Aug. 31, 1937. H. A. REICHENBACH 2,091,880

BINDING POST

Filed Dec. 19, 1935

Fig. 1.

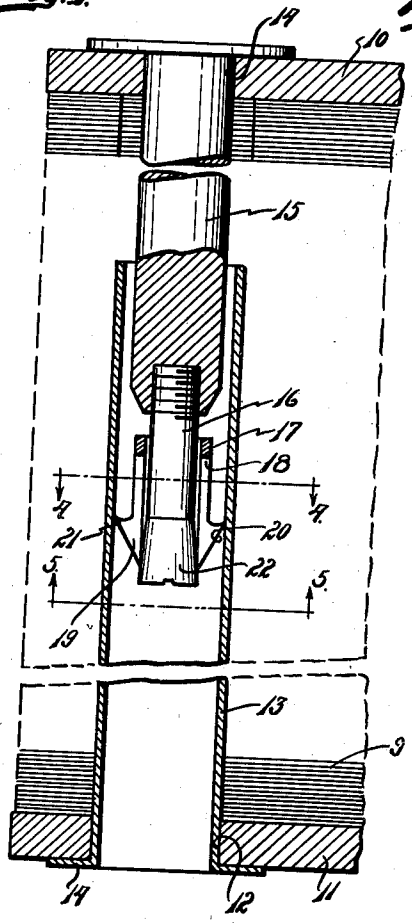


Fig. 2.

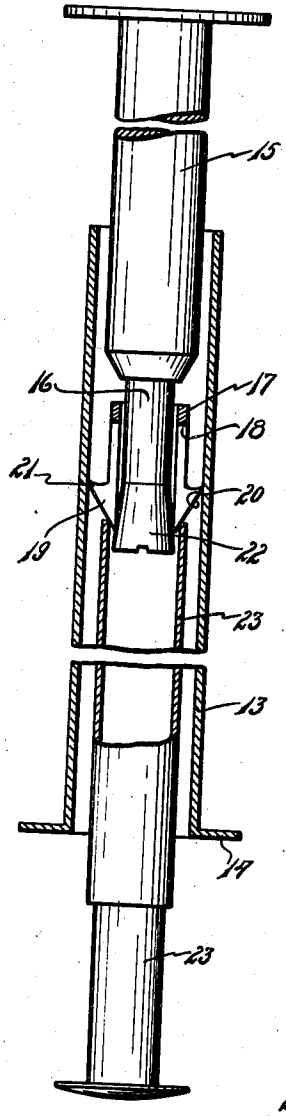


Fig. 3.

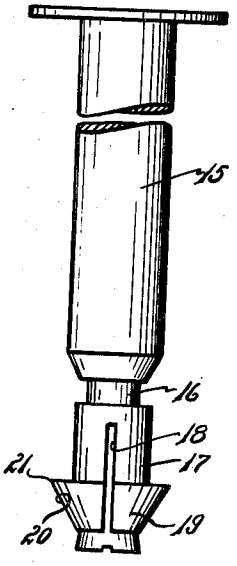


Fig. 5.

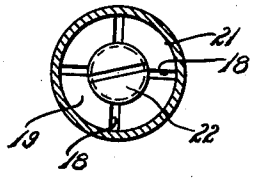


Fig. 4.

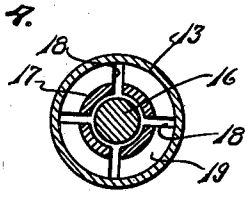
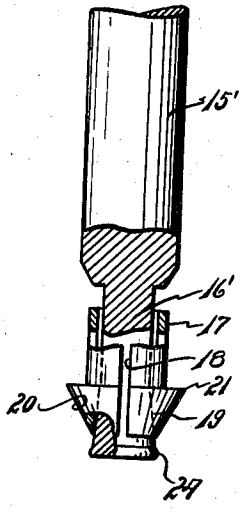


Fig. 6.



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2,091,880

UNITED STATES PATENT OFFICE

2,091,880

BINDING POST

Harry A. Reichenbach, Detroit, Mich.

Application December 19, 1935, Serial No. 55,163

5 Claims. (Cl. 85—4)

My invention relates to a new and useful improvement in a binding post adapted for use on loose leaf books and has for its object the provision of a binding post comprised of a pair of cooperating parts so arranged and constructed that when these parts are moved into binding position relatively to each other they will automatically lock and remain firmly held together until released.

Another object of the invention is the provision of a binding post of this kind which will be simple in structure, economical of manufacture, durable, easily and quickly operated and highly efficient in use.

Another object of the invention is the provision of a binding post of this kind having a binding head mounted on a tapered shank so arranged and constructed that an attempt to separate the posts will move the taper into head-expanding position to more effectively lock the parts together.

Another object of the invention is the provision in a binding post of this class of a binding head mounted on a shank and slidable axially thereof.

Other objects will appear hereinafter.

The invention consists in the combination and arrangement of parts hereinafter described and claimed.

The invention will be best understood by a reference to the accompanying drawing which forms a part of this specification, and in which,

Fig. 1 is a longitudinal, central, sectional view of the invention showing the parts in assembled relation.

Fig. 2 is a longitudinal, central, sectional view showing the releasing tool in position.

Fig. 3 is a side elevational view of the male member with a part broken away.

Fig. 4 is a view taken on line 4—4 of Fig. 1.

Fig. 5 is a view taken on line 5—5 of Fig. 1.

Fig. 6 is a fragmentary view of a slightly modified form showing a part broken away and a part shown in section.

In Fig. 1 I have illustrated the invention in use for binding the sheets 9 between the covers 10 and 11. The cover 11 is provided with an opening 12 through which is projected the tubular or female portion 13 of the binding post. The flange 14 on one end of this tubular portion serves as a head. The leaves 9 are, of course, provided with suitable openings for reception of the binding post. The cover 10 is provided with an opening 14 through which extends the pin or male portion 15 of the binding post. This male portion is adapted to enter the female portion and threaded into the male portion 15 is a stud 16 which serves to carry a clamping head. This clamping head comprises the cylindrical portion 17 which is slitted as at 18. An outwardly projecting conical head 19 is mounted on the inner end of the sleeve 17, the slits 18 extending through this head. The inner end of the head which flares outwardly from the cylindrical sleeve 17 is provided with the concave surface 20 formed by undercutting so that the peripheral edge 21 of the sections into which the head is cut will present a fine edge for contacting with the inner surface of the tubular member 13. In use the member 15 would be thrust inwardly of the female member as far as possible and the head 19 would snugly engage against the inner surface of the tubular or female member 13. It will be noted that the lower or outer end 22 of the stud 16 is tapered. Consequently, after the head has been thrust inwardly of the female member and the inwardly-directed pressure released, the leaves will force the member 15 outwardly so that the tapered surface 22 will move inwardly of the head and cause its expansion so that it is securely locked against removal. When it is desired to remove the sections 15 and 13 from cooperative relation with each other, a tubular releasing tool 23 may be inserted from the anterior end of the tube 13. In order to release the head the same will have to be slid along the stud 16 until the taper disengages from the head. For this reason, it will be noted that there is sufficient length in the member 16 to permit this slidable movement.

With a binding post constructed in this manner, the removal or replacement of leaves may be very easily and quickly effected and the binding post maintained securely in locked position at all times.

In Fig. 6 I have shown the male portion 15' provided with a stud portion 16' which is formed integral therewith. After the cylindrical portion 17 is mounted in position, the end of the portion 16' may be upset as at 24 to provide a bead which will retain the parts in assembled relation.

While I have illustrated and described the preferred form of construction, I do not wish to limit myself to the precise details of structure shown, but desire to avail myself of such variations and modifications as may come within the scope of the appended claims.

Having thus described my invention, what I

claim as new and desire to secure by Letters Patent is:

1. A binding post of the class described, comprising: a pair of cooperating sections, one of said sections being tubular and the other of said sections being insertable at one end into said tubular section; a reduced extension on the inserted end of said insertable section; an expansible cylindrical sleeve freely slidable in both directions and rotatably mounted on said extension, said extension being tapered, the slidable movement of said cylindrical member onto said tapered portion expanding the same for engagement with the inner surface of said tubular section for locking said sections in fixed relation to each other.

2. A binding post of the class described, comprising: a pair of sections, one of said sections being tubular and the other being insertable at one end thereinto; a reduced extension on the inserted end of said section terminating in a taper; a cylindrical sleeve rotatably mounted on said extension and freely slidable thereon; an outwardly projecting peripheral collar on said sleeve, adjacent its inner end, and having a surface inclined to the axis thereof, said sleeve being split longitudinally and adapted upon movement onto said tapered portion for expanding and bringing said collar into engagement with the inner surface of said tubular section for locking said sections in fixed relation to each other.

3. A binding post of the class described, comprising: a pair of cooperating sections, one of said sections being tubular and the other of said sections being insertable at one end into said tubular section; a clamping head carried on the inserted end of said section and freely slidable thereon, said end having a tapered portion, the movement of said clamping head onto said tapered portion effecting an expanding of the same into engagement with the other of said sections for locking the same against relative movement in one direction, said head having an outwardly projecting circumferential edge for engaging the inner surface of said tubular section.

4. A binding post of the class described, comprising: a pair of cooperating sections, one of said sections being tubular and the other of said sections being insertable at one end into said tubular section, said insertable section having a tapered terminal portion; an expansible clamping head mounted on and freely slideably longitudinally of said insertable section in both directions and movable onto and off of said tapered portion, said tapered portion having an outside diameter larger than the inside diameter of said head, the movement of said head onto said tapered portion a predetermined distance expanding said head into engagement with the inner surface of said tubular section for locking said sections in fixed relation, said head upon movement out of engagement with said tapered portion returning to normal non-expanding position out of locking engagement with the inner surface of said tubular section.

5. A binding post of the class described, comprising: a pair of cooperating sections, one of said sections being tubular and the other of said sections being insertable at one end into said tubular section, said insertable section having a tapered terminal portion; an expansible clamping head mounted on and freely slidable longitudinally of said insertable section in both directions and movable onto and off of said tapered portion, said tapered portion having an outside diameter larger than the inside diameter of said head, the movement of said head onto said tapered portion a pretermined distance expanding said head into engagement with the inner surface of said tubular section for locking said sections in fixed relation, said head upon movement out of engagement with said tapered portion returning to normal nonexpanding position out of locking engagement with the inner surface of said tubular section, the axial length of said head being sufficient for preventing tilting of the same relative to the axis of the section on which mounted.

HARRY A. REICHENBACH.