

W. B. STORY.
BOOKBINDING MACHINE.
APPLICATION FILED JAN. 20, 1919.

1,380,265.

Patented May 31, 1921.

3 SHEETS—SHEET 1.

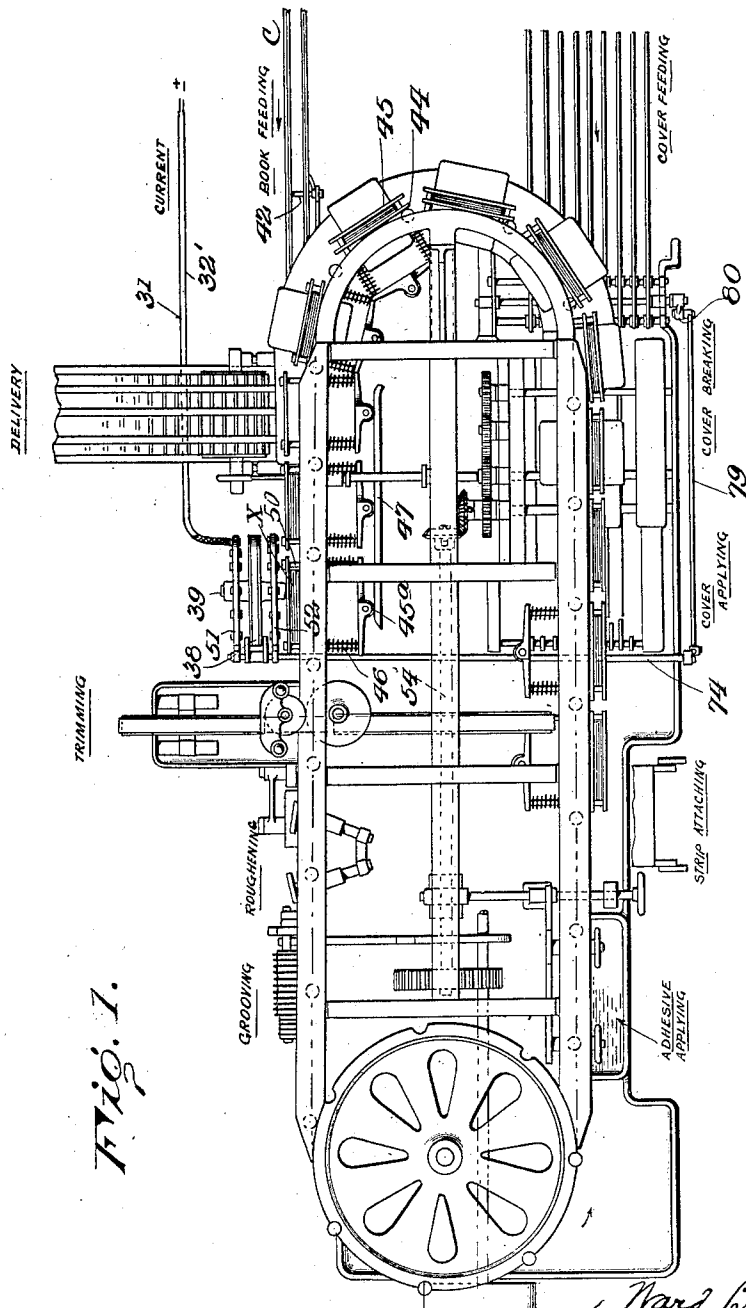


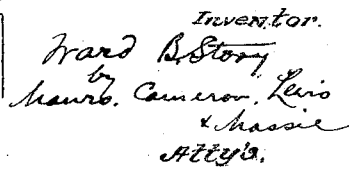
Fig. 1.

Inventor.

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1,380,265.

3 SHEETS—SHEET 2.

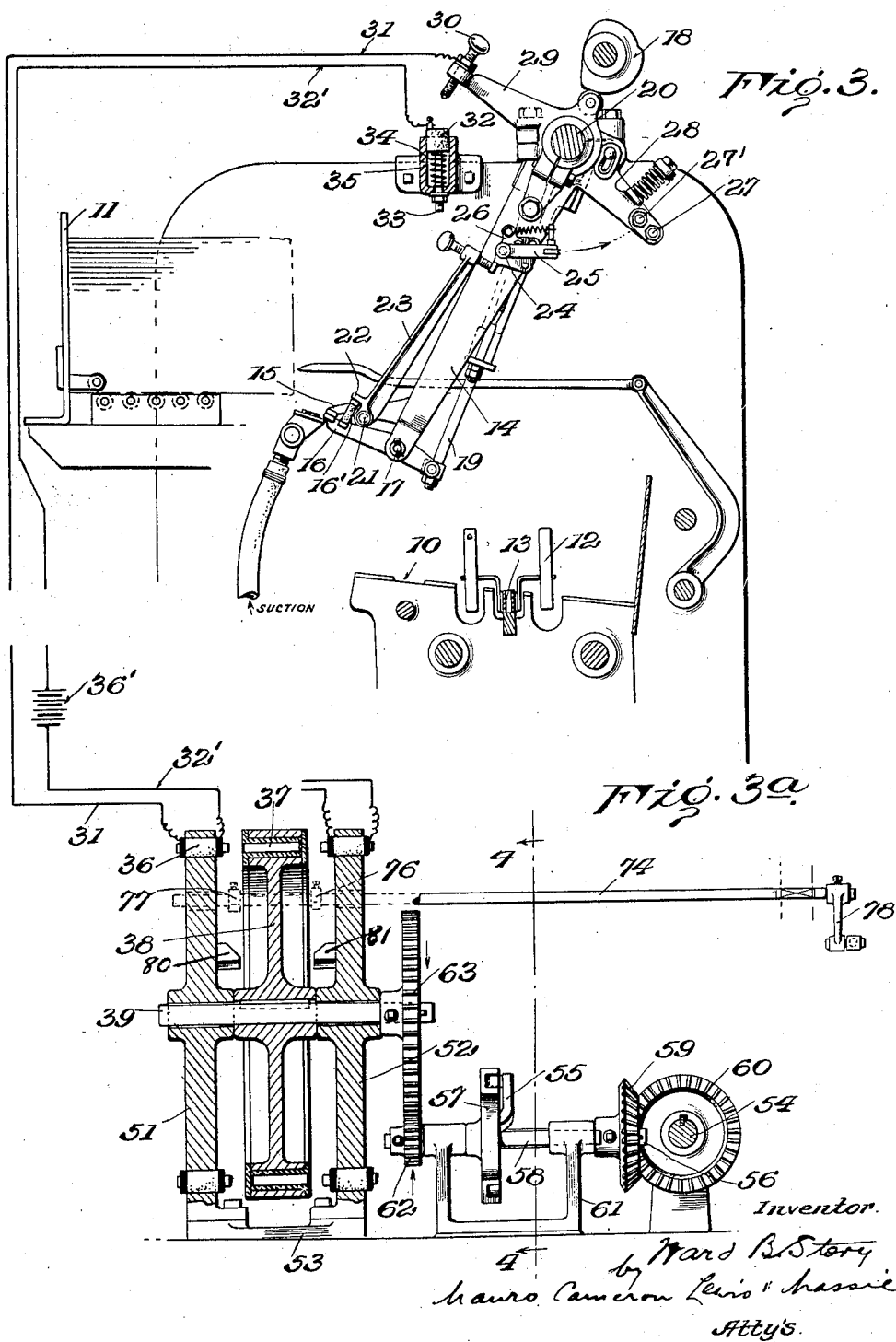


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3 SHEETS—SHEET 3.



UNITED STATES PATENT OFFICE.

WARD B. STORY, OF BROOKLYN, NEW YORK, ASSIGNOR TO T. W. & C. B. SHERIDAN COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

BOOKBINDING-MACHINE.

1,380,265.

Specification of Letters Patent.

Patented May 31, 1921.

Application filed January 20, 1919. Serial No. 272,122.

To all whom it may concern:

Be it known that I, WARD B. STORY, a citizen of the United States of America, and a resident of Brooklyn, New York, have invented a new and useful Improvement in Bookbinding-Machines, which invention is fully set forth in the following specification.

The present invention is an improvement in book-binding machines of the type shown in Bredenberg Patents Nos. 1,248,252 and Reissue 14,485, wherein groups of signatures, assembled in a gathering machine, are subsequently introduced into a train of traveling clamps in which they are held with their lower rear edges exposed to the action of the binding instrumentalities, after passing which the books are discharged into a suitable delivery.

It sometimes happens in gathering or book-assembling machines, wherein signatures are simultaneously fed from a plurality of sheet or signature sources to a common conveyer, that a signature will fail to be fed to the conveyer at some particular sheet or signature source (or a defective signature fed), whereupon the signature group that is short a signature, or into which the imperfect signature has entered, will be defective.

It has been heretofore proposed to separate such defective signature groups from the perfect books by providing mechanism, controlled by detecting devices associated with each sheet or signature source, for separating the defective books from the perfect books at the delivery. Machines of this type are illustrated in patents to Dexter No. 653,196, King No. 1,041,806, and Juengst No. 1,126,026, in each of which is provided a main conveyer to which sheets or signatures are fed from a plurality of sources of sheet or signature supply, and a detecting mechanism for each sheet or signature source. In the Dexter and Juengst machines, a procession of stops are moved with the said conveyer, said stops being operated by said detecting means, to separate the defective from the perfect books, and to distribute said books into two deliveries or piles.

While such a separating or switching construction is desirable, it has been found that, in a machine employing an endless train of

clamps which carry the groups of signatures past the binding instrumentalities (such as illustrated in Bredenberg Patent No. 1,248,252), this switching or separating of the good from the defective books may be profitably eliminated, the defective groups of signatures being fed to the train of traveling clamps with the perfect books, introduced into the appropriate clamps in the train, carried past the binding instrumentalities with the perfect books, and discharged into the same delivery with the perfect books.

The present invention resides particularly in preventing the binding instrumentalities from operating on the defective groups of signatures, this prevention being effected by suitable means controlled and operated by suitable detecting mechanism, associated with each of the sources of sheet or signature supply. Various means for effecting this object may be employed, but preferably the defective group is slightly elevated just before it is grasped by the appropriate clamp in the endless chain, with the result that the lower normally-projecting edge or back of the book is raised above the line of operation of the trimming, roughening, gluing, covering, cover-breaking and the other devices constituting the binding instrumentalities. The defective group of unbound signatures is discharged into a common delivery with the perfect books.

By means of such a construction for preventing the operation of the binding instrumentalities on the defective groups of signatures, the machine is greatly simplified, as the necessity for switching or separating devices, and the complicated means for operating the same (such as shown in the Dexter, King, and Juengst patents referred to), is removed.

Any suitable or desired detecting mechanism may be employed for preventing the operation of the binding instrumentalities on the defective group, either of the "feeler" variety, as shown in the Dexter or King patents, or of the "calipering" variety as disclosed in the Juengst Patents 1,126,026 and 761,496. Preferably a plurality of stops are mounted on a rotating carrier, one of said stops or members being "set" or rendered operative upon the absence of a signature, or the presence of a defective signa-

ture, so that, at an appropriate time corresponding to the moment when the defective group is being grasped by its clamp, said "stop" or member so set operates, through
 5 suitable connections, to slightly elevate said defective group. The result is that the clamp closes on the defective group which has been elevated so that its back edge is above the normal line of movement of that
 10 of the perfect books, whereupon the binding instrumentalities cannot act on the same.

The present device, so far as I am aware, is the first wherein groups of signatures are
 15 fed in a train of clamps past binding instrumentalities, with means, controlled by suitable detecting mechanism, for preventing the operation of the binding instrumentalities; and a single delivery into which the
 20 perfect and bound books, and the unbound defective signature groups, are discharged. Such a machine has certain obvious advantages which will be apparent to one skilled in the art.

While the invention has been illustrated herein as embodied in a machine of the "perfect binding" type, *i. e.* one in which the backs of the books are trimmed, roughened, glued, and cover applied, the invention may be also advantageously employed
 30 in association with covering machines employing an endless train of clamps, but in which the signature-groups are stapled or wire-stitched before such groups are introduced into the clamps. I have also shown
 35 and described herein means for tripping the cover-feed mechanism to prevent a cover being fed to the defective group.

The invention will be better understood
 40 by reference to the accompanying drawings, illustrating one embodiment of the inventive idea, and wherein—

Figure 1 is a plan view of a book-binding and covering apparatus embodying the present
 45 invention;

Fig. 2 is a diagrammatic elevation, indicating a signature-gathering or assembling mechanism in association with the book-binding and covering apparatus of Fig. 1
 50 and showing the application of the present invention;

Fig. 3 is a transverse section through one form of gathering machine, with various parts omitted, showing one form of detecting mechanism preferably employed;

Fig. 3^a is a transverse section partly in elevation, of the structure shown in Fig. 4;

Fig. 4 is an enlarged detail on the line 4—4, Fig. 3^a, showing one of the carriers
 60 for the electromagnet and associated parts; and

Figs. 5 and 6 are details of the mechanism for elevating the leveling table.

Referring to the drawings, wherein like
 65 reference numerals indicate like parts, A in-

dicates any suitable or usual form of gathering or assembling machine in which sheets or signatures are assembled in book form.

The groups of signatures are fed from this gathering machine to a book-binding
 70 and covering machine B preferably of the type illustrated in Bredenberg Patent No. 1,248,252, dated Nov. 27, 1917, wherein the signature groups are fed into an endless
 75 train of traveling clamps from an infeed trough C along which they are progressed while supported on their rear edges, as fully described in said patent. Inasmuch as the
 80 signature groups at the end of the gathering machine are resting flatwise on table 10 (Fig. 3), suitable means are provided for receiving said groups in that position, turning the same and depositing them on their
 85 rear edges in the infeed trough C. Any suitable means D may be employed for this purpose but preferably there is employed the so-called "rotary delivery" or the twisted rail construction of Juengst Patent No. 846,923.

The gathering machine A is provided
 90 with a plurality of sources of sheet or signature supply, as hoppers 11, from which the lowermost sheets or signatures are simultaneously withdrawn and deposited on table
 95 10, preferably slightly inclined, and along which they are progressed in the usual manner by pins 12 carried by endless conveyer 13. The withdrawing means are preferably
 100 of the well known swinging gripper type comprising a pair of arms 14 each provided with a fixed jaw 15 and having a movable jaw 16 pivoted thereto at 17. Said movable jaw is moved toward said fixed jaw by a
 105 cam 18 operating through rod 19 in the well known manner described in Gitzendanner Patent No. 1,203,109. The whole gripper construction is rocked from shaft 20 in any
 suitable or usual manner.

Preferably the detecting mechanism for preventing the operation of the binding
 110 instrumentalities on defective signature groups is carried by one of said gripper arms 14. That detecting mechanism employs a bell-crank lever pivoted at 21 and having a short arm 22 and a long arm 23. Said bell-crank
 115 lever is rocked on its pivot by the engagement of a stud 16', carried by movable jaw 16, with a similar stud carried by the short arm 22. Pivoted on said gripper arm 14 at
 120 24, near the upper end of the long arm 23 of the bell-crank lever, is a detecting or contact finger 25 which, during the normal operation of the machine (*i. e.* when signatures
 125 of a desired thickness are being withdrawn by the grippers) is moved by said bell-crank lever, through an intermediate member 26, also pivoted at 24, to pass through the opening
 130 between two abutments 27 and 27'. These abutments are mounted on an arm 28 carried by a sleeve encircling shaft 20, 130

and said arm 28 is adjustably connected to a second arm 29 preferably carried thereby.

When arm 28 is moved, arm 29 accordingly moves therewith; and, if no signature is seized by the gripper jaws, or if one that is too thin or too thick is seized, the finger 25 will engage one or the other of said abutments (the upper abutment in the event no signature is seized or one that is too thin, and the lower in case one that is too thick is seized), thus swinging the free end of arm 29 downwardly. In the end of arm 29 is mounted an insulated contact member 30 which is electrically connected to a conductor 31. This member 30 contacts with a spring-seated plunger 32, provided with a stem 33 which is encircled by a spring 34, said plunger being carried by an insulated fiber bushing 35 mounted on the frame of the machine. This plunger is electrically connected to a conductor 32', and when the aforesaid contact is made a circuit is closed through an electromagnet 36 (corresponding to the section where the defect occurred) and a suitable source of electrical energy, as a battery 36', thus setting a trip 37, of which a plurality is carried by a wheel 38 mounted on shaft 39, that operates at an appropriate moment, and through suitable mechanism (hereinafter described) to elevate the defective group as it is seized by its clamp in the binding machine B, thus preventing the operation of the binding instrumentalities thereon.

As heretofore stated, after the book leaves the gathering machine proper, it is turned from its flatwise position until the signatures rest on their rear edges in the infeed trough or way C along which they are fed by a chain 41 provided with pushers 42 (Fig. 1) that engage the books and progress them to the binding machine.

This binding machine preferably consists of an endless train of book clamps, each clamp consisting of an inner member 44 and a movable outer or presser-member 45. Each clamp member 45 is mounted to separate from and approach to its complementary clamp member 44, for discharging, receiving and clamping the books; and a powerful spring device 46 is provided for each clamp to hold it closed firmly upon the book until the clamp is opened, as by rail 47.

As each book reaches the top of the inclined trough C, under the influence of its pusher 42, it commences to enter cornerwise in the open book-clamp and finally comes to a point above a leveling table 48 mounted on bracket 49 (Fig. 5). The clamp guide rod (Fig. 1) pushes the book forward with the clamp until the automatic closing of the same (due to the termination of the rail 47) causes the book to be firmly grasped between the clamp members—which occurs before the book has passed beyond the posi-

tion in which it is supported on the leveling table.

If the signature group is defective, it is the object of the invention to prevent the operation thereon of the binding instrumentalities indicated on Fig. 1. As is well understood in the art, and as fully described in Patent No. 1,248,252, these binding devices operate on the lower exposed edges of the groups that project from the clamps. In the particular embodiment of the inventive idea here disclosed, the defective group is elevated as it rests on the leveling table 48 so that, when the clamp closes, the edges of the signatures of the defective group, which are normally operated on by the binding instrumentalities, will be out of range of the same; that is to say, the defective group will be clamped in such an elevated position that the binding means cannot perform their normal functions.

The elevation of the leveling table may be effected in various ways, one simple and preferred method being to utilize the set or operative trip 37, said trip preferably operating when a defective group is resting on table 48 to elevate the latter just before the clamp is closed.

The shaft 39 (Fig. 3^a), on which is mounted wheel 38 that carries the trips 37, is supported in bearings in supports 51 and 52 which latter are mounted on the machine frame at 53. These supports carry a plurality of electromagnets 36, one for each source of signature supply. For the sake of clearness, the electrical connections for only two of these electromagnets are shown, though it will be understood that each magnet is adapted to be energized by the closing of the circuit at its hopper. Alternate trips 37 are adapted to be moved laterally by the magnets on support 51 and the remainder by the magnets on support 52, though, if desired, a single large support carrying all the magnets might be utilized, in which event all the stops would be moved in the same direction. Any desired or suitable means for limiting the movement of the trips 37, when influenced by the magnets, may be employed.

Shaft 39 is preferably driven from the main drive shaft 54 of the machine, and any suitable connections may be employed. The rotation of the wheel 38 is preferably intermittent and preferably timed so that one of the trips 37 will be immediately opposite one of the electromagnets 36 at the time the contact member 30 engages its corresponding contact member 32. Preferably there is employed the well known "Geneva stop" drive, one member 55 (Figs. 3^a and 4) of which is mounted on shaft 56 and the other member 57 on shaft 58. Shaft 56 carries a bevel gear 59 that meshes with a similar bevel gear 60 on drive shaft 54, and shaft

58 is rotated by the engagement of the members 55 and 57 of the Geneva drive. Both of shafts 56 and 58 are mounted in suitable standards 61. Shaft 58 has fixedly secured thereto a pinion 62 that meshes with a gear 63 fixedly secured to shaft 39, the proportion being preferably such that one-quarter of a turn of pinion 62 will rotate gear 63 an angular distance corresponding to the space between two of the trips 37 that project from the same side of wheel 38.

The trip 37 which has been displaced laterally, or rendered operative, elevates the leveling table at the appropriate time through any suitable means, but preferably there is provided a pair of levers 64 and 65 (Fig. 5) pivoted, respectively, at 66 and 67 to bracket 49. One arm of lever 64 engages and supports the under side of table 48, but is not fixedly connected thereto. The other arm of said lever is preferably provided with a segment 68 that meshes with a similar segment 69 on one arm of lever 65. The other arm of lever 65 is secured to the under side of table 48 at 70. Lever 64 is provided with a pair of downwardly projecting lugs 71 and 72 (Fig. 6), the lug 71 being adapted to be engaged by the trips 37 that are moved laterally from one side of wheel 38, and the lug 72 by the trips on the other side of said wheel. When either of said lugs 71 or 72 is engaged by a set trip 37, the longer arm of lever 64 is elevated and, through the connections described, also the longer arm of lever 65—thus effecting the necessary raising of the table to elevate the defective signature group just prior to the closing of the clamp. A spring 73 may be employed, if desired, to assist in returning the parts to the position shown in full lines in Fig. 5.

Means are preferably provided whereby a trip 37 that has been rendered operative and which has effected the elevation of the table 48 shall also operate the trip of the cover-feed to prevent a cover being fed to the defective group of signatures when it reaches the position at which a cover is normally applied. This may be effected in any suitable manner, but preferably there is mounted adjacent the periphery of the wheel or carrier 38 a shaft 74 (Figs. 3^a and 4) carried in lugs or brackets 75 projecting from the supports 51 and 52, on which the electromagnets are mounted. This shaft 74 has fixed thereon a pair of trip arms 76 and 77, one arranged on either side of the rotating wheel 38 and projecting into the path of the set or operative trips 37. The trip arm 76 will be engaged by the trips that project from one side of the wheel 38 and the trip arm 77 by the trips on the other side of said wheel. When an operative trip 37 engages either arm 76 or 77, it rocks the same downwardly and rotates shaft 74. Said shaft

is operatively connected to the trip mechanism of the cover feeder which may be, and preferably is, of the well-known Cross variety; an arm 78 (Fig. 3^a) secured to shaft 74 being connected to one end of a link 79 (Fig. 1), the other end of said link being connected to an arm 80 that projects downwardly from the shaft of the cover feeder on which the trip lever is mounted. The cover-feed mechanism is tripped when the cover, which would otherwise be fed to the cover-applying point (Fig. 1), is in position to be moved. The time of tripping would vary, for example, according to the distance of the cover supply from the cover-applying point and the speed at which the cover is moved; but, assuming that the speed of movement of the cover and the speed of the train of endless clamps is the same, the tripping would take place when the defective group was the same distance from the cover-applying point as the cover supply is from that point.

The trips 37 are returned to their inoperative position by any suitable means, although there is preferably carried, by supports 51 and 52, cam surfaces 80 and 81 (Fig. 3^a) which are engaged by the set or operative trips after they have operated the arms 76 and 77, thus returning the trips to their inoperative position.

Any desired number of trips 37 may be mounted on the wheel 38, so long as the number is equal to or in excess of the number of hoppers or sources of signature supply plus the number of spaces or stations between the point where the signature groups are clamped at leveling plate 48 and the point where the cover is applied. The number of stops that are needed will, as is well understood, vary in different machines.

The operation of the device is as follows: Should a signature fail to be withdrawn, for example, from a hopper or source of signature supply, the circuit will be closed at that point and one of the electromagnets 36, corresponding to the hopper where the defect occurred, will be energized. The trip opposite thereto—the wheel 38 being preferably stationary at this moment—will be displaced laterally, and thereafter said trip will raise the leveling table 48, while the defective group is resting thereon, thus elevating said group just before the clamp closes thereon. Referring to Fig. 1, let us assume that X indicates a defective group. The clamp is about to close, inasmuch as roller 45^a is near the end of the track. The defective group is elevated in the clamp at this time and the clamping will be effected as soon as the roller passes the end of the rail. Thereupon the defective group will be carried past, but out of the range of operation of, the trimming, roughening, grooving, adhesive-applying, strip-attaching, cover-ap-

plying, and cover-breaking devices (when the invention is used with a machine of the "perfect binding" type) and will be finally discharged, by the opening of the clamp, into the delivery with the good books, the unbound signatures of the defective group being thereafter picked out from among the good books by an operator.

The continued rotation of wheel 38 will ultimately, and at the appropriate moment, cause the set trip 37 to rock shaft 74 and trip the cover-feed mechanism, thus preventing any cover being fed to the defective signature-group.

While, for the purpose of clearness, one expression of the inventive idea has been herein described and illustrated in considerable detail, it is to be understood that the invention is not limited thereto, but that the inventive idea is susceptible of various electrical and mechanical expressions within the scope of the appended claims. Further, it is to be understood that, while the preferred use of the invention is in association with a machine of the "perfect binding" variety, it may also be used advantageously with simple covering machines wherein the groups of signatures are secured together, as by stapling or wire-stitching, before the book enters its clamp.

It is to be understood that by "imperfect" signature, as the term is hereinbefore used, is meant one that is too thick, too thin, or more than one; or a torn or reversed signature; and by "defective signature group" is meant one into which a signature such as designated has been included, or a group that lacks one or more signatures.

What is claimed is:—

1. In combination, an endless series of book-conveying clamps, binding instrumentalities arranged in association therewith and adapted to operate on the groups of signatures in said clamps, means for assembling signatures into groups and introducing them into said clamps, means for detecting the presence of an imperfect signature as the groups are being assembled, and mechanism controlled by said means and operating on the group into which an imperfect signature enters to displace the same in its clamp and thus prevent the operation of the binding instrumentalities on said group.

2. In combination, an endless series of book-conveying clamps, binding instrumentalities arranged in association therewith and adapted to operate on the groups of signatures in said clamps, means for assembling signatures into groups and introducing them into said clamps, means for detecting the absence of a signature as the groups are being assembled, and mechanism controlled by said means and operating on the defective group to displace the same in its clamp and

thus prevent the operation of the binding instrumentalities thereon.

3. In combination, an endless series of book-conveying clamps, binding instrumentalities arranged in association therewith and adapted to operate on the groups of signatures in said clamps, means for assembling signatures into groups and introducing them into said clamps, means for detecting the presence of an imperfect signature as the groups are being assembled, and mechanism controlled by said means and operating on the group into which an imperfect signature enters as said group is introduced into its clamp to prevent the operation of the binding instrumentalities on said group.

4. In combination, an endless series of book-conveying clamps, binding instrumentalities arranged in association therewith and adapted to operate on the groups of signatures in said clamps, means for assembling signatures into groups and introducing them into said clamps, means for detecting the absence of a signature as the groups are being assembled, and mechanism controlled by said means and operating on the defective group as said group is introduced into the clamp to prevent the operation of the binding instrumentalities thereon.

5. In combination, an endless series of book-conveying clamps, means for applying covers to the books in said clamps, means for assembling signatures into groups and introducing them into said clamps, means for detecting the presence of an imperfect signature as the groups are being assembled, and mechanism controlled by said means and operating on the group into which the imperfect signature entered to displace the same in its clamp and thus prevent the operation thereon of the cover-applying means.

6. In combination, an endless series of book-conveying clamps, means for applying covers to the books in said clamps, means for assembling signatures into groups and introducing them into said clamps, means for detecting the absence of a signature as the groups are being assembled, and mechanism controlled by said means and operating on the defective group to displace the same in its clamp and thus prevent the operation thereon of the cover-applying means.

7. In combination, an endless series of book-conveying clamps, means for applying covers to the books in said clamps, means for assembling signatures into groups and introducing them into said clamps, means for detecting the presence of an imperfect signature as the groups are being assembled, and mechanism controlled by said means and operating on the group into which the imperfect signature entered as said group is introduced into its clamp to prevent the

operation thereon of the cover-applying means.

8. In combination, an endless series of book-conveying clamps, means for applying covers to the books in said clamps, means for assembling signatures into groups and introducing them into said clamps, means for detecting the absence of a signature as the groups are being assembled, and mechanism controlled by said means and operating on the defective group as said group is introduced into its clamp to prevent the operation thereon of the cover-applying means.

9. In combination, an endless series of book-conveying clamps, binding instrumentalities arranged in association therewith and adapted to operate on the groups of signatures in said clamps, means for assembling signatures into groups and introducing them into said clamps, means for detecting the presence of an imperfect signature as the groups are being assembled, and mechanism controlled by said means and operating on the group into which an imperfect signature enters to slightly elevate the same just before its clamp closes whereby the defective group is carried through its orbit at a greater elevation than the perfect books.

10. In combination, an endless series of book-conveying clamps, means for applying covers to the books in said clamps, means for assembling signatures into groups and introducing them into said clamps, means for detecting the presence of an imperfect signature as the groups are being assembled, and mechanism controlled by said means and operating on the group into which the imperfect signature entered to slightly elevate the same just before its clamp closes whereby the defective group is carried through its orbit at a greater elevation than the perfect books.

11. In combination, an endless series of book-conveying clamps, means for applying covers to the books in said clamps, means for assembling signatures into groups and introducing them into said clamps, means for detecting the absence of a signature as the groups are being assembled, and mechanism controlled by said means and operating on a defective group to slightly elevate the same just before its clamp closes, whereby said defective group is carried through its orbit at a greater elevation than the perfect books.

12. In combination, an endless series of book-conveying clamps, means for applying covers to the books in said clamps, means for assembling signatures into groups and introducing them into said clamps, means for detecting the presence of an imperfect signature as the groups are being assembled, and mechanism controlled by said means and operating on the group into which the imperfect signature entered to slightly elevate

the same just before its clamp closes, whereby the defective group is carried through its orbit at a greater elevation than the perfect books.

13. In combination, an endless series of book-conveying clamps, means for assembling signatures into groups from a plurality of sources of sheet or signature supply and introducing said groups into said clamps, detecting means associated with each signature source and operating to detect imperfect signatures or the absence of a signature, and mechanism controlled by said detecting means and operating on a defective group to elevate the same just before its clamp closes.

14. In combination, a traveling clamp, means for assembling signatures into groups from a plurality of sources of sheet or signature supply and introducing a group into said clamp, detecting means associated with each signature source and operating to detect imperfect signatures or the absence of a signature, and means controlled by said detecting mechanism operating on a defective group to elevate the same just before said clamp closes.

15. In combination, a traveling clamp, a leveling table over which said clamp moves and on which signature-groups rest, means for assembling signatures into groups from a plurality of sources of sheet or signature supply and introducing a group into said clamp, detecting means associated with each signature source and operating to detect imperfect signatures or the absence of a signature, and means controlled by said detecting mechanism elevating said table when a defective group is resting thereon just before the clamp closes on said group.

16. In combination, an endless series of book-conveying clamps, binding instrumentalities arranged in association therewith adapted to operate on the groups of signatures in said clamps, means for assembling signatures into groups and introducing them into said clamps, means for detecting the presence of an imperfect signature as the groups are being assembled, a rotary carrier, a plurality of stops mounted thereon, connections whereby one of said stops is rendered operative by said detecting means, and mechanism controlled by said stop and operating on the group into which an imperfect signature enters to prevent the operation of the binding instrumentalities on said group.

17. In combination, an endless series of book-conveying clamps, binding instrumentalities arranged in association therewith adapted to operate on the groups of signatures in said clamps, means for assembling signatures into groups and introducing them into said clamps, means for detecting the presence of an imperfect signature as the

groups are being assembled, a rotary carrier, a plurality of stops mounted thereon, electrical connections whereby one of said stops is rendered operative by said detecting means, and mechanism controlled by said stop and operating on the group into which an imperfect signature enters to prevent the operation of the binding instrumentalities on said group.

10 18. In combination, an endless series of book-conveying clamps, binding instrumentalities arranged in association therewith including means for feeding covers adapted to operate on the groups of signatures in
15 said clamps, means for assembling signatures into groups and introducing them into said clamps, means for detecting the presence of an imperfect signature as the groups are being assembled, a rotary carrier, a plurality of stops mounted thereon, electrical
20 connections whereby one of said stops is rendered operative by said detecting means, and mechanism controlled by said stop and operating on the group into which an imperfect signature enters to prevent the operation of the binding instrumentalities on
25 said group, said stop also tripping the cover-feeding means to prevent the feeding of a cover as said defective group passes.

30 19. In combination, an endless series of book-conveying clamps, a leveling table over which said clamps move and on which signature-groups rest, means for assembling signatures into groups from a plurality of
35 sources of sheet or signature supply and introducing a group into one of said clamps, a rotary carrier, a plurality of stops carried thereby, detecting means associated with each signature source and operating to detect imperfect signatures or the absence of
40 a signature, means controlled by said detecting means for rendering said stops operative, and means actuated by an operative

stop for elevating said table when a defective group is resting thereon just before the clamp closes on said group. 45

20. In combination, an endless series of book-conveying clamps, a leveling table over which said clamps move and on which signature-groups rest, means for assembling signatures into groups from a plurality of sources of sheet or signature supply and introducing a group into one of said clamps, a rotary carrier, a plurality of stops carried thereby, detecting means associated
55 with each signature source and operating to detect imperfect signatures or the absence of a signature, electromagnetic means controlled by said detecting means for rendering said stops operative, and means actuated
60 by an operative stop for elevating said table when a defective group is resting thereon just before the clamp closes on said group.

21. In combination, an endless series of book-conveying clamps, a leveling table over which said clamps move and on which signature-groups rest, means for assembling signatures into groups from a plurality of sources of sheet or signature supply and
70 introducing a group into one of said clamps, a rotary carrier, a plurality of stops carried thereby, detecting means associated with each signature source and operating to detect imperfect signatures or the absence of a signature, means controlled by said detecting means for rendering said stops operative, cover-feeding means and means actuated by an operative stop for elevating
75 said table when a defective group is resting thereon just before the clamp closes on said group, said stop also tripping the cover-feeding means. 80

In testimony whereof I have signed this specification.

WARD B. STORY.