

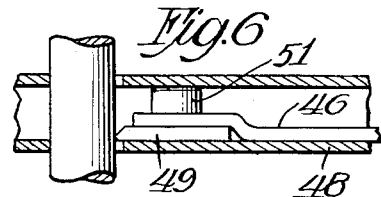
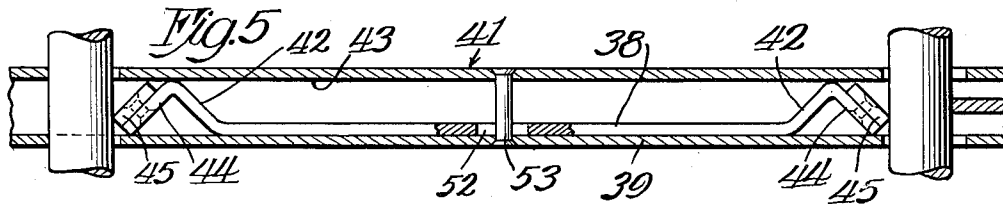
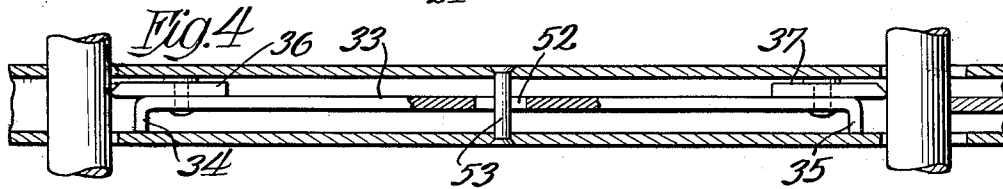
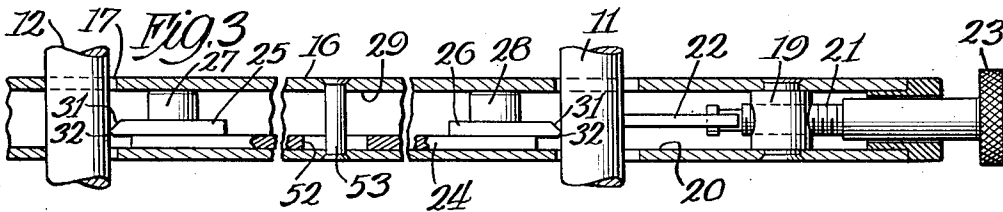
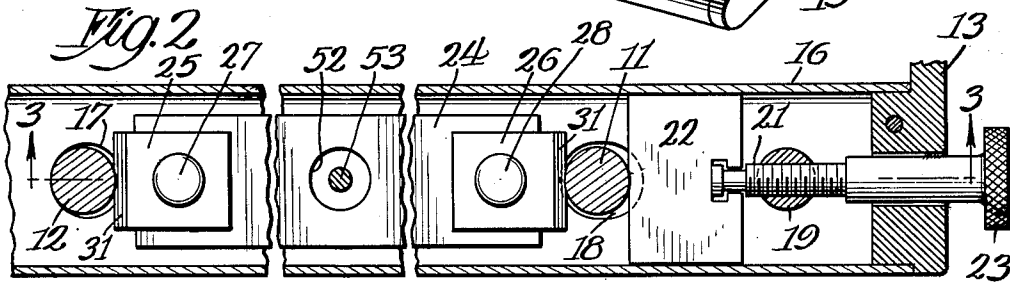
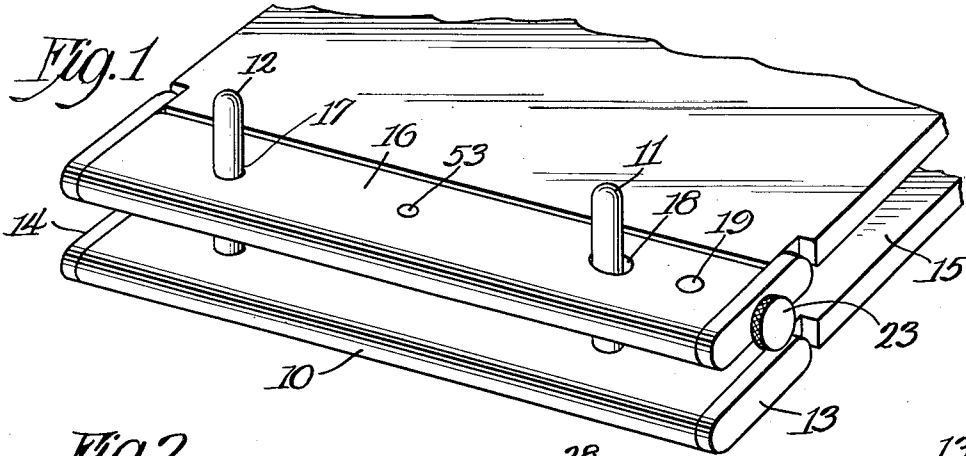
May 23, 1933.

J. C. DAWSON

1,910,324

LOOSE LEAF POST BINDER

Filed April 29, 1931



Inventor
James C. Dawson
By Nelson, Mann & Co.
Attys.

UNITED STATES PATENT OFFICE

JAMES C. DAWSON, OF WEBSTER GROVES, MISSOURI, ASSIGNOR TO ELMA N. DAWSON, OF
WEBSTER GROVES, MISSOURI

LOOSE LEAF POST BINDER

Application filed April 29, 1931. Serial No. 533,717.

This invention relates to loose leaf post binders and has for its objects to produce simple, rigid and secure means for locking the upper binder bar to the paper holding posts.

These and other objects and advantages of the invention will become apparent from the following description taken in conjunction with the accompanying drawing, in which

Fig. 1 is a perspective view of the loose leaf post binder;

Fig. 2 is a longitudinal section through the upper binder bar showing the operating parts, however, in plan;

Fig. 3 is a vertical section through the upper binder bar, as shown on the line 3—3 of Fig. 2, the posts and most of the locking mechanism being shown in elevation;

Fig. 4 is a vertical, longitudinal section through the binder bar illustrating a modified form of post lock;

Fig. 5 is a vertical, longitudinal section through the upper binder bar illustrating a still further form of post lock; and

Fig. 6 is a detail sectional view showing a still further modification of the post engaging portion of the lock.

The particular embodiments of the invention herein set forth are for the purpose of illustration only and are not intended to limit the scope of the invention as defined by the appended claims.

Loose leaf binders of the post type find their major use as binders for books of account and are, therefore, subject to continuous handling and extraordinarily heavy wear. The parts must be rugged and the locks particularly secure. Usually, and as illustrated, the binders comprise a lower tubular binding bar 10 which bears the paper holding posts 11 and 12. Preferably the post 11 is so mounted in the bar that it may swing or rock very slightly in the line of the axis of the bar. For finish and general appearance, the ends of the tube are closed by the plugs 13 and 14, which in some binders, and in the one illustrated, also form hinges for the stiff board cover 15.

The upper binder bar is of much the same configuration and comprises the tube 16

pierced at 17 and 18 to form apertures through which the posts may pass. A nut 19 is secured transversely across the bar through which the screw 21, which is operatively connected to the pressure plate 22, is threaded. The plate may be reciprocated by turning the key 23.

So far, the apparatus described is the familiar post binder. Its individual parts have been recited for the purpose of identification.

Lying against the lower inner wall of the binder tube 16 is a flat strip or plate 24 which bears upon its ends the metal blades 25 and 26. Preferably, these are hardened and ground and attached to the plate 24 by riveting or in any other suitable manner. If rivets are used, the rivet may be made with an enlarged head and so shaped as to form the spacer elements 27 and 28 which engage the upper interior wall 29 of the binder bar. The blades 25 and 26 are ground to produce a bevelled face 31 at their ends. I have found that if the blade is ground in the manner of a carpenter's chisel, that it is liable to break and even when it does not break, is not capable of holding the binder securely. When, however, a short bevelled face 32 is formed upon the end of the blade, no trouble from breakage is experienced and the blade bites into the post and holds securely. I consider it preferable to make the upper face 31 considerably longer than the lower face 32 since the posts appear to be released more easily and quickly when this manner of grinding is observed.

When the key 23 is turned, the post 11 is pushed by the pressure plate 22 against the blade 26 and this in turn carries the post 12 against the far edge of the aperture 17 and then forces the blade 25 into the post. The spacers 27 and 28 prevent the plate 24 from buckling upwards and it cannot bend in the other direction since it lies against the lower wall 20 of the tube 16. It will now be found that the bar is locked to the posts in an exceedingly secure manner and will withstand all of the upward pressure which the compressed paper sheets may throw against it.

The alternative form of binder lock il-

illustrated in Fig. 4 comprises a plate 33 which is bent downwardly at its ends, as at 34 and 35, and bears the blades 36 and 37 riveted adjacent its ends and projecting beyond the extent of the plate. The blades are ground in the same manner as previously set forth. While this device locks the binder as securely as the type previously illustrated, the transmitted pressure causes the plate 33 to bow downwardly. Since the upward pressure tends to make the plate 33 straighten out, a toggle is formed the effect of which is to cause the device to release with much more difficulty than that shown in the preceding type.

Alternatively to the structure shown in Figs. 2 and 3, the locking element as illustrated in Fig. 5 may be a plate 38 which lies against the lower wall 39 of a binder bar 41. Adjacent its ends the plate may be bent at 42 to engage the upper wall 43 of the bar and may then be bent downwardly at 44 to touch the wall 39 again.

A rectangular piece, 45, of hardened metal is riveted to the end 44. In this form, as well as in the form illustrated in Figs. 2 and 3, there is slight tendency for the plate 38 to buckle, and the release of the posts is easily obtained.

An even more rigid locking bar is illustrated in Fig. 6. This comprises a plate 46, lying against the inner face of the bottom wall of the binder tube 48. It is offset adjacent its ends through the thickness of the blade 49, which is riveted to it by the combined spacer and rivet 51. Since this transmits the pressure almost in a straight line, the key can be turned for release as easily as it may be set up to lock.

In all instances it is desirable to punch a hole 52 through the plate and set a rivet 53 across the binder tube. This prevents the locking element from sliding too far out of place in the binder tube and allows the posts to be inserted through the apertures 17 and 18 easily.

It is thus apparent that I have produced a rigid, simple lock which will hold the upper binder bar securely at all times, and which is free from the difficulties which have heretofore been experienced when springs or flexible blade elements have been used to engage the posts.

What I claim, therefore, is:

1. In a loose leaf binder, a tubular binder bar, locking means within the bar comprising a plate having end portions disposed angularly to its axis and a rigid, post engaging blade affixed to the plate adjacent each of its ends.

2. In a loose leaf binder, a flattened tubular binder bar having apertures therethrough, adapted to receive paper holding posts, means within the bar to engage the posts comprising a flat plate lying against the

lower inner wall of the bar having end portions angularly bent to engage the upper wall and thence downwardly to meet the lower wall at substantial angles thereto, and a post-engaging blade affixed to each end portion of the plate.

3. In a loose leaf binder, in combination, a base binder bar, posts rising therefrom, a hollow binder bar apertured to receive and slide upon the posts, a rigid floating locking plate housed within the last-named bar and interposed between the posts and having means loosely engaging each thereof and being engageable with the top and bottom walls of such bar, and means for urging the posts toward each other.

4. In a loose leaf binder, a tubular binder bar, a post-engaging locking element therein having terminal post-engaging blades each provided with two bevel faces of different sizes forming a cutting edge asymmetrically located with respect to the central horizontal longitudinal plane of the blades.

In testimony whereof I affix my signature.

JAMES C. DAWSON.