M. C. NEUNER.

LOOSE LEAF BINDING DEVICE.

APPLICATION FILED MAR. 15, 1909.

951,545.

Patented Mar. 8, 1910.

Fig. 1.

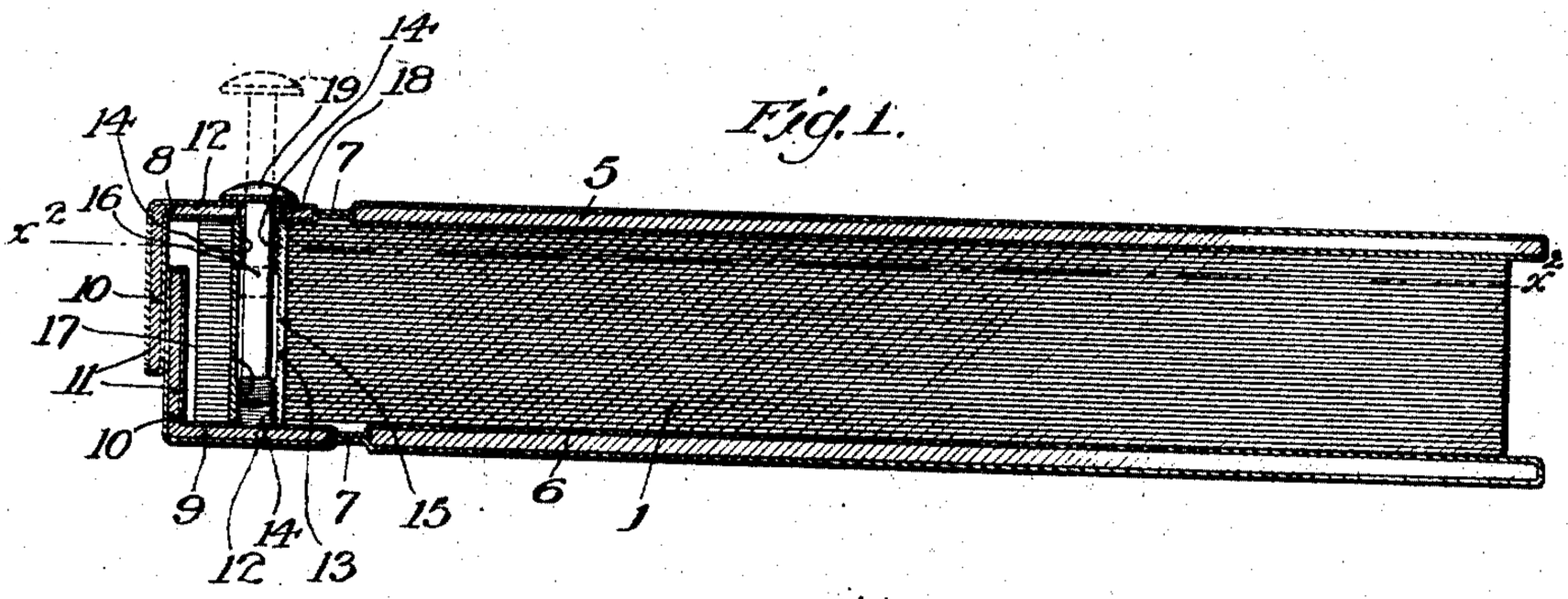


Fig. 2.

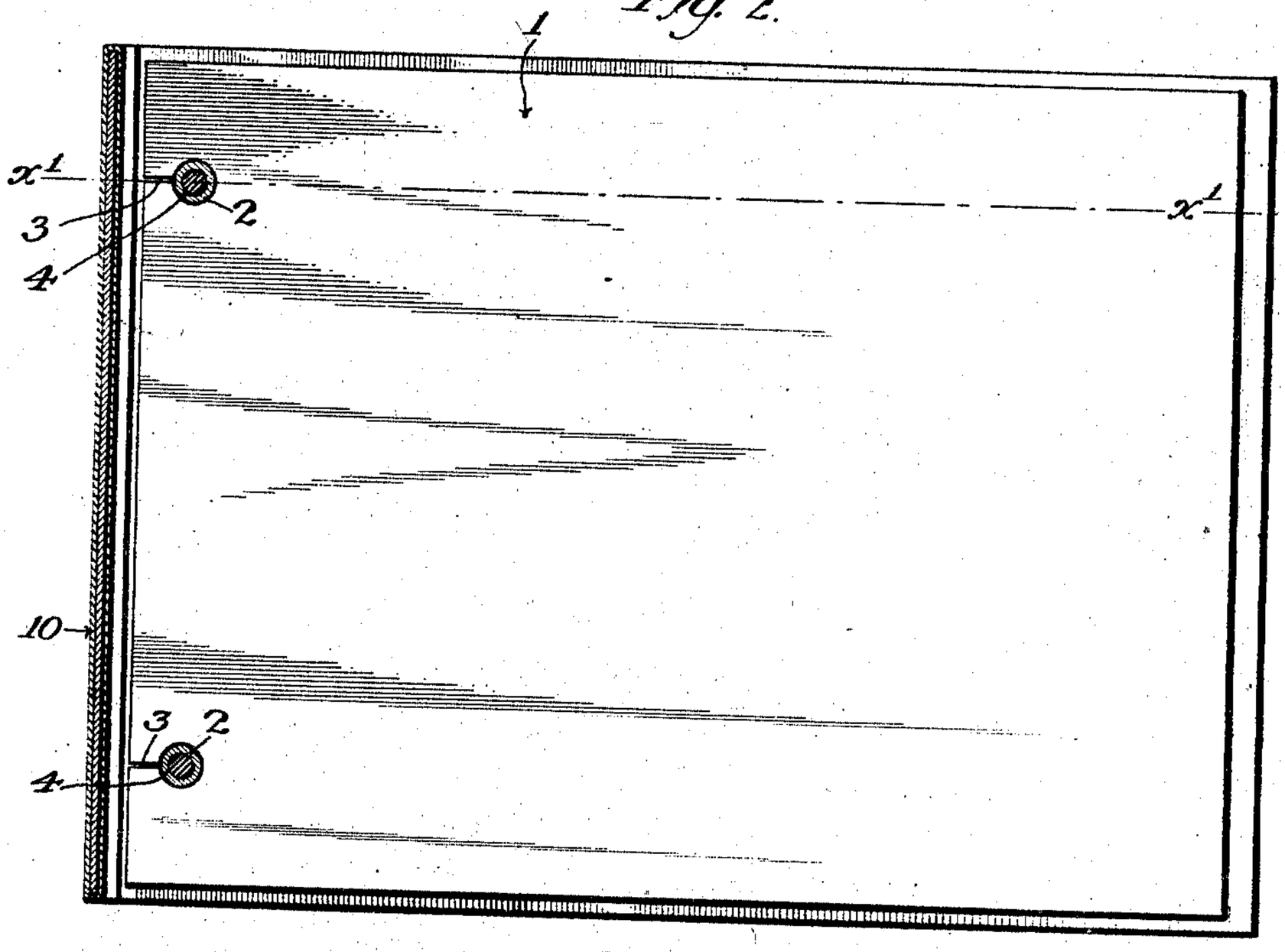
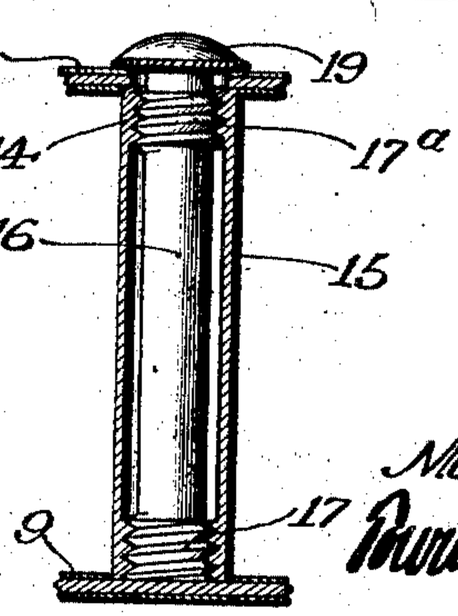


Fig. 3.



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UNITED STATES PATENT OFFICE.

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LOOSE-LEAF-BINDING DEVICE.

951,545. Specification of Letters Patent. Patented Mar. 8, 1910.

Application filed March 15, 1909. Serial No. 483,610.

To all whom it may concern:

Be it known that I, MARTIN C. NEUNER, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Loose-Leaf-Binding Device, of which the following is a specification.

The invention relates to loose leaf binders of the type in which the binding post or device extends through the leaves to hold the leaves together, and the object of the present invention is to provide simple and effective means whereby the said post or device may be operated to quickly loosen the leaves to permit ready insertion or removal of the leaves.

Referring to the drawings: Figure 1 is a section taken transversely through a loose leaf book equipped with this invention, the section being on line x^1—x^1 Fig. 2. Fig. 2 is a section on line x^2—x^2 Fig. 1. Fig. 3 is an enlarged section of a modified form of post.

1 designates the leaves which in the present instance are shown as provided with perforations 2 near theif binding edges, each leaf having a slit 3 which extends from the perforation clear to the adjoining edge so that the portions of the leaf may be bent back at the slit to pass by the binding post 4, which extends through the perforation, to permit the removal or insertion of the leaf. The leaves are not necessarily constructed in this manner, as it will be obvious that any leaf of this type may be used. The leaves in this instance are shown as confined between upper and lower covers 5 and 6, which are joined by flexible hinges 7, with upper and lower back members 8 and 9, each of which members is formed of a metal body portion 10 bent longitudinally to form a right angle in cross section, thus forming overlapping back plates 11 and side plates 12 which are connected with the respective flexible hinges 7. The overlapping back plates 11 enable the members 8 and 9 to be adjusted toward and from each other to suit the thickness of the book or number of leaves between the covers.

The binding post or device 4 comprises a tube 13, the lower end of which is suitably secured, as by brazing, to the member 9. The tube 13 has internal threads 14 at each end, which threads extend for a short distance only along the tube, thus leaving an unthreaded intermediate portion 15, the internal diameter of which is greater than the internal diameter of the threaded portions, and of a diameter at least as great as the diameter of the threaded portions at the bottom of the threads. Coacting with the tube 13 is a bolt 16 which at its lower end is provided with screw threads 17 which are adapted to be screwed completely through the upper screw threads 14 of the tube and engage with the lower screw threads 14, the member 8 having a perforation 18 of ample size to permit the threaded end 17 of the bolt to pass freely therethrough. The upper end of the bolt 16 has a head 19 which is knurled to permit the bolt being readily operated manually, and the shank of the bolt is of a diameter less than the internal diameter of the upper screw threaded portion 14 and is smooth so that the shank can readily slip endwise through the upper threaded portion 14.

When the leaves are secured in position in the book ready for use the bolts 16 are screwed down tight with the threaded portions 17 engaging the lower screw threads 14 of the tubes, thereby clamping the back portions of the leaves securely between the back members 8 and 9. When it is desired to insert or remove a leaf the bolts 16 are unscrewed a few turns sufficient to disengage the threads 17 from the lower threaded portions 14 of the tube and then the bolts are pulled out longitudinally until the threads 17 strike the lowermost threads 14 at the upper end of the tube, the upper threads 14 acting as shoulders or stops to prevent the bolts from being pulled farther out longitudinally. This adjustment of the bolts permits the back members 8 and 9 to be separated for quite a distance and permits easy access of the fingers of the operator to the inner edge of the leaves to insert or remove the same, and this wide opening is accomplished by merely a few turns of the bolts to loosen them and permit them to be pulled longitudinally without further unscrewing, thereby giving a very quick opening and permitting ready insertion or removal of leaves. After the leaves have been inserted or removed the bolts are pushed back longitudinally until the threads 17 come in contact with the lower threads 14 of the tubes and then the bolts are turned to screw them into place and clamp the covers. A very few screw threads are sufficient to retain the bolts securely. The upper threads 14 are

provided to act as a stop to limit the outward non-revoluble sliding action of the bolts, but obviously permit the bolts to be unscrewed entirely from the tubes should it be desired to completely separate the covers, and they also permit the bolts to be reëngaged with the tubes with equal facility.

If desired, the bolt 16 may be provided with screw threads 17ª at its upper end also, to engage with the upper threads 14 of the tube, as indicated in Fig. 3, in which form half the number of threads shown at the lower end in Fig. 1 may be employed in each place in Fig. 3 and secure the same retaining strength, and permit the disengagement with half the number of turns. For example, by providing three threads at the bottom of the bolt and three threads at the top of the bolt the bolt will be retained by an aggregate of six threads and yet can be disengaged from the tube or engaged with the tube with only three revolutions, whereas when all of the threads are at one end of the bolt, twice as many revolutions are required as when they are distributed, as shown in Fig. 3. In addition to this, the smooth surface 15 of the tube is lengthened, thereby affording a greater loosening movement of the covers without actual disengagement.

What I claim is:

1. A loose leaf binding post or device comprising two telescopic members both of which are threaded to engage each other when contracted, and the outer member having threads to act either as a stop for the inner member or to permit the inner member being screwed therethrough to disengage or engage it with the other member.

2. A binding post or device comprising an outer tube with internal screw threads at each end, and a bolt threaded at one end and adapted to be screwed into the threads in the tube, the intermediate portion of the tube being smooth to permit endwise sliding movement of the bolt.

3. A binding post or device comprising a tube one end of which is secured to a cover, said tube having screw threads at each end with a smooth intermediate portion, a bolt passing through a perforation in the other cover and having screw threads adapted to mesh with screw threads in the tube, and the shank of the bolt having a smooth portion permitting endwise movement of the bolt through the tube.

4. A binding post or device comprising a tube one end of which is secured to a cover said tube having screw threads at each end with a smooth intermediate portion, a bolt passing through a perforation in the other cover and having screw threads adapted to mesh with screw threads in the tube, and the shank of the bolt having a smooth portion permitting endwise movement of the bolt through the tube, said bolt having a knurled head.

5. A loose leaf binding post or device comprising two telescopic members, the outer member having threads near each end with an intermediate smooth portion, and the inner member having threads at two portions thereof to engage the respective threaded portions of the outer member, the intermediate portion of the inner member being smooth to permit endwise sliding movement of the inner member when it is turned to free the screw threaded portions.

In testimony whereof, I have hereunto set my hand at Los Angeles, California, this 8th day of March 1909.

MARTIN C. NEUNER.

In presence of—

G. T. HACKLEY,

FRANK L. A. GRAHAM.