Feb. 17, 1931. J. TAUPIN 1,792,664

MACHINE FOR PASTING HINGES ON BOOK COVERS

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Fig.1

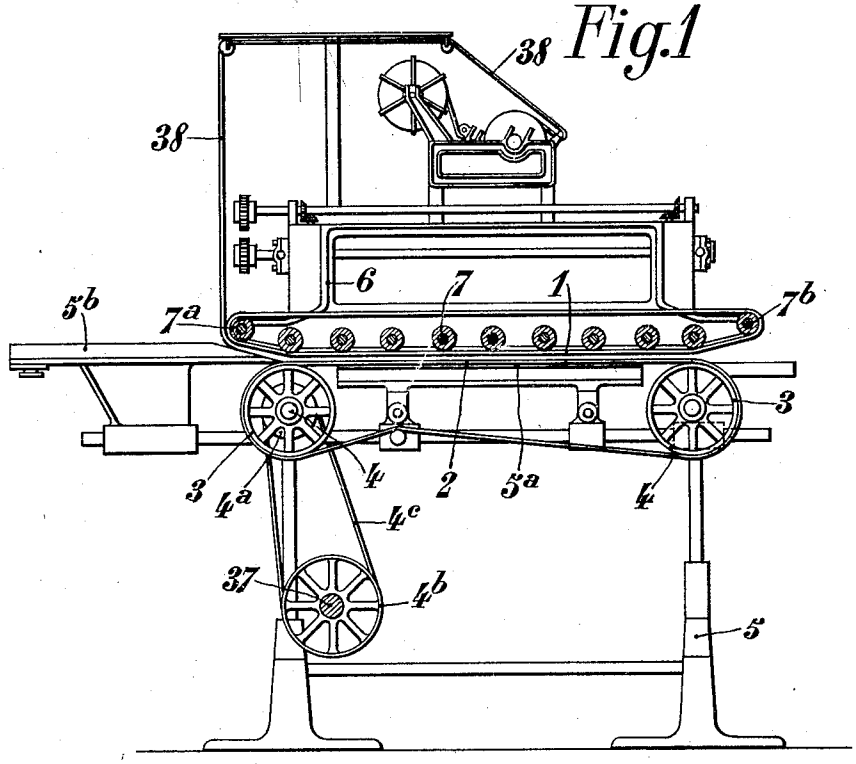


Fig.7

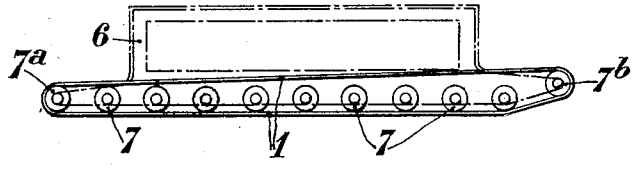
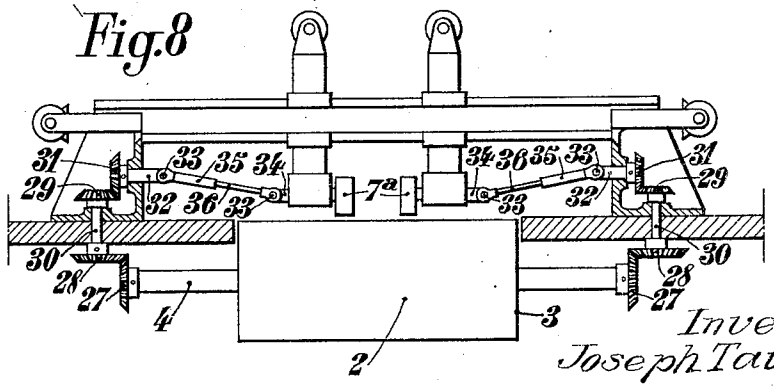


Fig.8



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Fig.2

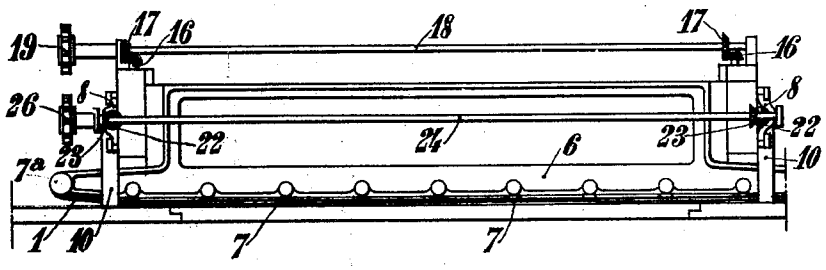
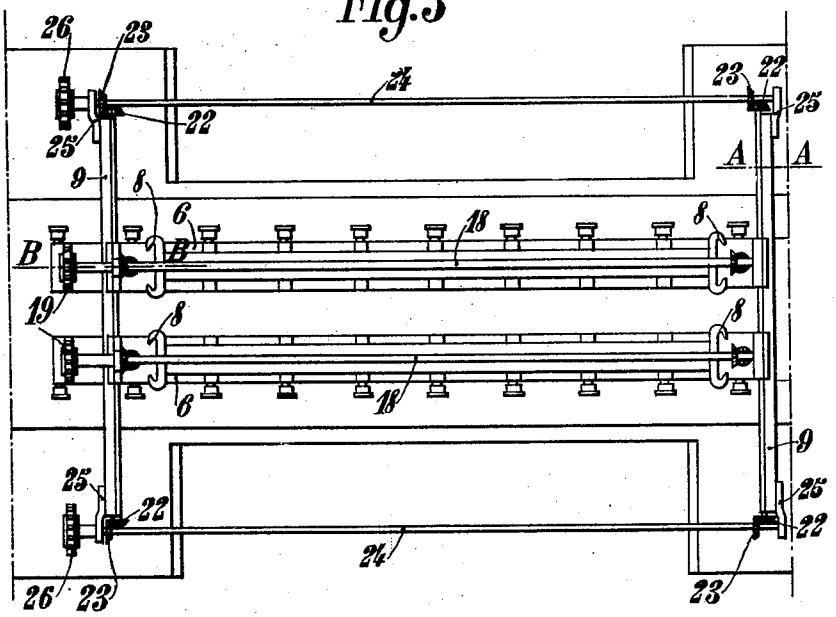


Fig.3



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MACHINE FOR PASTING HINGES ON BOOK COVERS

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Fig.4

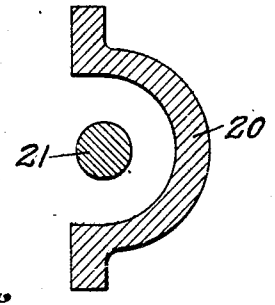
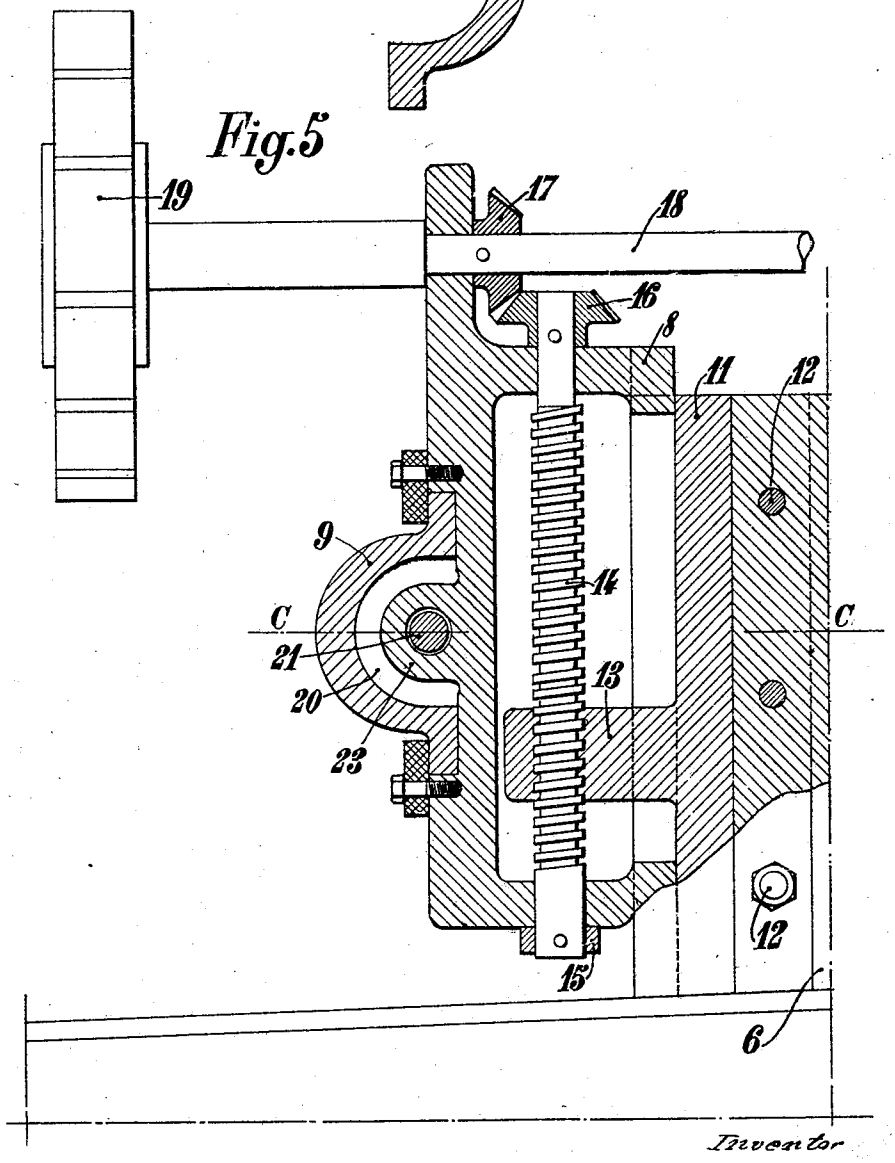


Fig.5



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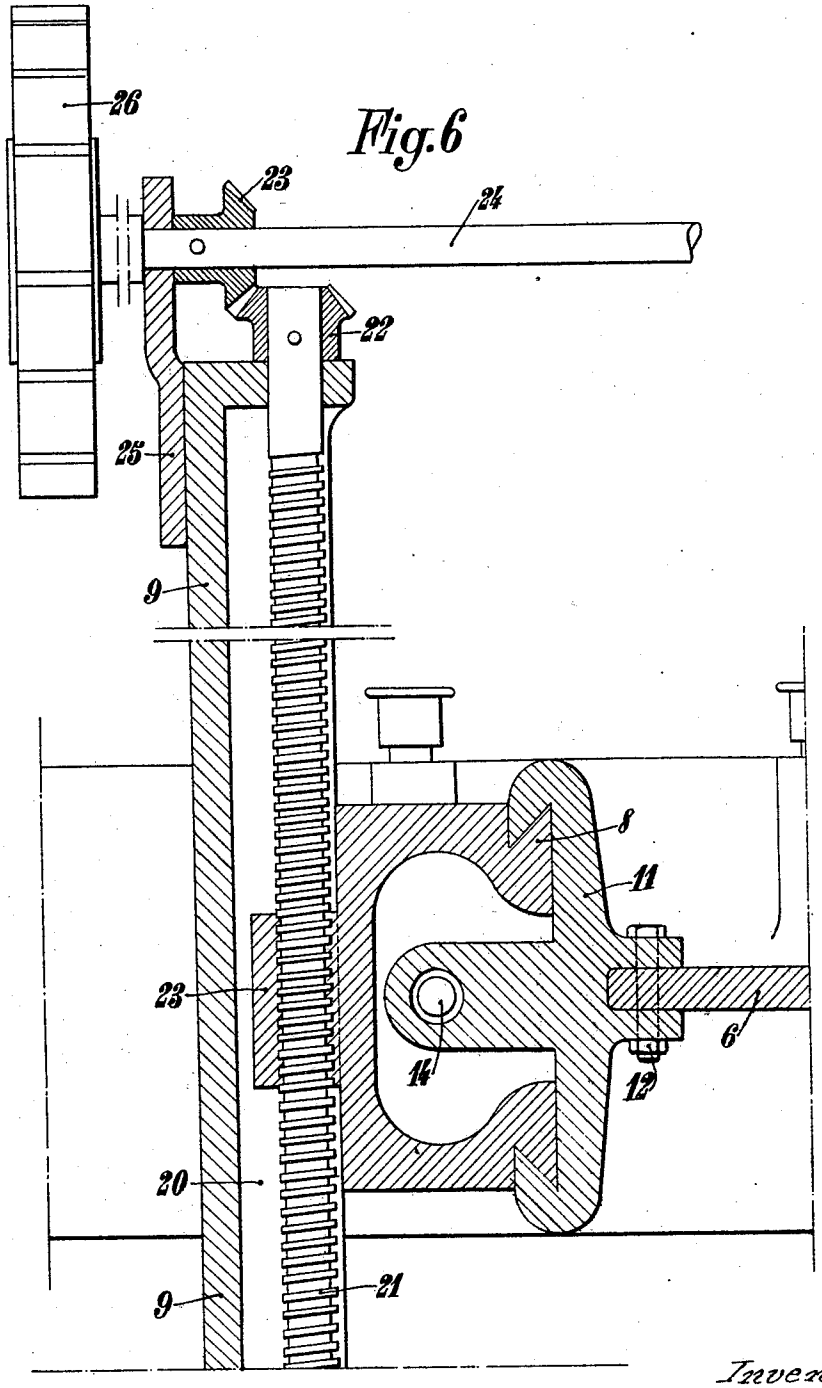
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MACHINE FOR PASTING HINGES ON BOOK COVERS

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Fig. 6



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1,792,664

UNITED STATES PATENT OFFICE

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MACHINE FOR PASTING HINGES ON BOOK COVERS

Application filed October 31, 1927, Serial No. 230,093, and in France September 17, 1927.

The present invention relates to the machines used for mechanically effecting the gluing of the hinges on the covers of copy-books, stitched-books or books, and it has for its object to permit the adaptation of the machine to all the widths of hinges.

For that purpose, the improvements forming the subject-matter of the invention are especially characterized by the new application of the press-belts or press-drums to machines for gluing hinges, in order to simultaneously effect, with these press-belts or these press-drums, the drawing along of the continuous strip from which the hinges are obtained, and of the covers, and the gluing of the latter on the said hinges.

The accompanying drawing illustrates by way of example only a form of construction of an improved machine for gluing hinges in accordance with the subject-matter of the invention.

Fig. 1 is a side elevation of the whole of the machine, certain parts of which are omitted for greater clearness.

Fig. 2 is a side elevation of the press-belts which ensure against both the displacement of the hinges and of the covers, and their gluing.

Fig. 3 is a corresponding plan view.

Figs. 4 and 5 are cross sections, on an enlarged scale, made according to lines A—A and B—B, respectively, of Fig. 3.

Fig. 6 is a horizontal section, on an enlarged scale, made according to line C—C of Fig. 5.

Fig. 7 is a diagrammatic view showing the method of mounting one of the press-belts on its driving rollers and jockey rollers.

Fig. 8 is a front view of the whole of the press-belts.

The press-belts used in the example described are constituted by two belts 1 arranged above a single belt or endless band 2 held stretched on two drums 3 the shafts 4 of which are suitably supported in the bearings of a frame 5, the upper part of which constitutes a table 5^a. The position of these drums 3 is determined once for all, but the upper belts 1 are, according to the invention, mounted on two frames 6 the position in height and the spacing apart of which can be adjusted relatively to the middle longitudinal axis of the table 5^a. For that purpose, and as clearly shown in Figs. 2 and 3, each belt 1 passes between the two side cheeks of its frame 6 and its lower section passes on rollers 7 the shafts of which are simply pressed at the bottom of notches provided on the lower edges of the cheeks of the frames 6. The upper section or length of the belt 1 has no contact whatever with the rollers except the two end rollers 7^a and 7^b, one of which, the roller 7^b, is a driving roller and receives its movement from a mechanism to be hereinafter described. The frames 6 are mounted by the ends of their upper part, on dovetail or like slides 8, so that they can be subjected to vertical displacements for allowing the adjustment of the distance between the lower lengths or stretches of the belts 1 and the upper length of the endless band 2. The slides 8 can themselves slide along transverse supporting guides 9 sustained relatively to the table of the machine, by means of brackets 10 rigidly secured on the said table. This arrangement allows of adjusting the spacing apart of the belts 1 and of each of them relatively to the longitudinal axis of the endless band 2 on the table 5^a. These two essential adjustments of the belts 1 in the vertical direction and in the transverse direction, are effected by the operator of the machine from the rear end of the table, that is to say from the end where takes place the entrance of the strips or hinges and of the covers. This result is obtained by means of the following mechanisms:

At each of its ends (Fig. 5) a belt-carrying frame receives a member 11 forming a slide block secured on the frame 6 by means of bolts 12 and provided with a perforated and internally screw threaded boss 13 for engaging with a screw 14 axially immobilized on the slide 8 by a ring 15 and a bevel pinion 16 pinned at the upper part of the screw 14. The pinions 16 rigidly secured on each of the screws 14 arranged at the ends of one and the same frame 6 gear with corresponding pinions 17 rigidly secured on a shaft 18 journalled in bearings provided upon slides 8, and

the rear end of which is provided with an operating hand-wheel 19 within reach of the operator of the machine placed at the rear end of the table. By acting on the handles 19, the operator adjusts at will the height of the belts 1 above the table and, owing to the arrangement of a screw 14 at each end of the frame 6, it is possible to obtain vertical and rigorously equal displacements for each of the ends of the frames 6, whatever may be the length of the latter.

An equivalent arrangement is provided for the transverse displacement of the slides 8 along the supporting guides 9. On each supporting guide 9 (Figs. 5 and 6) is provided a trough 20 within which is arranged a screw-threaded rod 21 the axis of which is parallel to the upper face of the table of the machine. The rods 21 are immobilized in the axial direction by a bevel pinion 22 rigidly secured on their outer end and by a shoulder bearing against a boss forming a bearing for supporting the rod within the trough-shaped member 20. The bearings are not illustrated in the drawing, as their arrangement is obvious and does not concern the invention. Each slide 8 is provided with a perforated and internally screw threaded boss 23 for engaging with the screw threaded rod 21 corresponding to it. The two screws 21 in engagement with the slides corresponding to one and the same frame 6 are associated by gearing of the pinions 22 with similar pinions 23 rigidly secured on one and the same shaft 24 of the supporting frames 10 and provided, at its rear end, with an operating hand-wheel 26. The four hand-wheels 19 and 26 which allow to obtain all the adjustments above mentioned, are arranged, as shown in Figs. 1, 2 and 3, at the rear of the machine and the operator can easily have access thereto from the latter.

The actuation of the belts 1 is synchronized with that of the endless band 2, so that the speeds may be rigorously equal if it is desired to avoid the slipping of the hinges and covers they drive along. For that purpose, use may be made of the mechanism more particularly shown in Fig. 8. The shaft 4 which rotates with the front drum 3 of the endless band 2 carries at each of its ends, a bevel pinion 27 which, by means of pinions 28 and 29 and the shaft 30, which is supported by a bearing portion of the table, is connected to a pinion 31 rigidly secured on a shaft 32 connected by a double distortable joint 33, of the Hooke's type, to the shaft 34, driving the roller 7^a of one of the belts 1. The connection between the elements of the joints is effected by shafts 35 and 36 of variable length, constituted by engagement of a rod 36 in a tubular part 35 with angular connection by key or claw moving in a longitudinal groove, for always ensuring the transmission whatever may be the transverse position of the belts 1.

The front drum 3 of the endless band 2 can be directly connected to the source of power of the machine, or, as illustrated, simply driven by the endless band 2 itself which, in this case, receives its movement from the rear drum 3. The latter is connected by pinions 4^a and 4^b and chain 4^c for instance, to a driving shaft 37 which receives its movement from any source of power (not shown).

At the rear end of the table is effected the admission between the belts 1 and the endless band 2, of the hinges and covers. The hinges are in the known manner, cut out from an endless strip 38 (Fig. 1) the edges of which are coated with glue by passage in a gumming device which preferably is of the type described in the French Patent No. 652,731, dated January 10th, 1927, for "Machine for gluing the backs on copy-books, stitched-books or books".

The operation of the machine thus described is as follows:—

The belts 1 being properly adjusted one relatively to each other, and both of them relatively to the belt 2, the covers of copy-books to be bound by the strip 38, are fed from a table 5^b (Fig. 1) between the belts 1 and 2. The feeding of such covers may be realized either by hand or automatically by any suitable means. The pressing action of the belt glues the strip 38 to the covers and the whole is drawn to the exit end of the machine. From this end the whole of covers and strip is presented to the action of cutting means of any arrangement.

What I claim as my invention and desire to secure by Letters Patent is:

In a machine for pasting hinges on the covers of books, a press-belt device for simultaneously effecting the feed of the band of hinges and the pasting of the latter on the cover of books comprising, an under belt stretched upon two drums one of which is connected with driving means, two independent upper belts stretched upon rolls, a frame for supporting the rolls corresponding to each upper belt, means for moving the said frames both horizontally and vertically, and means for driving the first roll of each upper belt.

In testimony whereof I have signed my name to this specification.

JOSEPH TAUPIN.