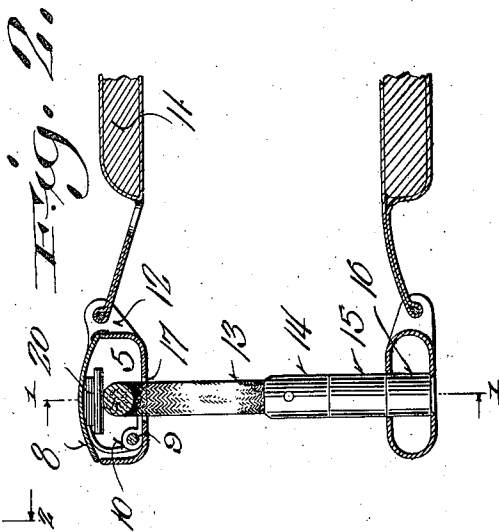
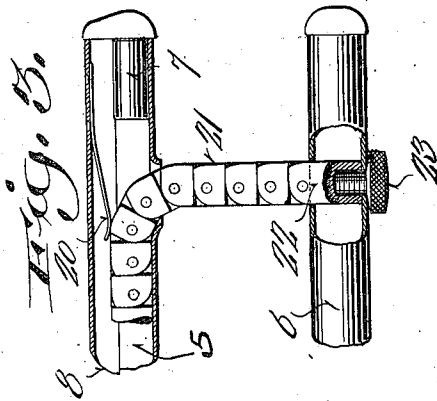
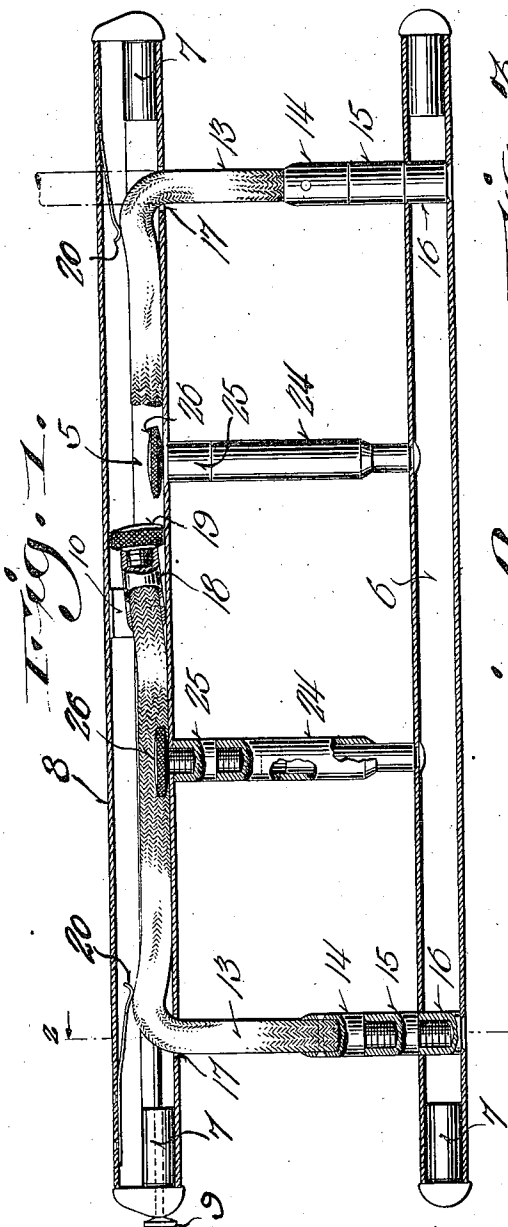


H. C. MILLER,  
 LOOSE LEAF BINDER.  
 APPLICATION FILED NOV. 9, 1916.

1,242,018.

Patented Oct. 2, 1917.

2 SHEETS—SHEET 1.



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# UNITED STATES PATENT OFFICE.

HENRY C. MILLER, OF MILWAUKEE, WISCONSIN.

## LOOSE-LEAF BINDER.

1,242,018.

Specification of Letters Patent.

Patented Oct. 2, 1917.

Application filed November 9, 1916. Serial No. 130,330.

*To all whom it may concern:*

Be it known that I, HENRY C. MILLER, a citizen of the United States, and resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Loose-Leaf Binders; and I do hereby declare that the following is a full, clear, and exact description thereof.

The present invention relates to new and useful improvements in loose leaf binders of that general type including a pair of binder heads and connecting members for the heads having portions flexible throughout and movable into one of the heads to provide for adjustment of the connecting members between the heads.

It is primarily the object of the present invention to increase the ease and rapidity of manipulation of devices of this type and it is more particularly an object to provide an arrangement whereby the connecting members may be manually gripped to procure their movement into and out of one of the heads, in contra-distinction to various arrangements heretofore provided wherein the connecting members are moved into the head by feed screw operating means to procure clamping relation of the heads with the body of leaves.

A further object of the present invention resides in the provision of flexible connecting members for the heads which may be provided at a minimum cost and I contemplate accomplishment of this object by the provision of connecting members including relatively thick cord portions.

A further object of the invention with respect to said cord portions resides in the provision of means for clampingly gripping said cord portions to prevent undesired movement with respect to the binder head into which they are inserted.

A still further object in connection with the cord portions resides in the provision of means for lengthening connecting members including such cord portions whereby the binder may be adapted for relatively great variation of capacity.

I contemplate the insertion of flexible connecting members into the end portions of a binder head of the "spectacle case" type whereby the surplus lengths of connecting

members may lie within the head, and it is further an object of the invention to provide means carried by the cover of the binder head and automatically engageable with the connecting members upon closing the cover to hold the connecting members against undesired movement in the head.

A still further object of the invention resides in the provision of post members associated with the binder heads in conjunction with the flexible connecting members to prevent tilting movement, which are automatically extensible in length to compensate for adjustment of the binder heads by the flexible connecting members.

A further object with respect to the connecting members resides in the provision of an arrangement whereby said members are readily completely detachable from their connections with the binder head into which they move, whereby said members may be readily manipulated for the addition or removal of extension sections in such instances as when the other ends of said connecting members would be fixedly secured to the lower binder head.

With the above and other objects and advantages in view the invention resides more particularly in the novel combination, arrangement and formation of parts hereinafter described and pointed out in the appended claims.

In the drawings:

Figure 1 is a vertical sectional view through the binder heads of a loose leaf binder constructed in accordance with the present invention, this view being indicated by the line 1—1 of Fig. 2.

Fig. 2 is a transverse sectional view through the binder heads as indicated by the line 2—2 of Fig. 1.

Fig. 3 is a longitudinal sectional view of the ends of the binder heads showing a modified form of flexible connecting members.

Fig. 4 is a longitudinal sectional view through adjacent ends of the binder heads showing another means for securing the flexible connecting members in the upper head.

Fig. 5 is a transverse sectional view on the line 5—5 of Fig. 4.

Fig. 6 is a longitudinal sectional view

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through one end of an upper binder head showing still another means for securing the flexible connecting members therein.

Fig. 7 is a transverse sectional view on the line 7—7 of Fig. 6.

Fig. 8 is a longitudinal sectional view of an upper binder head showing yet another means for securing the connecting members, this view being indicated by the line 8—8 of Fig. 9.

Fig. 9 is a fragmentary plan view of the binder head and securing means shown in Fig. 8.

Fig. 10 is a transverse sectional view through the binder head on the line 10—10 of Fig. 9.

Referring now more particularly to the accompanying drawings, 5 and 6 designate preferably upper and lower binder heads having the usual blocks 7 in their ends. The upper head 5 is preferably of the "spectacle case" type including a hinged cover 8 adapted to be closed by the locking pin 9 engageable in alinable ears 10 carried by the cover and body of the head. Binder covers 11 are hinged in the usual manner to ears 12 at the ends of the heads.

The connecting members of the heads shown more particularly in Figs. 1 and 2 comprises each a length of thick cord 13 preferably similar in nature to what is usually termed "sash cord" and this cord has one end secured in the socketed end of a cylindrical metallic member 14 carrying a threaded boss engageable in turn in a socket member 16 disposed in one end portion of the lower binder head 6 and preferably secured at one end to the outer wall of the binder head. Thus any number of extension link sections 15 may be provided, or such extensions may be eliminated entirely by the engagement of the boss of the member 14 in the socket member 16, to provide for any desired degree of adjustment of the capacity of the binder.

The cords 13 are passed through openings 17 in the end portions of the inner wall of the upper binder head and are directed laterally to lie longitudinally within the head, the ends of the cords within the heads being secured in cylindrical metallic members 18 similar to the members 14 and having threaded therein the bosses of head pieces 19 of greater diameter than the openings 17 to prevent complete withdrawal of the cords 13 from the binder head.

For normally holding connecting members 13 against movement into or out of the binder head, the cover 8 thereof carries downwardly extending spring arms 20 engageable with the connecting members immediately inwardly of their bends at the opening 17 to thus bind said members against the body of the head. In this arrangement the securement and release of the

connecting members is automatically effected upon opening and closing the cover of the binder head.

While I am aware that heretofore loose leaf binders of a particularly small type 70 have been provided including cord connecting members for the binder heads which were manually engageable for adjustment, the securing members of such cords against undesired movement has been to tie the cords 75 together, such cords being therefore of a too small size to render their use in binders of the present type at all practical.

While from the standpoint of economy, I find cord connecting members preferable, 80 it may in certain instances be desired to utilize connecting members having portions flexible throughout which are formed of a series of very short metallic links 21, as shown in Patent No. 1184979 granted to me 85 May 30, 1916, and in such instances these connecting members would be secured to the lower binder head 6 in any suitable manner and extended into the other binder head, as shown in Fig. 3, in the manner of the cords 90 13, for similar clamping engagement by the springs 20 of the cover 8. The continuously flexible connecting member portions formed by the short links 21 terminate at their ends adjacent the lower binder heads in socket 95 bars 22 which may be associated with extension link sections as in my said other patent, or they may extend into the lower binder head for engagement by head pieces 23 passed through the outer wall of said binder 100 head for securement thereto.

For connecting the binder heads to prevent tilting movement due to the flexible nature of the connecting members, intermediate posts are provided, each of which 105 comprises a pair of telescopically connected sections 24 one of which is rigidly secured to the lower binder head, and the other of which is adapted to receive the threaded boss of an extension section 25 which is in 110 turn adapted to receive the threaded boss of another similar extension section or to abut against the inner wall of the upper binder head for the reception of the threaded boss of a head piece 26 passed through 115 said head. The telescopic relation of the sections 24 thus compensates for relative movement of the binder head to provide "finger room" in adding or inserting leaves, while the extension sections 25 provide for 120 ultimate adjustment of the capacity of the binder.

Fig. 4 shows a modified structure wherein the lower binder head 6<sup>a</sup> is provided in each end portion with a sleeve 27 adapted to receive either the end piece 14 of a cord 13 or to receive an extension link connected therewith, the connecting member including either of said portions being secured to the lower binder head by a head piece 28 having 130

a threaded boss passed through the bottom wall of the binder head to engage therewith, this head piece being shielded by an outwardly struck intermediate portion 29 of the outer wall of the binder head.

The upper binder head comprises merely an elongated casing 30 provided with end blocks 31 and having its outer wall longitudinally slotted at 32 to provide for insertion or retraction of the cords 13 and their end pieces 18. For securing the cords to this binder head U shaped spring clips 32 are disposed in the heads inwardly of the openings 34 through which the cords pass and having their bight portions secured to the inner wall of the head with the free end of their legs extended outwardly of the head and laterally turned.

In manipulation of this type of binder the cords are pulled from their insertion in the clips 35, suitable manipulation of the binder to insert or remove the leaves is then had, and in again closing the binder the operator presses upon the upper binder head and simultaneously pulls the cords to procure the proper clamping engagement with the body of leaves and retaining this clamping relation the operator turns the cords laterally and inserts them in the clips 35 whereby the clamping relation of the heads is retained permanently. This operation is in contradistinction to the automatic clamping action of Fig. 1 wherein no positive drawing of the cords is procured.

Figs. 6 and 7 show a still further means of securing connecting members in the upper head and in these views the upper binder head 36 is of similar general nature to the binder head of Fig. 4 and connecting members are each passed through openings 37 in the end portions of the inner wall thereof and in a track plate 38 carried by said end portion, this track having its side edges upwardly off-set for engagement by the inverted ends of an upwardly bowed carriage plate 39 through which is passed a clamping screw 40 carrying the shoe 41 at its lower end arcuate in shape to fit against a connecting member inserted thereunder, to securely bind said connecting member between the shoe and the track plate. When the clamping screw is retracted the carriage plate 39 may be slid to the position shown in dotted lines outwardly of the openings 37 whereby a free manipulation of the connecting member may be had.

Figs. 8 to 10 show a still further means for securing the connecting members, wherein a transverse block 42 is disposed transversely slidably in the upper binder head 43, similar to the head of Fig. 4, and disposed over this block is a plate 44 through which, and through the block is passed a binding screw 45 which upon being tightened is adapted to bind the edges of the binder head

slot between the block and plate. The plate is provided with down-turned ears 46 embracing the block, and at one side of the block the plate is provided with an extension 47 having its extremity bifurcated and downwardly directed to embrace the end of a cord 13 immediately inwardly of its headed extremity 48. At the other side of the block the plate is provided with a handle extension 49 whereby upon loosening the screw 45 the plate may be rocked to release the head 48 of the cord.

In all my means of securing the connecting member to the upper binder head it is thus noted that the connecting members are detachable from said securing means whereby they may be readily rotated for the insertion of extension sections 15 in the lower hinder post arrangement shown in Fig. 1, this arrangement not being essential in the lower binder post construction shown in Fig. 4. It is however appreciated that the structure of Fig. 1 is much simpler.

Since the essential feature of my invention resides in the provision of manually engageable connecting members each including portions flexible throughout and passed into the upper binding head for clamping or other securement commensurate with their necessary size, it is obvious that various modifications of this essential structure may be resorted to without departing in any manner from the spirit of the invention as interpreted by the appended claims.

What is claimed:

1. A loose leaf binder including a pair of binder heads, connecting members secured to one head and including portions flexible throughout and passed into the other head to extensibly lie therein, and means detachably engageable with the connecting members throughout their entire length for securing said members to said other head, whereby to permit the close adjustment of the binder heads, substantially as described.

2. A loose leaf binder including a pair of binder heads, connecting members secured to one head and including flexible portions passed into the other head to extensibly lie therein, said other binder head including a movable closure portion, and spring arms carried by and movable with the closure for engaging said connecting members to prevent the accidental movement thereof.

3. A loose leaf binder including a pair of binder heads, connecting members secured to one head and including portions flexible throughout and passed into the other head to extensibly lie therein, and clamping springs movably carried by the said other head for said connecting members, said springs being moved simultaneously to engage and disengage the connecting members.

4. A loose leaf binder including a pair of binder heads and connecting members each

including flexible fabric portions, extension sectional members adapted for securement with certain ends of said fabric portions for connection with one of the binder heads, and resilient means carried by the other binder head and adapted to engage the other ends of the flexible fabric portions with said other binder head.

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10 5. A loose leaf binder including a pair of binder heads and connecting members each including a flexible fabric portion passed

into one binder head, means for securing said fabric portion against movement in said head, and an end piece for the end of the fabric portion adjacent the other binder head adapted for securement to said head. 15

In testimony that I claim the foregoing I have hereunto set my hand at Milwaukee, in the county of Milwaukee and State of Wisconsin.

HENRY C. MILLER.