

[54] DIAL NEEDLE BED FOR CIRCULAR  
KNITTING MACHINE

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[58] Field of Search 66/19, 15, 31, 32, 33

[56] References Cited

UNITED STATES PATENTS

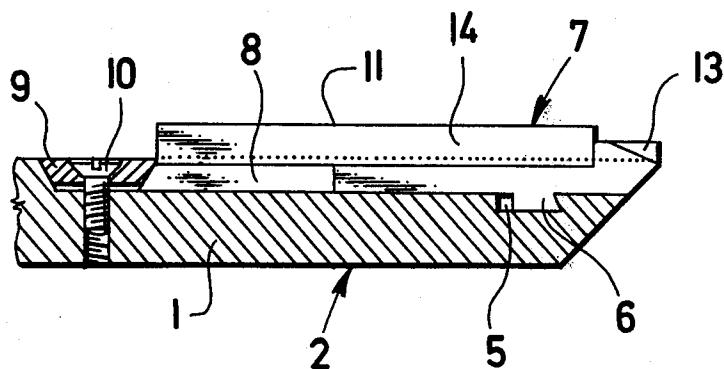
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[57] ABSTRACT

Dial bed of a circular knitting machine provided with radial grooves for the inserting of guiding ribs for knitting needles. The width of the grooves are stepped up on one side, the narrower part of the groove being closer to the center of the dial bed. The external parts of the ribs are to form knock over sinkers.

2 Claims, 3 Drawing Figures



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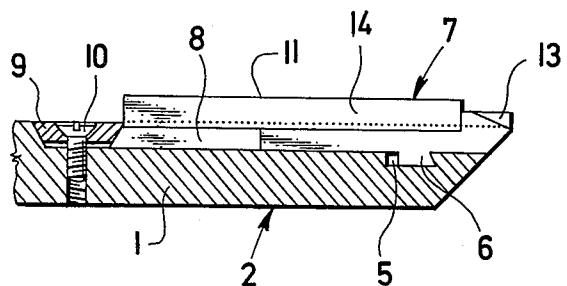


FIG. 1

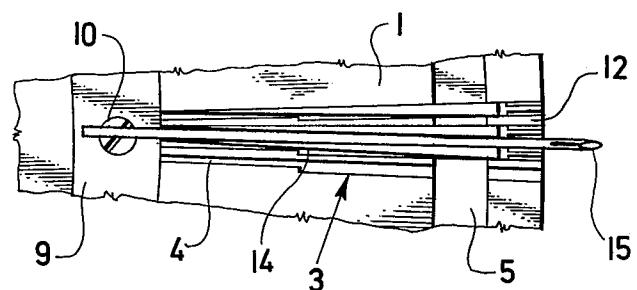


FIG. 2

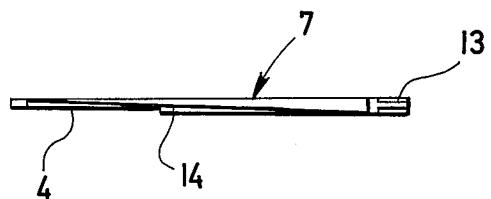


FIG. 3

## DIAL NEEDLE BED FOR CIRCULAR KNITTING MACHINE

### BACKGROUND OF THE INVENTION

This invention relates to a dial needle bed for circular knitting machines, the needle bed is provided with grooves into which ribs are inserted, the ribs forming a lateral guide for knitting needles. 5

Known dial needle beds generally have grooves for guiding knitting needles, such grooves being formed directly in the body of the dial bed. In a similar way, knock over sinkers are formed on the circumference of the dial bed. 10

A drawback of such needle beds is their relatively low hardness, particularly of the lateral walls of the grooves and of the knock over sinkers, since any heat treatment of the whole bed may possibly form deformations in it. The useful life of the needle bed is therefore relatively short; also, in the case of some damage to one of the knock over sinkers or to the grooves the whole 15 needle bed has to be replaced.

A number of designs have been proposed to overcome this drawback. Thus, ribs for guiding knitting needles have been inserted into grooves formed in the body of the dial bed. One end of each rib is generally 20 provided with a holding extension engaging into a circular groove in the needle bed, and the other end of the rib is secured by an insert of the shape of a segment which is fixed to the bed by screws.

The advantage of these solutions is a substantially longer useful life of the whole bed since the ribs can be easily heat treated to a suitable hardness. In addition, any damaged rib can be removed and replaced by a new one. 25

The problem of the knock over sinkers still remained, however. The sinkers of the prior art are either formed on the body of the bed, or are made independently and are individually inserted into the grooves of the dial bed. However, this substantially increases the manufacturing costs. 30

Disadvantage of known arrangements of dial beds with inserting ribs is the fact that they can be used only for knitting machines with a coarse needle distribution; they cannot be used for machines where a close needle distribution or where machines with a needle bed of a small diameter are required. That is due to the fact that the distance between adjacent grooves, which are radially arranged in the bed, is reduced to such an extent that manufacture of the bed becomes very difficult. 35

### SUMMARY OF THE INVENTION

It is an object of this invention to eliminate these drawbacks and to provide a dial needle bed for circular knitting machines wherein a fine or close needle distribution is possible and wherein the diameter of the needle bed can remain small. According to the invention, the width of each groove is increased in its longitudinal direction so that the narrower part remains closer to the center of the body of the needle bed, whereby the shape of the inserted part of each rib is coincident with the shape of the groove and one end of the external part of the rib is adjusted to the shape of a knock over sinker. 50

An advantage of the dial needle bed, according to this invention, are a substantially easier manufacture of the grooves, particularly for beds with fine distribution of the knitting needles and for beds of small diameter. 55

The shaping of one end of each rib to a knock over sinker in addition reduces the costs of manufacturing the needle bed.

### DESCRIPTION OF THE DRAWING

An exemplary embodiment of the object of this invention is shown in the attached drawing, wherein

FIG. 1 is a view partly in elevation and partly in section through a part of the needle bed;

FIG. 2 is a fragmentary top view of a bed;

FIG. 3 is a top view of a rib;

### DESCRIPTION OF PREFERRED EMBODIMENT

A system of radially arranged grooves 3 is provided in the body 1 of a needle bed 2. The width of each groove 3 is increased or stepped up in its longitudinal direction on one side, the narrower part 4 of the groove 3 being to the center or axis of the body 1. a circular groove 5 is provided near the circumference of the body 1, radially the outer wall of groove 5 being of re-entrant or dove-tail shape. An extension 6 having a dove-tail radially outer surface mating with that of the groove on each rib engages into groove 5, the lower parts 8 of the ribs 7 in turn being received in the radially arranged grooves 3 in the bed.

The opposite ends of ribs 7 are fixed to the body 1 of the bed by a segment shaped insert 9 by means of screws 10. The insert 8 has its opposite side walls arranged in a V, the radially outer levelled wall overlying levelled inner ends of the ribs, as shown. The lateral wall of the part 11 of each rib 7, lying external of its groove 3, is provided along its whole length with a levelled or slanting surface 14 parallel with the lateral wall of the adjacent rib 7, thus providing a guiding groove 12 for a knitting needle 15, one of which is shown in FIG. 2. The radially outer end of the external part 11 of each rib 7, on the circumference of the dial bed 2, is formed in the known shape of a knock over sinker 13.

40 The invention can be used for dial needle beds of circular knitting machines with fine needle distribution, for needle beds of small diameter, or both.

Although the invention is illustrated and described with reference to one preferred embodiment thereof, it is to be expressly understood that it is in no way limited to the disclosure of such a preferred embodiment but is capable of numerous modifications within the scope of the appended claims.

What is claimed is:

1. A dial needle bed for circular knitting machines, comprising a dial bed body with radially arranged grooves, upstanding elongated rib-forming members inserted into these grooves, the external portions of the ribs, outwardly of the grooves, forming lateral guides for knitting needles, the width of each groove being stepped up in its longitudinal direction on one side, the narrower part of each groove being closer to the center of the body of the needle bed, the shape of the part of each rib engaging into the groove corresponding to the shape of the groove, the confronting surfaces of successive ribs disposed outwardly of their respective grooves being parallel so as guidingly to receive a parallel-sided needle between them.

2. The combination, according to claim 1, wherein one end of the external part of each rib is formed in the shape of a knock over sinker.

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