Aug. 27, 1935. J. LINSKY 2,012,572

PAPER FASTENER

Filed Dec. 5, 1934

Fig. 1.

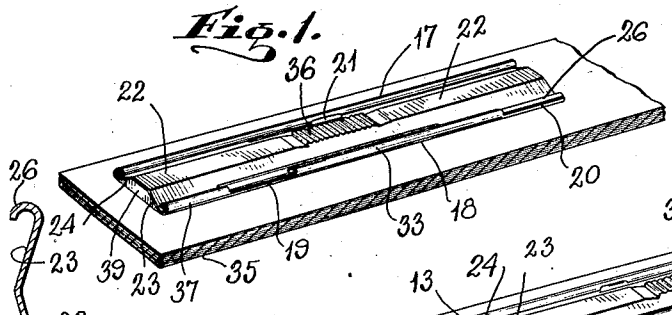


Fig. 2.

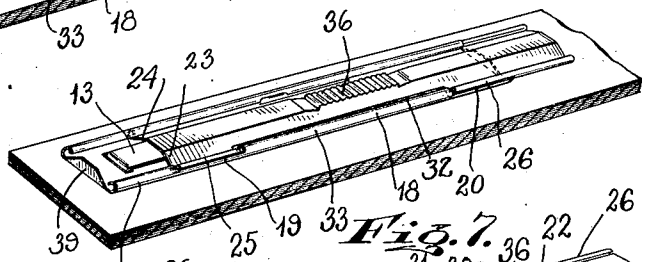


Fig. 8.

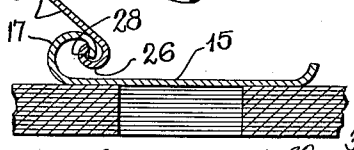


Fig. 7.

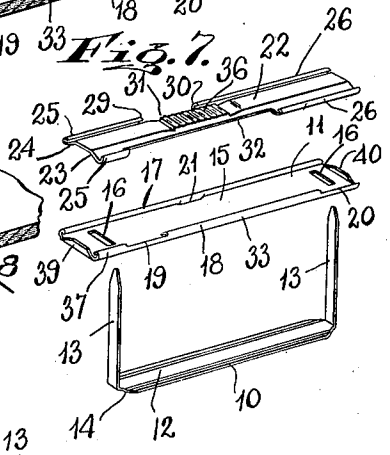


Fig. 3.

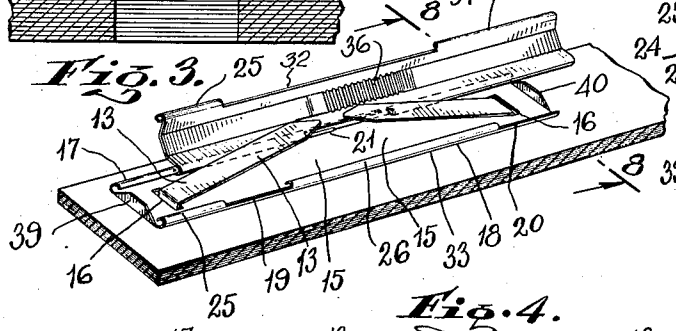


Fig. 4.

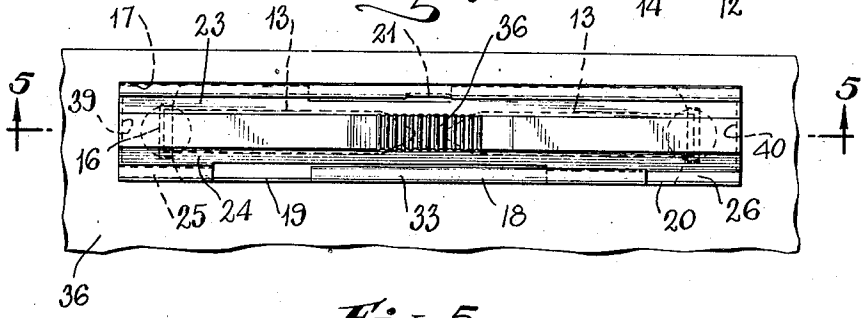


Fig. 5.

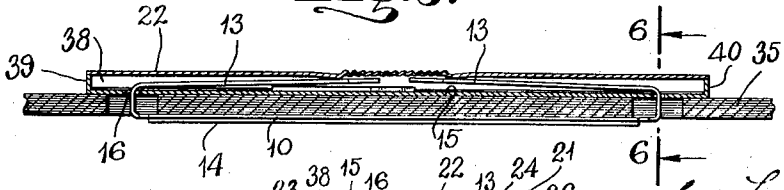
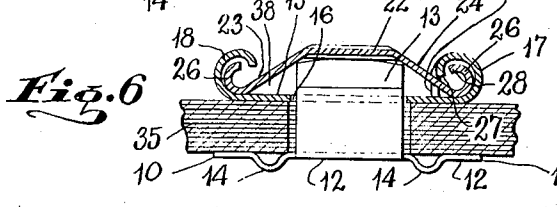


Fig. 6



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PAPER FASTENER

Jack Linsky, New York, N. Y.

Application December 5, 1934, Serial No. 756,070

19 Claims. (Cl. 24—153)

The present invention is concerned with a paper fastener of the type employed in connection with a loose leaf binder. Specifically the invention has to do with a paper fastener comprising a retaining member having a hingedly associated but slidable locking cover adapted to hold flexible and foldable arms of a strap in a bent relation and against the retaining member for securing a stack of papers and/or cardboard together.

The invention has as an object to provide a functionally and structurally improved fastener in which foldable arms of a flexible strap position in alinement the sheets of paper or the like to be fastened and in which the arms removably guide a retaining member carrying a slidable locking cover which includes means adapted to interlock with the retaining member to hold the flexible arms in a bent position and against the retaining member.

The invention has as a further object the provision of a paper fastener comprising a keeper or retaining member having an arcuate hollow bead which serves as a longitudinal fulcrum and rectilinear guide for an associated hollow bead of a swingable locking cover which in the closed position thereof cooperates to sustain flexible arms of a U-shaped member in a bent relation to urge the retaining member against the uppermost sheet of a stack of papers or appropriately hold suitable covers of a binder in the required clamping relation against an intervening stack of papers.

The invention has as a further object to provide a novel paper fastener embodying a swingable and slidable locking cover which is hingedly connected to a retaining member comprising means for receiving foldable and flexible arms of a U-shaped complementary clamping strap, the arms being foldable towards each other and against the retaining member and cooperating with the slidable cover to hold the latter in a non-shiftable position after having been slidably interlocked with the retaining member.

Further objects, advantages and features of the invention will appear as the description herein progresses attention being now directed to the accompanying drawing in which:

Fig. 1 is a perspective view of my paper fastener illustrating the slidable cover thereof in a closed and locked position holding several sheets of paper or the like together.

Fig. 2 is a view similar to Fig. 1, showing the locking cover closed but in an unlocked position.

Fig. 3 is a perspective view of the fastener, showing the hinged locking cover raised and unlocked.

Fig. 4 is a plain view of Fig. 1.

Fig. 5 is a section on the line 5—5 of Fig. 4.

Fig. 6 is a section on the line 6—6 of Fig. 5.

Fig. 7 illustrates an exploded or disassembled view of the fastener before the slidable cover is hingedly mounted on the retaining member and the latter on the U-shaped strap and

Fig. 8 is a section on the line 8—8 of Fig. 3.

According to the invention, the fastener comprises complementary clamping members 10 and 11 in the form of relatively thin sheet metal stampings. Clamping member 10 is a U-shaped strap and includes a horizontal bar 12 having integral upstanding foldable and flexible spaced arms 13. As shown, bar 12 includes a plurality of spaced longitudinally disposed hollow reinforcing ribs 14.

Complementary clamping member 11 is in the form of an elongated plate 15 having spaced transversely disposed slots 16. The rear side of plate 15 is provided with an integral hollow curved bead or arcuately reflexed portion 17 coextensive with the length thereof. The front side of plate 15 is provided with a hollow integral bead or arcuately reflexed portion 18 which includes spaced recesses or cut away portions 19 and 20.

The rear bead 17 is provided with a struck out intermediately disposed lug or stop 21 which serves to limit lateral displacement of a hingedly associated cover or locking plate, generally designated 22, which comprises a body having a substantially trapezoidal cross section as illustrated in Fig. 6 with front and rear inclined sides 23 and 24 thereof each including curved hollow spaced beads or reflexed portions 25 and 26.

The rear bead 17 slidably receives spaced beads 25 and 26 of the rear inclined wall 24 and to prevent transverse separation of the swingable cover 22 relative to the retaining member, the free terminal 27 of outside bead 17 is bent slightly inwardly towards the free terminals 28 of the inside rear beads 25 and 26 although slightly spaced therefrom. In other words, beads 25 and 26 of rear inclined wall 24 are telescopically associated with bead 17 and form a hinged connection permitting the cover to swing towards and away from the retaining member about a rear edge thereof as an axis. By reason of the telescopic association of the rear beads of the cover with the rear bead of the retaining member the cover may be laterally and slidably displaced relative to the retaining member. In this connection inner

ends 29 and 30 of beads 25 and 26 of inclined wall 24 widely straddle the sides of stop lug 21 and cooperate therewith to limit lateral displacement of the cover. More particularly spaced ends 29 and 30 constitute a gap 31 in which lug 21 extends, the gap being considerably longer than the length of lug 21.

The forward beads 25 and 26 of inclined wall 23 are spaced apart and form an elongated channel or recess 32 adapted to receive reflexed part 33 of the forward bead 18 of the retaining member or keeper 15, for example, see Fig. 2, in which the cover is shown closed but in a nonlocked position. In this position, the forward bead 25 is disposed within recess 19 and forward bead 26 is arranged in part in recess 20 of the retaining member. In this position the slidable and hinged cover overhangs the retaining member and the end 29 is against stop lug 21 and hence the cover cannot further be displaced to the right.

With the cover disposed as illustrated in Fig. 2, the cover may be swung bodily rearwardly until the free terminals 27 and 28 interlock as shown in Fig. 8. Consequently further rearward displacement of the cover relative to the retaining member is prevented. In such position the cover may be considered as open and access is had to the flexible bent arms 13 of the U shaped strap if they had been previously threaded through the transverse slots 16 of the retaining member.

In Figs. 1 and 5, a stack of papers 35 are secured by the fastening device according to the invention. These papers or flexible elements are first appropriately perforated and subsequently are moved downwardly and guided on the upstanding spaced arms 13 of strap 10 with the bottom paper or sheet of the stack against the reinforced bar 12. Following this, retaining member 15 is placed over arms 13 and these arms are passed into slots 16 after which the retaining member is dropped against the topmost sheet of the stack. The flexible arms 13 are bent inwardly and towards each other as illustrated in Fig. 3. With the cover in the position illustrated in Fig. 3, it is manually swung bodily and downwardly towards the retaining member, pivoting on the rear hinged connection, flexing the arms 13 downwardly against the upper rectilinear face of the retaining member. With manual pressure still applied to overcome the resiliency of the flexible arms, which would automatically raise the cover in the event this pressure were removed, the cover takes the position illustrated in Fig. 2, to wit, bead 33 of the retaining member is disposed or registered in channel 32 of the cover, the forward bead 25 is in registration with recess 19 and forward bead 26 is in part disposed in recess 20.

The cover may now be bodily and slidably moved to the left upon the application of a laterally directed finger pressure on the centrally disposed knurled boss 36. With a slight lateral displacement to the left, the front bead 25 moves under marginal reflexed or bead portion 37 of the front bead 18 and front bead 26 moves more under bead 33. Beads 33 and 37 slidably receive the forward beads 25 and 26 of the cover and lateral displacement of the latter may be continued until abutment end 30 of rear bead 26 strikes stop lug 21. In this position the cover is closed and locked (see Fig. 1).

When the front beads 25 and 26 are interlocked with beaded portions 37 and 33 respectively, the sloping walls 23 and 24 urge the flexible bent arms 13 downwardly and consequently the sheets of paper are secured together between the bar 12 and the retaining member as is well understood. In the locked position of the cover the flexible arms exert a certain upward pressure on the cover, which pressure serves to hold the cover against accidental lateral displacement.

For purposes of description the strap and retaining member may be considered as complementary clamping members which when disconnectably interlocked form a relatively shallow chamber 38 within which the flexible arms are disposed in clamping relation against the removable retaining member having trapezoidal shaped end lugs 39 and 40 which are flush with the corresponding ends of the slidable cover when the latter is in a closed and locked position to prevent ingress of undesirable particles such as dust or the like within chamber 38.

The retaining member may be readily and conveniently disconnected from the strap for the insertion of a new sheet to the stack 35 or where it is desired to replace one sheet by another. To this end, the cover is manually moved to the right until abutment end 29 strikes stop lug 21. In this position, as previously stated, the cover is unlocked from the retaining member and if at this time manual pressure be removed, the cover opens automatically due to the resiliency of the folded flexible arms and the latter are now accessible and may be bent to an upstanding position to permit the removal of retaining member from the strap after which a new sheet may be added to the stack or a new sheet may be substituted in place of a sheet previously in the stack. Having completed the desired substitution or alteration of the stack the flexible arms are again passed through the retaining member and folded, the cover is closed and subsequently shifted to the left to its locked position.

In the broader aspect of the invention, I do not desire to be understood as limiting its embodiment to details herein shown illustratively as a wide variety of modifications may be made within the scope of the appended claims without departing from the spirit of the invention.

I claim:

1. In a fastener, the combination of, a strap comprising flexible and foldable arms, a retaining member removably mounted on said arms, and a cover longitudinally slidable relative to said member hingedly connected to said member and adapted to hold said arms thereagainst.

2. In a fastener, the combination of, a strap for supporting sheets of paper and comprising flexible arms, a retaining member removably mounted on said arms, a cover having a hinged and longitudinal shiftable connection with said retaining member and means for holding said cover removably interlocked with said retaining member.

3. In a fastener, the combination of, a strap for supporting a plurality of flexible elements and comprising flexible upstanding arms, a retaining member removably guided by said arms and adapted to rest on the uppermost element of said plurality, said arms being foldable toward each other to sustain said retaining member against said uppermost element, and a cover having a slidable and swinging connection with said retaining member adapted to urge said arms towards and against the latter, said cover and retaining member comprising slidable and disconnectable interlocking means for holding said flexible arms against said retaining member.

4. In a fastener, the combination of, a strap comprising a U shaped member comprising flex-

ible arms adapted to guide displacement of flexible elements adapted to be mounted on said member, a retaining member having openings adapted to receive said arms, the latter being foldable against said retaining member and a cover having a hinged connection with said retaining member and longitudinally slidable relative to the latter and adapted to be bodily swung against said folded arms to hold the latter against said retaining member.

5. In a fastener, the combination of, a U shaped member comprising foldable arms adapted to guide displacement of flexible elements adapted to be mounted on said member, a retaining member having openings adapted to receive said arms, the latter being foldable against said retaining member and a cover having a hinged connection with said retaining member and adapted to be bodily swung towards said folded flexible arms to hold the latter against said retaining member, said connection having means to permit lateral displacement of said cover relative to said retaining member, the latter and said cover having means adapted to disconnectably interlock and hold said cover against said folded arms.

6. In a fastener, the combination of, a U shaped member comprising foldable arms adapted to guide displacement of flexible elements adapted to be mounted on said member, a retaining member having openings adapted to receive said arms, the latter being foldable against said retaining member, and a cover having a hinged connection with said retaining member and adapted to be bodily swung downwardly towards said folded flexible arms to hold the latter against said retaining member, said connection having means to permit lateral displacement of said cover relative to said retaining member, the latter and said cover having means adapted to disconnectably interlock for holding said cover against said folded arms, said folded arms in the disconnectable interlocking relation of said cover and retaining member cooperating with said cover to prevent lateral displacement of the latter.

7. In a fastener, a strap having spaced flexible arms, a retaining member removably mounted on said arms, the latter being foldable towards said member, a locking cover, a bead carried by said member, and a bead carried by said cover slidably associated with the aforementioned bead of said member, the beads of said cover and member constituting a hinged connection permitting said cover to be swung bodily towards and away from said retaining member.

8. The fastener according to claim 7 in which the bead of said cover is slidably relative to the bead of said member permitting lateral displacement of said cover relative to said member.

9. In a fastener, the combination of, a strap having flexible arms, a retaining member having means for receiving said arms, a cover and a hinged connection between said cover and member, said connection comprising telescoping portions to permit lateral displacement of said cover relative to said retaining member.

10. In a fastener, the combination of, a strap having foldable arms, a retaining member having means for receiving said arms, and a cover having a hinged and slidable connection with said member, said cover being adapted to be swung against said arms to position the latter against said member, said member having spaced guide portions, said cover having means adapted to be slidably guided by said guide portions during the lateral displacement of said cover.

11. In a fastener, the combination of, a retaining member, a cover having a hinged and slidable connection with said member, the latter comprising a longitudinally disposed bead having spaced recesses, the cover including spaced beads defining a recess adapted to straddle a portion of said first mentioned bead for disposing said spaced beads of said cover in said spaced recesses in the unlocked and closed position of said cover, said spaced beads of the cover during lateral displacement thereof adapted to removably interlock with said longitudinally disposed bead of said retaining member.

12. In a fastener, the combination of, a strap having foldable arms, a retaining member adapted to receive said arms, a cover and a slidable and hinged connection between said cover and member, said cover and member having a disconnectable telescopic connection to prevent rearward displacement of said cover relative to said member.

13. In a fastener, the combination of, a strap having foldable terminals, a retaining member mounted on said strap adapted to receive said terminals, a cover for holding said terminals against said retaining member, said cover and member having a slidable and hinged connection, said cover and member having disconnectable interlocking means to prevent rearward displacement of said cover relative to said member and to hold said terminals against said member.

14. In a fastener, the combination of, a strap having foldable terminals, a retaining member removably receiving said terminals, a cover, a slidable and hinged connection between said cover and member, said cover being swingable about a rear longitudinal edge of said member and against said terminals to position the latter against said member and locking means effective upon lateral displacement of said cover in one direction to hold said cover closed.

15. In a fastener, the combination of, a strap having foldable arms, a retaining member removably mounted on said arms, a cover, a slidable and hinged connection between said cover and member, means to limit lateral displacement of said cover relative to said member, said cover being swingable relative to said member to position said arms against the latter, said cover and member having locking means effective upon lateral displacement of said cover in one direction to hold said cover against said arms to position the latter against said member, said locking means being disconectable upon lateral displacement of said cover in an opposite direction to open the latter.

16. The fastener according to claim 15 characterized further in that upon disconnection of said locking means, said arms automatically raise said cover.

17. In a fastener, the combination of, a strap having flexible arms, a retaining member removably guided by said arms and a cover, said cover and member having longitudinally disposed reflexed portions defining a slidable and swingable telescopic connection permitting said cover to be selectively laterally displaced relative to said member or permitting said cover to be swung bodily towards or away from said member, means to limit lateral displacement of said cover, said cover and member comprising a telescopic disconnectable interlocking connection to hold said cover closed and hold said arms against said retaining member.

18. The fastener according to claim 17 in which said reflexed portions are disposed at corresponding rear sides of said cover and member and said telescopic disconnectable interlocking connection is disposed at corresponding front sides of said cover and member.

19. In a fastener, the combination of, complementary removably associated clamping members adapted to secure a plurality of flexible elements, one of said members comprising flexible and foldable arms, the other complementary member constituting a retaining member adapted to receive said arms, a cover slidable laterally relative to said retaining member and hingedly carried thereby, means to limit lateral displacement of said cover relative to said retaining member, said cover being bodily swingable towards said flexible arms to hold the latter in clamping relation against said retaining member, said cover and retaining member comprising disconnectable interlocking means effective upon lateral displacement of said cover relative to said retaining member to hold said cover closed.

JACK LINSKY.