

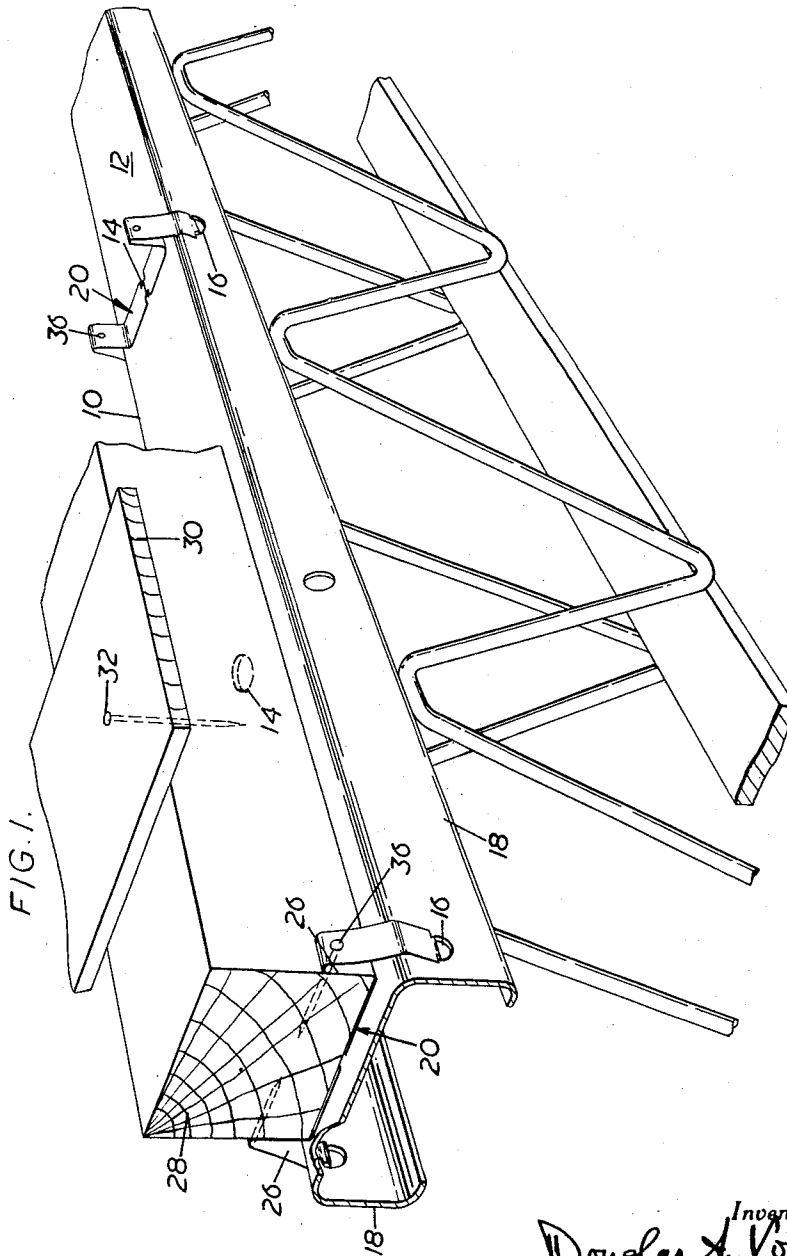
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2,996,160

Filed July 30, 1959

2 Sheets-Sheet 1



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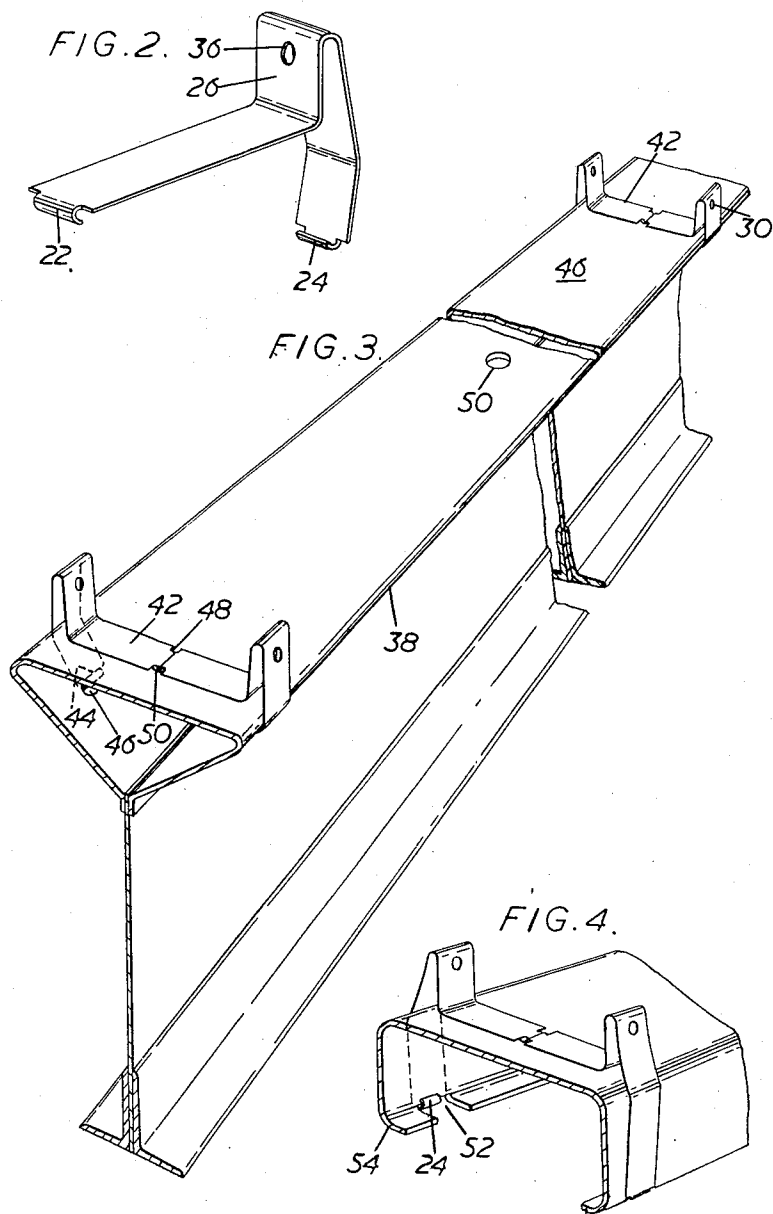
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BUILDER'S APPLIANCES

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This invention relates to builders' appliances.

In building construction, use is frequently made of formwork in the form of steel beams destined to support other formwork which may be of metal or wood. When that other formwork is of wood, there can be difficulty in fixing it securely in the working position and the present invention is concerned with the provision of means which can be used in conjunction with a steel formwork beam to obviate that difficulty.

In accordance with the invention, a steel formwork beam having an upper boom with a flat upper surface is provided at intervals along its length with resilient steel clips adapted to receive and provide seatings for a timber scantling running along the beam, the said clips being shaped so as to straddle the boom and to provide upstanding abutments limiting lateral movement of the scantling and being removably held in their working position by being sprung into gripping engagement with the boom.

When provided with such clips, the beam can securely support a timber scantling across which other formwork timbers such as planks can be laid and to which they can be easily secured by nailing.

If the upper boom has depending flanges, holes or notches can be provided in them for the reception of the outer ends of the clips which are suitably hooked.

In one useful form of formwork beam, the upper boom is of hollow construction and can be provided with holes for the reception of hooks at the ends of the clips at any suitable location below the flat upper surface of the boom.

The clips may be made in one piece or of two identical halves. In the former case they can usefully be provided with one or more depending lugs which, in the working position, are engaged in holes in the flat upper surface of the boom. In the latter case, each half of a clip provides one of the lateral abutments and can be provided at its inner end with a hook which, in the working position, is engaged in a hole in the flat upper surface of the boom.

For the construction of floors of substantial span it is not unusual for telescopic formwork beams or "centres" to be used, consisting of a number of beams of which the upper boom of one is slidable within the upper boom of another so that the overall length of the telescopic centre can be adjusted to any particular requirement. The invention can be particularly usefully applied to such beams. By making the clips of spring steel it will generally be possible to use identical clips to straddle the upper booms of the inner and outer beams in spite of the difference in the dimensions of those booms.

The invention includes within its scope not only the combination of beam and clips defined above but also the clips themselves.

Some examples of the invention are shown in the accompanying drawings in which:

FIGURE 1 is a perspective view of a formwork beam fitted with two clips each formed of identical halves;

FIGURE 2 is a perspective view of one of the half clips;

FIGURE 3 shows a modification of the beam shown in FIGURE 1; and

FIGURE 4 shows another kind of formwork beam fitted with clips made in one piece.

The beam shown in FIGURE 1 is of lattice construc-

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tion and has an upper boom 10 having a flat upper surface 12. At intervals along its length the upper boom is provided with a series of holes 14 along its centre line and a series of holes 16 in its depending flanges 18. These holes serve to locate and receive clips 20 each made of identical halves of which one is shown separately in FIGURE 2.

Each half clip is a resilient steel pressing having a hooked inner end 22 and a hooked outer end 24 and an upstanding portion 26. As can be seen in FIGURE 1, the inner hooked ends 22 are engaged in the holes 14 in the upper boom of the beam and the outer hooked ends 24 in the holes 16. The springiness of the half clips is such that they can be sprung into the working position shown in FIGURE 1 and be sprung out when desired.

When the beam is thus fitted with clips a timber scantling 28 can be laid along the upper boom as shown, the clips providing seatings for it and portions 26 of the clips forming abutments limiting lateral movement of the scantling. Timber formwork members such as the planks 30 can then be laid across the beam and other beams arranged parallel to it and be secured in position by nails 32 driven into the scantling which, itself, can be secured in position by nails driven into it through holes 36 in the half clips.

FIGURE 3 shows a small modification of FIGURE 1 in which the holes 16 in the depending flanges of the upper boom are replaced by notches 52 in the intumed flanges 54, the clips being lengthened accordingly.

The beam shown in FIGURE 4 has an upper boom 38 of hollow construction but also having a flat upper surface 40. It can be arranged with that of FIGURE 1 so that the two beams constitute a telescopic floor centre or other formwork device. It is shown fitted with two clips 42 each of one-piece construction and being the equivalent of the pairs of half clips shown in FIGURE 1. Their outer ends 44 are hooked so that they can be sprung into and out of holes 46 in the hollow boom 38 below the level of the flat surface 40. In the middle they have two turned-down lugs 48 which engage in holes 50 corresponding to the holes 14 in the beam of FIGURE 1. These lugs and holes, however, are not essential.

When the two beams are used in conjunction, the inner beam (FIGURE 4) is engaged to the desired extent within the outer beam (FIGURE 1) and the clips are fitted in suitable locations to enable the scantling 28 to be supported on and to be secured to them. Each beam can, of course, be used by itself in appropriate circumstances and single clips or pairs of half-clips can be used as desired.

The upper boom of the inner beam (FIGURE 4) is necessarily of smaller dimensions than that of the outer beam (FIGURE 1). The difference, however, will generally not be so great as to preclude the use of identical clips or pairs of half-clips on the two beams. This has the important advantage of reducing the number of different parts to be provided by the builder. If the difference in the width of the two booms is substantial identical pairs of half-clips can be used if the holes 14 in the outer beam are enlarged or elongated transversely of the boom so that a small gap is left between the inner ends of the half-clips.

The invention increases the usefulness of steel formwork beams in a very simple manner.

I claim:

1. A formwork member comprising in combination a steel beam having an upper boom with a flat upper surface and downturned flanges, said flanges having a series of holes in them and clips straddling the boom and having two upstanding abutment portions to receive between them a timber scantling, the outer ends of the clips being hooked to engage in the holes in the boom flanges.

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2. A formwork member as claimed in claim 1, in which the upper boom is hollow and is provided below the level of the upper flat surface of the boom with holes for the reception of the hooked ends of the clips.

3. A formwork member as claimed in claim 1, in which each clip has at least one downwardly projecting lug and the boom has a series of holes in its flat upper surface to receive the downwardly projecting lugs of the clips.

4. A formwork member as claimed in claim 1, in which each clip is formed of two identical halves each providing one of the said abutments and each terminating at its inner end in a hook which is engaged in a hole in the flat upper surface of the boom.

5. A formwork member comprising in combination a steel boom having an upper boom with a flat upper surface and downturned flanges, said flanges having a series of notches in them, and clips straddling the boom and having two upstanding abutment portions to receive between them a timber scantling, the outer ends of the clips

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being hooked to engage in the notches in the boom flanges.

6. A formwork member as claimed in claim 5, in which each clip has at least one downwardly projecting lug and the boom has a series of holes in its flat upper surface to receive the downwardly projecting lugs of the clips.

7. A formwork member as claimed in claim 5, in which each clip is formed of two identical halves each providing one of the said abutments and each terminating at its inner end in a hook which is engaged in a hole in the flat upper surface of the boom.

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