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Description

The invention relates to a sliding clamp for fastening the binding prongs of a binder having flexible binding prongs, which is adapted to slide in a rail-shaped member of substantially U-shaped cross-section, provided with openings for the passage of the binding prongs, said sliding clamp comprising a first elongate portion adapted to slide in the rail-shaped member.

Such a sliding clamp is known from US patent 3,080,562 and GB—A—1417580. The known binder comprises an approximately U-shaped rail having two parallel legs linking up with a bottom portion, said legs being inwardly bent at the free edges. The bottom portion contains openings at an interspace corresponding with the distance between the flexible binding prongs, so that the prongs can extend through said openings. Besides, at least one sliding clamp is provided that is adapted to slide between the legs of the U-shaped rail and which is fitted with a slot at the end facing the bottom of the U-shaped rail. When inserting the sliding clamp, this butts against a binding prong, which is thereby pushed against the bottom of the U-shaped rail and which, upon subsequent sliding movement, is received in the slot.

A drawback going with the prior art sliding clamp is that it can be easily pulled out of the rail unintentionally. In the past, this drawback was eliminated by providing the sliding clamp adjacent the front portion of the slot with a shorter slot closed at the front by an intermediate piece. The binding prongs can now extend both through the openings in the rail and through the slot in the sliding clamp, while the intermediate piece at the front end of the sliding clamp prevents the same from being pushed out of the rail entirely.

A drawback going with these two sliding clamps described is that when they are installed, the binding prong has to be bent by a force acting just beside a supporting point of the prong, viz. the edge of the opening in the rail. The bending of the prongs thus takes place heavily and with the risk that material is stripped off the prongs, so that the prongs are weakened and may break eventually, resulting in seizure of the sliding clamp.

Another drawback of the prior art sliding clamps is that these should be capable of sliding lightly in the rail, since it is always necessary for releasing the binding prongs to displace the sliding clamp so that, when the rail has been removed entirely from the prongs, the sliding clamps may fall out of the rail and get lost.

It is an object of the invention to eliminate the above drawbacks. To this end according to the invention, a sliding clamp of the above described type is characterized in that the first elongate portion is fitted with a passage for a binding prong; that a second portion is pivotally connected to the first portion adapted for pivotal movement transversely to the longitudinal direction of the first portion to cover said passage, having cam means for locking said second portion in a swing

down position wherein the binding prong is bent and clamped.

One embodiment according to the invention will now be described, by way of example, with reference to the accompanying drawing, in which:

Fig. 1 shows a prior art sliding clamp with the associated rail and a binding prong extending through an opening in the rail;

Fig. 2 is a side view of an embodiment of a sliding clamp according to the invention; and

Figs. 3 and 4 are top views of portions of the sliding clamp shown in Fig. 2.

Fig. 1 shows a prior art sliding clamp 1 adapted to slide between the flanges 2 of a rail-shaped member 3. The rail-shaped member has an approximately U-shaped cross-section, while the upright legs of the U-shape each have an inwardly bent flange 4. The bottom 5 of the U-shape contains a plurality of openings, one of which is shown at 6, through which a flexible binding prong 7 can be inserted.

The sliding clamp itself has an elongate, substantially rectangular body 8 adapted to slide with lateral flanges 9 just in the rail-shaped member 3.

The body 8 is designed in such a manner that in the operating condition a binding prong can lie in a space provided between the bottom of the rail-shaped member 3 and the underside of the body 8. The prong is then bent through about 90° in the place where the prong extends through the opening in the bottom of the rail-shaped member.

At the end of the sliding clamp turned outwardly in the operating condition, there is formed a thickened portion 10, serving as a stop, as a handle and as a suspension member for the binder.

At the other end of the sliding clamp, there is provided a slot 11 in registry with the position of the binding prong, said slot being shut off at the front by an intermediate piece 12. In the operating condition, said intermediate piece is located beyond the binding prong and the prong extends partly through the slot 11 over the intermediate piece 12. Therefore, the sliding clamp cannot be easily pulled out of the rail, even if the slot 11 is located above the opening 6.

Figs. 2—4 show an embodiment of a sliding clamp according to the invention. Said sliding clamp again comprises a stop 20, likewise functioning as a handle and as a suspension member.

From the stop there extends an elongate, frame-like portion 21 whose longitudinal legs are adapted to slide just between the flanges 2 and underneath the flanges 4 of a rail-shaped member as shown in Fig. 1. The frame-shaped portion is shut off at the stop-averted end by a slightly thinner portion 22, over which lies the binding prong 7 in the operating condition indicated by broken lines in Figs. 2 and 3. Furthermore, recesses 23 are formed in each of the longitudinal legs of the frame-shaped portion on the inside, forming, with the thinner portion 22, said recess and, in the operating condition, extending underneath the flanges 4 of the rail-shaped member.

An elongate body 24 is pivotally connected at 25 to the stop 20. In Fig. 3, said elongate body 24 has

been omitted for the sake of clarity, but in Fig. 4 it is shown separately. Nevertheless, the elongate body preferably is integral with the frame-shaped portion, which can be realized in a simple manner with a synthetic plastics design. The pivot indicated at 25 can be formed by reducing the thickness of the material locally.

The width B of the elongate body 24 is such that it fits between the longitudinal legs of the frame-shaped portion.

The elongate portion is provided at the stop-averted free end with a slot 26, thereby forming two legs 27 that are slightly resilient. At the free ends of the legs 27, there are formed laterally projecting cams 28, which correspond with the recesses 23 in the legs 21 of the frame-shaped portion.

Moreover, two projections 29 are formed at the top of the resilient legs 27 by means of which the legs can be manually bent slightly towards each other.

When the sliding clamp has been inserted into the rail-shaped member to such a position that a binding prong extends through the frame-shaped portion, while the pivoting elongate member 24 is directed obliquely upwardly, as shown in Fig. 2, the binding prong can be clamped by folding down the elongate member 24, as indicated by an arrow 30 in Fig. 3. The legs 27 are then manually bent slightly towards each other by means of the projections 29, so that the cams 28 can pass the flanges 4 and fall into the recesses 23.

The binding prong is then gradually bent at a force exerted at a considerable distance from the rail-shaped member, thus minimizing wear and facilitating the operation.

The elongate pivoting portion 24 is also provided with a groove 31 facing the rail-shaped member, said slot leading into the slot 26 and being adapted to receive the binding prong in operating condition. The pivoting elongate portion 24 enables to release or to fasten the binding prongs without the necessity of displacing the sliding clamp. As a result, it is only rarely necessary to displace the sliding clamp according to the invention, so that the frame-shaped portion can be dimensioned conveniently in such a manner that it slides heavily in the rail-shaped member. This has the advantage that even when the rail-shaped member has been entirely removed with the sliding clamp(s) from the binding prongs, the sliding clamp cannot fall out of the rail-shaped member and get lost.

It is observed that various modifications of the embodiment described are obvious to one skilled in the art after the foregoing. For instance, when the sliding clamp is actually so dimensioned that it heavily slides in the rail-shaped member, the intermediate piece 22 may be omitted. Such modifications are deemed to fall within the scope of the invention.

Claims

1. A sliding clamp for fastening flexible binding

prongs (7) of a binder, which sliding clamp is adapted to slide in a rail-shaped member (3) of substantially U-shaped cross-section, with openings (6) for the passage of the binding prongs (7), said sliding clamp comprising a first elongate portion (21, 22) adapted to slide in the rail-shaped member (3) characterized in that said first portion is provided with a passage for a binding prong (7); that a second portion (24, 27, 28) is pivotally connected to the first portion (21, 22) adapted for pivotal movement transversely to the longitudinal direction of the first portion (21, 22) to cover said passage, having cam means for locking said second portion in a swing down position wherein the binding prong is bent and clamped.

2. A sliding clamp according to claim 1, characterized in that the first portion has a stop member (20) protruding, in operation, from the rail-shaped member and a frame-shaped portion (21) extending from said member, and that the pivoting portion (24) is pivotally attached to the stop member (20) and fits, in the operating condition, between the longitudinal legs of the frame.

3. A sliding clamp according to claim 2, characterized in that the pivoting portion is fitted at the free end with a slot (26) extending in the longitudinal direction of the pivoting portion, said slot being defined on either side by resilient legs (27) carrying the cam means.

4. A sliding clamp according to claim 3, characterized in that the cam means comprise cams (28) extending laterally outwardly at the ends of the resilient legs (27), and that the longitudinal ribs of the frame-shaped portion (24) are fitted at the facing ends with recesses (23) for receiving the cams (28).

5. A sliding clamp according to claim 4, characterized in that the resilient legs (27) each carry at the top a projection (29), so that the resilient legs can be bent manually towards each other.

6. A sliding clamp according to any one of the claims 3—5, characterized in that the pivoting portion is fitted at the bottom with a groove (31) leading into the slot (26) for receiving the binding prong (7) in the operating condition.

7. A sliding clamp according to any one of the claims 2—6, characterized in that a transverse web (22) disposed at the end of the frame-shaped first portion averted from the stop member (20) is at least partly thinner than the longitudinal legs (21) for forming a location for the binding prong (7).

Patentansprüche

1. Verriegelungsschieber für eine Hefter mit biegsamen Aufreihzungen (7) auf einem Verbindungsstück, gleitend in einem schienenähnlichen Teil (3) mit U-förmigem Querschnitt, mit Öffnungen (6) für den Durchlass der biegsamen Aufreihzungen, wobei der genannte Verriegelungsschieber ein längliches Teil (21, 22), dass in einem schienenähnlichen Teil (3) gleitet, umfasst, dadurch gekennzeichnet, dass das längliche Teil mit einer Aussparung für eine biegsame Aufreih-

zunge versehen ist; dass ein zweites längliches Teil (24, 27, 28) drehbar verbunden mit dem ersten länglichen Teil (21, 22) ist für eine drehbare Bewegung schräg zur Längsrichtung des ersten Teiles (21, 22) um die genannte Aussparung abzudecken, wobei das erste Teil eine mitnehmende Funktion für das schliessende zweite Teil in einer nach unten gerichteten Position besitzt, worin die biegsame Aufreihzungegebogen und festgeklemt ist.

2. Verriegelungsschieber gemäss Anspruch 1, dadurch gekennzeichnet, dass das erste längliche Teil ein Endstück (20) besitzt, dass aus dem schienenähnlichen Teil und einem rahmenähnlichen Teil (21) hervorragt, wobei letzteres das schienenähnliche Teil mitnimmt und das schwenkbare Teil (24) drehbar an das Endstück angefügt ist und zwischen den Längsschenkeln des Rahmens eingepasst ist.

3. Verriegelungsschieber gemäss Anspruch 2, dadurch gekennzeichnet, dass das drehbare Teil am freien Ende mit einem Einschnitt (26) versehen ist, der in Längsrichtung des drehbaren Teiles angeordnet ist, und der von beiden Seiten durch die elastischen Schenkel (27), die die Mitnehmer tragen, begrenzt ist.

4. Verriegelungsschieber gemäss Anspruch 3, dadurch gekennzeichnet, dass die Mitnehmer (28) seitlich aussen an den Enden der elastischen Schenkel (27) angefügt sind und dass die Längsrippen des rahmenähnlichen Teiles (24) ausgestattet sind mit Aussparungen (23) für die Aufnahme der Mitnehmer (28).

5. Verriegelungsschieber gemäss Anspruch 4, dadurch gekennzeichnet, dass die elastischen Schenkel (27) oben einen Vorsprung (29) tragen, so dass die elastischen Schenkel manuell gegeneinander gebogen werden können.

6. Verriegelungsschieber gemäss einem der Ansprüche 3 bis 5, dadurch gekennzeichnet, dass das drehbare Teil am Boden mit einer Aussparung (31) versehen ist, die in den Einschnitt (26) führt, für die Aufnahme der biegsamen Aufreihzungen.

7. Verriegelungsschieber gemäss einem der Ansprüche 2 bis 6, dadurch gekennzeichnet, dass ein Querstück (22) am Ende des rahmenähnlichen Teiles angeordnet ist, entgegengesetzt zum Endstück (20), wobei dieses Querstück wenigstens teilweise dünner ist als die Längsschenkel (21) für die Feststellung der biegsamen Aufreihzunge (7).

Revendications

1. Organe de serrage coulissant servant à fixer des tiges de reliure flexibles (7) d'un classeur, cet organe de fixation coulissant étant apte à glisser dans un élément (3) en forme de rail possédant une section transversale sensiblement en forme de U possédant des ouvertures (6) pour le passages des tiges de liaison (7), ledit organe de

serrage coulissant comprenant une première partie allongée (21, 22) apte à glisser dans l'élément (3) en forme de rail, caractérisé en ce que ladite première partie est munie d'un passage pour une tige de reliure (7); qu'une seconde partie (24, 27, 28) est raccordée, de manière à pouvoir pivoter, à la première partie (21, 22) en étant apte à exécuter un mouvement de pivotement transversalement par rapport à la direction longitudinale de la première partie (21, 22) de manière à recouvrir ledit passage, et comportant des moyens formant comes pour verrouiller ladite seconde partie dans une position rabattue, dans laquelle la tige de reliure est fléchie et serrée.

2. Organe de serrage coulissant selon la revendication 1, caractérisé en ce que la première partie comporte un organe de butée (20) qui fait saillie, en fonctionnement, à partir de l'élément en forme de rail, et une partie en forme de cadre (21) qui s'étend à partir dudit élément, et que la partie pivotante (24) est raccordée, de manière à pouvoir pivoter, à l'organe de butée (20) et s'insère, dans l'état de fonctionnement, entre les branches longitudinales du cadre.

3. Organe de serrage coulissant selon la revendication 2, caractérisé en ce que la partie pivotante comporte, sur son extrémité libre, une fente (26) qui s'étend dans la direction longitudinale de la partie pivotante, ladite fente étant définie de chaque côté par des branches élastiques (27) portant les moyens formant comes.

4. Organe de serrage coulissant selon la revendication 3, caractérisé en ce que les moyens formant comes comprennent des comes (28) qui s'étendent latéralement vers l'extérieur sur les extrémités des branches élastiques (27), et que les nervures longitudinales de la partie en forme de cadre (24) comportent, sur leurs extrémités se faisant face, des renforcements (23) servant à recevoir les comes (28).

5. Organe de serrage coulissant selon la revendication 4, caractérisé en ce que les branches élastiques (27) portent chacune, à leur partie supérieure, une partie saillante (29) de sorte que les branches élastiques peuvent être fléchies manuellement l'une vers l'autre.

6. Organe de serrage coulissant selon l'une quelconque des revendications 3—5, caractérisé en ce que la partie pivotante comporte, dans sa base, une rainure (31) débouchant dans la fente (26) et servant à recevoir la tige de reliure (7), dans l'état de fonctionnement.

7. Organe de serrage coulissant selon l'une quelconque des revendications 2—6, caractérisé en ce qu'une âme transversale (22) disposée sur l'extrémité de la première partie en forme de cadre, située à l'opposé de l'organe de butée (20), est au moins partiellement plus mince que les branches longitudinales (21) pour former un emplacement pour la tige de reliure (7).

