

PATENT SPECIFICATION

DRAWINGS ATTACHED

939.825



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COMPLETE SPECIFICATION

Improvements relating to Splicing Plates

We, CONDER ENGINEERING COMPANY LIMITED, a British Company of Winnal, Winchester, Hampshire, do hereby declare the invention, for which we pray that a Patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention concerns splicing plates and in particular, splicing plates for joining purlin lengths of the type described and claimed in our copending application No. 39509/60 dated the 4th October, 1957, (Serial No. 893,243) to which the present application is an application for a Patent of Addition.

According to the invention there is provided a splicing plate, for joining purlin lengths, comprising an elongated plate web with an unflipped flange along each edge so as to present a substantially Z-shaped cross-section and which forms a substantially complete contiguous surface with one or more purlin lengths of corresponding shape when in relative contact therewith, the plate web being provided with one or more series of holes spaced apart along the length of the plate each series containing four or more holes, the holes in each series being arranged so that two of the holes have their centres on a line extending parallel to the longitudinal edges of the splicing plate which line is substantially tangential to or passes through the remaining holes in the series but does not pass through the centres of the latter, and so that, in use, the holes will be out of alignment with corresponding co-linearly arranged holes in the purlin lengths and thus will result in bolts accommodated in the holes being subject to a force so as to compensate for slack or free movement due to bolt clearance, when said plate is secured to each relative purlin length.

In a preferred embodiment, each series of holes comprises a hole adjacent each end of the splicing plate and a pair of holes intermediate the ends thereof.

The invention will be described further, by

way of example, with reference to the accompanying drawings, in which:—

Fig. 1 is a side elevation of a splicing plate in accordance with the present invention;

Fig. 2 is a cross-sectional elevation taken on the line II—II of Fig. 1; and

Fig. 3 is a side elevation, similar to Fig. 1, of an alternative embodiment of splicing plate in accordance with the present invention.

A splicing plate in accordance with the present invention and as illustrated in Figs. 1 and 2 comprises a rectangular substantially plane plate web 10 having an unflipped flange 11 projecting outwardly from each longitudinal edge thereof in a plane at right angles to the plane of the plate web. The splicing plate has a Z-shaped configuration in end elevation, as will be appreciated from Fig. 2.

Holes are provided in the plate web 10 and in use these holes accommodate bolts. The holes are in two series spaced longitudinally of the web in rows adjacent the respective longitudinal edges of such web 10. Each series comprises a pair of holes 12 and 13 one disposed adjacent each end of the splicing plate and having their centres disposed on a respective common line 16 extending parallel to the adjacent longitudinal edge of the web 10.

Each series of holes also comprises a pair of holes 14 intermediate the ends of the web 10 and as can be seen from the drawings, these too are disposed with their centres on a respective line which is parallel to the adjacent edge of the web 10. It will be seen, however, that such line through the centres of the holes 14 in the respective series does not register with the corresponding line 16, but is spaced from the latter. Thus, the respective line 16 extends through the holes 14, but does not pass through the centres of such holes 14.

When the splicing plate is used for joining purlin lengths described in our aforesaid Application No. 39509/60 (Serial No. 893,243) the bolt holes of which purlin

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lengths are co-linearly arranged, any slackness, free movement or the like, between the purlin lengths and the splicing plate is taken up by the bolts accommodated in the holes 12, 13 and 14 i.e. the corresponding holes in the purlin lengths and the splicing plates are not concentric and the edges, defining the holes, which overlap will subject a bolt, accommodated in such corresponding holes, to a considerable shear pressure.

The invention is not confined to the precise details of the foregoing example and variations may be made thereto. For instance the positions of the holes 14 in their respective series may be such that the line 16 extends tangentially thereto. Furthermore, in each series, one hole adjacent one end of the web 10 and one hole intermediate the ends may lie on the line 16, so that the other two holes lie on the line shown in Fig. 1 as joining the centres of the two holes, 14. The intermediate holes 14 of the two series need not, therefore define the corners of a rectangle; they may define the corners of a parallelogram. More than two intermediate holes can be provided in each series, and the overall number of holes in each series may be varied, as desired, provided there are at least four holes in such series.

The number of series of holes in the splicing plate may be more than two, or only a single series may be provided. Fig. 3 illustrates the latter possibility wherein the splicing plate has a single series of holes the disposition of which corresponds to each of the series in the arrangement of Figs. 1 and 2.

A splicing plate in accordance with the present invention has the following advantages: it obviates the need for close tolerance bolt holes in the splicing plate and/or the purlin lengths as any slack is taken up by the non-alignment of the registering bolt holes; it is simple and inexpensive to produce; and by increasing the offset of the bolt holes in the series beyond that necessary to absorb bolt

clearance, purlin lengths may be given an upward camber at the joints to compensate for subsequent loading.

WHAT WE CLAIM IS:—

1. A splicing plate, for joining purlin lengths, comprising an elongated plate web with an unlipped flange along each edge so as to present a substantially Z-shaped cross-section and which forms a substantially complete contiguous surface with one or more purlin lengths of corresponding shape when in relative contact therewith, the plate web being provided with one or more series of holes spaced apart along the length of the plate each series containing four or more holes, the holes in each series being arranged so that two of the holes have their centres lying on a line extending parallel to the longitudinal edges of the splicing plate which line is substantially tangential to or passes through the remaining holes in the series but does not pass through the centres of the latter, and so that, in use, the holes will be out of alignment with corresponding colinearly arranged holes in the purlin lengths and thus will result in bolts accommodated in the holes being subject to a force so as to compensate for slack or free movement due to bolt clearance, when said plate is secured to each relative purlin length.

2. A splicing plate as claimed in claim 1 wherein there are two of the series of holes.

3. A splicing plate as claimed in claim 1 or 2 wherein each series of holes comprises a hole adjacent each end of the splicing plate and a pair of holes intermediate the ends thereof.

4. A splicing plate substantially as hereinbefore described with reference to and as illustrated in Figs. 1 and 2 or Fig. 3 of the accompanying drawings.

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