

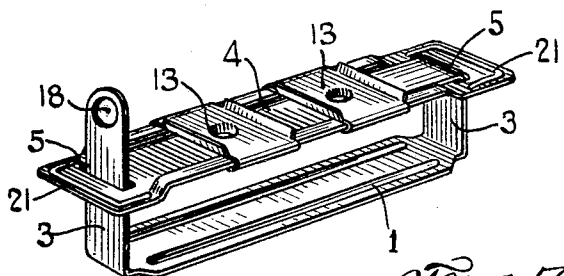
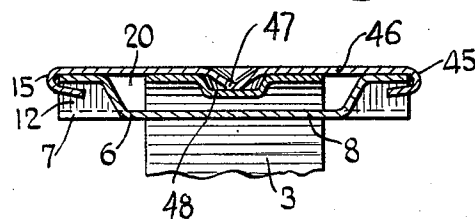
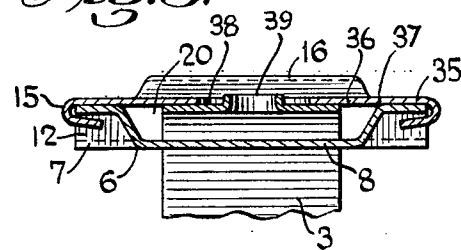
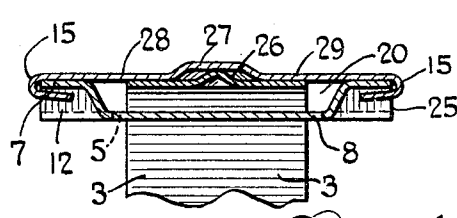
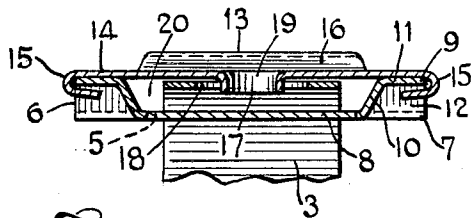
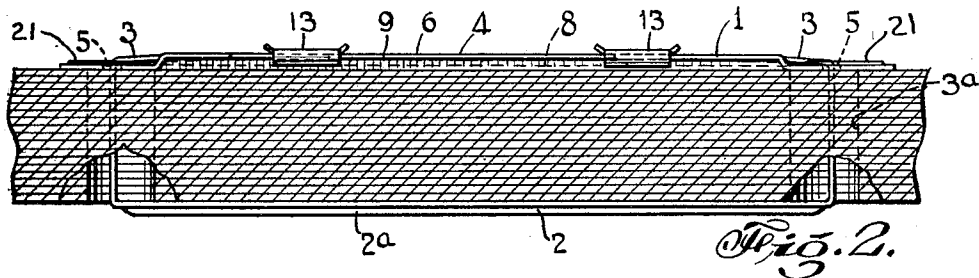
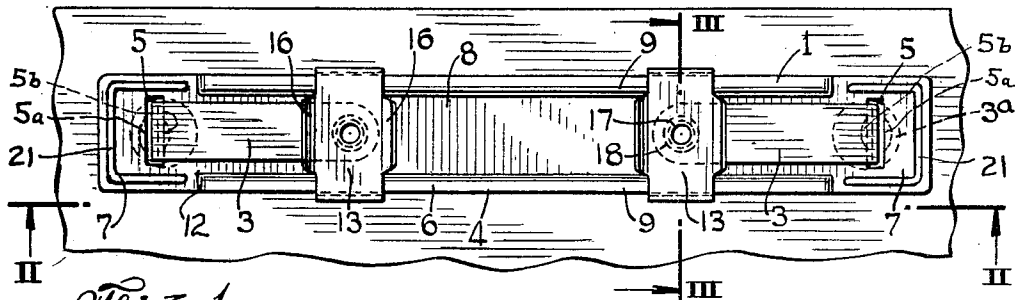
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PAPER FASTENER

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INVENTOR.

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UNITED STATES PATENT OFFICE

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PAPER FASTENER

Application filed November 21, 1932. Serial No. 643,773.

This invention refers to paper fasteners and more particularly to that class of fasteners for clamping together a number of perforated sheets of paper such as correspondence.

One object of the invention is to furnish a fastener of economical construction at the same time giving satisfactory service during the use thereof.

Another object is to furnish a paper fastener wherein the fastener parts securing the papers are positively locked in closed position to prevent accidental opening of the fastener and resultant misalignment of the papers secured thereby.

Another object is to furnish a novel form of locking member for paper fasteners capable of being locked and unlocked by the movement of one finger of an operator.

Another object is to furnish a novel form of stop for locking members slidable on keepers of paper fasteners for constraining a predetermined movement thereof.

Another object is to furnish a novel form of bendable finger for paper fastener clamping members having male locking portions formed thereon cooperating with female locking portions formed on locking members arranged to be locked over said fingers.

Another object is to furnish a novel form of keeper for paper fasteners wherein rails provided for supporting locking members also act as re-enforcements for said keeper.

Another object is to furnish a paper fastener having a comparatively low height, or thickness whereby filing space in filing cabinets is economized.

Another object is to furnish a novel form of re-enforcement on the keeper of paper fasteners without adding to the thickness of said fastener.

Another object is to furnish a novel form of keeper for paper fasteners wherein the paper is held in substantially flat parallel planes after being secured in the fastener thereby economizing in filing space in file cabinets.

Another object is to furnish novel means for supporting locking members on keepers of paper fasteners whereby the keeper is

formed of a comparatively low height, or thickness without interfering with the free movement of said locking members when adding or removing papers from the fastener.

Another object is to furnish a novel form of keeper for paper fasteners whereby the paper may be more readily tightly clamped between the keeper and clamping member or base thereof.

Another object is to furnish a novel form of paper fastener wherein locking members for locking the fingers of the clamping member are frictionally locked thereto for preventing accidental movement thereof to unlock said fingers.

Other objects and advantages will appear as the description of the invention progresses and the novel features thereof will be pointed out in the appended claims.

In describing the invention in detail reference is made to the accompanying drawing wherein embodiments of the invention are illustrated, and wherein like reference numerals refer to corresponding parts throughout the several views, and in which:—

Figure 1 is an enlarged plan view of one embodiment of the invention taken on line 1—1 of Fig. 2, and Fig. 2 is a part sectional, part elevational view of the same taken on line 2—2 of Fig. 1, and Fig. 3 is an enlarged sectional view taken on line III—III of Fig. 1, and Figs. 4 to 6 are super-enlarged sectional views of modified forms of the invention, and Fig. 7 is perspective view of the embodiment of the invention shown in Figs. 1 to 3 inclusive.

Referring to Figs. 1, 2, 3, and 7, paper fastener 1, formed of sheet metal comprises clamping member 2 having base portion 2a and finger portions 3 joined to each end thereof, said fingers being arranged to pass through and be bent at orifices 5 in keeper 4. Keeper 4 comprises plate or body 6 having end portions 7 joined to center or base portion 8 formed between upwardly extending wall portions 10, to the upper edges of which are joined flat rail portions 11, said rail portions being formed along the edges of keeper plate 6 but terminating short of the ends thereof, the ends of said rail portions

forming stop portions 12 arranged to limit the sliding movement of locking members 13 slidably mounted on plate 6. End portions 7 are provided with re-enforcing portions 21 of U-shaped form, the legs thereof extending inwardly from the ends of the plate 6 and preferably beyond the ends of the orifices 5 for rigidifying the end portions 7.

Locking members 13 comprise plate or bridge portion 14 having grooved or channel shoe portions 15 formed at each end thereof and arranged to slide between stop portions 12. Joined to the edges of plate portion 14 are actuating flange portions 16 between which an operator's fingers may be placed for more readily sliding said locking members 13. Also formed on plate portion 14 is the downwardly facing annular male locking portion 17 arranged to enter into the opening 18 in the free end of fingers 3 for matingly locking the members 13 at predetermined and variable locations on rail portions 11, the inherent resilient upward movement of said fingers after bending downwardly thereof acting to retain the locking projections 17 in said openings 18, said projections snapping into said openings as the locking members 13 are slid over said fingers. The snapping of said projection into said opening forms an aural indication that said locking member and finger are positively and matingly locked together for preventing accidental sliding movement of said locking member. The end portions 7 are formed with re-enforcing rib or groove 21 surrounding orifice 5. The locking projections 17 are preferably formed by initially perforating the plate portion 14 and thereafter forcing an annular portion surrounding said perforation downwardly to form said projection.

In applying the fastener 1, the fingers 3 are inserted through the perforated paper sheets, whereafter keeper 4 is applied by inserting said fingers through the orifices 5, the fingers being bent downwardly between rails 9 whereafter the locking members 13 are slid over the free ends of said fingers while held pressed against the base portion 8, the fingers then being released and the locking members 13 slid thereover until the locking projection 17 snaps into the locking opening 18 in this manner positively locking said finger and locking member against substantial relative movement.

Figure 3 is an enlarged sectional view of fastener 1 showing how the locking projection 17 of the locking member 13 enters the orifice 18 of the fingers 3 for positively locking said members and fingers against relative sliding movement.

Referring to the modified form of fastener 25 shown by Fig. 4, the fingers of clamping member 2 are formed with upwardly extending imperforate male locking projection 26 arranged to enter upwardly extending im-

perforate female locking recess 27 formed in plate portion 28 of locking member 29, said locking member being similar to locking member 13, the flange portions 16 being omitted thereon and the recess portion 27 being substituted for the locking projection 17 and orifice 19. In this form of fastener the fingers 3 are bent downwardly between rails 9 whereafter locking members 29 are slid over the free ends of said fingers until the male locking projection 26 enters the female locking recess portion 27, the inherent resilient upward movement of said fingers after bending acting to frictionally constrain locking projection 26 in the recess of recessed portion 27.

Referring to the modified form of paper fastener 35 shown in Fig. 5, the locking members 36 comprise plate or bridge portion 37 having orifice 38 arranged to receive annular male locking projection 39 formed on finger 3, the application of this fastener being affected in substantially the same manner as described for applying fastener 1. The actuating flange portion 16 has been omitted from locking members 36.

Referring to the modified form of paper fastener 44 shown in Fig. 6, the locking member 45 comprises plate or bridge portion 46 having downwardly extending imperforate male locking projection 47 formed therein arranged to enter or engage downwardly extending female locking recess portion 48 formed on fingers 3, the application of this fastener being substantially as described for the application of fastener 25.

The various means for locking the fingers 3 and the locking members together may be substituted by the various locking means shown in my copending application Ser. No. 643,774, filed November 21st, 1932.

It is to be noted that by having the rails 9 formed short of the orifices 5 the file operator can more readily confine the bend of the finger immediately at the orifice thereby more tightly binding the paper sheets together and therefore economizing in file cabinet space.

It is also to be noted that by employing the connecting or reinforcing wall 10 as the sole reinforcement longitudinally of the keeper plate 6, the keeper 4 has a comparatively low height or thickness thereby further economizing in file cabinet space.

I claim:

1. A paper fastener comprising, a clamping member having spaced fingers, perforations formed in the fingers, a keeper member comprising, an elongated keeper plate having perforations formed at each end thereof arranged to receive the fingers of the clamping member therethrough, spaced parallel rail portions formed on the keeper plate, locking members slidably secured to the rail portions arranged to slide over the fingers after the bending downwardly thereof between the rail

portions, and locking projections formed on the locking members arranged to enter the perforations of the fingers for positively locking the locking members against accidental
5 removal from over the fingers.

2. A paper fastener comprising, a clamping member having spaced fingers, perforations formed in the fingers, a keeper member comprising an elongated keeper plate having
10 perforations formed at each end thereof arranged to receive the fingers of the clamping member therethrough, spaced parallel rail portions formed on the keeper plate, locking members arranged to slide over the fingers
15 after the bending downwardly thereof over the keeper member, a bridge portion formed thereon having shoe portions formed at each end thereof arranged to embrace the rail portions of the keeper plate for slidable movement thereon, and a downwardly extending
20 locking projection formed on the bridge portion arranged to enter the perforation in the fingers as the locking member is slid thereover.

3. A paper fastener comprising, a clamping member having spaced fingers, a keeper member comprising an elongated keeper plate having perforations formed at each end thereof arranged to receive the fingers of the
20 base member therethrough, parallel rail portions formed on each edge of the keeper plate arranged to form a channel space therebetween, locking members having a bridge portion extending across the channel space, a
35 grooved shoe portion formed at each end of the bridge portion embracing the rail portions being slidable thereon, and upwardly extending flange portions formed at each edge of the bridge portion for urging the free ends
40 of the fingers downwardly as the locking members slide thereover.

4. In a paper fastener, a clamping member having spaced fingers thereon, and a keeper member comprising an elongated keeper
45 plate having perforated end portions for receiving the fingers therethrough, re-enforced portions on the end portions surrounding the ends and one side of the perforations for reinforcing the end portions, a base portion on
50 the keeper plate extending between the end portions thereof, spaced rail portions formed along each edge of the base portion positioned thereabove, stop portions at each end of the rail portions, and locking members
55 having shoe portions slidably embracing the rail portions arranged to slide over the fingers after the bending downwardly thereof over the keeper plate, the shoe portions engaging the stop portions at ends of the rail portions for limiting the movement of the
60 locking members on the rail portions.

5. In a paper fastener, a clamping member having spaced fingers thereon, and a keeper member comprising an elongated keeper
65 plate having perforated end portions for re-

ceiving the fingers therethrough, re-enforced portions on the end portions surrounding the ends and one side of the perforations for reinforcing the end portions, a base portion on
70 the keeper plate extending between the end portions thereof, spaced rail portions formed along each edge of the rail portions positioned thereabove, and locking members slidably embracing the rail portions arranged to
75 slide over the fingers after the bending downwardly thereof over the keeper plate.

6. A locking member for paper fastener keepers comprising, a bridge portion having an opening therein, a downwardly extending
80 annular locking portion surrounding the opening for locking the member, and grooved shoe portions formed at each end of the bridge portion for slidably supporting the member.

7. A locking member for paper fastener
85 keepers comprising, a bridge portion for sliding the member on the fastener keeper, an upwardly extending imperforate locking boss portion formed spacedly between the edges of the bridge portion, the boss portion
90 having a downwardly facing locking recess therein for locking the member, and shoe portions formed at each end of the bridge portion for slidably supporting the member.

8. A locking member for paper fastener
95 keepers comprising, a substantially flat bridge portion for sliding the member on the keeper, a downwardly extending locking portion formed on the bridge portion spacedly between the edges thereof, and shoe portions
100 formed on each end of the bridge portion for slidably supporting the member on the keeper.

9. A locking member for paper fastener
105 keepers comprising, a substantially flat bridge portion, an opening formed in the bridge portion spacedly between the edges thereof, and grooved shoe portions formed at each end of the bridge portion for slidably
110 supporting the member on the keeper body.

10. A locking member for paper fastener
keepers comprising, a bridge portion for sliding the member, a downwardly extending imperforate locking boss formed on the
115 bridge portion spacedly between the edges thereof, and grooved shoe portions formed on each end of the bridge portion for slidably supporting the member on the keeper body.

11. A keeper for paper fasteners comprising, a keeper plate having a substantially flat
120 base portion extending between the ends thereof arranged to rest on the paper sheets secured by the fastener, perforations formed in the ends thereof, substantially flat spaced
125 parallel rail portions formed on the keeper plate between the ends thereof, the rail portions being formed in a plane parallel to the plane of the base portion but spaced therefrom, re-enforcing wall portions joining the
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edges of the base portion and the rail portions, the re-enforcing wall portions being positioned solely between the rail and base portions, and locking members slidably secured to the rail portions arranged to slide between the ends thereof.

12. A keeper for paper fasteners comprising, a keeper plate having a substantially flat base portion extending between the ends thereof arranged to rest on the paper sheets secured by the fastener, perforations formed in the ends thereof, substantially flat spaced parallel rail portions formed on the keeper plate between the ends thereof, the rail portions being formed in a plane parallel to the plane of the base portion but positioned spacedly thereabove, re-enforcing wall portions joining the edges of the base and rail portions, the re-enforcing wall portion being positioned solely below the rail portions, and locking members slidably secured to the rail portions arranged to be moved between the ends thereof.

13. In a paper fastener, a clamping member having spaced fingers thereon, and a keeper member comprising an elongated keeper plate having perforated end portions for receiving the fingers therethrough, U-shaped re-enforcing portions on the end portions, the legs of the U facing inwardly from the ends of the end portions and extending beyond the perforations for re-enforcing the end portions, a base portion extending between the end portions thereof, spaced rail portions on the base portion, and locking members slidably mounted on the rail portions arranged to slide over the fingers after the bending downwardly thereof over the keeper plate.

14. A keeper plate for paper fastener keepers comprising, an elongated base portion, rail portions formed on the edges of the base portion, end portions formed coextensively with the ends of the base and rail portions, perforations formed in the end portions, and U-shaped re-enforcing portions on the end portions, the open end of the U facing the ends of the rail portions.

Signed at New York city in the county of New York, and State of New York, this 16th day of August, A. D. 1932.

OSCAR A. ROSS.

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