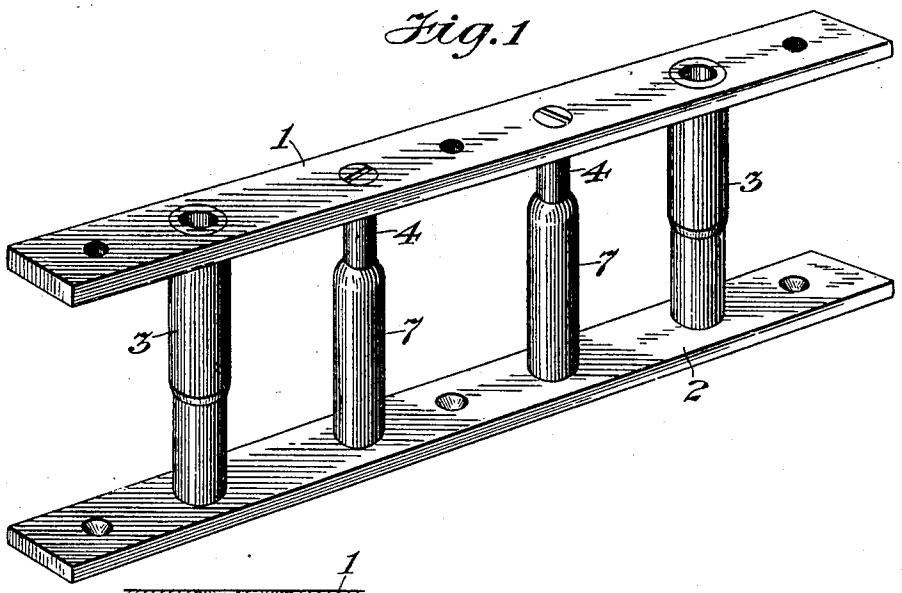
No. 809,495. PATENTED JAN. 9, 1906.

F. A. CLEVELAND.

BINDER.

APPLICATION FILED JULY 7, 1905.

Fig. 1



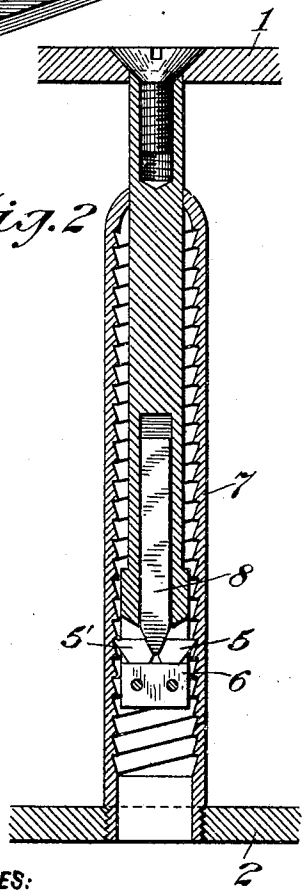


Fig. 2

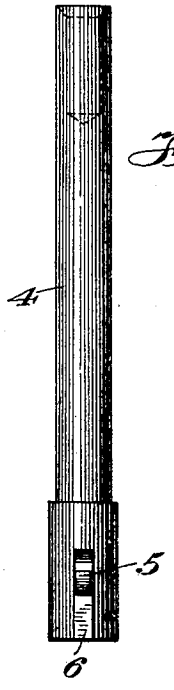


Fig. 3

WITNESSES:
Chas. F. Clagett
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Frederick A. Cleveland, INVENTOR,
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UNITED STATES PATENT OFFICE.

FREDERICK A. CLEVELAND, OF NEW YORK, N. Y.

BINDER.

No. 809,495. Specification of Letters Patent. Patented Jan. 9, 1906.

Application filed July 7, 1905. Serial No. 268,660.

To all whom it may concern:

Be it known that I, FREDERICK A. CLEVELAND, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Binders, of which the following is a specification.

This invention relates to a device which may be applied to binders of the loose-leaf type, the object being to provide a device of simple construction which may be used in connection with covers or binders of this class, which may be easily operated, and which will be positive in its action. The use of binders of this description is well understood, and it is not thought necessary to enter into an explanation of their operation further than to state the principal requirement, which is that any number of pages or leaves may be inserted, replaced, or taken out without disturbing the remaining leaves.

The object of my invention is to provide a device which shall meet this requirement and accomplish the desired result by the use of a simple locking mechanism which does not require separate keys or other devices to operate the same and which shall be self-contained and operated by turning the book on one side to lock the covers in any desired position and to release the same by simply reversing the position of the book. To accomplish this result, I provide an upper and lower clamping-section, which may be attached to the covers of the binder. These clamping-sections are normally held apart by the action of springs contained in telescoping members attached to said clamping-sections in the usual manner. Attached to one of these clamping-sections, preferably the upper, I provide a post, which carries one or more sliding pawls or dogs which are adapted to engage projections on the interior of a coöperating post or casing which is secured to the lower clamping-section. This latter post or casing is adapted to telescope over the post carrying the pawl or dog. The construction of these parts is such that when the clamping-sections are in the position just indicated a free inward movement is permitted and the pawl or dog will operate to prevent an outward movement of the members. As the position of the clamping members and attached covers is reversed an auxiliary weight, which operates said pawl or dog, will fall out of engagement and render the same inoperative and allow the clamping members to be separated by the action of the springs heretofore referred to or by other suitable means.

The construction and operation of the device will be more fully explained in connection with the drawings accompanying this specification.

Figure 1 is a perspective side elevation of a pair of clamping-sections or binder-frames with the covers and leaves of the book omitted. Fig. 2 is an enlarged side elevation in section of the post and casing carrying the locking mechanism. Fig. 3 is an enlarged side elevation and detail view of the post carrying the pawl or dog.

In Fig. 1 at 1 and 2 are shown an upper and lower clamping-section, respectively, which may be attached by any suitable means to the covers of the binder, or, if preferred, the covers themselves may form the clamping-sections and have the locking device attached directly thereto. At 3 3 are shown telescoping members containing springs which operate normally to separate the clamping-sections 1 and 2.

At 4 is shown a post attached to the upper clamping-section 1 by any suitable means and in such a manner that it may be rotated therein. This post is preferably provided with a slot at the lower end thereof, in which is carried one or more sliding pawls or dogs, such as shown at 5 and 5′. These dogs are not attached to the post 4, but are carried in said slot at the lower end thereof and rest upon a support, such as 6. An auxiliary operating-weight 8 is provided which is carried in a chamber opening into said slot in said post. This chamber is of such a size and depth as to allow the weight to slide freely therein as the covers are reversed. The lower end of this weight is beveled and adapted to engage one end of the sliding dogs 5 and 5′ and force the same outward in such a manner that the outer ends thereof will engage the projections on the inner surface of the casing 7 and prevent the outward movement or separation of the clamping members and covers when the same stand in the position shown in the drawings. When the position of the covers is reversed, the auxiliary weight 8 will fall back out of engagement with the dogs 5 and 5′. These dogs are small and light in construction, and when the weight is out of engagement with the same they will be forced

together by the movement of the casing and post out of engagement with the former and allow the covers to be separated.

The casing 7 may be attached by any suitable means to the lower clamping-section 2. The projections on the interior of this casing are preferably in the form of a spiral or thread, as shown, to provide means for further tightening of the covers, as will be more fully explained hereinafter.

The slot in the end of the post 4 has its lower portion closed by the stop 6, which is fastened therein by any suitable means. This provides a chamber or recess between the upper portion of the slot and the stop 6. The upper portion of this slot is formed at an angle with the post 4 in order to provide for a movement of the pawls 5 and 5′ in the slot and also to limit said movement.

The outer ends of the pawls 5 and 5′ are pointed, so as to engage the spiral toothed projections on the interior of the casing 7 when the pawls are in the position shown in Fig. 2. The inner ends of the pawls 5 and 5′ are beveled, so as to engage a corresponding bevel portion of the auxiliary weight 8 and to be retained by said weight in the position shown when the covers are in the position indicated in the drawings. The advantage of this construction is that the parts operate very quickly to hold the telescoping members against a movement in one direction, and when the covers are reversed in position the auxiliary weight will quickly drop away from the pawls and allow same to fall out of engagement with the casing and permit the telescoping members to be separated by action of springs previously referred to.

The pawls being unattached may be easily replaced when broken or worn out, being of a very simple construction, as it will be readily seen. The auxiliary weight 8 may be of any desired form to operate in conjunction with the pawls, as already described.

The use of an auxiliary weight in connection with the pawls insures a very quick and positive action of the same both in locking and in releasing the safe parts. When the covers stand in the position shown in Fig. 2, the beveled end of the weight tends to slide the pawls outward and to hold them in position so that the outer ends will engage the spiral projections on the casing. Upon reversing the position of the covers the weight 8 will drop away from the pawls, and a slight downward pressure upon the upper cover will cause the pawls to slide inwardly out of engagement with projections on the casing, allowing the covers to be separated, as described above.

The object of providing projections spiral in form on the inner surface of the casing 7 is to permit of further tightening of the covers by turning the post 4, which carries the pawls, causing it to operate as a screw. This may be done by using an ordinary screw-driver in the slot of the screw which holds the post in position in the upper clamping member or by other suitable means.

It will be noted that the device herein shown and described as an illustration of an operative embodiment of my invention is composed of a very small number of parts and that such parts are of a simple construction and may be easily and cheaply manufactured. It will also be noted that the device when assembled is very compact in form and that the operating parts are self-contained within the same.

I do not confine myself, however, to the exact details of construction shown and described, as it will be evident that various modifications and changes may be made therein to adapt the device to its several uses without departing from the scope of my invention.

What I claim is—

1. In a binder, the combination of a pair of clamping members, a post attached to one of said clamping members, an unattached sliding pawl or dog carried by said post and adapted to engage the inner surface of a casing, a casing secured to the other of said clamping members adapted to telescope over said post, an auxiliary weight coöperating with said pawl or dog to slide the same into engagement with said casing, substantially as described.

2. In a binder, the combination of a pair of clamping members, a post having a slot at the lower end thereof attached to one of said clamping members, an unattached sliding pawl or dog carried in said slot in said post and adapted to engage the inner surface of a casing, a casing secured to the other of said clamping members adapted to telescope over said post, an auxiliary weight coöperating with said pawl or dog to slide the same into engagement with said casing, substantially as described.

3. In a binder, the combination of a pair of clamping members, a post having a slot at the lower end thereof attached to one of said clamping members, an unattached sliding pawl or dog carried by said post in said slot in such a manner that the bottom of said slot forms a stop to limit the movement of said pawl or dog, a casing secured to the other of said clamping members adapted to telescope over said post, an auxiliary weight coöperating with said pawl or dog to slide the same into engagement with said casing, substantially as described.

4. In a binder, the combination of a pair of clamping members, a post attached to one of said clamping members, an unattached sliding pawl or dog carried by said post and adapted to engage the inner surface of a casing, a casing having a serrated inner surface secured to the other of said clamping members and adapted to telescope over said post,

an auxiliary weight coöperating with said pawl or dog to slide the same into engagement with said casing, substantially as described.

5. In a binder, the combination of a pair of clamping members, a post attached to one of said clamping members, an unattached sliding pawl or dog carried by said post and adapted to engage the inner surface of a casing, a casing having a threaded inner surface secured to the other of said clamping members and adapted to telescope over said post, means for rotating said post in said casing, an auxiliary weight coöperating with said pawl or dog to slide the same into engagement with said casing, substantially as described.

6. In a binder, the combination of a pair of clamping members, a post having a recess at the lower end thereof attached to one of said clamping members, an unattached sliding pawl or dog carried by said post in said recess and adapted to engage the inner surface of a casing, a casing secured to the other of said clamping members adapted to telescope over said post, an auxiliary weight located in a chamber in said post coöperating with said pawl or dog to slide the same into engagement with said casing, substantially as described.

7. In a binder, the combination of a pair of clamping members a post having a slot at the lower end thereof, said slot being partially closed by means of a slot member secured therein, an unattached sliding pawl or dog carried by said post in said slot adapted to slide upon said stop member and to engage the inner surface of a casing, a casing secured to the other of said clamping members and adapted to telescope over said post, an auxiliary weight coöperating with said pawl or dog to slide the same into engagement with said casing, substantially as described.

8. In a binder, the combination of a pair of clamping members, a post attached to one of said clamping members, an unattached sliding pawl or dog carried by said post and having one end thereof adapted to engage an auxiliary weight and the other end thereof adapted to engage the inner surface of a casing, a casing secured to the other of said clamping members adapted to telescope over said post, an auxiliary weight coöperating with said pawl or dog to slide the same into engagement with said casing, substantially as described.

9. In a binder, the combination of a pair of clamping members, a post attached to one of said clamping members, an unattached sliding pawl or dog carried by said post and having one end thereof beveled to engage an auxiliary weight and the other end thereof adapted to engage the inner surface of a casing, a casing secured to the other of said clamping members adapted to telescope over said post, an auxiliary weight coöperating with said pawl or dog to slide the same into engagement with said casing, substantially as described.

10. In a binder, the combination of a pair of clamping members, a post attached to one of said clamping members, a pair of unattached sliding pawls or dogs carried by said post and having the outer ends thereof adapted to engage the inner surface of a casing, a casing secured to the other of said clamping members, adapted to telescope over said post, an auxiliary weight coöperating with said pawls or dogs to slide the same into engagement with said casing, substantially as described.

11. In a binder, the combination of a pair of clamping members, a post attached to one of said clamping members, a pair of separable unattached pawls or dogs carried by said post and having the outer ends thereof adapted to engage the inner surface of a casing, a casing adapted to telescope over said post, said casing being secured to the other of said clamping members, an auxiliary weight coöperating with said pawls or dogs to separate the same and cause the outer ends thereof to engage said casing, substantially as described.

12. In a binder, the combination of a pair of clamping members, a post having a slot at the lower end thereof, said slot being partially closed by means of a stop member secured therein and having the upper portion thereof form an angle with the axis of said post, a stop member having the upper portion thereof forming a sliding surface interior of said slot, an unattached sliding pawl or dog carried by said post in said slot adapted to slide on said stop member and having the outer end thereof adapted to engage the inner surface of a casing, a casing secured to the other of said clamping members and adapted to telescope over said post, an auxiliary weight coöperating with said pawl or dog to slide the same into engagement with said casing, when the members are in the operative position and when said members are reversed in position said weight being adapted to fall out of engagement with said pawl or dog allowing it to drop out of engagement with said casing against the angular upper portion of the slot in which it is carried allowing the post and casing to be separated, substantially as described.

13. In a binder, the combination of a pair of clamping members, a post attached to one of said clamping members, said post having a recess at the lower end thereof and a chamber opening into said recess, a pair of unattached sliding pawls or dogs carried by said post in said recess and having the outer ends thereof adapted to engage the inner surface of a casing, a casing secured to the other of said clamping members and adapted to tele-

scope over said post, an auxiliary weight carried by said post in said chamber, said weight having one end thereof wedge-shaped and adapted to engage said pawls or dogs and slide the same outwardly into engagement with said casing when the members are in the operative position and to move out of engagement with said pawls or dogs allowing the same to slide inwardly and to drop out of engagement with said casing when the members are reversed in position, substantially as described.

14. In a binder, the combination of a pair of clamping members, a post attached to one of said clamping members, said post having a slot at the lower end thereof and a chamber opening into said slot, a pair of unattached separable pawls or dogs carried by said post in said slot having the outer ends thereof adapted to engage the inner surface of a casing and having the inner ends thereof beveled to engage an operating-weight, a casing secured by the other of said clamping members and adapted to telescope over said post, an auxiliary operating-weight carried by said post in said chamber, said weight having one end thereof wedge-shaped and adapted to engage the beveled portion of said pawls or dogs and to move and to hold the same in engagement with said casing when the members are in the operative position and to move out of engagement with said pawls or dogs allowing the same to drop out of engagement with said casing when the members are reversed in position, substantially as described.

Signed at New York, in the county of New York and State of New York, this 3d day of June, A. D. 1905.

FREDERICK A. CLEVELAND.

Witnesses:
H. B. Cook,
A. M. Mallin.