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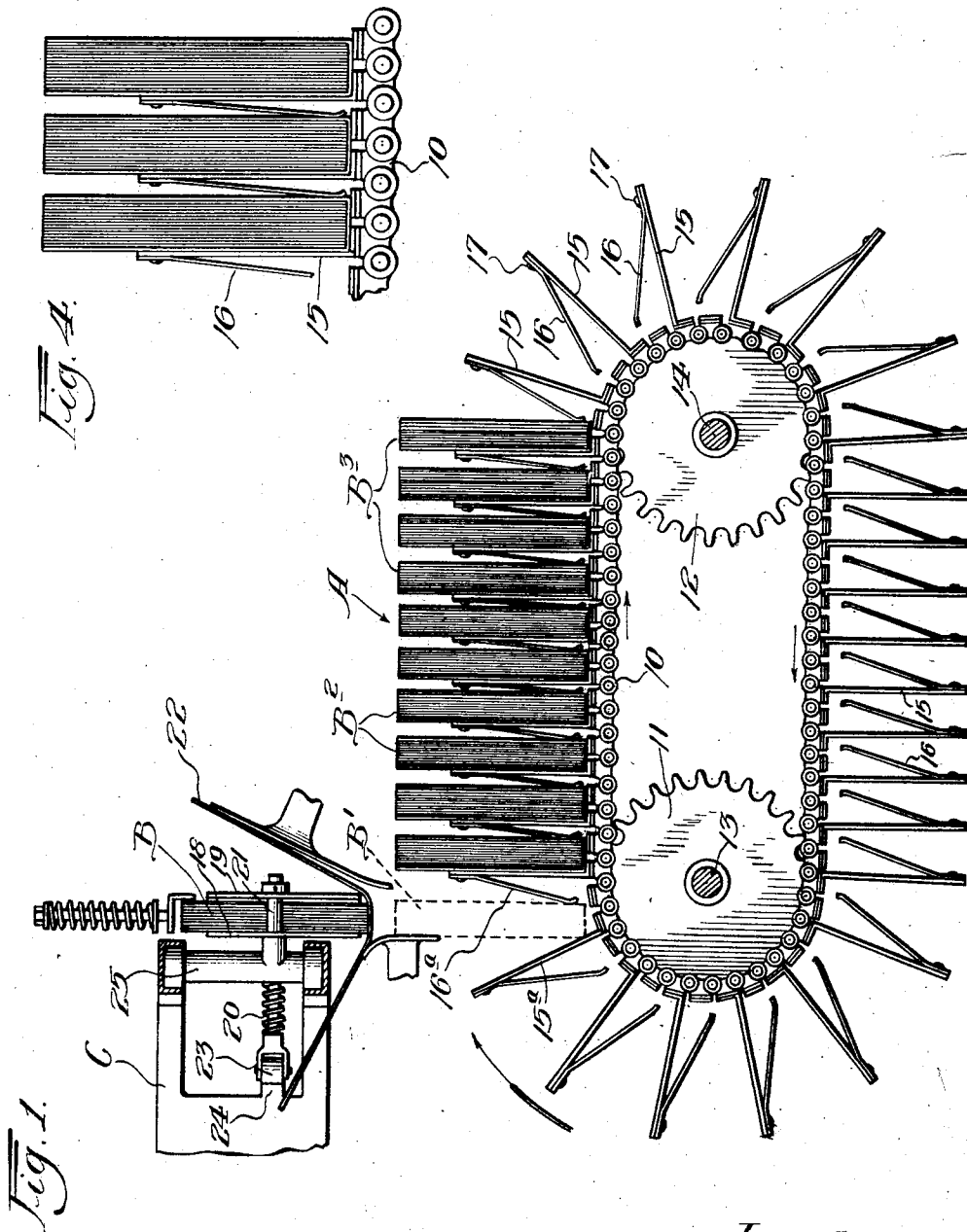
H. C. ALGER

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MACHINE FOR PRESSING BOOKS

Filed Sept. 12, 1928

3 Sheets-Sheet 1



Inventor:
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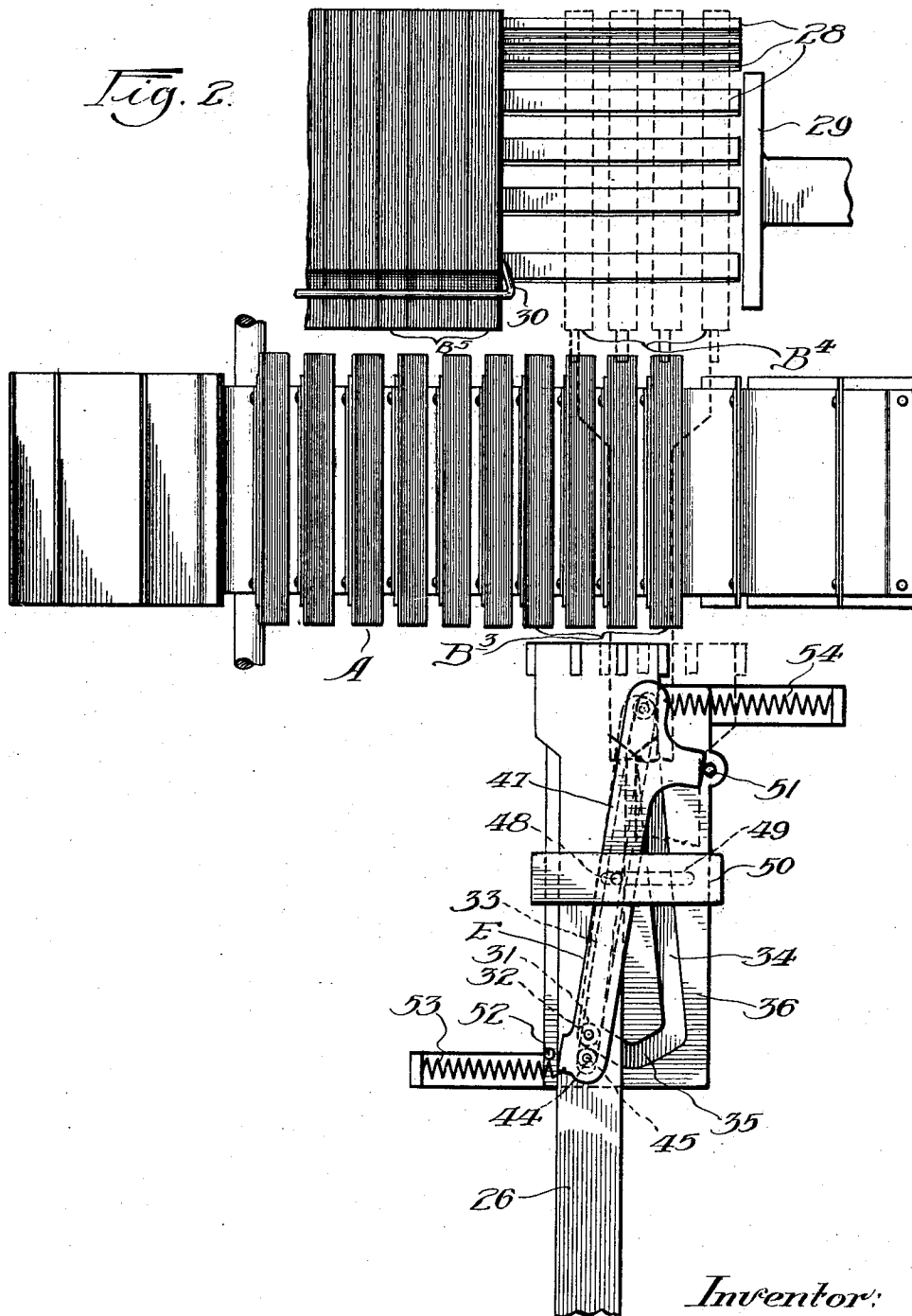
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UNITED STATES PATENT OFFICE

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MACHINE FOR PRESSING BOOKS

Application filed September 12, 1928. Serial No. 305,452.

This invention relates to a machine for pressing books and the like, and is particularly intended to receive books from a binding machine such as that shown and described in the patent to Bredenberg No. 1,073,324. Books of this type have the backs of the signatures cut away to expose the edge of each sheet of paper. These raw edges are then covered with glue, and the whole is then bound together by a strip of "super" and is secured by the same glue to a flexible back which is pressed thereon.

When these books emerge from the binder, the glue which is applied hot has not had time to become set, and the present machine for pressing these books is intended to thoroughly press and hold them for a short interval after leaving the binding machine so as to hold them accurately in proper shape during the time when the glue is setting.

These and other objects, as will hereinafter appear, are accomplished by this invention which is fully described in the following specification and shown in the accompanying drawings, in which—

Figure 1 is a partial side elevation of a machine embodying the present invention;

Fig. 2 is a top plan view of the same showing the relation of this machine to the packer;

Fig. 3 is a partially enlarged section on the line 3—3 of Fig. 2; and

Fig. 4 is a partially enlarged detail of the chain links and plates carried thereby.

The embodiment illustrated comprises a book pressing machine A shown in Fig. 1 as receiving a book B from a book binder C. Figs. 2 and 3 show a machine A for pressing books and delivering them to a well known form of packer D by means of a plunger or pusher E.

The book pressing machine A consists essentially of two chains 10 which mesh with sprockets 11 and 12, these sprockets being carried on shafts 13 and 14 which are driven from any suitable source of power. Alternate links of the chain 10 carry plates 15 extending substantially 90 degrees from the longitudinal position of the chain when placed as shown in Figs. 1 and 4.

Upon the back of each of the plates 15 is

carried a spring plate 16 which is secured thereto by means of rivets 17 near the upper edge, the spring plates 16 extending inwardly and toward the other plate. The rear or receiving end of the pressing machine A is located beneath the discharge end of the book binder C.

The books B, before reaching the part shown in Fig. 1, have been assembled and formed in a manner already known to the art as "perfect" binding. This consists in assembling the signatures and placing them between the plates 18 and 19, the latter being urged toward the former by means of springs 20 acting upon pins 21 one of which is placed at each end of one of the plates 19.

While so grouped, the backs of the signatures having the folded edges are cut away, and this lower edge is then glued, a "super" applied, and a flexible cover 22, usually of paper, is pressed upon the glued back, at which time the book B is ready to leave the binder C. To release it, the ends of the pins 21 are provided with rollers 23 which ride upon stationary cam surfaces 24, thereby forcing the pins 21 outwardly against the tension of the springs 20 and releasing the grip of the plate 19 upon the book B, thereby permitting it to drop to the dotted line position B'.

The pressing machine A is so placed and so timed with respect to a chain 25 of the binder C that one of the plates 15^a is in a diverging position owing to the fact that it is still passing around the sprocket 11, so that the book B' drops readily upon this plate and is forced by its own weight past the lower curved edge of the spring plate 16^a. As the plates move forward to a position intermediate the sprocket wheels 11 and 12, the plates assume a position substantially parallel with each other, and the plates 15 and 16 tend to approach each other. When, therefore, a book is placed between them, it is compressed and held compressed in the position B² until it is released at the discharging end of the machine.

The discharging mechanism, shown in Figs. 2 and 3, consists of a plunger 26 which reciprocates once for each four books carried

by the plates 15 and 16, and has four fingers 27 which simultaneously move four books B³ to the dotted line position B⁴, where they fall upon and are caught by a tilted rack 28 of the packer D. A plunger 29, reciprocating in
 5 timed relation to the plunger 26, then forces the four books B⁴ forward to the position B⁵ where they are caught and held by a wire retainer finger 30.

10 As the books B⁴ are thus pushed forward by the plunger 26 to the position B⁵, the books already held under the finger 30 are pushed forward. The operator then removes the books from the far end of this pile of books
 15 which is not shown, or they may be disposed of in any other manner.

It is necessary that the plunger 26 be moved forward with the books B³ while these books are being forced from between the plates 15
 20 and 16, thereby necessitating that the plunger 26 have a diagonal motion. This is accomplished by providing a cam roller 31 which is journaled upon a pin 32 on the bottom side of the plunger 26. This cam roller follows a
 25 cam groove 33, 34, 35 in a plate 36 suitably mounted upon standards 37. The plunger 26 is moved forward by means of a cam 38 on a shaft 39 which is driven in timed relation to the shaft 14 of the pressing machine A and
 30 makes one revolution for each four books.

The cam 38 acts through a cam follower 40 to move a lever 41 which is fulcrumed at 42 from the full line position of Fig. 3 to the dotted line position. In doing so, the cam
 35 roller 31 follows the diagonal groove 33 which is so formed that the plunger fingers 27 press directly against the ends of the books B³ but travel along with them. At the end of the stroke, the cam roller 31 is caused to follow
 40 the return cam groove 34, and thence back to the groove 35 to the starting point by means of spring-operated mechanism which will now be described.

The operating lever 41, together with the
 45 plunger 26, is also returned to the full line starting position by means of a spring 43. A cam roller 44 is mounted upon a pin 45 on the upper side of the plunger 26 and engages a straight cam groove 46 in a bar 47 which is
 50 provided with a central pivot 48 slidably mounted in a transverse slot 49 in a transverse member 50 carried by the plate 36. The bar 47 is normally held in the position shown at the right hand end against a stop 51 and the
 55 left hand end is held almost in contact with a stop 52 by means of springs 53 and 54.

As the plunger 26 is pushed forward from the full line position shown, the cam roller 44
 60 rides up along the groove 46, thereby tensioning the spring 54 and ensuring that the cam roller 31 will travel back along the cam groove 34. As the left end of the cam groove 34 is approached, the spring 54 is placed in tension, thereby causing the cam roller 31 to travel
 65 back along the cam groove 35. The plunger

26 is extended beyond the paper at the left and guided to maintain substantial parallelism.

It will be seen that a simple and efficient means is provided for holding and pressing
 70 the books as they emerge from the binder C, thereby ensuring that these books are firmly held so as to enable the glue to come more intimately into contact with the leaves of the book and also with the cover. This pressing
 75 also gives the book a more regular and compact form and even this short interval enables the glue to cool and set somewhat so as to provide a stronger and firmer book than would otherwise be obtained.

While I have shown and described but a single embodiment of my invention, it is to be understood that it is capable of many
 80 modifications. Changes, therefore, in the construction and arrangement may be made which do not depart from the spirit and scope of the invention as covered by the appended claims.

I claim:

1. A machine for pressing books comprising a traveling means having a series of
 85 forms for holding and pressing books as they leave a book binder, and means for discharging said books endwise from said forms.

2. A machine for pressing books comprising a traveling means having a series of parallel forms for holding and pressing books
 90 as they leave a book binder, and means for discharging said books endwise from said forms.

3. A machine for pressing books comprising a traveling means having a series of parallel forms for holding and pressing books
 95 as they leave a book binder, and means for discharging said books from said forms in groups while still pressed thereby.

4. A machine for pressing books comprising a traveling means having a series of forms for yieldably holding and pressing books
 100 as they leave a book binder, and means for discharging said books from said forms.

5. A machine for pressing books which are glued along one edge comprising a traveling
 105 means having a series of parallel plates carried thereby, and yieldable means extending substantially along the glued edge of the book for pressing said book against each plate.

6. A machine for pressing books comprising a traveling means moving at substantially
 110 a uniform speed having a series of forms for holding and pressing books as they leave a book binder, and means for discharging said books from said forms.

7. A machine for pressing books which are glued along one edge comprising two parallel
 115 chains running over similar sprocket wheels on the same shafts, parallel plates carried by links of said chains, flat spring members riveted to the back of one plate and cooperating with the next adjacent plate to hold
 120

and press a book therebetween along the glued edge of a book, and means for discharging said books endwise from said plates.

5 8. A machine for pressing books comprising a traveling means having a series of forms for holding and pressing books as they leave a book binder, and means for discharging said books from said forms, said discharging means acting to discharge books
10 while being pressed by the traveling means.

9. A machine for pressing books comprising two parallel chains running over similar sprocket wheels on the same shafts, parallel plates carried by links of said chains, yield-
15 able means carried by said chains cooperating with said plates for holding and pressing a book therebetween, and means for discharging books in groups from said pressing machine while still held by said yieldable
20 means.

10. A machine for pressing books comprising two parallel chains running over similar sprocket wheels on the same shafts, parallel plates carried by links of said chains, and flat
23 spring members riveted to the back of one and co-operating with the next adjacent plate to hold and press a book therebetween.

In testimony whereof, I have hereunto affixed my hand this 5th day of September,
30 1928.

HARLEY C. ALGER.

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