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(54) Ausziehführung

(57) A sliding jogger comprises a fixed part 110 for securing to the frame of a blanking tool and a sliding part 112 slidable on the fixed part, the two parts being formed by stamping a respective blank from sheet metal and bending the blank. The fixed part comprises a substantially flat base portion 114 for securing to the frame of the blanking tool and a pair of opposite substantially parallel turned-in outer edges 116. The sliding part comprises a pair of opposite substantially parallel outer edges 120 which are slidably embraced by the outer edges 116 of the fixed part and a longitudinal central portion 118 which is substantially coplanar with the turned-in outer edges 116 of the fixed part.

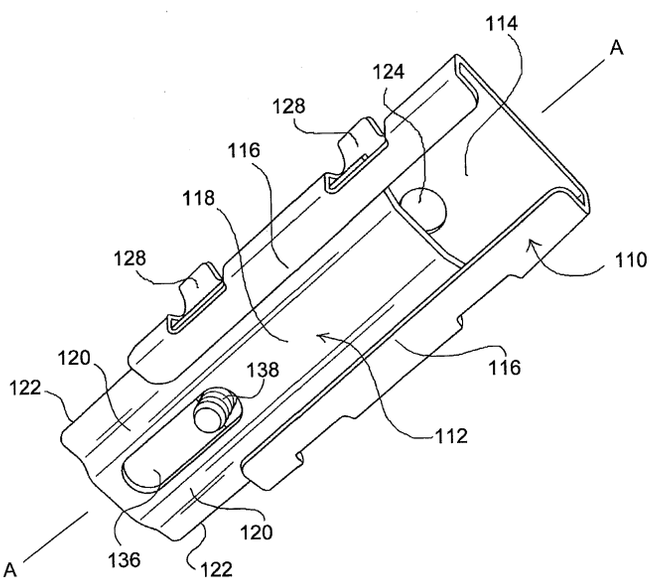

FIG. 1

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Description

[0001] This invention relates to a sliding jogger.

[0002] A sliding jogger and blanking tool incorporating such jogger is described in our copending application WO 02/36471. Referring to Fig. 1 of such application, which is reproduced as fig. 1 herein, the jogger comprises a fixed part 10 for securing to the frame of a blanking tool and a sliding part 12 slidable on the fixed part, the two parts of the jogger having been formed by stamping a respective blank from sheet metal and bending the blank. The fixed part comprises a base portion 14 for securing to the frame of the blanking tool and a pair of opposite substantially parallel outer edges 20 which lie in a plane spaced from the base portion. The sliding part comprises a pair of opposite substantially parallel turned-in edges 32 which slidably embrace the outer edges of the fixed part.

[0003] Also, the jogger includes a narrow upper end (tongue) 40 which in use enters a slot in a plywood template forming part of a blanking tool with which the jogger was used. The tongue is required because when the blanking tool is lifted, a gap would otherwise have appeared between the underside of blanking tool and the top of the sliding part of the jogger. The foremost edges 20 of the fixed part were too far back from the blank guiding surface of the sliding part to make up for this gap and to properly guide blanks falling through the blanking frame.

[0004] A problem with this prior sliding jogger is that up to four different versions were required for fitting to the same blanking tool. These had differing length tongues 40 which extended into the plywood template of the blanking tool. This arose because the plywood template is reduced in height at the front frame bar so necessitating a shorter tongue 40 on the sliding joggers attached to this bar.

[0005] Accordingly, the present invention provides a sliding jogger comprising a fixed part for securing to the frame of a blanking tool and a sliding part slidable on the fixed part, the two parts being formed by stamping a respective blank from sheet metal and bending the blank, wherein the fixed part comprises a base portion for securing to the frame of the blanking tool and a pair of opposite substantially parallel turned-in outer edges, and wherein the sliding part comprises a pair of opposite substantially parallel outer edges which are slidably embraced by the outer edges of the fixed part and a longitudinal central portion which is substantially coplanar with the turned-in outer edges of the fixed part.

[0006] Also, each jogger of WO 02/36471 has a pair of wings 28 which engaged a slot 26 in a frame member of the blanking tool. Again, different designs of joggers were necessary since the height of the wings required to engage the slot in the frame was different according to the side of the frame (i.e. which cross-member) on which the jogger was located.

[0007] Preferably, therefore, the fixed part comprises two pair of wings, the wings in each pair extending at an angle from opposite edges of the base portion and one pair of wings being displaced longitudinally of the other pair.

[0008] Embodiments of the invention will now be described, by way of example, with reference to the accompanying drawings, in which:

Fig. 1 is a front perspective view of an embodiment of sliding jogger according to the invention; and

Fig. 2 is a perspective view of the jogger fixed to a support bar of a blanking tool; and

Fig. 3 is a top perspective view of a second embodiment of the invention.

[0009] Referring initially to Fig. 1 of the drawings, a sliding jogger comprises fixed and sliding parts 110 and 112 respectively. Each part is manufactured by stamping a respective blank from sheet metal and bending the blank. This may be done using conventional metal stamping and bending techniques.

[0010] The fixed part 110 of the jogger is substantially symmetrical about a longitudinal axis A-A and comprises a substantially flat base portion 114 having a pair of opposite substantially parallel turned-in edges 116. The sliding part 112 is substantially symmetrical about the same longitudinal axis A-A and comprises a substantially flat longitudinal central portion 118 and a pair of inclined walls 120 extending outwardly from opposite longitudinal edges of the central portion 118 respectively and terminating in outer substantially parallel edges 122. The turned-in edges 116 slidably embrace the respective outer edges 122 of the walls 120 such that the sliding part 112 is able to slide freely along the longitudinal axis A-A relative to the fixed part 110. The longitudinal central portion 118 of the sliding part 112 is substantially coplanar with the turned-in outer edges 116 of the fixed part 110.

[0011] In use, the fixed part 110 is fitted to the frame member 16 of a blanking tool by a bolt (not shown) which passes through a hole 124 in the base portion 114 and is screwed tightly into a nut 23 slidably captured in a slot 26 in the member 16. To resist twisting of the jogger in use, the base portion 114 has a pair of wings 128, located one on either side of the hole 124, which extend outwardly from the opposite edges of the base portion 114 and are bent rearwardly at an angle out of the plane of the base portion 114 into the slot 26. In fact, there are two pairs of wings 128, one pair being displaced longitudinally of the other pair, and two holes 124, each hole 124 being located in the base portion 114 between a respective pair of wings 128. This allows either pair of wings to be inserted in the slot 26, depending on the height of the frame member 16 relative to a plywood template 50 disposed above the frame member 16 (the nature and purpose of the template 50 is described in

WO 02/36471).

[0012] When the jogger is fitted to the frame member 16 as shown in Fig. 2, the inner edge 50A of the template 50 is substantially coplanar with the longitudinal central portion 118 of the sliding part 112 and the turned-in outer edges 116 of the fixed part 110. Also, the upper end of the fixed part 110 substantially abuts the underside of the template 50 so that there is little or no gap between them. Thus the tongues 40 provided on the joggers of WO 02/36471 are unnecessary.

[0013] To limit the range of travel of the sliding part 112 on the fixed part 110, to stop it sliding off in use, the central portion 118 has a slot 136 extending substantially parallel to the direction of movement of the sliding part, and the base portion 114 has an upstanding pin 138 which enters the slot 136. The limits of travel are defined by the pin 138 meeting the opposite ends of the slot 136. The pin 138 extends just into the slot 136 but does not extend beyond the outer surface of the central portion 118 (i.e. the surface seen in Fig. 1).

[0014] In the foregoing embodiment it will be seen that the fixed part of the jogger is supported only at the frame member 16, leaving a substantial part of the length of the jogger unsupported above the member 16, especially when the lower pair of wings 128 are used. It would be desirable to fix, or at least locate, the top of the jogger relative to the template 50. This is achieved by the alternative embodiment shown in Fig. 3, in which the same reference numerals have been given to components the same or equivalent to those in Figs. 1 and 2.

[0015] The sliding jogger of Fig. 3 includes a steel block 140 secured, e.g. by spot welding, to the inside surface of the base portion 114 of the fixed part 110 between the turned-in outer edges 116. The block 140 has an internally threaded bore 142 substantially parallel to the edges 116. To accommodate the block 140 both the fixed and sliding parts of the jogger have a greater depth than in the previous embodiment. In particular, the channels 116A defined by the turned-in edges 116 are wider than before, and the parallel outer edges 122 of the sliding part 112 are turned at right angles compared to Figs. 1 and 2.

[0016] In use, a hole (not shown) is drilled vertically through the template 50 so that, when the jogger is positioned on the frame member 16, the hole in the template is directly above and coaxial with the bore 142. Now, a bolt 144 is inserted from the top into the hole in the template and screwed into the bore 142 until the template is tight against the top end of the sliding part 112. This fixes the top end of the fixed part of the jogger to the underside of the template 50.

[0017] Alternatively, a threaded shaft (not shown) could first be screwed into the bore 142 and inserted upwardly into the hole in the template as the jogger is fitted to the frame member 16. This would locate the top end of the jogger against sideways movement relative to the template, although the jogger would not be positively fixed to the template.

[0018] In the above joggers, it is the fixed part which embraces the sliding part (the opposite of WO 02/36471) so that the front embracing lips of the fixed part are coplanar with the front surface of the sliding part. Now when the sliding part moves away from the underside of the blanking frame, the front lips of the fixed part will guide blanks until they meet the front surface of the sliding part. When the blanks pass the fixed part, they are guided by the sliding part as before.

[0019] The invention is not limited to the embodiment described herein which may be modified or varied without departing from the scope of the invention.

Claims

1. A sliding jogger comprising a fixed part for securing to the frame of a blanking tool and a sliding part slidable on the fixed part, the two parts being formed by stamping a respective blank from sheet metal and bending the blank, wherein the fixed part comprises a base portion for securing to the frame of the blanking tool and a pair of opposite substantially parallel turned-in outer edges, and wherein the sliding part comprises a pair of opposite substantially parallel outer edges which are slidably embraced by the outer edges of the fixed part and a longitudinal central portion which is substantially coplanar with the turned-in outer edges of the fixed part.

2. A sliding jogger as claimed in claim 1, wherein the fixed part comprises two pair of wings, the wings in each pair extending at an angle from opposite edges of the base portion and one pair of wings being displaced longitudinally of the other pair.

3. A sliding jogger as claimed in claim 2, wherein the base portion has a respective hole between each pair of wings to accept a screw-threaded fixing means to secure the base portion to the frame.

4. A sliding jogger as claimed in any preceding claim, wherein the sliding part has a slot extending substantially parallel to its direction of movement, and wherein the fixed part has a projection which enters the slot, the range of travel of the sliding part relative to the fixed part being defined by the projection meeting the opposite ends of the slot.

5. A sliding jogger as claimed in any preceding claim, further including a member having an internally threaded bore secured to the base portion of the fixed part between the turned-in outer edges, the bore being substantially parallel to the turned-in outer edges.

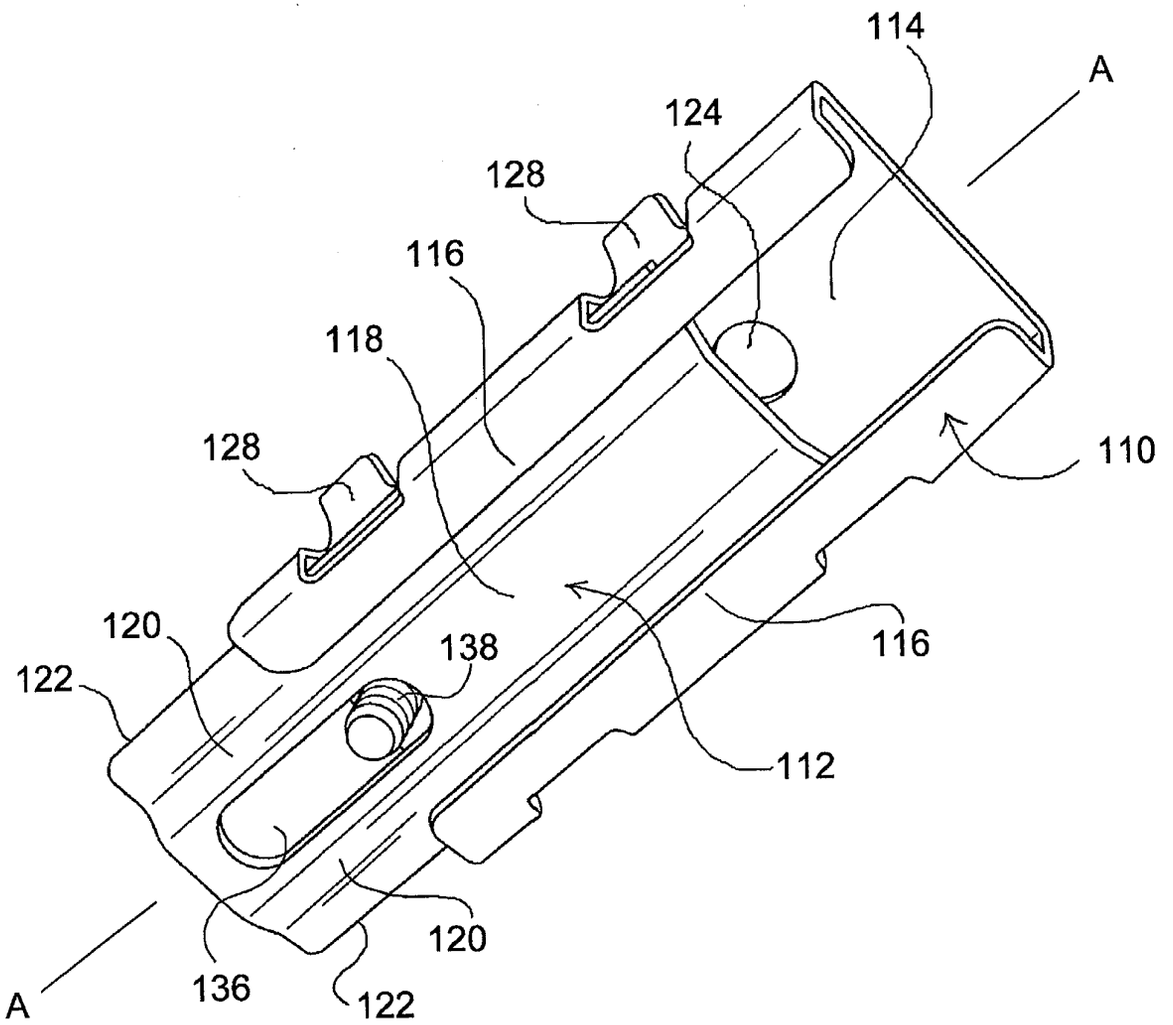

FIG. 1

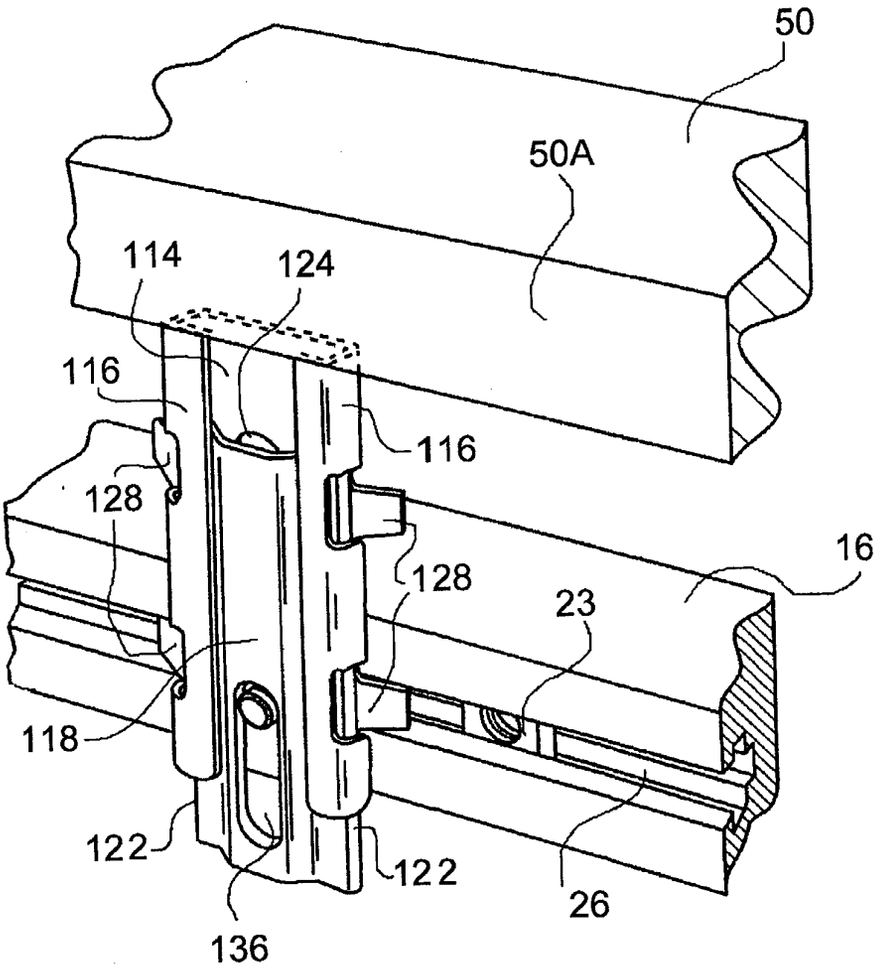

FIG. 2

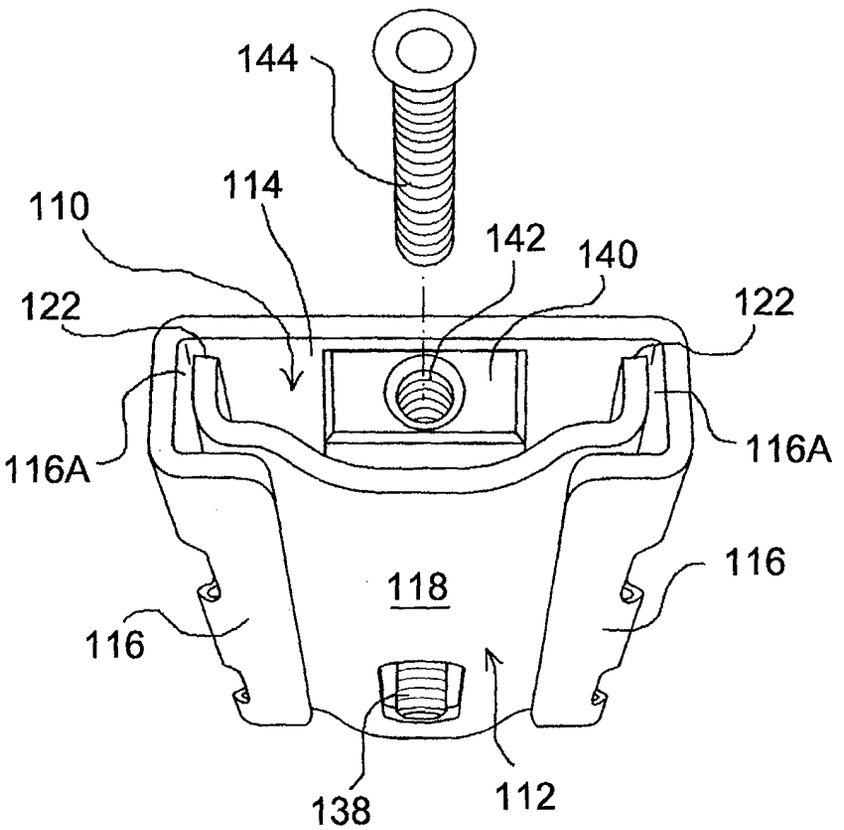

FIG. 3