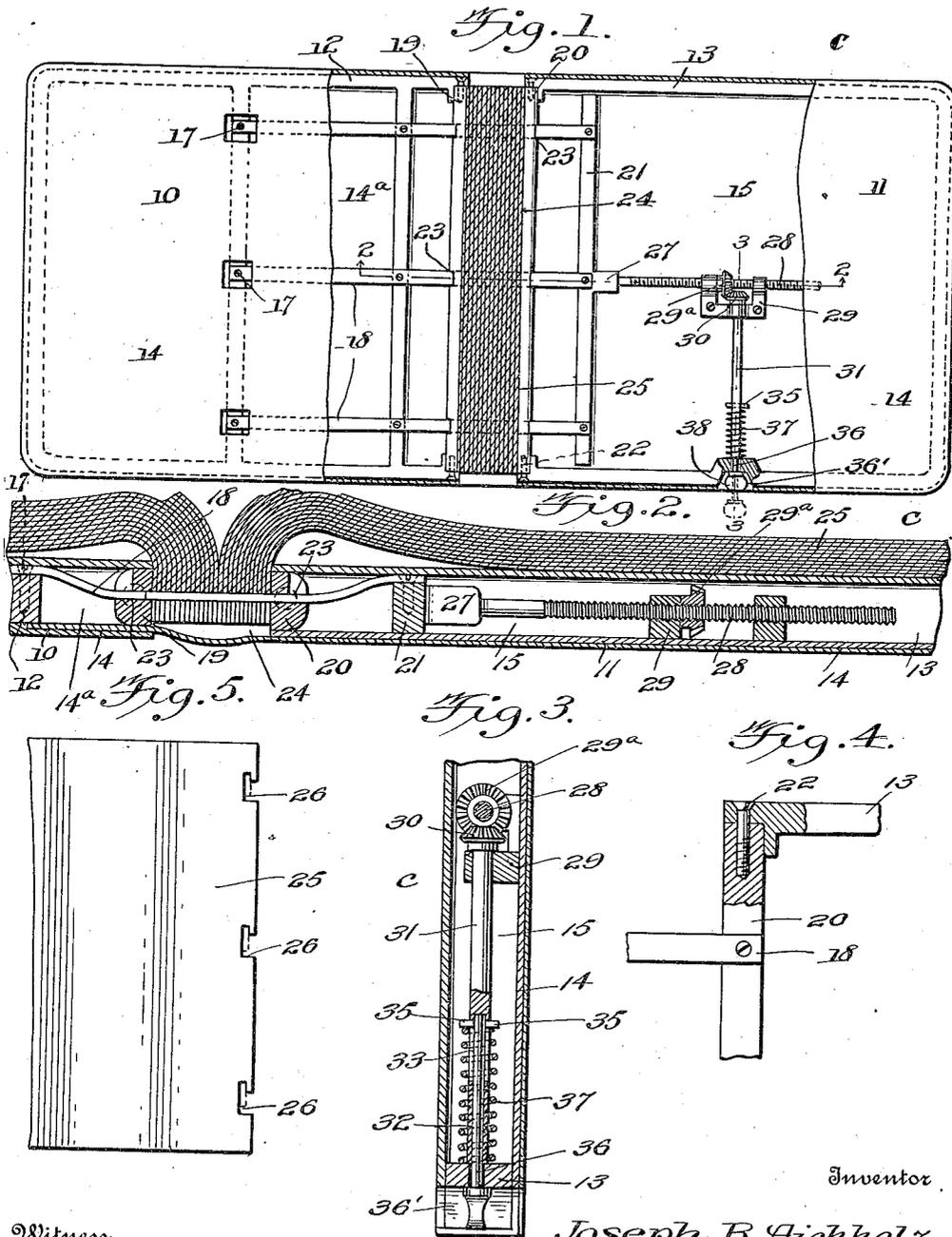


J. B. AICHHOLZ.
 LOOSE LEAF BINDER.
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1,174,792.

Patented Mar. 7, 1916.



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LOOSE-LEAF BINDER.

1,174,792.

Specification of Letters Patent.

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Application filed June 11, 1915. Serial No. 33,562.

To all whom it may concern:

Be it known that I, JOSEPH B. AICHHOLZ, a citizen of the United States, residing at Lansdowne, in the county of Delaware and State of Pennsylvania, have invented new and useful Improvements in Loose-Leaf Binders, of which the following is a specification.

The object of this invention is to provide a loose leaf binder, formed with improved means for securing loose sheets temporarily, or permanently, therewith.

Another object is in forming a loose leaf binder with flexibly connected covers, in which mechanism is provided for controlling the expansion or contraction of sheet binding strips, to permit sheets to be added or removed from the binder.

A further object is in forming the parts of the binder in such a manner as to accommodate a varying number of sheets or leaves, without interfering with the normal operation of the device.

With these objects in view and others, as will be obvious as the description proceeds, the invention comprises various novel features of construction and arrangement of parts which will be more fully described hereinafter and set forth with particularity in the accompanying claims.

In the drawings, Figure 1 is a plan view of the invention with parts shown in section to disclose the underlying structure. Fig. 2 is a longitudinal section taken on the line 2—2 of Fig. 1. Fig. 3 is a transverse section taken approximately on the line 3—3 of Fig. 1. Fig. 4 is a detail view, partly in section, of the sheet binding strip and cooperating frame. Fig. 5 is a similar view of a sheet or leaf used in conjunction with the binder.

Referring to the drawings the device illustrated therein, forming the preferred embodiment of the invention, comprises a binder C, formed primarily of covers 10 and 11, that are flexibly connected together. Said covers consist of frames 12 and 13, which are surrounded and secured by a covering of suitable material 14. This construction results in the formation of hollow chambers 14 and 15 in each of said covers, the chambers being adapted to receive a novel mechanism for retaining loose sheets or leaves within the binder.

Permanently secured to the frame 12 of the cover 10, by means of screws or like members 17, are binding strips 18. The op-

posite end of said strips extend through leaf gripping strips 19 and 20 and pass into the chamber 15 of the cover 11, wherein a sliding bar 21 is securely affixed thereto.

The leaf gripping or retaining strips 19 and 20 consist of transversely extending bars, pivoted at the outer ends thereof to the frames 12 and 13, by means of suitable members 22, and are further provided with alining recesses 23, through which the strips 18 are adapted to extend, for a purpose to be hereinafter specified. An adjustable leaf receiving slot 24 is formed by the space separating the strips 19 and 20 and loose leaves or sheets 25 are positioned therein. Said sheets 25 may be of any preferred design, but the inner edges thereof are provided with bayonet slots 26, that are adapted to receive the portion of the strips 18 that extend across the slot 24.

The sliding bar 21, positioned within the chamber 15 of the cover 11, extends transversely across the latter, and is provided with a laterally protruding lug 27 to which an adjustable screw threaded rod 28 is integrally or permanently secured. The threaded rod 28 extends in a longitudinal direction within the chamber 15 and is loosely journaled within bearings 29, that are fastened to the covering 14 of the cover 11. Threaded onto the rod 28 is a bevel gear 29^a, stationed inside the bearing 29, and meshing with a similar gear 30, keyed to a shaft 31, which extends perpendicularly to the threaded rod 28. The shaft 31 is formed with a hollow recess 32 in the end opposite to the gear 30, and is further provided with slots 33, that are adjacent said hollow portion and are adapted to receive pins 35 on a sliding rod 36 mounted within the hollow end 32. A recess 36' is formed adjacent the edge of the binder cover 11, offsetting the frame bar 13, and is adapted to receive the end of the rod 36 that extends beyond the shaft 31. A helical spring 37 encircles the shaft 31 and is positioned between the frame 13 and the pins 35 on the rod 36, normally keeping the latter elevated. An operating handle 38 is formed on the lower end of the rod 36 and lies within the recess, so as not to normally protrude beyond the edge of the cover 11, thereby preventing the furniture, upon which the binder rests, from being marred or scratched.

In operation, the handle 38 is pulled outwardly to assume the position shown in

dotted lines in Fig. 1 of the drawings; and is then rotated to cause the gear 30 to be similarly moved. This results in the rotation of the interiorly threaded gear 29^a, which in turn being threaded upon the screw threaded rod 28, will cause the latter to be moved in a longitudinal direction, and thereby imparts movement to the bar 21, to permit the widening of the leaf receiving slot 24. With the strips 19 and 20 in extended relation the designed number of sheets or leaves 25 are locked upon the straps 18 by means of the slots 26. Then upon rotating the handle 38 in the opposite direction, to that previously mentioned, the bar 21 will be moved toward the bearings 29. This results in moving the cover 10 over toward the cover 11 on account of the straps connecting said cover 10 with the sliding bars 21. The rotation of the handle 38 is continued until the leaf binding strips 19 and 20 firmly grip the edges of the sheets or leaves 25 as to prevent the latter from being either purposely or accidentally removed from the binder without first having operated the necessary mechanism to accomplish this function.

From the foregoing description the advantages of construction and method of operation of the present invention will be readily apparent; and having described the principle of operation of the mechanism comprising the preferred embodiment of the invention it should be understood, that the device shown is merely illustrative, so that such changes may be made when desired as fall within the scope of the claims.

I claim:—

1. In a temporary binder, the combination with the covers, of a binder adjusting means comprising adjustable members secured to one of said covers, means for regulating said adjustable members carried by the other cover, said latter means comprising a threaded shaft carried by said adjusting members, a gear threaded on said shaft and

held on the other cover against endwise movement and means for rotating said gear to impart movement to said threaded shaft.

2. In a loose leaf binder, the combination with the covers, leaves therefor of flexible binding strips connecting said covers with said leaves, said binding strips being secured to one of said covers, a sliding bar in the other cover to which said binding strips are secured, a threaded rod protruding from said sliding bar, a bevel gear threaded on the rod and held on the other cover against endwise movement, a similar gear meshing with the bevel gear, a shaft on said other cover carrying said last named gear and means for rotating the shaft outside of said binder.

3. A temporary binder including covers, binder adjusting means comprising adjustable members secured to one of said covers, and means for regulating said adjustable members carried by the other cover, said latter mentioned means comprising a bar, a shaft connected to said bar, a gear threaded on said shaft, means for rotating said gear for causing movement of the shaft in a longitudinal direction, an operating handle for said gear rotating means, and means for retracting the operating handle within the latter mentioned cover.

4. A temporary binder including covers, binder adjusting means comprising adjustable members secured to one of said covers, and means for regulating said adjustable members carried by the other cover, said latter mentioned means comprising a bar, a shaft connected to said bar, a gear threaded on said shaft, means for rotating said gear for causing movement of the shaft to a longitudinal direction, an operating handle for said gear rotating means, and a spring for retracting the operating handle within a recess formed in the latter mentioned cover.

In testimony whereof I affix my signature. 90

JOSEPH B. AICHHOLZ.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."