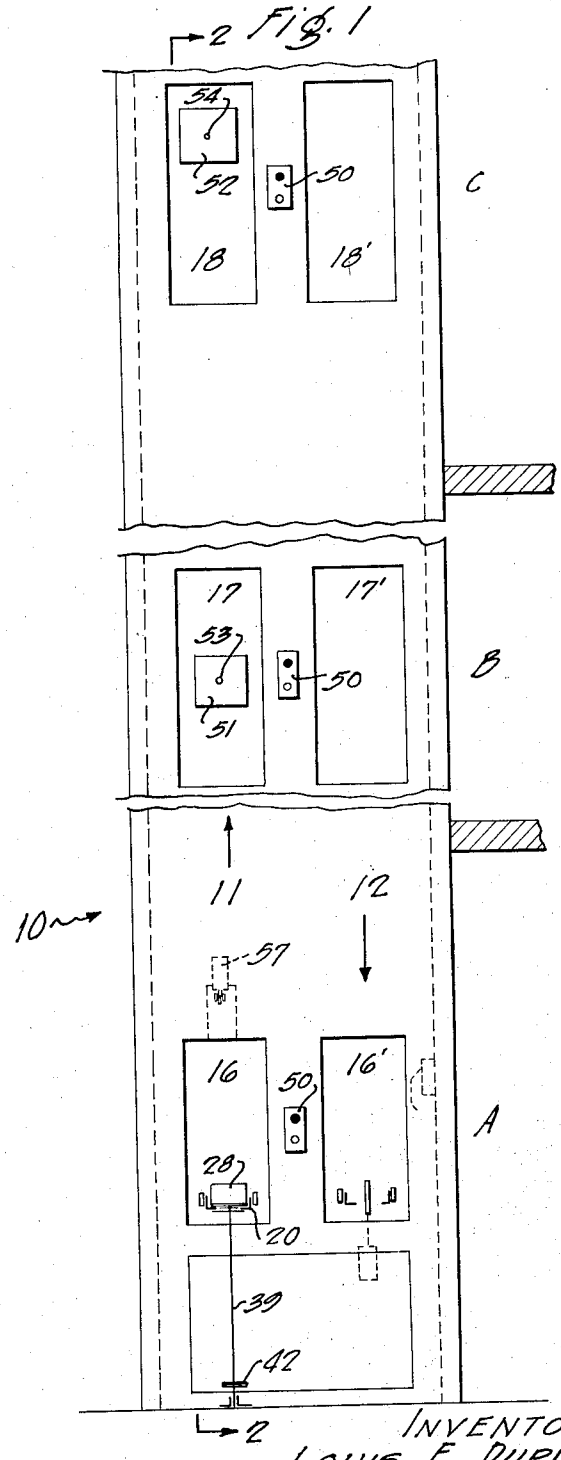


FIG. 1



INVENTOR
LOUIS E. DUPUY
by Roberts, Cushman & Woodberry
ATT'YS

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Filed June 9, 1931 2 Sheets-Sheet 2

Fig. 3

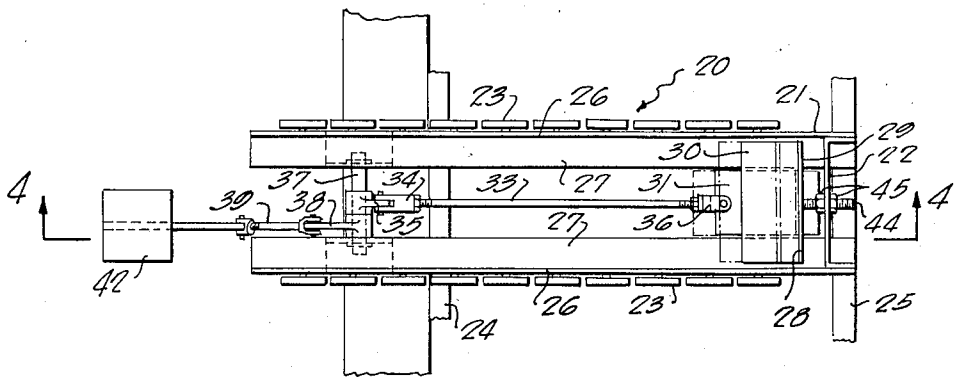
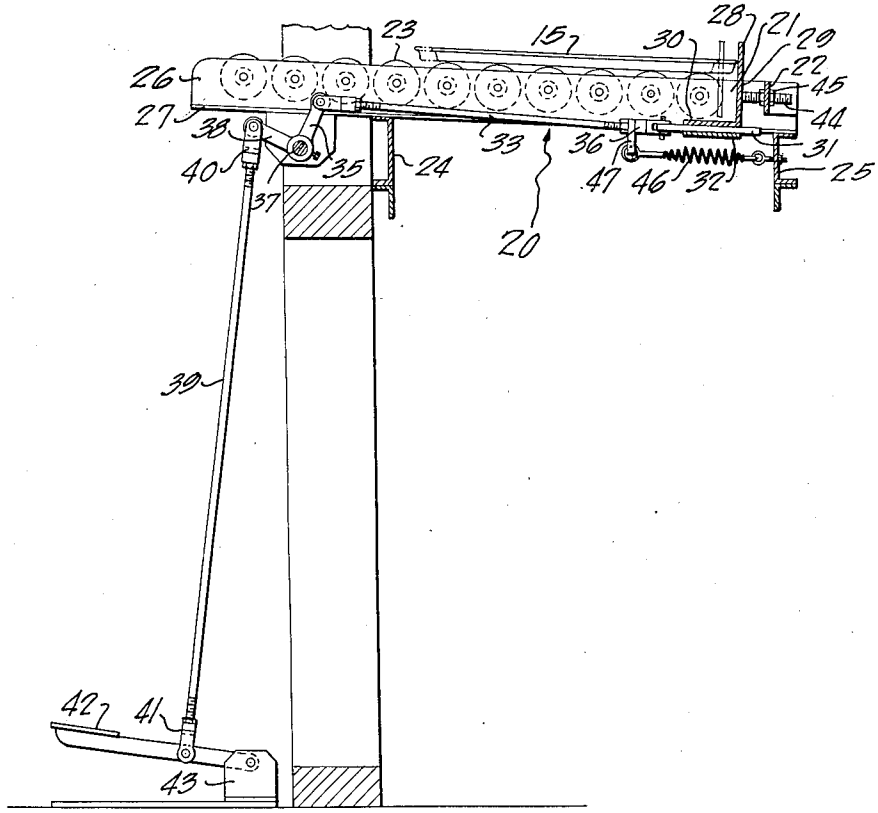


Fig. 4



INVENTOR
LOUIS E. DUPUY
by Roberts, Cushman & Woodberry
ATT'YS

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UNITED STATES PATENT OFFICE

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CONVEYER

Louis E. Dupuy, Syracuse, N. Y., assignor to The Lamson Company, Syracuse, N. Y., a corporation of Massachusetts

Application June 9, 1931. Serial No. 543,061

11 Claims. (Cl. 198—26)

This invention relates to an improvement in conveyers and more particularly to conveyers having a continually traveling means by which articles are transported from a despatching station to a plurality of receiving stations and mechanism for stopping the travel of such means upon the arrival of an article at its destined station.

The primary object of this invention is broadly to provide, in a conveyer of this type, means at each receiving station which means, when engaged by a transported article, will stop the travel of the transporting means, each such stopping means being so positioned that it will be engaged only by articles located on the transporting means in a predetermined position.

Further objects of this invention reside in the details of construction of such stopping means, in the provision of locating means at the despatching station and the details of such locating means and in other features which will be apparent from a consideration of the following description and of the accompanying drawings in which:

Fig. 1 is a front elevation of a portion of an elevator well having two shafts therein the conveyer raising articles through one at the left and lowering articles through the one at the right;

Fig. 2 is a sectional view of the shaft at the left of Fig. 1 taken along the line 2—2 of Fig. 1;

Fig. 3 is an enlarged plan view of the loading platform at the despatching station; and

Fig. 4 is a sectional view taken along the line 4—4 of Fig. 3.

This invention is illustrated as employed in a conveyer of the general type shown in the patent to Gibbs, No. 1,504,886 dated August 12, 1924, operating in a well 10 having two shafts the articles being raised in the shaft 11 and lowered in the shaft 12. The conveying means comprise chains 13 and flights 14 mounted upon the chains and upon which the loads are supported, the chains being driven by an electric motor (not shown). Such loads are here indicated as trays 15 adapted to contain articles, as for example, dishes or food when used in restaurants, hotels, institutions and the like.

In the installation here illustrated the trays are transported between stations A, B and C, at each of which articles are despatched and received through openings 16, 16', 17, 17' and 18, 18' respectively. At the station A is mounted a despatching platform 20 one end of which projects through the opening 16. The platform 20, as shown particularly in Figs. 3 and 4 comprises side strips 21 connected at the inner ends by a cross strip 22. Rollers 23 carried by the strips 21 support the load as shown in Fig 4. The platform is downwardly and inwardly inclined and is suitably supported in any well known manner as upon channel bars 24 and 25 fixed to the frame of the well 10. The strips 21 are L-shaped in cross section having vertical flanges 26 and horizontal flanges 27 and the rollers 23 are carried by the vertical flanges 26 thereof.

Mounted for movement longitudinally of the platform is a stop 28 which rests upon and travels over the horizontal flanges 27 of the strips 21. The stop 28 is here shown as L-shaped in cross section having a vertical portion 29 and a horizontal portion 30. Secured to the portion 30 is a plate 31 which substantially fills the space between the flanges 27 and a plate 32 which extends below the flanges 27, the plates 31 and 32 coacting to guide the travel of the stop and prevent its separation from the platform. The stop 28 is actuated by a link 33 connected at one end by a yoke fitting 34 to an arm 35 and at the other end by a yoked fitting 36 to the plate 31. The arm 35 is fixed upon a suitably mounted rock shaft 37 to which is also secured an arm 38, connected by a link 39, through fittings 40 and 41, with a treadle 42 mounted upon a supporting bracket 43. Fixed in the cross strip 22 is a threaded rod 44, adjustably secured therein by nuts 45 and adapted to contact with the portion 29 and limit the advance movement of the stop 28. The stop 28 is normally held in the advance position shown in full lines in Figs. 3 and 4 by a spring 46 suitably connected at one end to the channel bar 25 and at the other end to a tongue 47 which projects downwardly from the fitting 36, and is retracted therefrom by depressing the pedal 42. The flights travel continually, controlled of course by buttons 50 at each station, and in order to stop automatically the travel when the tray 15 leaving the platform 20 arrives at the station to which it is destined, there is provided in the well at each station a circuit breaker which will be tripped by the tray upon its arrival at the destined station to open a circuit and stop the motor. These circuit breakers, see Figs. 1 and 2, are designated as 51 and 52 each comprising a housing and an arm projecting therefrom and adapted to be tripped by certain trays. The arm 53 of the circuit breaker 51 is much shorter than the arm 54 of the circuit breaker 52 and accordingly will not be tripped by trays the inner edges of which travel in the path 55, designated by a dot and dash

line, but will be tripped by trays the inner edges of which travel in the path 56, similarly designated. Above the opening 16 is also provided as a matter of precaution a circuit breaker 57 the arm 58 of which will be tripped by a tray, which has been engaged by the conveyer flights and lifted from the platform 20 before reaching its proper position, to stop the travel of the conveyer.

The stop 28 limits the advance of the articles over the platform and accordingly predetermines the locations the articles will assume upon the conveyer flights. This location of the articles upon the conveyer flights is an essential feature of this invention since it determines the destinations of the articles. In other words when the stop 28 is in its normal position the inner edge of the article follows the path 55 while when the stop is in the retracted position the inner edge of the article follows the path 56. Consequently if a tray 15 is to be despatched from station A to station B, the stop 28 of the loading platform is in its normal position shown in full lines in Figs. 3 and 4 and the tray is fed into contact therewith. The tray, when engaged by the conveyer flights and raised from the platfrom, will trip the arm 53 of the circuit breaker 51 stopping the travel of the conveyer until the tray has been withdrawn from the well through the opening 17. If a tray is to be despatched from station A to station C the treadle 42 is first depressed to move the stop 28 into the dotted line position of Figs. 3 and 4 and the tray 15 is fed into contact therewith as shown in dotted lines in Fig. 4. That tray, will in its travel pass the arm 53 of the circuit breaker 51 and trip the arm 54 of the circuit breaker 52 and stop the conveyer until the tray is removed through the opening 18 of station C. In addition to the two delivery stations B and C here shown other stations could be provided and the stop 28 given additional positions each position locating the tray so that it will not trip the arm of a circuit breaker until it arrives at its destination.

While one embodiment of this invention has been described in detail and one application thereof has been set forth it will be understood that I am not limited thereto and that other embodiments may be made and other applications employed without departing from the spirit and scope of the invention as set forth in the following claims.

I claim:

1. In a conveyer by which articles are despatched from a station to any one of several receiving stations, means at each receiving station for stopping said conveyer and means for selectively positioning the article upon the conveyer so that, upon its arrival at the predestined receiving station, the article will actuate the conveyer stopping means at such station.

2. In a conveyer by which articles are despatched from a station to any one of several receiving stations, a circuit breaker at each receiving station for stopping said conveyer, and means for selectively positioning the article upon the conveyer so that, upon its arrival at the predetermined receiving station, the article will actuate the circuit breaker at such station.

3. In a conveyer by which articles are despatched from a station to any one of several receiving stations, means at each receiving station for stopping said conveyer, each means comprising a circuit breaker having an arm which projects into the path of travel of articles upon the conveyer and means for selectively positioning the articles upon the conveyer so that the arm of each circuit breaker is tripped by each article destined for that station.

4. In a conveyer by which articles are despatched from a station to any one of several receiving stations, means at each receiving station for stopping said conveyer, each means comprising a circuit breaker having an arm which projects into the path of travel of articles upon the conveyer, the arm of the circuit breaker at each station projecting further than the arms of the circuit breakers at preceding stations and less than the arms of the circuit breakers at succeeding stations and means at the despatching station for so positioning the articles upon the conveyer that each article will trip the arm of the circuit breaker at the destined receiving station and will pass freely the arms of the circuit breakers at the preceding stations.

5. In a conveyer by which articles are despatched from a station to any one of several receiving stations, means at each receiving station for stopping said conveyer, each means comprising a circuit breaker, having an arm which projects into the path of travel of articles upon the conveyer, the arm of the circuit breaker at each station projecting further than the arms of the circuit breakers at preceding stations and less than the arms of the circuit breakers at succeeding stations, and means at the despatching station for supplying articles to the conveyer in such position that each article will trip the arm of the circuit breaker at the station to which it is destined and will pass freely the arms of the circuit breakers at the preceding stations.

6. In a vertical conveyer having a despatching station and at least two receiving stations, and continually traveling flights for transporting articles from the despatching station to the receiving stations, means at each receiving station for stopping said flights upon the arrival at each station of articles destined thereto and means at the despatching station for so locating the articles upon the flights that each article will actuate only the stopping means at the destined receiving station upon arrival thereat.

7. In a vertical conveyer having a despatching station and at least two receiving stations located above the despatching station, and continually traveling flights for raising articles from the despatching to the receiving stations, a loading platform at the despatching station from which articles are raised by the flights, means for so locating each article upon the platform that it will be conveyed by the flights in a selected vertical path in accordance with the destination thereof, and means at each receiving station which extends into the path of the articles destined therefor and is engageable only by such articles for stopping the flights until the articles engaging the means are removed.

8. In a vertical conveyer having a despatching station and at least two receiving stations located above the despatching station, and continually traveling flights for raising articles from the despatching to the receiving stations, a loading platform at the despatching station from which articles are raised by the flights, means for so locating the articles upon the platform that they will be conveyed by the flights in selected vertical paths in accordance with the destination thereof, and circuit breakers at each receiving station, each circuit breaker comprising an arm which extends into the path of the articles destined for

such station and is engageable by articles destined to that station for stopping the flights until the article engaging the arm is removed.

9. In a vertical conveyer having a despatching station and at least two receiving stations located above the despatching station and continually traveling flights for raising articles from the despatching to the receiving stations, an inwardly inclined loading platform at the despatching station from which articles are raised by the flights, and over which the articles travel, an element for stopping the travel of articles over the platform, means for shifting said element over said platform to limit the advance of articles thereover and means at each receiving station engageable only by articles destined thereto for stopping the flights until the articles engaging such means are removed.

10. In a vertical conveyer having a despatching station and at least two receiving stations located above the despatching station and continually traveling flights for raising articles from the despatching to the receiving stations, an inwardly inclined loading platform at the despatching station from which articles are raised by the flights, an element for stopping the travel of articles over the platform, means for shifting said element over said platform to limit the advance of articles thereover and circuit breakers at each receiving station each circuit breaker comprising an arm tripped by articles on the flights for stopping the flights, until the articles are removed, the arm of the circuit breaker at one station being tripped by articles located by said element on the platform in one position and the arm of the circuit breaker at another station being tripped by articles located by said element on the platform in another position.

11. In a vertical conveyer having a despatching station from which articles are transported upwardly by traveling flights, a loading platform at said station for advancing the articles into the path of travel of said flights, an adjustable stop movable longitudinally over the platform to limit the advance of the articles, yieldable means normally holding the stop in its most advanced position and means acting against said yielding means for retracting said stop into a second position, the advance of the articles when the stop is in its normal position being greater than when the stop is in the retracted position.

LOUIS E. DUPUY.