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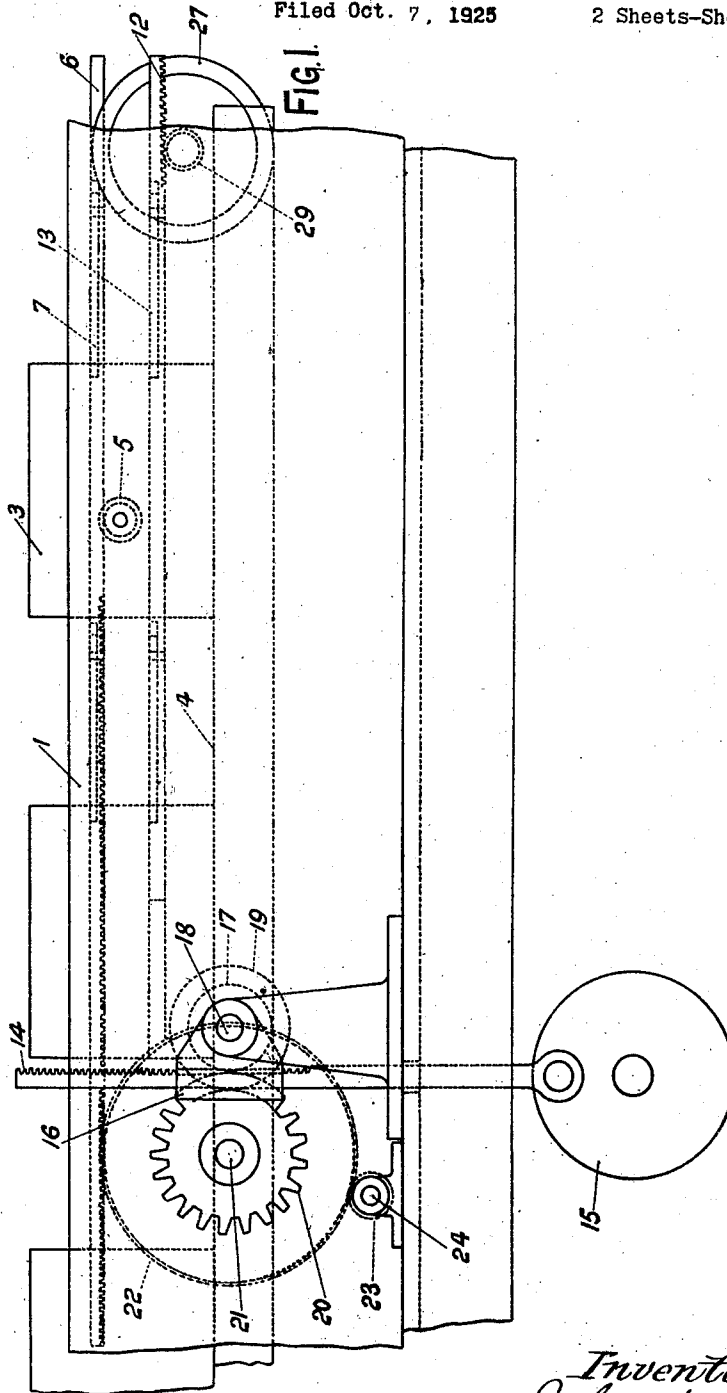
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CONVEYER FOR BOOKBINDING MACHINERY

Filed Oct. 7, 1925

2 Sheets-Sheet 1



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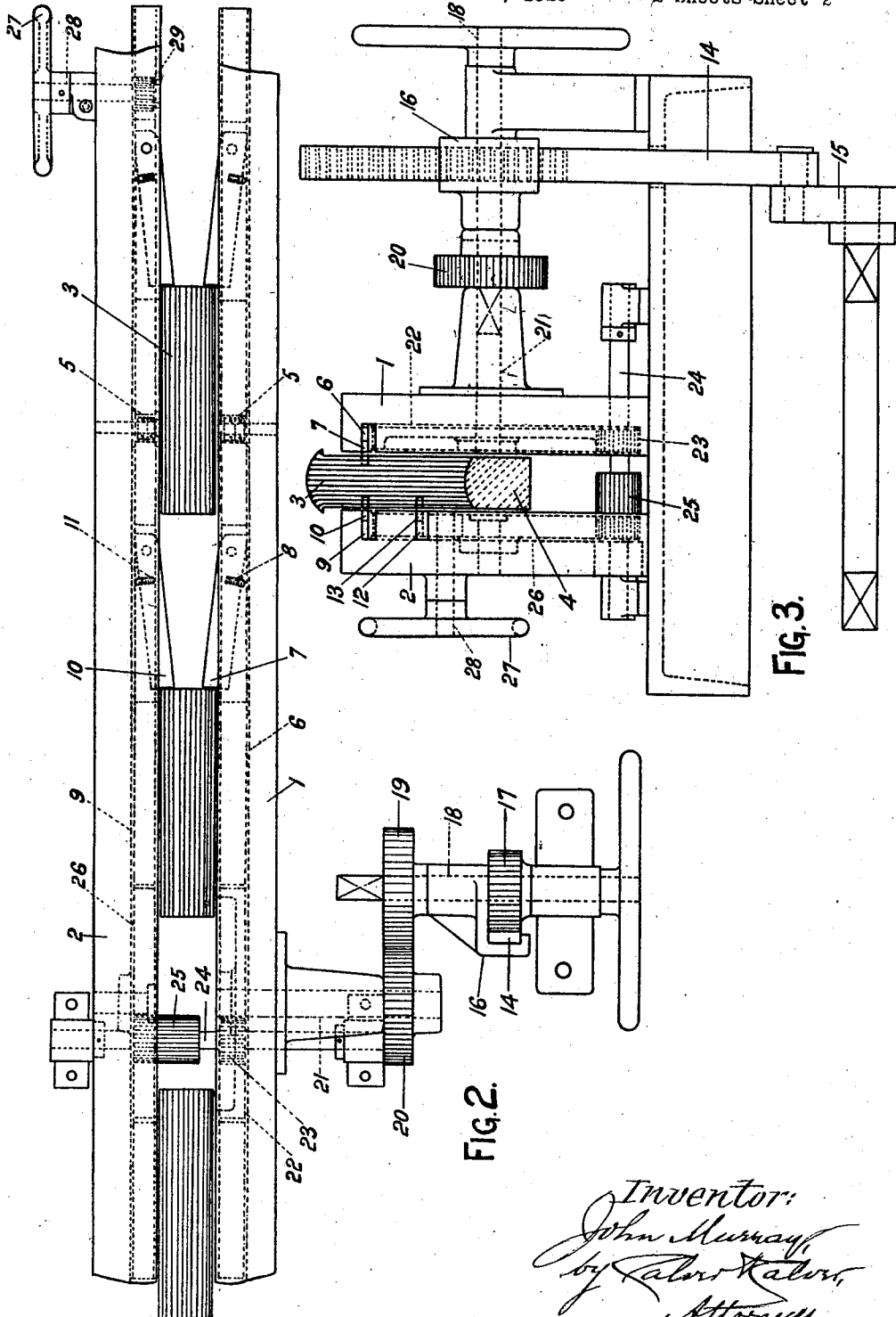


FIG. 2.

FIG. 3.

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UNITED STATES PATENT OFFICE.

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CONVEYER FOR BOOKBINDING MACHINERY.

Application filed October 7, 1925, Serial No. 61,028, and in Great Britain January 21, 1925.

The invention relates to book-binding machinery in which books in any stage of manufacture are supported on their edges and fed step-by-step between parallel rails—for example, “lining” or like machines as described in the prior Patent No. 1,263,273 dated 16th April, 1918.

The invention has for an object to provide simplified means for effecting the feeding movements.

According to the invention there is fitted in one or in each of the rails a reciprocatory bar extending lengthwise for such distance as the books may require to be conveyed step-by-step, and carrying a series of longitudinally spaced one-way acting pawls adapted to engage behind the books and feed them forward step-by-step.

When one or each of the rails is adjustable laterally to accommodate books of different thicknesses, and a bar is fitted to such adjustable rail, the relative bar-driving gear is preferably contrived to admit of this lateral adjustment without special readjustment of the gear elements.

In a practical construction chosen as an illustrative example, where one of the rails is fixed and the other laterally adjustable, each of two bars is supported upon rollers in a longitudinal recess in the inner face of the relative rail in such wise that its pawls, adapted in their rearward travel to slip past the books, project into the path of the books and propel the books in their forward travel.

In order to prevent retrograde movement of the books due to friction of the retiring pawls a longitudinally adjustable bar equipped with check-pawls to engage the rear edges of the books may be fitted to one of the rails, say the laterally adjustable rail.

The reciprocatory movement of the bars is derived from a crank-operated connecting rod slidable in a pivoted guide and having rack teeth in mesh with a pinion on a shaft transverse to the rails. This shaft carries an additional pinion engaging a pinion on a shaft which carries also a pinion engaging rack teeth upon one of the bars, i. e., the bar fitted to the fixed rail. The last mentioned pinion engages a pinion on a shaft which carries also a pinion in mesh with a pinion that engages rack teeth on the other bar, i. e., the bar fitted to the laterally movable rail.

In the accompanying drawings Fig. 1 is

a side elevation, Fig. 2 a plan and Fig. 3 an end view of part of a book-conveyer according to the invention.

In the drawings 1 denotes a fixed rail and 2 a rail adjustable laterally relatively to the rail 1 to accommodate books 3 carried on a support 4. Supported on rollers, as 5, in a longitudinal recess in the face of the rail 1 is a reciprocatory bar 6 fitted with a series of pawls 7 each urged by a spring 8. Similarly supported in relation to the rail 2 is a reciprocatory bar 9 fitted with pawls 10 each urged by a spring 11. As will be understood, the pawls 7, 10, adapted in their rearward travel to slip past the books, will project into the path of the books and propel the books in their forward travel.

In order to prevent retrograde movement of the books due to friction of the retiring pawls 7, 10, a longitudinally adjustable bar 12 equipped with check-pawls 13 similar in all respects to the pawls 7 and 10, is fitted to the rail 2.

The means for reciprocating the bars 6, 9 comprises an upstanding connecting rod 14 which is operated by a crank 15 and the upper portion of which is slidable in a pivoted guide 16 and has rack teeth in mesh with a pinion 17 on a shaft 18 transverse to the rails. The shaft 18 carries an additional pinion 19 engaging a pinion 20 on a shaft 21 which also carries a pinion 22 engaging rack teeth upon the bar 6. The pinion 22 engages a pinion 23 on a shaft 24 which carries also a long pinion 25 engaging a pinion 26 that meshes with rack teeth on the bar 9, the long pinion 25 being capable of transmitting rotation to the pinion 26 for all positions of adjustment of the bar 9 and rail 2.

Adjustment of the bar 12 may be effected by rotation of a hand wheel 27 carried by the outer end of a spindle 28 which penetrates the rail 2 and carries at its inner end a pinion 29 meshing with rack teeth formed on the bar 12.

What I claim is:—

1. In book-binding machinery, a book-conveyer comprising a pair of parallel book-guiding rails, at least one of said rails having a longitudinal recess in its inner face, a reciprocatory bar mounted in said recess, spaced one-way acting book-engaging pawls carried by said bar, means for reciprocating said bar, a normally stationary

bar fitted to one of said rails, check-pawls carried by said stationary bar, and means for adjusting said stationary bar.

2. In book-binding machinery, a book-
5 conveyer comprising a pair of parallel book-guiding rails, at least one of said rails having a longitudinal recess in its inner face, a reciprocatory bar mounted in said recess and having rack teeth, spaced one-
10 way acting pawls carried by said bar, a pinion in mesh with said rack teeth, a second

pinion operatively connected to said first named pinion, a pivoted guide, a connecting rod slidable in said guide and having rack teeth in mesh with said second pinion,
15 a crank for operating said connecting rod, and adjustable means to prevent retrograde movement of the books.

In testimony whereof I have signed my name.

JOHN MURRAY.