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R. SATO

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FASTENER

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Fig. 1.

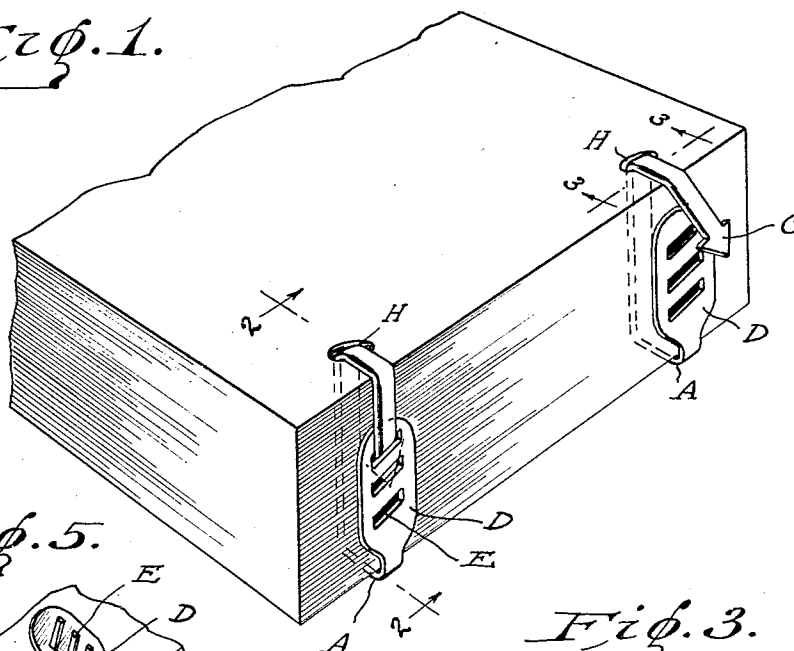


Fig. 5.

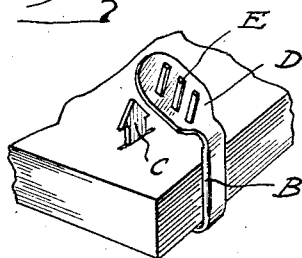


Fig. 3.

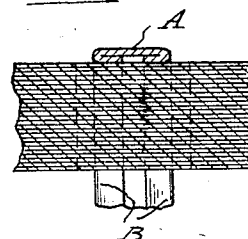


Fig. 2.

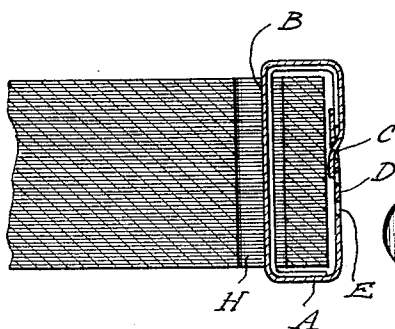
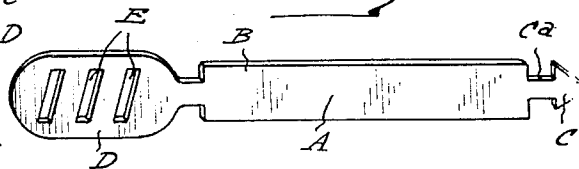


Fig. 4.



WITNESS

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This invention relates to improvements in means for binding loose leaves, and its leading object is to provide a simple, self-adjustable, binding strap, which can be extended through punched holes in the edges of a stack of paper or other sheets, and its ends interlocked to each other, so as to tie or bind the sheets into book form.

One of the objects of the invention is the provision of a flexible strap, preferably made of soft malleable brass or other metal, one end of which is formed with a series of transverse slots and the other end of which is formed with a tongue which may be interlocked in any one of the slots, so as to bind the paper sheets through which the device is extended.

Another object of the invention is to provide such a device with a coupling means, whereby the expansive action of the paper sheets will force the ends of the binding device into interlocking engagement.

Other objects and advantages of the invention will be hereinafter specifically pointed out, or will become apparent, as the specification proceeds.

With the above indicated objects in view, the invention resides in certain novel constructions and combinations and arrangement of parts, clearly described in the following specification and fully illustrated in the accompanying drawings, which latter show embodiments of the invention as at present preferred.

In the drawings:—

Fig. 1 is a view in perspective view showing a book of sheets held together by a pair of the binding devices.

Fig. 2 is a detail vertical sectional view taken on line 2—2 of Fig. 1, looking in the direction of the arrows.

Fig. 3 is a detail sectional view taken on line 3—3 of Fig. 1.

Fig. 4 is a perspective view showing the binding device in its original condition.

Fig. 5 is a detail perspective view showing a different way of inserting the tongue.

Referring to the accompanying drawings in detail A designates a flexible binding strip, preferably of soft, malleable metal, like brass,

copper, nickel-silver, or some other metal or alloy of metals.

The body of this strip is folded upon itself to provide a binding band B, which is adapted to be inserted in the punched holes H of a stack of sheets, indicated in Fig. 1. On one end of the band B an arrow headed terminal or tongue C is formed, which is spaced longitudinally from the band by the neck Ca.

On the opposite end of the band the coupling head D is formed, and this is spaced from the end of the band by means of the neck Da. This coupling head is formed with a series of diagonal slots E, which are spaced longitudinally from and are parallel to each other. This head D is wider than the folded band B, and the slots are each wide enough to receive the arrow shaped locking tongue C.

The band is connected to the sheets to be bound, by extending the arrow shaped head through the punched holes of the sheets, and folding the band upon itself, so that the locking head D will enter one of the slots E. The locking head is forced through the slot selected for coupling, in the manner shown in Figs. 1 and 2, by forcing the tongue through the coupling head from the outside thereof, so that the tongue will be disposed between coupling head and the opposed edges of the book of sheets.

If a number of sheets are added to the book of sheets, the tongue may be located in another slot, and if a number of sheets are extracted from the book the position of the locking tongue may be changed accordingly.

Owing to the diagonal disposition of the slots of the coupling head, the locking tongue when inserted in one of these slots will slide laterally, so that end of the slot will enter the neck Da of the locking tongue, thereby preventing endwise withdrawal of the locking tongue from the coupling head.

The folded edges of the band form a smooth surface on each side of the band, and thus prevent the band from cutting the paper or other material clamped.

A pack of sheets bound together by a pair of the binding devices will open and close like a flat opening book.

The locking tongue is formed with a rela-

tively sharp point, which may be forced through paper, so that the binding device will make its own holes in the paper. When the device is used in this way the coupling head
5 may be disposed against one side of the bound sheets, instead of against the edge faces thereof, as shown in Fig. 1.

The hereinbefore described construction admits of considerable modification without departing from the invention; therefore, I
10 do not wish to be limited to the precise arrangements shown and described, which are, as aforesaid, by way of illustration merely. In other words, the scope of protection contemplated is to be taken solely from the ap-
15 pended claim, interpreted as broadly as is consistent with the prior art.

I claim as new:—

A binding device consisting of a band of
20 flexible material formed with a coupling head on one end thereof, and provided with a series of slots spaced from each other, each of the slots being disposed diagonally in the head, the other end of the band being formed with
25 a locking tongue of arrow shape insertable in either one of the slots and adapted to slide against the end of the slot under the tension of paper sheets around which the band is placed, the band being folded upon itself to
30 provide rounded side edges.

In testimony whereof I hereby affix my signature.

RYUJI SATO.

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