March 4, 1941. C. D. REED ET AL 2,233,899

ASSEMBLING RACK

Original Filed April 21, 1938

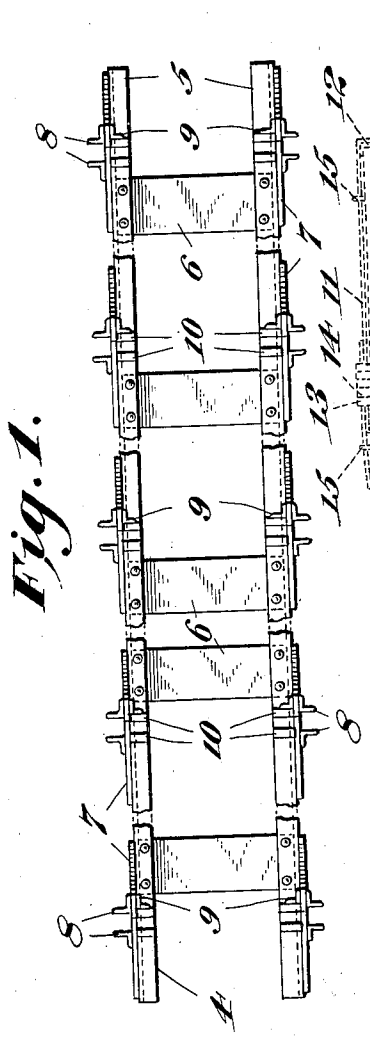


Fig. 1.

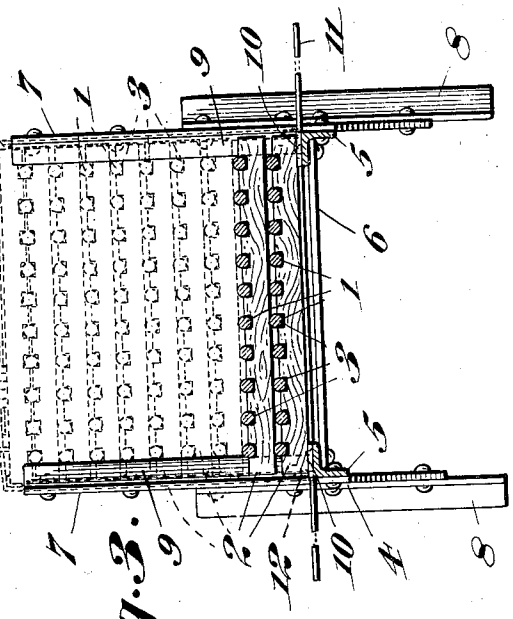


Fig. 3.

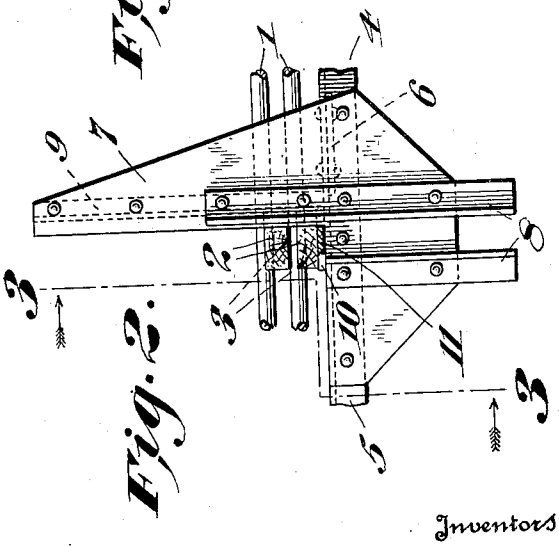


Fig. 2.

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## ASSEMBLING RACK

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Original application April 21, 1938, Serial No. 203,306. Divided and this application April 12, 1939, Serial No. 267,525

7 Claims. (Cl. 100—31)

This invention relates to assembling racks for use in forming bundles of rods or the like arranged and bound together in spaced relation and is more especially adapted for assembling bundles of sucker rod sections used in oil wells which have enlarged and threaded end portions and is a division of our copending application entitled "Method and apparatus for assembling and shipping rods," filed April 21, 1938, Serial No. 203,306.

It is necessary that the threaded ends of the sucker rod sections should be fully protected at all times during the shipping operation and handling, otherwise difficulty in assembling may be experienced in the field or the threads at the coupling joints might fail during the pumping operation.

To protect these threaded end portions of the sucker rods a coupling is usually threaded on one end of each rod and a cap on the opposite end.

Sucker rods on account of their enlarged end portions and the couplings and caps for protecting the said threaded end can not be shipped loose or bundled directly together as the intermediate portions of the rods would become bent or twisted during shipment or handling.

As shown in the drawing the sucker rods are adapted to be assembled in sets of wooden spacing blocks and bound together at spaced intervals to form bundles in which the rods are arranged in vertical and horizontal rows held perfectly straight with the ends and intermediate portions in spaced relation to each other in such a manner as to obviate scratches and abrasions and prevent relative longitudinal and lateral movement of the rods in the bundle during handling and shipment.

One of the objects of our invention relates to the manner of holding the sets of wooden spacing blocks in spaced vertically aligned position during the formation of the bundle.

Another object of our invention relates to the manner of assembling the vertically aligned rows of spacing blocks so they can be easily and quickly bound together at the end of the assembling operation.

With the foregoing and other objects in view, the invention will be more fully described hereinafter, and will be more particularly pointed out in the appended claims.

Referring now to the accompanying sheet of drawings which forms a part of this specification and on which like characters of reference indicate like parts:

Figure 1 is a top plan view of the bundle assembling rack with parts of the longitudinally extending angular side frame members broken away to allow the figure to be drawn on a larger scale;

Fig. 2 is a side elevation of one of the guiding brackets of the assembling rack for holding the spacing blocks during the formation of the bundle, but drawn on a larger scale than in Fig. 1; and

Fig. 3 is a transverse section through the assembling rack taken on the line 3—3 of Fig. 2 and showing part of the assembled bundle in dotted lines.

Referring now to the various characters of reference on the drawing:

The numeral 1 indicates the sucker rods, and 2 a plurality of wooden spacing blocks adapted to be vertically arranged in sets and each having kerfs or notches 3, the contour of which may be rectangular, V-shaped or curved, cut in one side in spaced relation to each other for receiving the sucker rods.

For illustration we have shown the assembling rack adapted for holding five vertically arranged sets of spacing blocks in forming a bundle of rods, but this number of sets of spacing blocks may be varied if desired.

The assembling rack 4 comprises a pair of longitudinally extending side frame angular members 5 connected at spaced intervals by means of transversely extending plates 6 having five sets of side guide brackets 7, reinforced on their outer sides by means of vertically extending angles 8 which are adapted to form supporting legs for the assembling rack, and on the inside by vertical angular guides 9 for engaging one side of the ends of the sets of spacing blocks 2 during the formation of the bundle. A pair of spaced flat plates 10 are welded to the tops of each of the side longitudinally extending angular frame members 5 adjacent to each vertical angular guide 9, between which straps 11 are inserted before the bottom spacing block for each set is placed in the assembling rack 4.

The bottom spacing block for each of the sets of spacing blocks with their kerfs 3 uppermost are then inserted in position above each of the straps 11 and pairs of spaced flat plates 10, with their side ends engaging the vertical angular guides 9, as indicated in Figs. 2 and 3. Operators at opposite ends of the assembling rack then insert a horizontal row of sucker rods in the kerfs 3, and then add another spacing block above each bottom block with their kerfs 3 uppermost

and then assemble another horizontal row of sucker rods 1 in the kerfs 3. This operation is repeated until the desired number of horizontal rows of rods is obtained. A top spacing block is then placed over the top of each set of spacing blocks, which may be a plain block without kerfs or a similar block turned over so that the kerfs will be disposed in the lower surface of the block. As illustrated the spacing blocks 2 are all duplicates and are each formed with ten kerfs which are substantially the same width as each of the sucker rods 1 and about half the depth of the same and all spaced an equal distance apart both horizontally and vertically and arranged to form a bundle comprising eight horizontal rows of sucker rods of ten each and ten vertical rows of eight each. When this bundle of eighty rods has been assembled, as shown in full and dotted lines in Fig. 3, bent metal angle pieces 12 are placed over the upper and lower corners of the assembled top and bottom spacing blocks of each set and the ends of the straps 11 are then brought up over the tops of the sets of spacing blocks and a sealing joint 13 inserted thereon, the ends of the straps are then stretched to bind the spacing block tightly together by means of a suitable machine adapted for this purpose and the seals crimped by slitting the opposite side edges as at 14 and bending a portion downwardly as shown and described more clearly in our copending application above mentioned. The straps are further secured to the top spacing blocks by means of staples 15.

After the bundle has been assembled and bound by means of straps it is hoisted by means of a traveling crane and a pair of lifting devices and transported to a car or to any other desired location, and the operation above described may then be repeated.

For illustration we have described our invention as a rack particularly adapted for use in assembling and bundling sucker rods. We wish it understood, however, that we do not limit ourselves to sucker rods as it is equally applicable for other kinds of rods or bars which it is desired to form and bind in bundles in a similar manner.

Although we have shown and described our invention in considerable detail, we do not wish to be limited to the exact and specific details shown and described, but may use such substitutions, modifications or equivalents thereof, as are embraced within the scope of our invention, or as pointed out in the claims.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is:

1. An assembling rack for forming bundles of rods, comprising horizontally disposed angular side members, each having a vertical and inwardly horizontally extending leg, connecting plates secured to the inwardly horizontally extending legs of the side members at intermediate points for holding the side members in spaced parallel relation, a plurality of pairs of guide brackets arranged in pairs in transverse alignment rigidly secured to the vertically extending legs and extending upwardly from the side members, and vertical reinforcing angles secured to the outside of each of the guide brackets.

2. An assembling rack for forming bundles of rods, comprising a pair of horizontally disposed angular side members, each having vertical and inwardly horizontally extending legs, connecting plates secured to the inwardly horizontally extending legs at intermediate points for holding the side members in spaced parallel relation, a plurality of guide brackets secured to each of the vertical legs of the side members and extending upwardly therefrom, said brackets secured to one side member being in transverse alignment with each of the brackets secured to the other side member, and a vertically extending aligning guide secured to each of the guide brackets.

3. An assembling rack for forming bundles of rods, comprising a pair of horizontally disposed angular side members having vertical and inwardly horizontally disposed leg portions, plates at intermediate points secured to the inwardly horizontally disposed leg portions for holding the side members in spaced parallel relation, a plurality of guide brackets rigidly secured to each of the vertical side legs of the side members and extending upwardly therefrom, said brackets secured to one side member being in transverse alignment with each of the brackets secured to the other side member, a vertically extending angular aligning guide secured to the inner face of each of the guide brackets, and vertical reinforcing angles secured to the outer face of each of the guide brackets.

4. An assembling rack for forming a bundle of rods or the like secured together in spaced relation by means of a plurality of vertically arranged sets of spacing blocks bound together by means of straps, comprising a pair of angular horizontally disposed side members, each having vertical and inwardly extending legs, connecting plates secured to the inwardly extending legs at intermediate points for holding the side members in spaced parallel relation, a plurality of vertically extending flat plates forming guide brackets rigidly secured to the vertical legs of the side members and extending upwardly therefrom, said brackets secured to one side member being in transverse alignment with each of the brackets secured to the other side member, a vertically extending angle secured to the inner face of each of the upwardly extending guide brackets for aligning the spacing blocks, and a pair of spaced flat plates secured to the tops of each of the side members adjacent to each guide bracket adapted to hold the binding straps in position.

5. An assembling rack for forming a bundle of rods or the like secured together in spaced relation by means of a plurality of vertically arranged sets of spacing blocks bound together by means of straps, comprising a pair of angular horizontally disposed side members, each having vertically and inwardly extending legs, connecting plates secured to the inwardly extending legs at intermediate points for holding the side members in spaced parallel relation, a plurality of guide brackets rigidly secured to the vertical legs of the side members and arranged in pairs transversely of the assembling rack for aligning each set of spacing blocks, and a pair of spaced flat plates secured to the tops of said side members for supporting the lower spacing block of each set and between which binding straps are adapted to be inserted and held in position.

6. An assembling rack for bundling a plurality of rods secured in spaced relation by means of a series of vertically arranged sets of spacing blocks bound together by means of straps, comprising angular longitudinal side members, each having vertically and inwardly extending legs, plates for connecting the inwardly extending

legs of the side members together at spaced intervals, guide brackets riveted to the vertical legs arranged transversely in pairs at a plurality of points along the longitudinal side members, and a vertically extending guide angle secured to the inside of each guide bracket adapted to vertically align the ends of the spacing blocks during the assembling of the bundle.

7. An assembling rack for forming a bundle of rods or the like secured in spaced relation by means of a series of vertically arranged sets of spacing blocks each bound together by means of a metal strap, comprising longitudinal angular side members each having vertically and inwardly extending legs, plates for connecting the inwardly extending legs of the side members together at spaced intervals, guide brackets arranged transversely in alignment in pairs at a plurality of points along the side members, vertically extending angles for reinforcing the outside of the guide brackets adapted to form supporting legs for the assembling rack, a pair of spaced flat plates secured to the top of each side member adjacent to each guide bracket between which binding straps are adapted to be inserted, and a vertically extending guide angle secured to the inside of each guide bracket adapted to vertically align the ends of the spacing blocks during the assemblage of the bundle.

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