No. 798,301. PATENTED AUG. 29, 1905.

J. SCHADE, JR.

BINDER.

APPLICATION FILED DEC. 10, 1903.

FIG. 1.

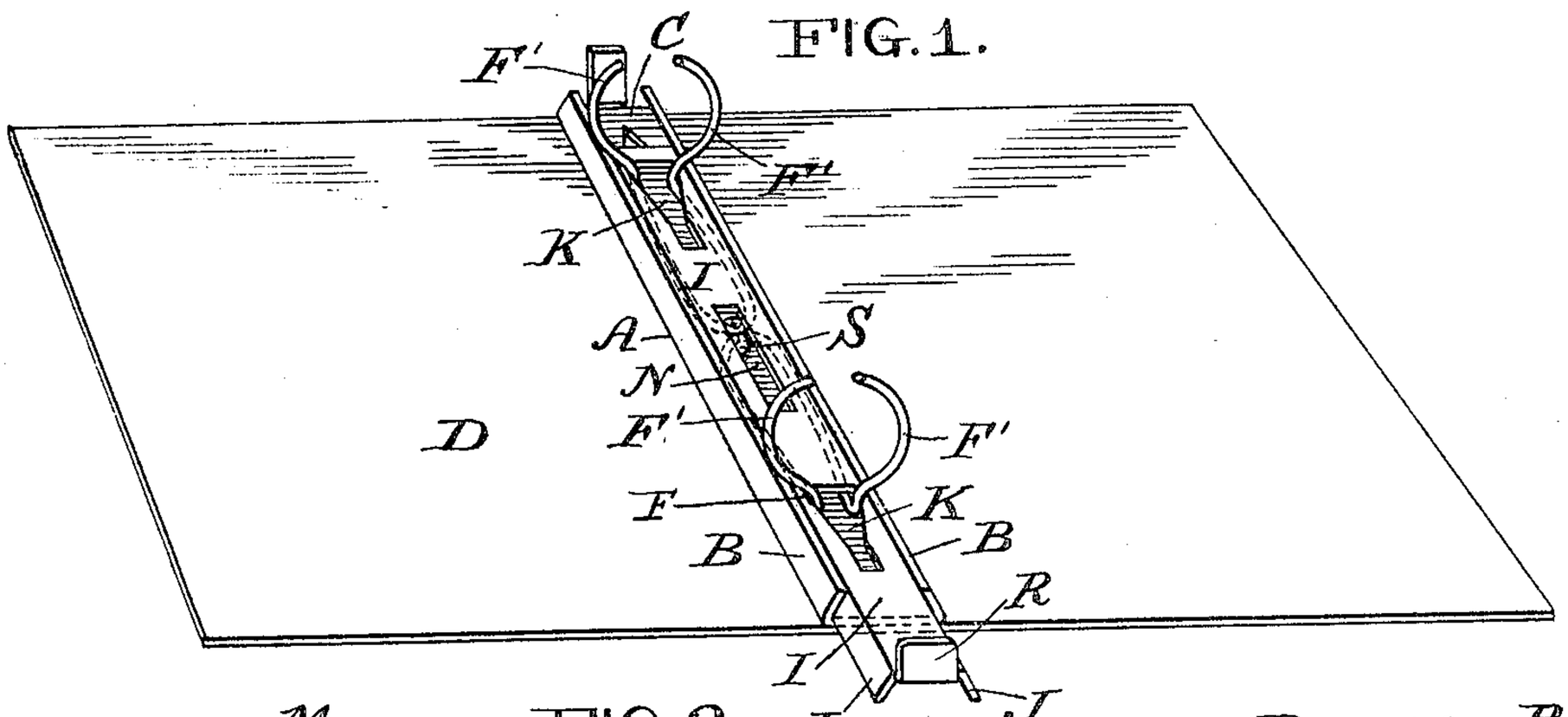


FIG. 2.

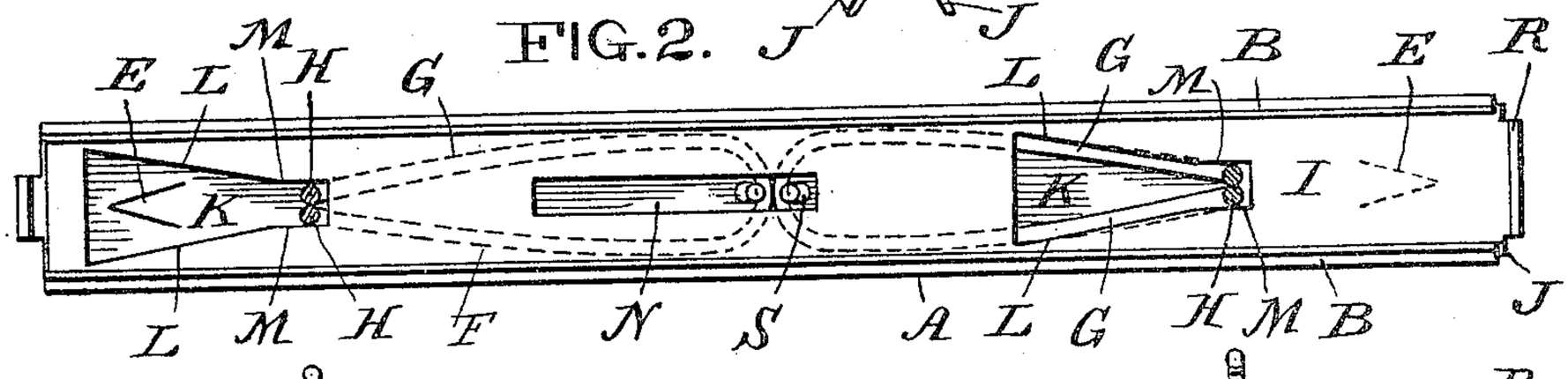


FIG. 3.

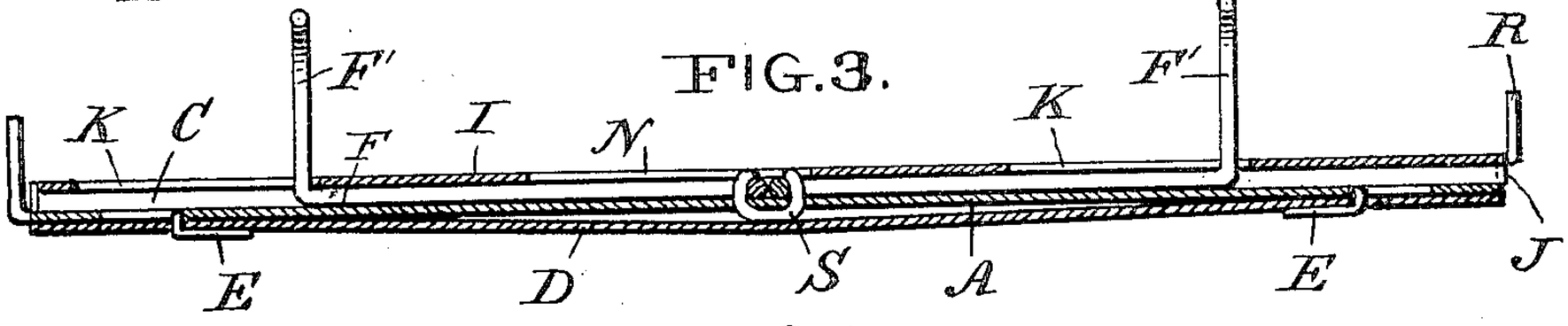


FIG. 4.

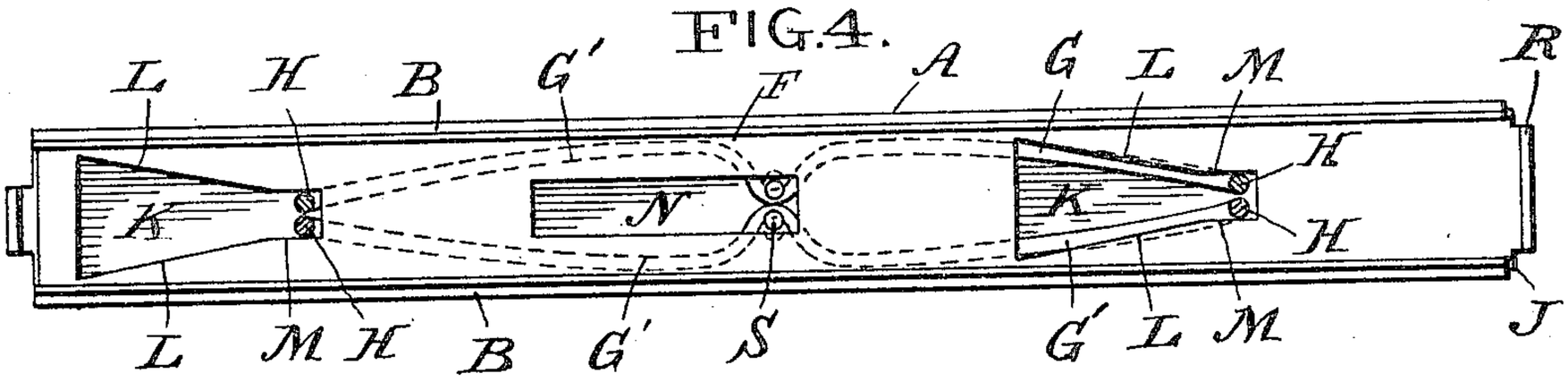
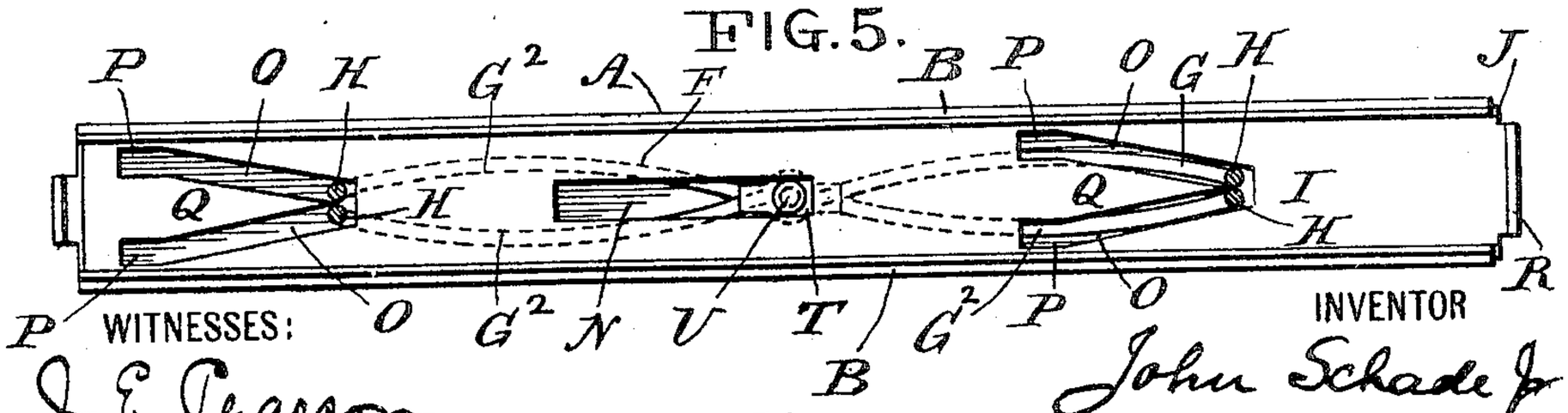


FIG. 5.

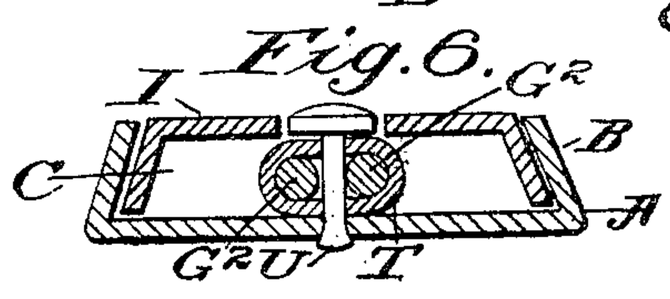


WITNESSES:

J. E. Pearson

Frank O'Connor.

Fig. 6.



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UNITED STATES PATENT OFFICE.

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BINDER.

No. 798,301. Specification of Letters Patent. Patented Aug. 29, 1905.

Application filed December 10, 1903. Serial No. 184,695.

To all whom it may concern:

Be it known that I, JOHN SCHADE, Jr., a citizen of the United States, residing at New York city, borough of Brooklyn, county of Kings, State of New York, have invented certain new and useful Improvements in Binders, of which the following is a specification.

My invention relates to what is now commonly known in the art as a "loose-leaf binder;" and it consists in the construction of the separable attaching members, over which the loose leaves are placed and which serve to hold such leaves in position, and the means employed for opening and closing such attaching members to permit the insertion or withdrawal of a leaf or leaves.

The object of my invention is a binder in which the attaching members may be readily replaced when broken or injured, and, further, considered as a whole, a binder which shall be cheap in cost of construction and easily operated.

The accompanying drawings will serve to illustrate my invention.

Figure 1 is a perspective view showing the binder secured to the inner side of a book. Fig. 2 is a plan view and partial section with the supporting portion of the attaching member shown in dotted lines and with the parts in the closed position. Fig. 3 is a longitudinal section with the parts in the same position as shown in Fig. 2. Fig. 4 is a plan view corresponding to Fig. 2, showing a modification of my invention. Fig. 5 is also a plan view corresponding to Fig. 2, showing a further modification of my invention. Fig. 6 is an enlarged sectional view of the band connecting the supporting portions.

Referring to the drawings, A indicates the base member of the binder, which is preferably formed of metal with the opposing edges B turned upward and inward at an angle to form a dovetailed slot C. The base member A may be secured to the body of a book D in any suitable manner—as, for instance, by means of fasteners E, struck out of the base member A or secured thereto. Situated within the dovetailed slot C are a pair of attaching members F, preferably formed of resilient wire. Each attaching member consists of a supporting portion G, formed either as shown in Fig. 2—that is, with the wire turned upon itself to form a loop and then upward at right angles to form upright portions H and circularly inward to form the divided ring portions F'—or, as shown in Fig. 4, where the supporting portion G' is bent inwardly at the center and then upward at right angles to form an upright portion and circularly inward to form one of the hooks of the divided ring portion, the opposite side being formed in a similar manner, or, as shown in Fig. 5, with the supporting portions G^2 of the two attaching members connected at the center and each turned upward at right angles at the ends to form upright portions and circularly inward to form the divided ring portions F'.

In Figs. 1, 2, and 3 the divided ring portions F', which for the purposes of description may be termed "binding-wires," are arranged to be normally open—that is, the resiliency of the wire from which they are made tends to keep the points of the hooks separated—whereas in Fig. 5 the opposite is the case, the resiliency of the wire acting to force the ends of the hooks in apposition.

To force the ends of the hooks together, Figs. 1, 2, 3, 4, when the resiliency of the metal of which the attaching members are made causes them to open, or to force the hooks of the divided ring portions F' apart, Fig. 5, when the resiliency of the metal of which the attaching members are made causes them to close, I make use of the sliding plate I, the edges of which, J, are turned downward and outward to conform to the shape of the slot C. Formed through the plate I, Figs. 1, 2, 3, 4, are the openings K with their sides inclined toward each other over a portion L and parallel over a portion M. The upright portions H of the attaching members are situated in these slots. The plate I also has a longitudinal slot N with parallel sides.

In Fig. 5 in place of the openings K there are two diverging slots O, which generally correspond to the portion L of the slots K, and parallel slots P, corresponding to the portion M of the slots K, and arranged between the slots O is a wedge-shaped body of metal Q. The upright portions H of the hooks are situated in the slots O, and the point of the wedge-shaped body Q is located between the upright portions H of the hooks. The plate I is also turned upward at the end to form a handle R, which may be grasped to shift the plate I in the slot C. The supporting portions of the attaching members are secured together in Figs. 1, 2, 3, 4, by means of a staple S and in Fig. 5 by means of a band T. U is a pin which, like the staple S, is carried through

the body portion A and serves to define the position of the attaching members F in the base A.

The operation of my device will be readily understood. When the plate I is moved to the right in slot C, the sides of the portion L of the openings K ride over the upright portions H of the hooks F′ and permit them, Figs. 1, 2, 3, 4, to separate by their normal resiliency or otherwise change the diameter of the divided ring portions F′, or in Fig. 5 when the plate I is pushed to the right the wedge-shaped body Q enters between the upright portions H of the hooks F′ and pushes them apart, thus overcoming their normal resiliency and increasing the diameter of the divided ring portions F′. It will be observed that when the parts are in the position shown the upright portions H of the hooks F′ lie in the portion M of the openings K or the portion P of the slots O, thereby locking them in position. When it is desired to replace an attaching member or members, the staple S or pin U is removed and the plate I drawn out, which carries the attaching members F with it. The attaching members F can then be removed from the plate I and new attaching members substituted.

Having thus described my invention, I claim—

1. A loose-leaf binder, comprising a base member, a resilient attaching member separable from the base member, not permanently attached thereto, and provided with a divided ring portion, and means for changing the diameter of the ring.

2. A loose-leaf binder comprising a base member, an attaching member having a divided ring portion, said attaching member separable from the base member, a plate having a slot adapted to change the diameter of the ring and to lock the ring in the closed position.

3. A loose-leaf binder, comprising a base member, an attaching member having a divided ring portion, a sliding member having a slot with its sides parallel over a portion of its length and at an angle to each other over the other portion of its length, and said slot adapted to coact with said ring portion to alter its diameter.

4. A loose-leaf binder, comprising a base member, having its sides turned upward and inward, a fastening member connected to said base member, an attaching member having a divided ring portion, a sliding member having its sides turned downward and outward and provided with slots adapted to coact with the ring portion to change its diameter.

5. In a loose-leaf binder, and in combination with a base member, a separable attaching member formed of resilient metal and bent upon itself to form a supporting portion, and upward at right angles and circularly inward to form a divided ring portion.

6. In a loose-leaf binder, a self-contained separable attaching member shaped to form a supporting portion and an attaching portion, together with means adapted to coact with the attaching portion to open and close said attaching portion.

7. In a binder, a pair of upright semicircular hooks capable of being moved from and toward each other, each formed integrally with and extending approximately at right angles from a resilient supporting portion, a base underneath said supporting portion, and a sliding plate above said base having a V-shaped cam-slot therein, through which slot the upright portions of said hooks extend, said cam serving to alter the position of said hooks relative to each other.

8. In a binder, a pair of upright semicircular binding-wires capable of being opened and closed, each formed integral with and extending approximately at right angles from a resilient supporting portion, supports underneath said supporting portions, and a sliding plate above said supporting portions, having V-shaped cam-slots therein through which slots said upright wires extend, said cams serving to operate said binding-wires.

In testimony whereof I affix my signature in the presence of two witnesses.

JOHN SCHADE, Jr.

Witnesses:
J. E. Pearson,
Frank O'Connor.