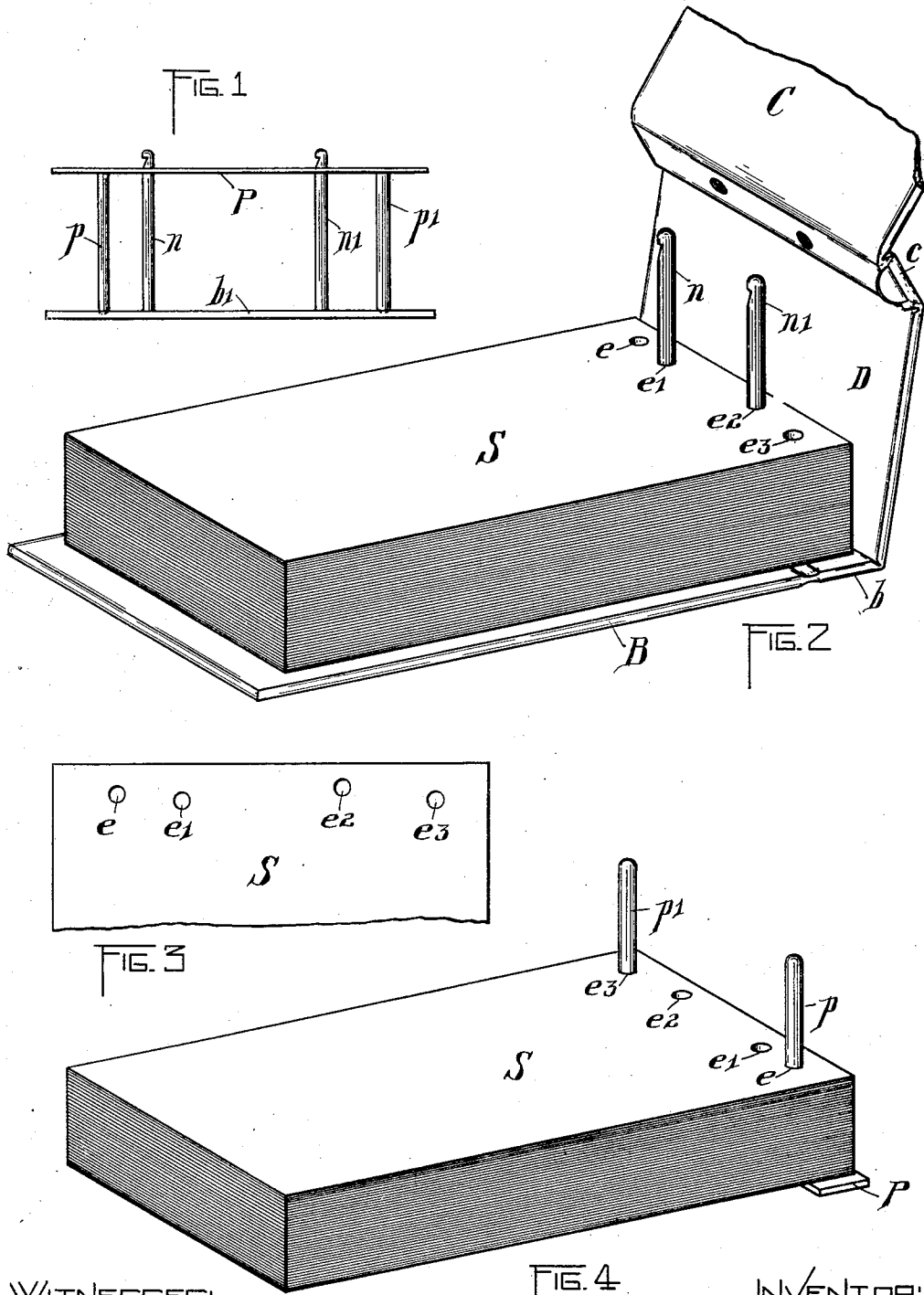


W. H. COOLEY.
 LOOSE LEAF BINDER AND LEAF THEREFOR.
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LOOSE-LEAF BINDER AND LEAF THEREFOR.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM H. COOLEY, a citizen of the United States, and a resident of Brockport, in the county of Monroe and State of New York, have invented a new and useful Improvement in Loose-Leaf Binders and Leaves Therefor, of which the following is a specification.

My present invention relates to that class of loose leaf binders in which there are provided leaf impaling means or posts relatively fixed in the binder and cooperating therewith separate and independent leaf impaling means or posts adapted to be removed from the binder with any desired quantity or number of the leaves impaled thereon in such a way as to hold such removed leaves in alinement while the posts permanently fixed in the binder are adapted to similarly retain in alinement the leaves that remain in the binder.

It frequently happens in inserting, removing and changing the leaves in such a binder that they become disarranged and placed bottom or wrong side up and it is the purpose of my present invention to prevent the insertion of the leaves in the binder wrong side up and also to provide means for detecting, before any attempt is made to insert them in the binder, any leaves which have been wrong side up in the pile of leaves to be inserted.

The accompanying drawings show my invention as embodied in a binder of the above named class of a well known pattern in which there are provided two cover means each flexibly connected to connecting members and the connecting members in turn flexibly connected to a common back member. One of the connecting members is provided with impaling posts fixed therein and such posts are conformed at their upper or free ends to receive a locking mechanism carried by the upper connecting member and the leaves in the binder are preferably provided with four holes for receiving the impaling posts, two of the holes located to receive the fixed impaling posts and the other two located to receive impaling posts carried by a removable member through the openings in which the first named impaling posts are adapted to engage.

The accompanying drawings illustrating such a binder are as follows,—

Figure 1 shows in diagrammatic elevation

the relative arrangement of the plates carrying the impaling posts. Fig. 2 shows in perspective such a binder opened out and with the upper and removable post carrying plate removed with a portion of the leaves therewith removed which are shown placed bottom side up in Fig. 4, while Fig. 3 shows in plan view the arrangement of the holes in the back edge of one of the leaves.

Similar parts are designated by similar reference characters throughout the several figures of the drawings.

Referring to the drawings. B and C are the cover members.

b and c are the connecting members flexibly connected to the cover members B and C and to a common back member D. Within the flexible member b is bound the lower impaling post carrying plate b¹ and within the connecting member c there is bound a locking mechanism adapted to releasably engage the notches in the upper and free edges of the posts n and n¹, which posts extend upwardly from and are secured in place in the plate b¹ bound into the connecting member b. These posts n and n¹ engage through openings e¹ and e² in the leaves S. The upper removable post carrying plate P carries two posts p and p¹ adapted to engage through the openings e and e³ in the leaves S and the plate P has openings therethrough to receive the upper free ends of the impaling posts n and n¹.

It will be noticed that the post p is so located that the hole e therefor is a greater distance from the left hand edge of a leaf S, as seen in Fig. 3, than the opening e³ positioned to receive the post p¹, is from the right hand edge of the leaf. In a similar way and for a similar reason the opening e² is located a greater distance from the right hand edge of the leaf S, as seen in Fig. 3, than the opening e¹ is from the left hand edge. Again the posts p and p¹ are so positioned that the openings e and e³ respectively therefor are different distances from the back edge of the leaf, similarly the openings e¹ and e² are located different distances from the back edge of the leaf. In the insertion of the leaves in the binder the plate P with the posts p and p¹ is removed and the location of the holes e¹ and e² in the leaves determines which side up such leaves must be inserted in the binder and over the posts n and n¹.

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The locations of the holes for receiving the posts p and p^1 in the leaves S determine which side up such leaves are to be inserted over the posts p and p^1 when any such leaves are inserted thereover when the plate P is removed and occupies a position substantially such as indicated in Fig. 4. Thus it will be seen that by reason of the arrangement of the impaling posts in each of the plates P and b^1 and of the corresponding holes in the leaves S for receiving them a means is provided for preventing the insertion of the leaves over the posts in the plate P or the posts in the plate b^1 wrong side up. It will, however, be understood when the plate P is removed from the binder and placed, as indicated in Fig. 4, with the posts p and p^1 extending upwardly therefrom that any leaves inserted thereover are to be placed with the reverse side up from what they would be if inserted directly over the posts n and n^1 carried by the plate b^1 and that as the mass of such leaves thus impaled on the posts p and p^1 is turned the other side up when inserted in the binder. Again, it will be understood that in a pile of leaves S regardless of which side up the pile is placed any leaves that are wrong side up relatively to the rest of the leaves in the pile are readily detected by the lack of alinement of the openings therethrough and such misplaced leaves may be removed and placed right side up before their insertion over the impaling posts of the binder. The location of the impaling posts relative to the ends and sides of the member carrying them affords an indication for determining which side up the leaves are to be inserted thereover.

From the foregoing description of the above indicated embodiment thereof it is believed that my invention and the application and method of using the same is sufficiently clear to call for no further explanation herein. I may call attention, however, to the following points.

The essential feature of my present invention consists then in such an arrangement of the impaling posts of a loose leaf binder, of the general character above described, that leaves having openings therein correspondingly positioned to receive the impaling posts may be inserted over all such impaling posts with only one and the same and corresponding side thereof uppermost.

In carrying out my invention the posts may be unsymmetrically disposed as desired in any one or more or in all of the different ways described as follows, viz:—The impaling posts may be arranged unsymmetrically relative to the leaves adapted to use in the binder with reference either to the two opposite edges of the leaves adjacent to the back edges thereof or with reference to a line extending between such two opposite edges and bearing a definite relation, prefer-

ably vertical to one of such opposite edges, or such posts may be arranged unsymmetrically with reference to the leaves in both such above mentioned ways and again the impaling posts carried by one plate may be arranged unsymmetrically with relation to the impaling posts carried by the other plate. Still, again, the impaling posts may be so arranged and positioned that the leaves may be inserted over the posts carried by either one or both of such plates with such posts engaging only in the proper and corresponding openings therefor in the leaves.

It is of course understood that there must be such coöperation as to the conformation of the impaling members and the openings in the leaves therefor as to secure and maintain alinement of the leaves in the binder.

It will of course be understood that at least three impaling members are required in order that they may be placed in such unsymmetrical relation as to prevent the insertion thereover of a leaf having corresponding and correspondingly positioned openings therein, except with only one side of the leaf uppermost.

What I claim is:

1. In a loose leaf binder in combination with suitable supporting means therefor, two relatively movable and separate series of impaling members for engaging and holding the leaves, said impaling members unsymmetrically disposed whereby leaves, having openings therein correspondingly conformed and positioned, may be inserted thereover with only one and the same and corresponding side of each one thereof uppermost.

2. In a loose leaf binder in combination with suitable supporting means therefor, two relatively movable and separate pairs of impaling members for engaging and holding the leaves, said impaling members unsymmetrically disposed whereby leaves, having openings therein correspondingly conformed and positioned, may be inserted in alinement thereover with only one and the same and corresponding side of each one thereof uppermost.

3. In a loose leaf binder in combination with suitable supporting means therefor, two relatively movable and separate series of impaling members for engaging and holding the leaves, the impaling members of one series unsymmetrically disposed relatively to the impaling members of the other series whereby leaves, having openings therein correspondingly conformed and positioned, may be inserted over all the impaling members with only one and the same and corresponding side of each one thereof uppermost.

4. In a loose leaf binder in combination with suitable supporting means therefor,

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two relatively movable and separate series of impaling members for engaging and holding the leaves, the impaling members of one series unsymmetrically disposed relatively to the impaling members of the other series and also relatively to the opposite edges of leaves adapted to use in the binder adjacent to their back edges whereby leaves, having openings therein correspondingly conformed and positioned to receive the impaling members of both series, may be inserted in alinement over the impaling members of one series with only one and the same and corresponding side of each one thereof uppermost.

5. In a loose leaf binder in combination with suitable supporting means therefor, two relatively movable and separate series of impaling members for engaging and holding the leaves, the impaling members of one series unsymmetrically disposed relatively to the impaling members of the other series and also relatively to the opposite edges of leaves adapted to use in the binder adjacent to their back edges whereby leaves, having openings therein correspondingly conformed and positioned to receive the impaling members of both series, may be inserted thereover with only one and the same and corresponding side of each one thereof uppermost and over the impaling members of one series only with the impaling members of said one series engaging in the openings correspondingly positioned therefor.

6. In a loose leaf binder in combination with suitable supporting means therefor, two relatively movable and separate series of impaling members for engaging and holding the leaves, said impaling members unsymmetrically disposed whereby leaves, having openings therein correspondingly conformed and positioned, may be inserted thereover with only one and the same and corresponding side of each one thereof uppermost and leaves for the binder having corresponding and correspondingly positioned openings therein operating to hold the leaves in alinement on the impaling members of one series independently of the impaling members of the other series.

7. In a loose leaf binder in combination with suitable supporting means therefor, two relatively movable and separate pairs of impaling members for engaging and holding the leaves, said impaling members unsymmetrically disposed whereby leaves, having openings therein correspondingly conformed and positioned, may be inserted in alinement thereover with only one and the same and corresponding side of each one thereof uppermost and leaves for the binder having corresponding and correspondingly positioned openings therein operating to hold the leaves in alinement on

the impaling members of one series independently of the impaling members of the other series.

8. In a loose leaf binder in combination with suitable supporting means therefor, two relatively movable and separate series of impaling members for engaging and holding the leaves, the impaling members of one series unsymmetrically disposed relatively to the impaling members of the other series whereby leaves, having openings therein correspondingly conformed and positioned, may be inserted over all the impaling members with only one and the same and corresponding side of each one thereof uppermost and leaves for the binder having corresponding and correspondingly positioned openings therein operating to hold the leaves in alinement on the impaling members of one series independently of the impaling members of the other series.

9. In a loose leaf binder in combination with suitable supporting means therefor, two relatively movable and separate series of impaling members for engaging and holding the leaves, the impaling members of one series unsymmetrically disposed relatively to the impaling members of the other series and also relatively to the opposite edges of leaves adapted to use in the binder adjacent to their back edges whereby leaves, having openings therein correspondingly conformed and positioned to receive the impaling members of both series, may be inserted in alinement over the impaling members of one series with only one and the same and corresponding side of each one thereof uppermost and leaves for the binder having corresponding and correspondingly positioned openings therein operating to hold the leaves in alinement on the impaling members of one series independently of the impaling members of the other series.

10. In a loose leaf binder in combination with suitable supporting means therefor, two relatively movable and separate series of impaling members for engaging and holding the leaves, the impaling members of one series unsymmetrically disposed relatively to the impaling members of the other series is also relatively to the opposite edges of leaves adapted to use in the binder adjacent to their back edges whereby leaves, having openings therein correspondingly conformed and positioned to receive the impaling members of both series, may be inserted thereover with only one and the same and corresponding side of each one thereof uppermost and over the impaling members of one series only with the impaling members of said one series engaging in the openings correspondingly positioned therefor and leaves for the binder having correspond-

ing and correspondingly positioned openings therein operating to hold the leaves in alinement on the impaling members of one series independently of the impaling members of the other series.

11. In a loose leaf binder two relatively movable plates each carrying impaling posts for engaging and holding leaves, said impaling posts unsymmetrically disposed whereby leaves, having corresponding and correspondingly positioned openings therein, may be inserted thereover with only one and the same and corresponding side of each one thereof uppermost.

12. In a loose leaf binder two relatively movable plates each carrying impaling posts for engaging and holding leaves, said impaling posts unsymmetrically disposed whereby leaves having corresponding and correspondingly positioned openings therein, may be inserted in alinement thereover with only one and the same and corresponding side of each one thereof uppermost.

13. In a loose leaf binder two relatively movable plates each carrying impaling posts for engaging and holding leaves, the impaling posts carried by one plate unsymmetrically disposed relatively to the posts carried by the other plate whereby leaves, having corresponding and correspondingly positioned openings therein, may be inserted over all the posts with only one and the same and corresponding side of each one thereof uppermost.

14. In a loose leaf binder two relatively movable plates each carrying impaling posts for engaging and holding leaves, the impaling posts carried by one plate unsymmetrically disposed relatively to the posts carried by the other plate and also relatively to the opposite edges of leaves adapted to use in the binder adjacent to their back edges whereby leaves, having corresponding and correspondingly positioned openings therein to receive the posts carried by both plates, may be inserted in alinement over the posts carried by one of the plates with only one and the same and corresponding side of each one thereof uppermost.

15. In a loose leaf binder two relatively movable plates each carrying impaling posts for engaging and holding leaves, the impaling posts carried by one plate unsymmetrically disposed relatively to the posts carried by the other plate and also relatively to the opposite edges of leaves adapted to use in the binder adjacent to their back edges whereby leaves, having corresponding and correspondingly positioned openings therein to receive all the posts may be inserted thereover with only one and the same and corresponding side of each one thereof uppermost and over the impaling posts carried by one of such plates only with the impaling posts carried by said one of such plates engaging

in the openings correspondingly positioned therefor.

16. In a loose leaf binder in combination with suitable supporting means therefor, three or more impaling members unsymmetrically disposed whereby a leaf having corresponding and correspondingly positioned openings therein to receive the impaling members may be inserted thereover with only one side thereof uppermost.

17. In a loose leaf binder in combination with suitable supporting means therefor, three or more impaling members unsymmetrically disposed and leaves having corresponding and correspondingly positioned openings therein and adapted to be inserted over the impaling members with only one and the same and corresponding side of each one thereof uppermost.

18. A leaf for a loose leaf binder having three or more openings therein unsymmetrically disposed whereby such leaf may be inserted over corresponding and correspondingly positioned impaling members with only one side thereof uppermost.

19. In a loose leaf binder in combination with suitable supporting means therefor, three or more impaling members disposed unsymmetrically and out of alinement, whereby a leaf having corresponding and correspondingly positioned openings therein to receive the impaling members may be inserted thereover with only one side thereof uppermost.

20. In a loose leaf binder in combination with suitable supporting means therefor, three or more impaling members disposed unsymmetrically and out of alinement and leaves having corresponding and correspondingly positioned openings therein and adapted to be inserted over the impaling members with only one and the same and corresponding side of each one thereof uppermost.

21. A leaf for a loose leaf binder having three or more openings therein disposed unsymmetrically and out of alinement whereby such leaf may be inserted over corresponding and correspondingly positioned impaling members with only one side thereof uppermost.

22. In a loose leaf binder in combination with suitable supporting means therefor, a plurality of impaling members disposed unsymmetrically and with no three of such impaling members disposed in alinement whereby a leaf having corresponding and correspondingly positioned openings therein to receive the impaling members may be inserted thereover with only one side thereof uppermost.

23. In a loose leaf binder in combination with suitable supporting means therefor, a plurality of impaling members disposed unsymmetrically and with no three of such im-

paling members disposed in alinement and leaves having corresponding and correspondingly positioned openings therein and adapted to be inserted over the impaling members with only one and the same and corresponding side of each one thereof uppermost.

24. A leaf for a loose leaf binder having a plurality of openings therein unsymmetrically disposed and with no three of such openings disposed in alinement whereby such leaf may be inserted over corresponding and correspondingly positioned impaling members with only one side thereof uppermost.

25. A leaf for a loose leaf binder having at least four openings therein unsymmetrically disposed whereby a plurality of such leaves may be inserted over corresponding and correspondingly positioned impaling members and whereby also such leaves may be inserted over and held in alinement by two of such impaling members, with only one and the same and corresponding side of each one thereof uppermost.

26. A leaf for a loose leaf binder having at least four openings therein unsymmetrically disposed whereby a plurality of such leaves may be inserted over corresponding and correspondingly positioned impaling members with only one and the same and

corresponding side of each one thereof uppermost, two of such openings positioned to receive only the two correspondingly positioned ones of such impaling members.

27. A leaf for a loose leaf binder having at least four openings therein disposed unsymmetrically and out of alinement whereby such leaf may be inserted over corresponding and correspondingly positioned impaling members with only one side thereof uppermost and whereby also a plurality of such leaves may be inserted over and held in alinement by two of such impaling members with only one and the same and corresponding side of each one thereof uppermost.

28. A leaf for a loose leaf binder having at least four openings therein disposed unsymmetrically and out of alinement whereby a plurality of such leaves may be inserted over corresponding and correspondingly positioned impaling members with only one and the same and corresponding side of each one thereof uppermost, two of such openings positioned to receive only the two correspondingly positioned ones of such impaling members.

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