

Oct. 5, 1965

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3,209,509

DEVICES FOR CONCRETE REINFORCEMENT

Filed Dec. 5, 1961

FIG. 1

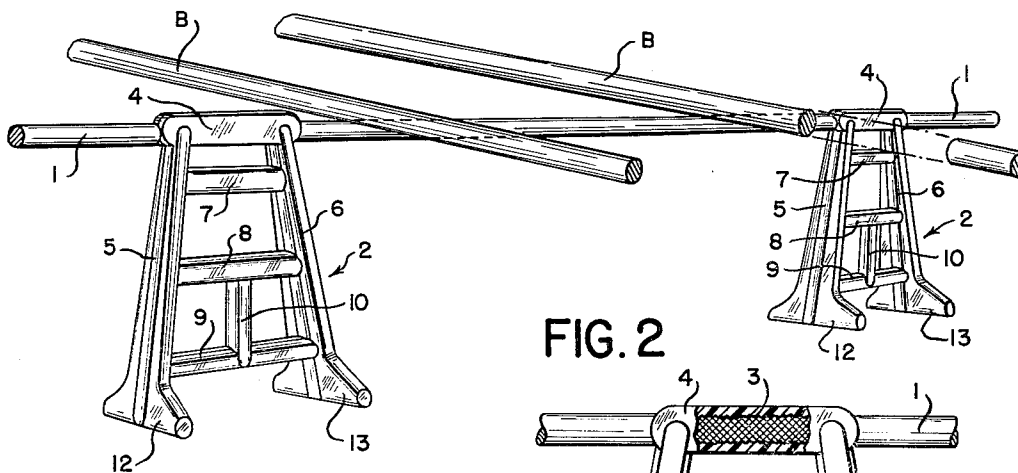


FIG. 2

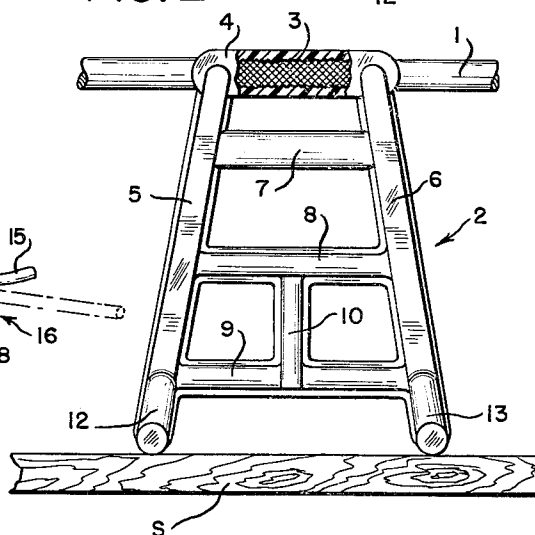


FIG. 3

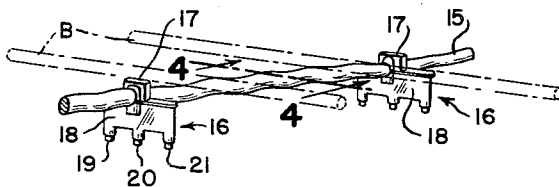


FIG. 4

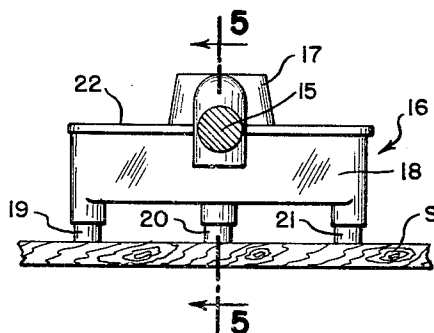
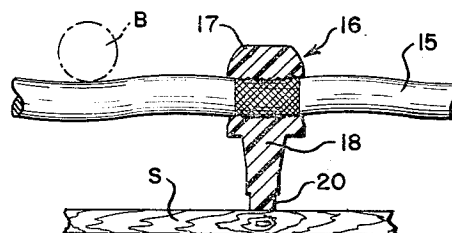


FIG. 5



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DEVICES FOR CONCRETE REINFORCEMENT
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1 Claim. (Cl. 52-688)

This application is a continuation-in-part of my abandoned application Ser. No. 56,439, filed Sept. 16, 1960.

This invention relates to supports for the reinforcing of steel rods or bars used in concrete construction, and is especially concerned with the bolster rods and chairs or spacers (hereinafter called spacers) for supporting the reinforcing bars a desired distance above the form on which concrete floors or the like are poured. The invention provides improved spacers for the rods, and also an improved combination of spacers and a bolster rod.

The improved spacers of the invention are formed of resin material and comprise means for securely mounting on the bolster rod and effecting a rigid supporting engagement with the ceiling form. A preferred form of my improved spacer is formed of molded resin preferably molded in contact with the bolster rod and is held in non-turning engagement with the rod.

In the combination bolster rod and spacer embodiment of the invention, I mount along the bolster rod at spaced intervals a series of spacers formed of resin which are molded and set on the rod. The rod is upset, flattened or otherwise provided with key means where the spacers are molded and set to maintain them in proper non-turning alignment. In other words, the upsetting of a round rod and the molding thereover of a spacer having an enlarged hub portion prevents the spacer from turning. The spacers may have spaced legs for stable support and they may have small projections for resting on the form.

The spacers are preferably formed of a material that is a non-conductor of electricity, impervious to moisture and inert with respect to concrete. Various thermoplastic and thermosetting resins are suitable for forming the spacers such as polyethylene, polypropylene, polymethane, polystyrene, nylon, Delrin, and phenol formaldehyde.

These and other novel features of the invention will be better understood with reference to the following discussion and the accompanying drawings in which

FIG. 1 is a perspective of a bolster rod and spacer combination of the invention;

FIG. 2 is an enlarged view partly in section of one of the spacers and the bolster rod of FIG. 1;

FIG. 3 is a sectional view of a modification;

FIG. 4 is a sectional view at 4-4 of FIG. 3; and
FIG. 5 is a sectional view at 5-5 of FIG. 4.

The embodiment of the invention illustrated in FIG. 1 is a continuous spacer-rod type of combination comprising a bolster rod 1 and molded plastic spacers 2. The rod is upset, roughened or deformed as at 3, providing a key-like section where the plastic rods are molded over the rod (FIG. 2). These spacers may be fixed at any suitably spaced intervals along the rod 1 as desired. The embodiment illustrated in FIGS. 1 and 2 is for relatively heavy construction for supporting bars B which are supported 3 or 4 inches above the support S.

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They comprise a hub portion 4 where the attachment is made with the roughened rod portion 3 and a depending portion in the form of a truss having legs 5 and 6, cross bars 7, 8 and 9 and a tie bar 10. The legs terminate in wide bearing parts 12 and 13.

It will be noted that the spacers of FIG. 1 are generally in the same plane as the rod and when the concrete flows between the legs 5 and 6 this minimizes an area of weakness in the concrete.

This bolster rod and spacer combination may be of more or less indefinite length and can be cut to any desired length and be set rapidly on the form for supporting the reinforcing bars B. The spacers are electrically non-conducting and do not transfer moisture from the lower surface of the floor to the bolster rod.

The spacer-rod combination illustrated in FIGS. 3 and 4 comprises bolster rod 15 and spacers 16 which have hubs 17 in engagement with a roughened portion of the rod 15 as in FIG. 2. The rod 15 is waved or crimped to facilitate locating the bars B. The form of spacer of FIGS. 3 and 4 is advantageously used for supporting relatively light bars at a short distance, say, from one-half to two inches above the support S. This spacer is set generally transverse to the rod 15 and has a solid body portion 18 unitary with the hub 17 and three short legs 19, 20 and 21. These legs are spaced apart for stability and have small bearing areas so that a very small amount of plastic will be seen when the support S is removed. The top 22 is generally flat and wide largely for strength.

The bolster rod and spacer combination is preferably made by supporting the rod in a mold and forcing fluid resin into the mold and letting it set or harden while in contact with the rod.

I claim:

The bolster rod and spacer combination which comprises a bolster rod of indefinite length, spaced key-like sections on said rod, a plastic spacer having a hub portion molded over each key-like section of the rod, said spacer being in secured attachment on the rod and having spaced depending legs terminating in laterally extending foot means disposed transverse to the axis of the bar, and cross bars integral with the legs which secure the legs together providing spaces in which concrete can flow whereby the spacer legs and cross bars reinforce the concrete.

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