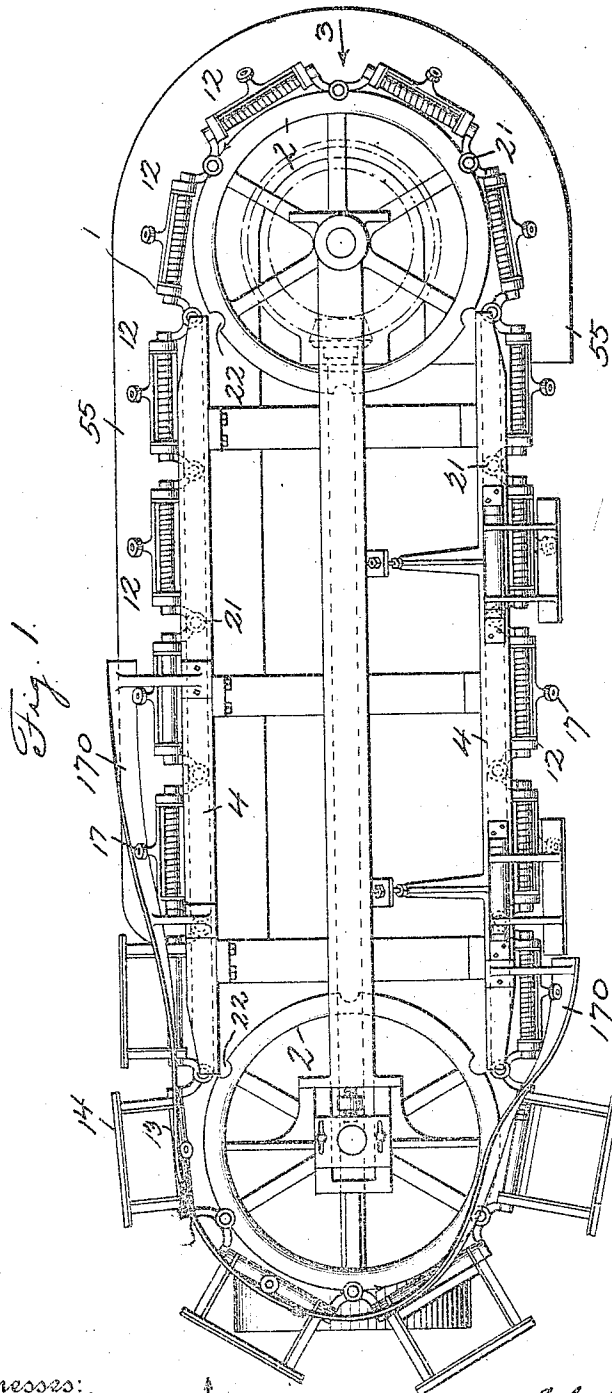


C. A. JUENGST.
CONVEYER.
APPLICATION FILED SEPT. 1, 1914.

1,215,547.

Patented Feb. 13, 1917.
4 SHEETS—SHEET 1.



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Fig. 3.

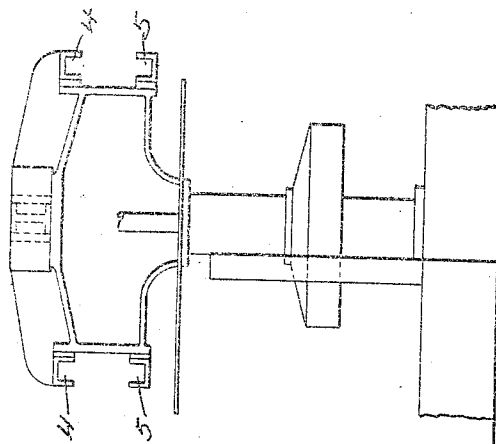
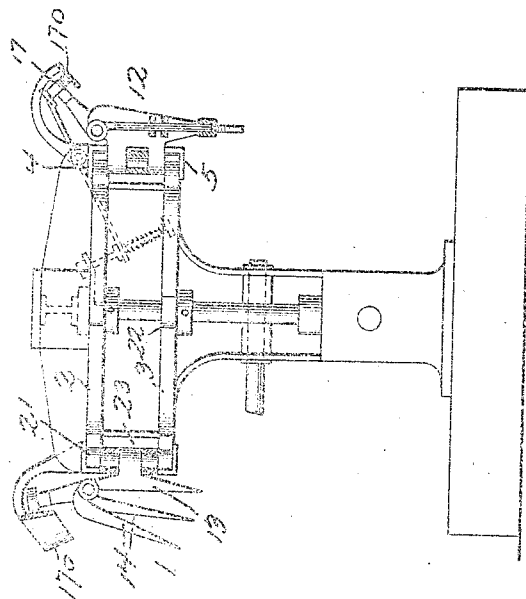


Fig. 2.



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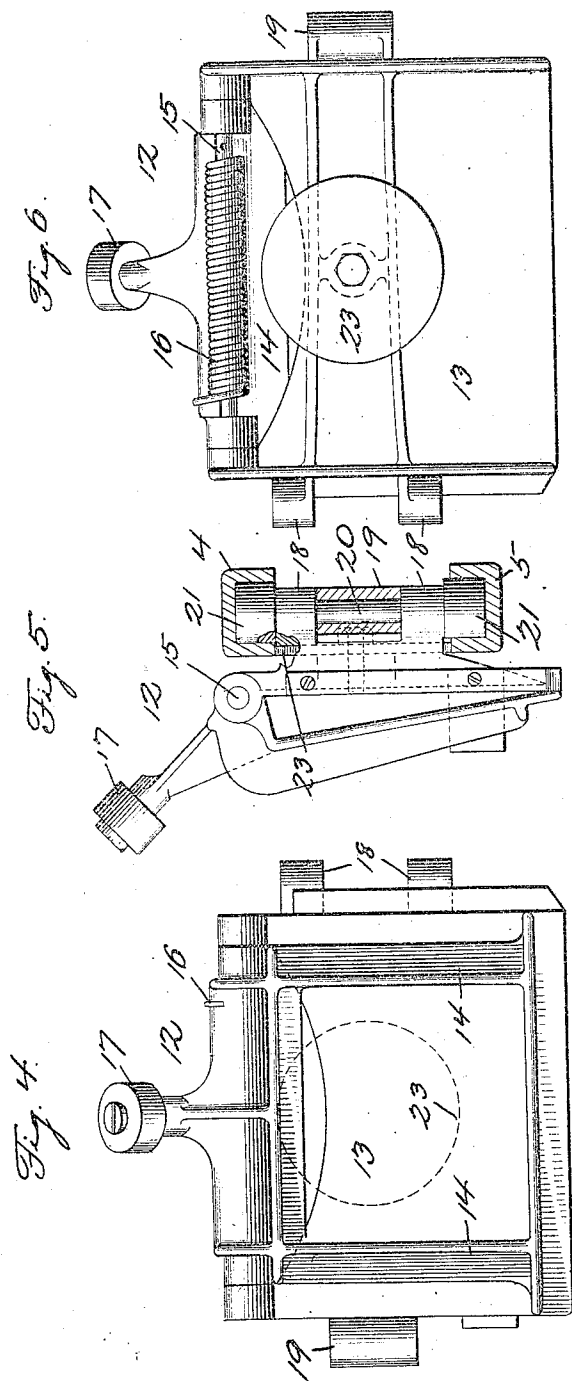
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4 SHEETS—SHEET 3.

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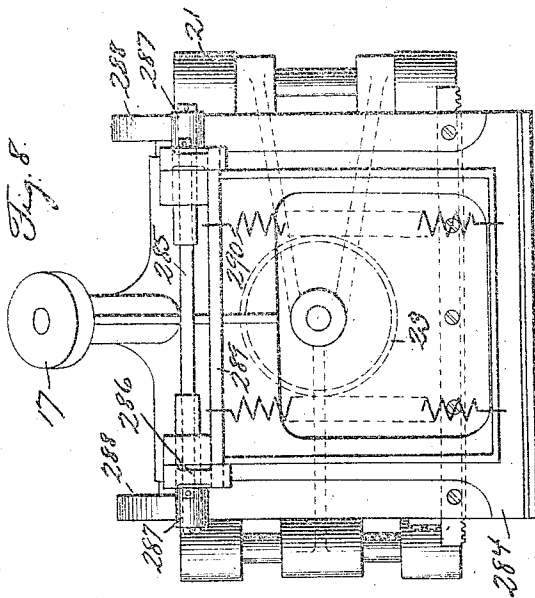
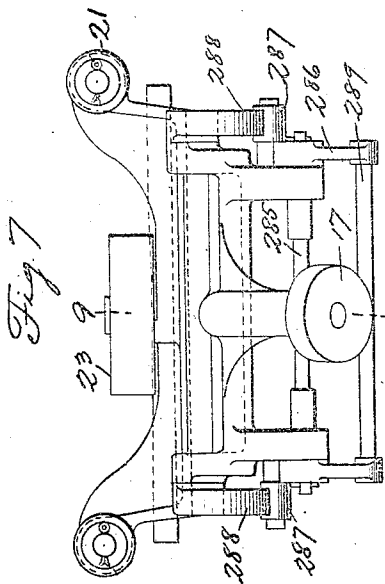
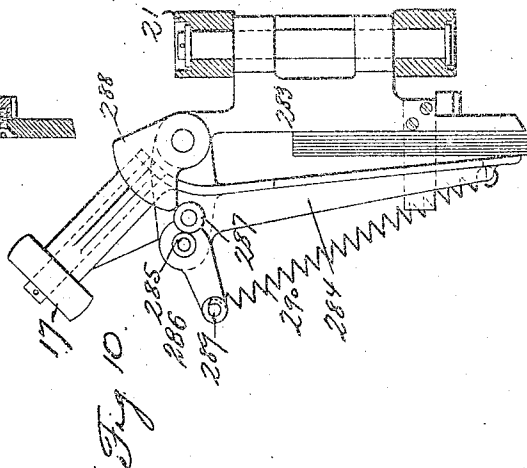
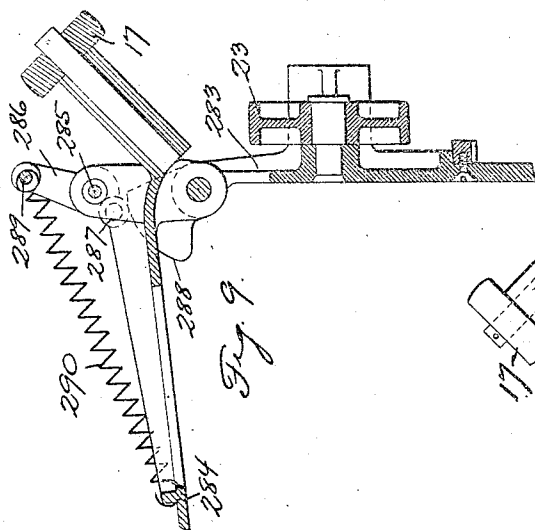
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4 SHEETS—SHEET 4.



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UNITED STATES PATENT OFFICE.

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CONVEYER.

1,215,547.

Specification of Letters Patent.

Patented Feb. 13, 1917.

Continuation in part of application Serial No. 550,305, filed March 19, 1910. This application filed September 1, 1914. Serial No. 859,606.

To all whom it may concern:

Be it known that I, CHARLES A. JUENGST, a citizen of the United States, and a resident of Croton Falls, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Conveyers, of which the following is a specification.

The present invention relates generally to conveyers used more particularly in book covering machines and has for its main object the production of a conveyer of a simple construction which will properly clamp and convey articles such as a book and is a continuation in part of application Serial No. 550,305, filed March 19, 1910.

The invention consists in a plurality of book clamps arranged to form an endless conveyer by being hinged together. Upper and lower sprocket wheels are arranged at each end of the machine, which sprocket wheels are in line with upper and lower longitudinal guides on the framework. Upper and lower horizontally disposed rolls are carried by the hinges which are received in slots in the sprockets whereby the conveyer is driven and which travel in the respective upper and lower guides on the framework. A large bearer or vertical roll is also carried by the clamp which travels between the upper and lower guides on the framework and between the upper and lower sprocket wheels at the end.

The book clamps have an opening and closing movement at an angle to the advancing movement of the conveyer, and means are provided for opening and closing these clamps to receive and discharge books during the travel of the conveyer. Preferably, as shown, the clamps are normally held closed by means of springs and are opened to discharge and receive the books by suitable means, as cams.

In the accompanying drawings the invention is disclosed in several concrete and preferred forms but changes of construction may be made without departing from the legitimate and intended scope of the invention as expressed in the claims.

In the said drawings:

Figure 1 is a plan view of the conveyer embodying the invention.

Fig. 2 is an end view looking in the direction of the arrow 2, Fig. 1, with the book conveyer and operating cam for the book clamps in section.

Fig. 3 is an end view of the framework of the machine, looking in the direction of the arrow 3, Fig. 1.

Fig. 4 is a front view showing one form of the book clamps.

Fig. 5 is a side view of the form shown in Fig. 4 with the clamp shown in position on the guides on the framework, said guides being in section.

Fig. 6 is a rear view of the form of clamps shown in Figs. 4 and 5.

Fig. 7 is a detail plan view of one of the book clamps, showing a modification of the invention.

Fig. 8 is a side elevation of Fig. 7.

Fig. 9 is a vertical sectional view on the line 9-9 of Fig. 7.

Fig. 10 is an end elevation of Fig. 8 with one of the hinges shown in section and with the clamp in its closed position.

Similar characters of reference indicate corresponding parts in the different views.

1 indicates the book conveyer which passes around the upper and lower sprocket wheels 2 and 3 at each end and which slides into the guides 4 and 5.

Referring to the modification shown in Figs. 4 to 6 inclusive, each book clamp 12 consists of a relatively stationary member 13 to which is pivoted the movable member 14 by means of the horizontal pivot 15. Normally the movable member 14 is held closed by means of the spring 16 which is attached to one end of the pivot 15 and at its other end to the movable member 14. 17 is a cam roll carried by the movable member 14 and which by engaging with a suitable cam 170 opens the book clamp.

The book clamps are hinged together to form a conveyer, the member 13 being to that end provided with hinged members 18 and 19 connected together by means of the pins 20. These pins 20 carry horizontally disposed rolls 21 at their upper and lower ends, which it will be seen rotate on a stationary vertical axis and travel between the flanges respectively of the upper and lower horizontally disposed guides 4 and 5 on the

framework. These guides 4 and 5 terminate at a point where the sprocket wheels 2 and 3 are located and are arranged in the same horizontal plane as the latter so that these sprocket wheels virtually form continuations of the members 4 and 5. The sprocket wheels 2 and 3 are provided with slots 22 into which the horizontal guide rolls 21 fit and by these means the book conveyer is driven. The clamps further carry horizontally disposed bearers or rolls 23 which rotate on a substantially horizontal axis and travel between the upper and lower guides 4 and 5 and between the upper and lower sprockets 2 and 3.

The cam 170 is bolted to the framework and starts at a point on one side of the machine, which may be called the delivery side. The shape of the cam is such that it acts on the roller 17 to open the book clamp just as the said clamp reaches the point of delivery. The clamp is opened gradually and continues in its open position until it almost reaches the point where the books are fed in on the other side of the machine, which may be called the feeding side of the machine. Owing to the shape of the cam 170 the clamp is opened still farther to receive the books suitably fed thereto and then closes quickly under the influence of the spring 16 due to the abrupt change in the shape of the cam. 55 is a cover support or shelf which extends around the machine from one side to the other, as indicated, and assists in supporting the cover of the book as it is being conveyed.

Referring now to the form of book clamp shown in Figs. 7 to 10 inclusive, 283 is a stationary member to which is pivoted the movable member 284. Pivoted upon the movable member 284 at 285 is a latch member 286 having at one end a roll 287 adapted to engage with the cam 288 on the stationary member and having at its other end 289 a spring 290 connected to the movable member. Normally gravity automatically moves the movable member to its closed position with respect to the stationary member, and the roll 287 passes in under the cam 288, thus constituting a latch which through the action of the spring 290 locks the movable member in its closed position. When pressure sufficient to overcome the tension of the spring 290 is applied to the extension 17 of the movable member by means of the cam 170, the movable member 284 will be moved and the latch member 286, carried thereby, by reason of the engagement of the roll 287 with the shoulder of the fixed cam 288 will be caused to rock about the fulcrum 285 against the tension of the spring 290, and in a clockwise direction until the roll passes from under the shoulder of the cam to the arc-shaped upper surface thereof. The pivotal motion of the extension 17 will continue to rock the movable member 284 out-

wardly, the roll 287 traveling over the upper surface of the cam 288 to the position shown in Fig. 9.

What is claimed, is:

1. In a machine of the character set forth, a plurality of clamps, hinges connecting said clamps to form an endless conveyer arranged to travel about vertical axes, horizontally disposed upper and lower rolls on the hinges having vertical axes, a vertically disposed roller on each clamp mounted on a horizontal axis, upper and lower guides and upper and lower sprockets at each end, the vertical bearer traveling between the upper and lower guides and between the upper and lower sprockets, the horizontally disposed upper and lower rolls traveling respectively in the upper and lower guides and engaging respectively the upper and lower sprockets.

2. In a machine of the character set forth, upper and lower guides arranged on opposite sides of the machine, upper and lower sprockets at each end of the guides, a plurality of clamps hinged together to form an endless conveyer, upper guide rolls on the conveyer engaging with the upper guides and upper sprockets, lower guide rolls on the conveyer engaging with the lower guides and lower sprockets, and a vertical roller on the conveyer engaging with the upper and lower guides and upper and lower sprockets.

3. In a machine of the character described, a plurality of links hinged together to form an endless conveyer, a clamping member carried by and pivoted to each link, a latch for holding said clamping member in clamping position, and means for moving said latch and said clamping member to releasing position during the progress of the conveyer.

4. An endless conveyer comprising: a plurality of links, a movable member carried by each link and adapted to cooperate therewith to form a clamp, spring pressed means for latching said movable member in clamping position, and means for simultaneously moving said latch against the tension of said spring and said clamping member to releasing position during the progress of the conveyer.

5. An endless conveyer comprising: a plurality of links, a movable member carried by each link and adapted to cooperate therewith to form a clamp, spring pressed means carried by said movable member for latching said movable member in clamping position, and means mounted on a fixed support for automatically moving said movable member and the latch carried thereby against the tension of said spring to releasing position.

6. In a machine of the character set forth, a clamp composed of a stationary member, a movable member normally held in its

closed position with respect to the stationary member, a latch for automatically locking the movable member against the stationary member when in the closed position, and means for imparting an opening movement to the movable member thereby releasing the latch and moving the movable member away from the stationary member.

7. In a machine of the character set forth, a clamp composed of a stationary member, a pivoted member, a cam whose surface is concentric with the center of the pivoted member on the stationary member, a latch member mounted on the pivoted member, a roll on one end of said latch member engaging with the cam on the stationary member, and a spring connecting the other end of the latch member with the pivoted member, and means for exerting pressure on the pivoted member whereby the latch member will swing around its pivot on the pivoted member and the pivoted member will swing around its pivot on the stationary member.

8. An endless conveyer comprising: a plurality of conveying links, pintles pivotally connecting adjoining links, guides for said links, a weight-carrying roller mounted on each link for rotation about an axis at right angles to the link and adapted to engage said guides, and rollers mounted on said pintles having rolling engagement with said guides.

9. An endless conveyer comprising: a plurality of conveying links, vertically spaced guides for said links, pintles pivotally connecting adjoining links, a weight-carrying roller mounted on each link for rotation about an axis at right angles to the link and rollers mounted on the ends of said pintles and adapted to engage said guides.

10. An endless conveyer comprising: a plurality of conveying links, vertically spaced channeled guides for said links, pintles pivotally connecting adjoining links, a weight-carrying roller mounted on each

link for rotation about an axis at right angles to the link and adapted to engage one of said guides, and rollers mounted on the ends of said pintles and adapted to engage the channels in said guides.

11. A conveyer comprising: a carrying device, vertically spaced guides for said carrying device, a guide engaging roller arranged to bear the weight of said device and a plurality of guide rollers on said device mounted on vertical axes and engaging said guides.

12. A conveyer comprising: a carrying device, a guide for said carrying device, a vertical thrust bearing on said device in engagement with said guide, and lateral thrust bearings on said device comprising a plurality of rollers mounted on the same vertical axis and engaging said guide.

13. An endless conveyer comprising: a plurality of vertically arranged conveying links, carrying means on a lateral face of the links, a guide for said links, rollers on each link mounted on a common vertical axis and engaging said guide to serve as lateral thrust bearings, and a roller on each link mounted on a horizontal axis and engaging said guide to serve as a vertical thrust bearing.

14. An endless conveyer comprising: a plurality of conveying links, vertically-placed, channeled guides for said links, a plurality of guide rollers on each link mounted on vertical axes and having rolling engagement with the channels in said guides, and a weight-carrying roller on each link bearing on one of said guides.

Signed at New York city, in the county of New York and State of New York, this 31st day of August A. D. 1914.

CHARLES A. JUENGST.

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