July 30, 1963 W. SÖRENSEN 3,099,269

FILE FOR NON-PUNCHED PAPERS

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Fig.1

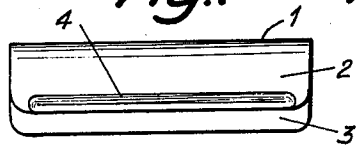


Fig.2

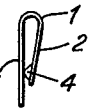


Fig.3

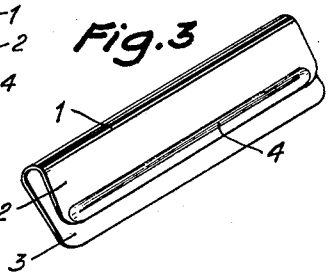


Fig.4

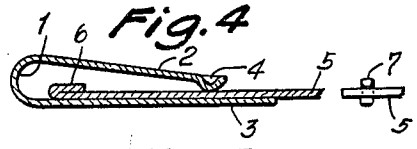


Fig.5

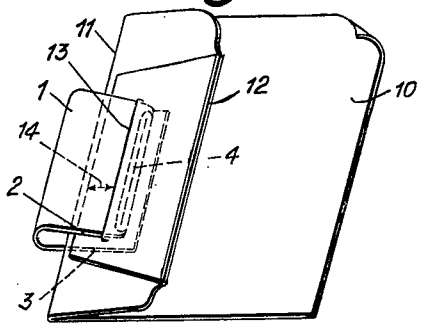


Fig.6

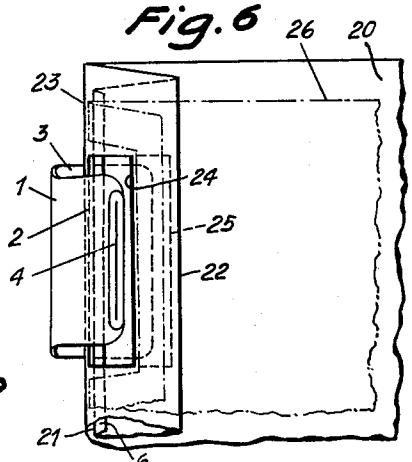


Fig.7

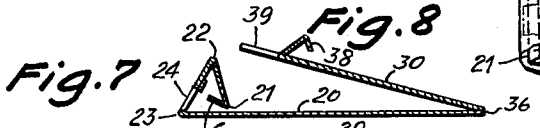


Fig.8

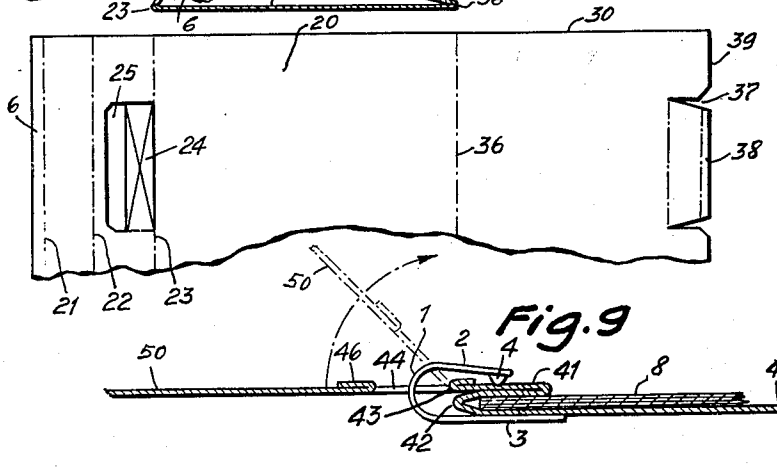


Fig.9

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Fig. 10

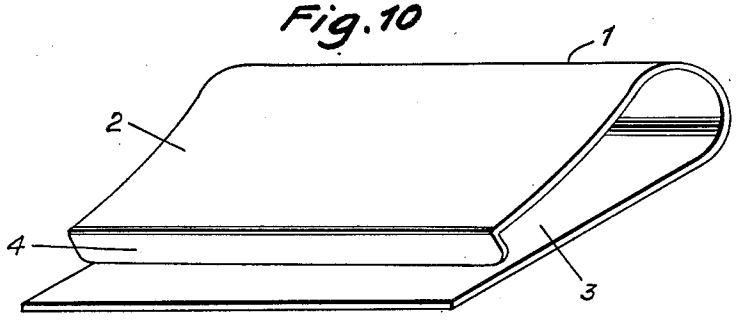


Fig. 11

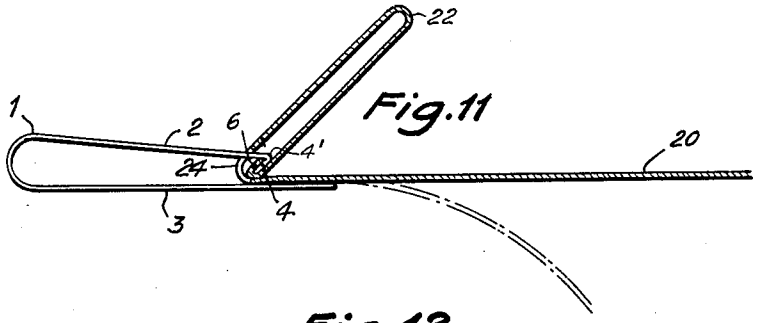


Fig. 12

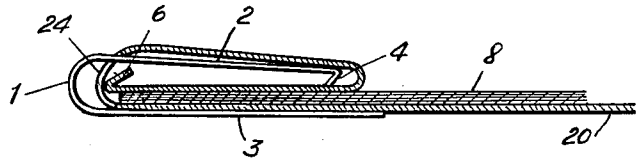
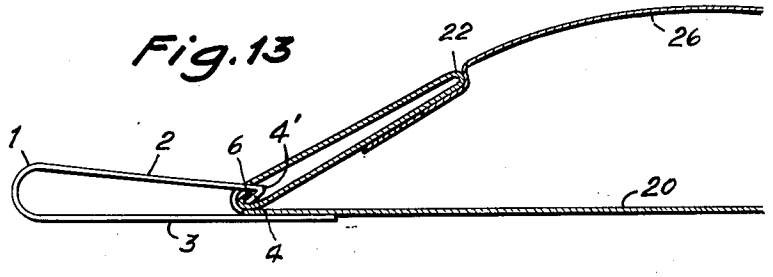


Fig. 13



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FILE FOR NON-PUNCHED PAPERS

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Filed Nov. 8, 1961, Ser. No. 150,987
6 Claims. (Cl. 129—37)

For holding together loose leaves, spring clamps made of thin steel sheet are used too, aside of the generally conventional letter clips. Such spring clamps are slid from above over the holding margin of the papers and properly hold together the latter. The advantage of the spring clamp is that it engages the margin of the papers and that the spring force acts along a line, whereas the letter clip practically is effective in one point only, directly crushes the sheet margins and thereby deforms or damages same. Both said clips and clamps are destined and used only for temporarily fastening together the papers. On the other hand, paper files are on the market which comprise a coverless simple sheet of cardboard on the left-hand margin of which is formed, by repeated folding, a niche or recess for accommodating the paper margins on one hand and a pocket on the other hand for a generally M-shaped fastening pin made of wire that is transversely movable therein. Said pin sets the niche free on being withdrawn and presses same against the base when being inserted. The clamping action here takes place at the tips, the groups of legs straddling against each other according to the gauge of the insert. Thicker inserts thus are crushed at the margin, tending to be forced out. This is avoided in the subject matter of the present invention.

To such end files, books or the like are formed, according to the invention, on one hand from at least one two-leg steel sheet clamping spring comprising a rib projecting on the clamping edge of one spring-leg and from a suitable flexible material on the other hand, the clamping spring being slidable crosswise on the fastening margin of said files or books so that the movement of drawing-off the clamping spring from folds or webs of the file bodies, which serve as stops, is limited in that the spring-leg rib abuts against said stop.

Several forms of the invention are shown in the drawings, in which:

FIG. 1 is a top plan view of the clamping spring,

FIG. 2 shows said spring in side view,

FIG. 3 is a perspective view of the spring, and

FIG. 4 depicts the arrangement of the spring on that file portion which comprises means for limiting the movement thereof,

FIG. 5 shows a form of the present file in perspective,

FIG. 6 illustrates a second form of the file in top plan view,

FIG. 7 shows a partial view of the developed file body of the form illustrated in FIG. 6,

FIG. 8 depicts the prefolded file body of FIG. 7 in side view,

FIG. 9 shows a partial section through a third form of the file,

FIG. 10 depicts a second form of the clamping spring in perspective,

FIG. 11 shows in section the arrangement of this spring on a file according to FIG. 6 with the spring withdrawn,

FIG. 12 is a cross-section through the file shown in FIG. 11 with clamped papers, and

FIG. 13 illustrates the file shown in FIGS. 11 and 12 with a folding cover.

As shown in FIGS. 1 to 3, the clamping spring **1** is formed of a rectangular piece of steel sheet that is bent over in the longitudinal direction with a radius of curvature of about 1/12 inch and comprises two resilient clamping legs **2** and **3**. The leg **2** through its exterior end exerts a clamping pressure against the lower, longer leg **3**. At the clamping edge of clamping leg **2** is a rig **4** produced by a compression of the sheet rim. This rib stiffens the clamping edge of clamping leg **2** and secures a linearly uniform engagement of the collection goods to clamping leg **3** which affords a plane base plate. Rib **4** moreover serves for limiting the slide path of clamping spring **1**, as illustrated by FIG. 4. Here, clamping spring **1** is slid over a piece of cardboard **5** of which the left-hand portion is thickened by a rim fold **6**. When drawing out the spring to the left, rib **4** abuts against rim fold **6** that acts as stop, and limits the extension movement of clamping spring **1**. In place of the fold **6**, a plurality of fastening clips **7** arranged in a row (right-hand portion of FIG. 4) could be used as a stop. Portfolio body **5** may consist, instead of cardboard, of leather, artificial leather, stiffened textile material, plastic, pressed material or impregnated materials of all kinds.

FIG. 5 shows the most simple exmaple of using the clamping spring **1** that is known per se, as sliding spring on an open portfolio or base. The carboard sheet **10** which forms the case, here comprises on its left side only two opposite folds **11**, **12** i.e. fold **11** clockwise and fold **12** anticlockwise. Cardboard **10** at a distance of about 1/6 inch from the edge of the strip resulting on account of fold **12**, is provided with a slit **13** produced by a simple cut of the knife, i.e. without removing any material. The length of slit **13** corresponds, with slight addition, to the length of the clamping spring. The latter is slid into slit **13** with clamping leg **2**, with clamping leg **3** engaging the exterior fold **11**. It cannot be withdrawn again without using force, and only can be moved between the abutment of its back against fold **11** on the right and the abutment of rib **4** against web **14** (to the left of slit **13**) on the left. In this latter position of the clamping spring, collection goods may be slid from the right underneath fold **12** and thus is engaged by the clamping pressure of rib **4** as soon as clamping spring **1** is moved to the right. When sliding-in the clamping spring, rib **4** is passed on the cardboard strip between the folds **11** and **12** over the goods without touching same.

This simplest embodiment, shown in FIG. 5, is not yet free of deficiencies and shortcomings. In particular, the topmost strip, produced by fold **12**, while abutting against the collection goods in the range of the slide spring, will spread away, and this at an increasing rate towards the upper and the lower edge of sheet edges. Such effect may be counteracted either by sticking-down the strip or, as shown, by clipping the marginal portions. In the other embodiments such disadvantage does not arise.

In the example shown in FIGS. 6 to 8, case body **20** or **30** from the left-hand margin is folded at **21**, **22** and **23**, the first fold being at small distance from the edge, and the other two so that they leave strips of the width of fastening margins. From the innermost strip (FIGS. 7 and 8) a window **24** is cut out along fold **23**, that has

substantially half the width of the strip and the length of the clamping spring (+ addition). This window is so cut out that the two narrow sides and the long side at the fold are cut with the knife, while the other long side is formed by folding the flap **25** anticlockwise. The folds now all are wrapped in the order **21**, **22**, **23** clockwise, one might say rolled-in, and thereby brought into the position shown in FIG. 8. The contours of the folded case body and of the clamping spring **1**, as far as they would have to coincide in the top plan view of FIG. 6, for the sake of clarity are drawn at an angle to each other. The upper and lower edges of case-body prior to folding could, but will not have to, be bevelled from fold **23** to the outside edge so as to agree with the illustration in FIG. 6. Fold **23** having been rolled in, has become the fastening back, and fold **21** has moved upwardly immediately over same with the marginal fold **6** that forms a narrow strip so that fold **6** is visible through the window **24**. Over and along this narrow strip is slid clamping leg **2** with rib **4**. When sliding-in clamping spring **1**, the clamping edge of rib **4** disappears below the inwardly folded flap **25**. When drawing out clamping spring **1**, the narrow folding strip **6** serves as stop for rib **4**. Since here no unfolded edges are exposed, the folded structure is stiffened so well that it is held together well by the clamping spring without any further aid such as glueing or clipping. As indicated in FIG. 6, a thin tough and conveniently transparent foil **26** may be provided as case cover for protecting the file papers, and this foil by its one edge is connected to the case body **20** at the fold edge **23**, as may be seen from FIG. 13. According to FIG. 6, the foil at the left margin is provided with a folded strip that has been folded once in a clockwise sense and that comprises a window opening within the range of spring **1**. With this folded strip, the foil engages the fold **21** of the case, while the web of the strip remaining in the window opening is covered by the flap **25**. The file papers are inserted between the case bottom **20** and the lightly folded fastening strips.

According to FIGS. 7 and 8, the foil is dispensed with. The case body **20**, **30** however is made double the size of the embodiments according to FIGS. 5 and 6 and by means of a fold **36** close to the transverse centre axis is formed to a case or portfolio having a cover sitting on the right. The right-hand case margin has two incisions **37** so as to produce a flap **38** which is folded clockwise, i.e. towards the reverse side of the case body which becomes the cover top-side. This flap **38** serves as handle for the cover. The marginal flaps of cover **30** that remain above and below flap **38**, may be inserted into the recess at fold **22** for closing the cover.

FIG. 9 shows a turn-over book in which the cover **50** is located on the left on the side of the clamping spring. FIG. 9 is a cross-section, the bend of clamping spring **1** being shown exaggerated for clarification. A cardboard **40**, **50** of double size is divided in the centre by a fold **41**. On both sides of said fold and separated by the width of the fastening margin, fold **42**, **43** each is struck in the opposite sense so that the top or bottom margin of the case, when seen laterally, has the form of a prone M with extremely long outer legs. The folding disappears inside the covers which first are entirely smooth. In the foldable top cover **50**, however, is provided a window **44** for the insertion of clamping spring **1**, which extends accurately beside fold **43** and of which the short sides are formed by knife slots, while the long sides are limited by folded-over flaps that remain after having made the knife slots in the longtiudinal direction of the window and that are folded-over inwardly. The inner flap **45** provided as stop for the rib **4**, is struck about about the existing fold **43**, while the outer flap **45** is struck about a fold of its own and stiffens the window. The file papers **8** inserted in the clamping fold of the case, already are subjected to the clamping pressure of the clamping spring **1** which has been inserted only partially.

In the second embodiment of the clamping spring **1**, the rib **4** forming the clamping edge of clamping leg **2**, consists of a marginal angular bend of said leg. By this formation of the rib **4**, the certainty of the abutment thereof against folding strip **6** is improved and at the same time the sliding path of the clamping spring is increased so that in the inserted position the clamping pressure takes place at the outermost fold edge **22** of the clamping fold of the case, while in the extended position of the clamping spring the clamping fold of the case may be opened unhindered, as shown in FIGS. 11 and 12. The case or portfolio shown in FIGS. 11 to 13 substantially corresponds to that of FIG. 6, which is particularly suited for using the second embodiment of the clamping spring. This case may be designed with or without protecting cover **26** (FIGS. 6 and 13).

Of special advantage is a marginal angular bend in which the leg **4** provided with a band **4'** includes an acute angle with the clamping leg **2**, or respectively forms a corresponding hook. In this design of leg **2**, the stop at the end of the extension path of spring **1** is materialized in that the angularly bent end portion of leg **4** engages from below the lightly opened end-fold **6** that forms the counterhook, as may be clearly seen from FIGS. 11 and 13. This not only ensures a certain limitation of the extension path of spring **2** but at the same time also a steep opening operation of the clamping fold **22** that is ledge-like. Therefore, the file papers **8** may be readily and completely inserted up to the interior portion of the folding edge **24** of the ledge-like clamping fold **22** and there finds on the entire length a stop that no longer permits of a lateral or angular displacement.

While the invention has been described in detail with respect to a now preferred example and embodiment of the invention it will be understood by those skilled in the art after understanding the invention, that various changes and modifications may be made without departing from the spirit and scope of the invention and it is intended, therefore, to cover all such changes and modifications in the appended claims.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A file adapted to hold a plurality of superposed paper sheets without perforating the sheets, comprising, in combination, a reverted sheet-metal clip formed to provide a pair of legs having confronting faces spaced by a resilient bight, one of said legs having a projection on the confronting face thereof adjacent its free end; a file sheet comprised of a back sheet having a first reverted portion extending forwardly thereover, a second reverted portion extending rearwardly toward the fold line of said first reverted portion, and a third reverted portion extending forwardly of said second reverted portion, said third reverted portion forming a stop, said sheet having a longitudinal slot formed along a fold line adjacent its edge, said one of said legs of said clip extending through said slot with the other of said legs positioned exteriorly and rearwardly of said back sheet; said clip sliding transversely of the fold lines of said back sheet with the engagement of said projection and said stop precluding movement of said one leg out of said slot, whereby when the paper sheets are inserted between said back sheet and said first reverted portion with said clip withdrawn from said slot, movement of said clip toward said sheets until said bight engages the edge of said back sheet clamps the sheets between the edge of said back sheet and said first reverted portion.

2. The structure of claim 1 wherein said projection on said one of said legs of said clip comprises an elongated indentation.

3. The structure of claim 1 wherein said projection on said one of said legs of said clip comprises a reverted edge portion thereof.

4. The structure of claim 1 wherein a front sheet is

secured to one of said reverted portions and extends over said back sheet.

5. The structure of claim 1 wherein said third reverted portion is formed interiorly of said slot and said second reverted portion includes a front sheet.

6. The structure of claim 1 wherein the outermost of said reverted portions adjacent said slot is provided with a cutaway recess to provide a finger hole for engaging said one leg of said clip to slide the same inwardly and outwardly relative to said slot.

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