Jan. 25, 1938. C. J. H. ANDERSON 2,106,419

METHOD OF BINDING BOOKS

Filed March 18, 1937

Fig. 1.

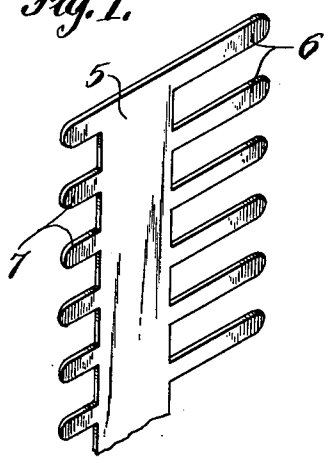


Fig. 2.

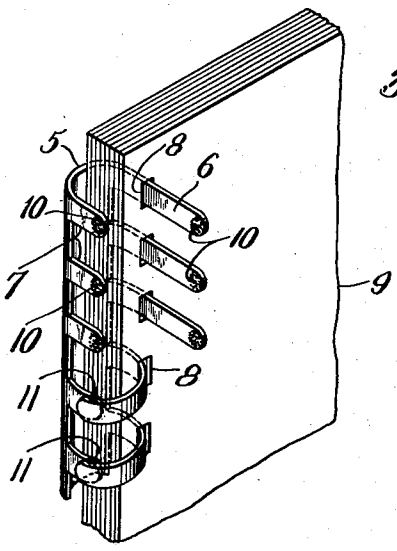


Fig. 3.

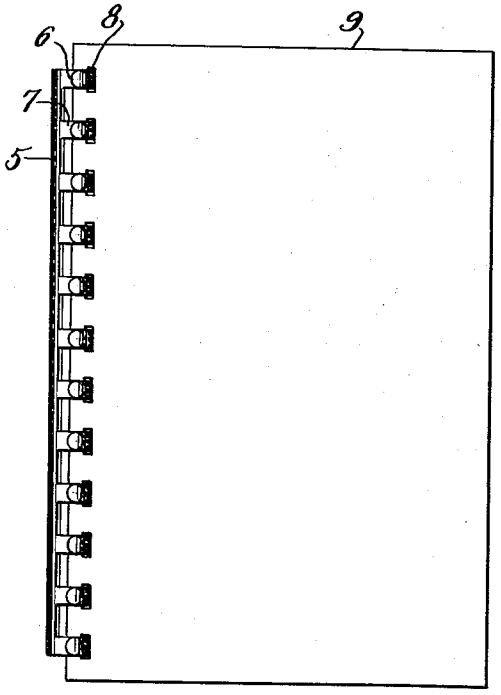


Fig. 4.

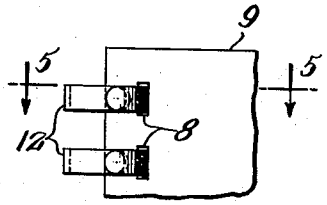
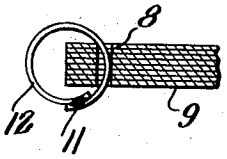


Fig. 5.



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METHOD OF BINDING BOOKS

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7 Claims. (Cl. 281—21)

My invention relates to an improved method of binding books, and is particularly applicable to bindings which are formed of celluloid, cellulose acetate, or some other flexible, resilient and fusible material.

Binders of this character are generally in the form of a strip having projecting fingers extending through appropriate openings in the leaves of the book to be bound. It is the present practice to first form the binder in finished shape, with the binder and fingers bent from flat blanks into cylindrical form, with the fingers overlapping or underlapping oppositely disposed parts of the binder. The binder is then sprung apart, and the fingers inserted in openings in the leaves of the book. When the fingers have been inserted the parts spring back into the underlapping position in which they were first bent. This method of binding books is open to a number of objections, the most important of which is that it takes time and care to separate the fingers from their overlapped position on the binder, insert them in openings in the leaves of the book, and to return the fingers to the proper position after having been inserted in the openings.

It is the primary object of my invention to improve the method of binding books with a binder of the character described, so that the binder can be quickly inserted through the openings in the leaves, and quickly shaped in the proper form and permanently secured in that position.

It is a further object of my invention to provide a method of binding books with a binder of the character described by using an adhesive or solvent permanently to secure the parts of the binder in position, while providing a temporary securing of the binder while the permanent adhesive or solvent sets.

It is a further object of my invention to provide a method of binding books with a binder of the character described in which the binder is first inserted through openings in leaves of the book, and thereafter bent to final shape.

Another object of my invention is the provision of an improved method of permanently securing the binder in position without impairing or marring the appearance thereof.

The foregoing, together with such other objects as may heretofore appear, I accomplish in the following manner, reference being had to the accompanying drawing, wherein:

Figure 1 is a fragmentary perspective view of my improved binder prior to its application to a book;

Figure 2 is a fragmentary perspective view showing the binder applied to a book, the upper portion of the binder being shown as only partially bent and the lower portion being shown completely bent;

Figure 3 is a face view of a complete book and binder;

Figure 4 is a fragmentary face view illustrating a modification; and

Figure 5 is a section taken on the line 5—5 of Figure 4.

Referring to Figure 1, the binder consists of a blank having a back portion 5, with fingers 6 projecting from one side thereof, and fingers 7, oppositely disposed to fingers 6, projecting from the opposite side thereof.

In the preferred embodiment illustrated in Figure 1, the fingers on one side of the back are longer than the fingers on the opposite side of the back. However, the fingers on opposite sides, if desired, may be of the same length, or may be alternately long and short, with the long fingers disposed oppositely to the short fingers.

The blank itself is made of celluloid, cellulose acetate, or any like material, which is flexible and can be united to another piece of like material by means of an adhesive and by fusing the pieces together.

The blank may be cut or formed from stock in any preferred manner.

In binding a book, the fingers are first inserted through appropriate openings 8 in the leaves of the book 9. An adhesive material is then applied to the extreme end portion of the fingers, as indicated by reference numeral 10. The adhesive may be applied to the fingers on one side only of the back, or may be applied to the fingers on both sides of the back. In this connection I wish to point out that in the term adhesive, I include solvents such as acetone, which will temporarily dissolve the material of the binder wherever applied thereto in a binder composed, for instance, of cellulose acetate, or will at least make it tacky so that it will adhere to another piece of the same material. Other types of adhesives, such as glue or cement, may likewise be used. All such materials I include under the general term adhesive. It is obvious, of course, that the adhesive may, if desired, be applied to the fingers before they are inserted through the openings.

The adhesive should be of such character that it will not mar the appearance of the binder. When a transparent binder is used, the solvent is well adapted for the purpose, as it is likewise quite transparent.

After the fingers have been inserted through the openings 8, and the adhesive applied, the binder is then bent into a cylindrical form, with the ends of the fingers 6 on one side of the back overlapping the ends of the fingers 7 on the opposite side, with the adhesive between the fingers at the points where they overlap. Known adhesives do not set quickly enough to permit immediate release of the binder after the ends of the fingers have been bent into overlapping position, and flexibility and resilience of the binder is such that the fingers will spring apart unless they are held in position temporarily while the adhesive sets. According to my invention, I hold the binder with fingers in overlapping position by fusing the edges of the fingers together at the overlapped portion, as indicated by the reference numeral 11. This fusing may be accomplished by touching the edge portions with a hot metallic rod, or in any other similar manner, so long as care is used to apply the heat only at the edges of the fingers. If the heat is applied on the surface of the fingers, it will mar the appearance of the binder, and it is for this reason that the heat must be applied only at the edges. This fusion of the edges of the overlapping fingers provides a temporary bond which will hold the binder in proper position until the adhesive can set. The fusion at the edge of the fingers is not strong enough to hold the binder in proper position when in use, for books so bound are of course subject to the usual wear of books of this character, and any undue pressure or strain on the binder would break the bond formed by the fusion of the parts. However, adhesive of the character which I contemplate using will generally set within a few minutes, and will hold the binder permanently in position thereafter, when the book is put in use.

The binder is generally cut from flat stock, and may be left flat as the fingers are inserted in the openings of the leaves of the book, or may be bent to a substantial extent, a U shape for instance, if desired. However, it will be found to be easier to insert the fingers through the openings 8, if the blank is not bent to a position with the fingers overlapped before they are inserted in the leaves of the book. The final bending of the binder to a position where the ends of the fingers overlap, should be done after the fingers have been inserted through the openings.

If desired, separate rings 12 for each opening 8 of the book may be provided, as illustrated in Figure 4. These rings would, of course, be inserted through the openings, bent into position with the adhesive on the ends, and overlapped and fused in exactly the same manner as described above in connection with the binder having the back. One advantage of using separate rings is that different colored rings may be used in binding the book, in order to improve the appearance thereof.

If desired, rings 12 may be used in combination with the type of binding illustrated in Figure 1, in any desired arrangement.

My improved method of binding secures many advantages not to be had in the present methods of binding. Among such advantages are the following:

1. In machine binding the speed of operation can be very materially increased, as it would not be necessary to hold the blank in position in the machine while waiting for the permanent adhesive to set.

2. A permanently sealed back rather than a flexible opened back is provided.

3. The use of lighter material is made possible with consequent reduction in cost.

4. Less material is required, as the overlap of fingers is less than that necessary in the case of binders where adhesive is not used.

5. As the fingers may be inserted while the blank is flat, or at least before the fingers have been overlapped, a great deal of time is saved in inserting the fingers in openings in leaves of the book. Where the binder must be sprung apart to insert the leaves, it is time-consuming and difficult. In addition, further time is consumed in returning the fingers to proper overlapping or underlapping position with the opposite portion of the binder.

6. Individual rings of different colors or a combination of rings with the type of binder illustrated in Figure 1, can be used.

Although I have described by method in connection with a binder having fingers on opposite sides of the back, it will be understood that it is also applicable in the case of a binder having the fingers on one side only of the back. In such cases the fingers overlap the back itself and while it is somewhat more difficult to apply heat to the edges of the parts, it is quite possible to do it.

I claim:

1. The method of binding a book with a binder of the character described which comprises inserting fingers of the binder through leaves of the book, applying an adhesive to the ends of fingers of the binder, bending the fingers so that the ends thereof overlap ends of oppositely disposed fingers with the adhesive between overlapping portions and fusing the edges of overlapping parts of the fingers to hold the fingers in overlapped position while the adhesive sets.

2. The method of forming a binder of the character described which comprises applying an adhesive to the end of fingers of the binder, bending the binder so that oppositely disposed fingers overlap at the ends thereof and fusing the edge of overlapping parts to hold the fingers in overlapped position while the adhesive sets.

3. The method of binding a book with a binder of the character described, which comprises forming the binder in flat position, inserting fingers of the binder through leaves of the book, applying an adhesive to the ends of fingers of the binder, bending the fingers so that the ends thereof overlap ends of oppositely disposed fingers with the adhesive between overlapping portions and fusing the edges of overlapping parts of the fingers to hold the fingers in overlapped position while the adhesive sets.

4. The method of binding a book with a binder of the character described which comprises forming the binder with oppositely disposed fingers thereof out of contact, inserting fingers of the binder through leaves of the book, applying an adhesive to the ends of fingers of the binder, bending the fingers so that the ends thereof overlap ends of oppositely disposed fingers with the adhesive between overlapping portions and fusing the edges of overlapping parts of the fingers to hold the fingers in overlapped position while the adhesive sets.

5. The method of binding a book with a binder of the character described which comprises inserting fingers of the binder through leaves of the book, applying adhesive to the ends of the fingers of the binder, and of bending the fingers so that the ends thereof overlap ends of oppositely dis-

posed portions of the binder with the adhesive between overlapping portions, and fusing the edges of overlapping parts to hold them in overlapped position while the adhesive sets.

6. The method of binding a book with a binder of the character described which comprises forming the binder in U shape, inserting fingers of the of the binder through leaves of the book, applying adhesive to the ends of fingers of the binder, bending fingers so that the ends thereof overlap oppositely disposed portions of the binder with the adhesive between overlapping portions, and fusing the edges of overlapping parts to hold them in overlapped position while the adhesive sets.

7. The method of binding a book with binders of the character described which comprises inserting a part of the binder through leaves of the book, applying an adhesive to the end thereof, bending the binder so that said part overlaps an oppositely disposed part of the binder, with the adhesive between overlapping parts and fusing the edges of overlapping parts to hold them in overlapped position while the adhesive sets.

CARL J. H. ANDERSON.