

- [54] **WILTON CARPET LOOMS**
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- [22] Filed: **June 21, 1971**
- [21] Appl. No.: **155,039**

- [30] **Foreign Application Priority Data**
June 25, 1970 Great Britain.....30,937/70
- [52] **U.S. Cl.**.....**139/40**
- [51] **Int. Cl.**.....**D03d 39/12**
- [58] **Field of Search**.....139/39, 40, 41, 127, 139/128, 188

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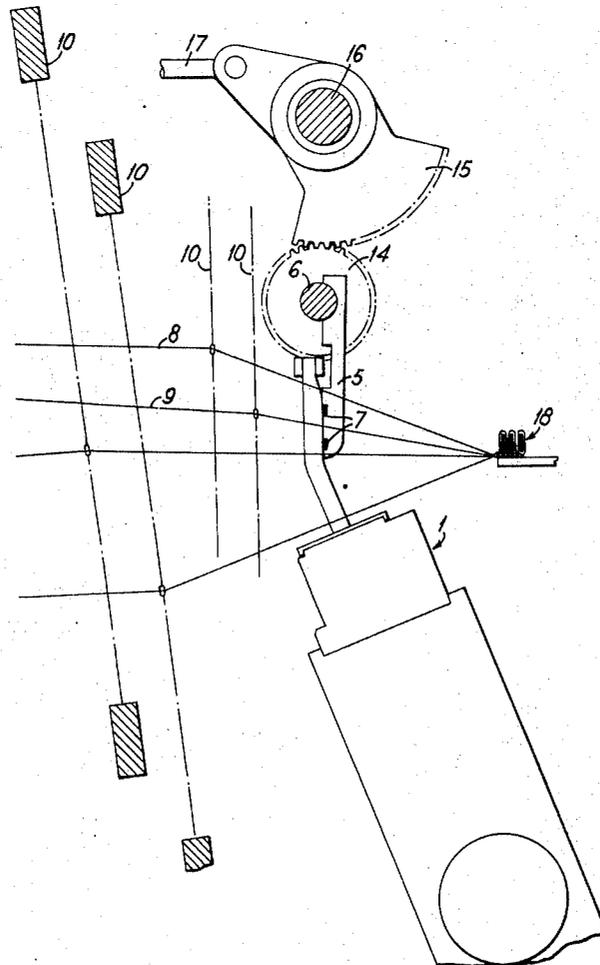
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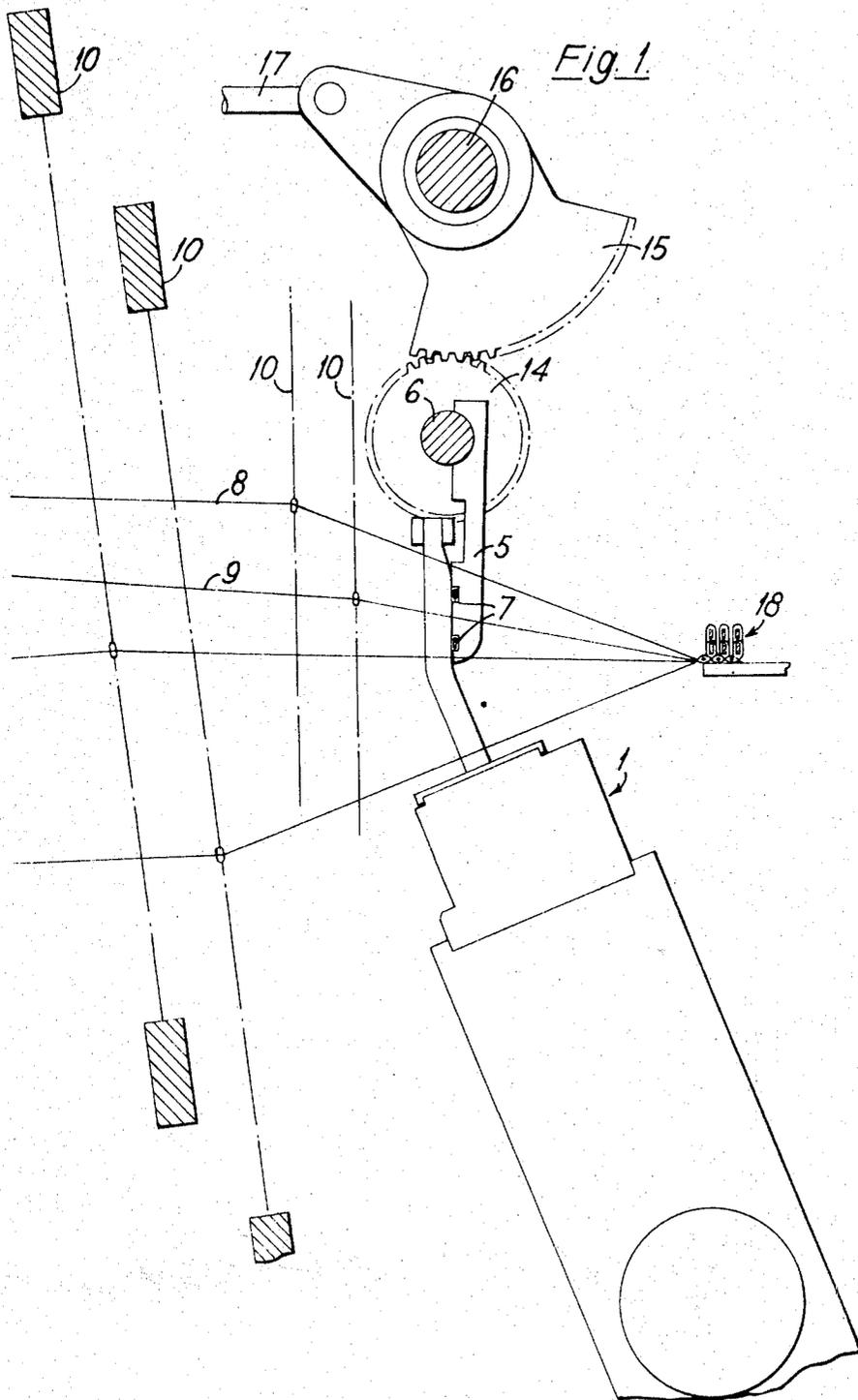
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[57] **ABSTRACT**

A Wilton carpet loom is fitted with a movable guide which cooperates with the sley to define a passage across the width of the loom for the insertion of each successive pile wire. Mechanism is provided for moving the guide out of the path of the inserted wire during the beat-up movement of the sley and for returning it to its operative position in relation to the sley prior to the insertion of the next wire. The guide is preferably constituted by spaced fingers each formed with a guide slot and extending downwardly from a cross-member mounted to rotate so as to swing the fingers into and out of their operative position in relation to the sley.

2 Claims, 3 Drawing Figures





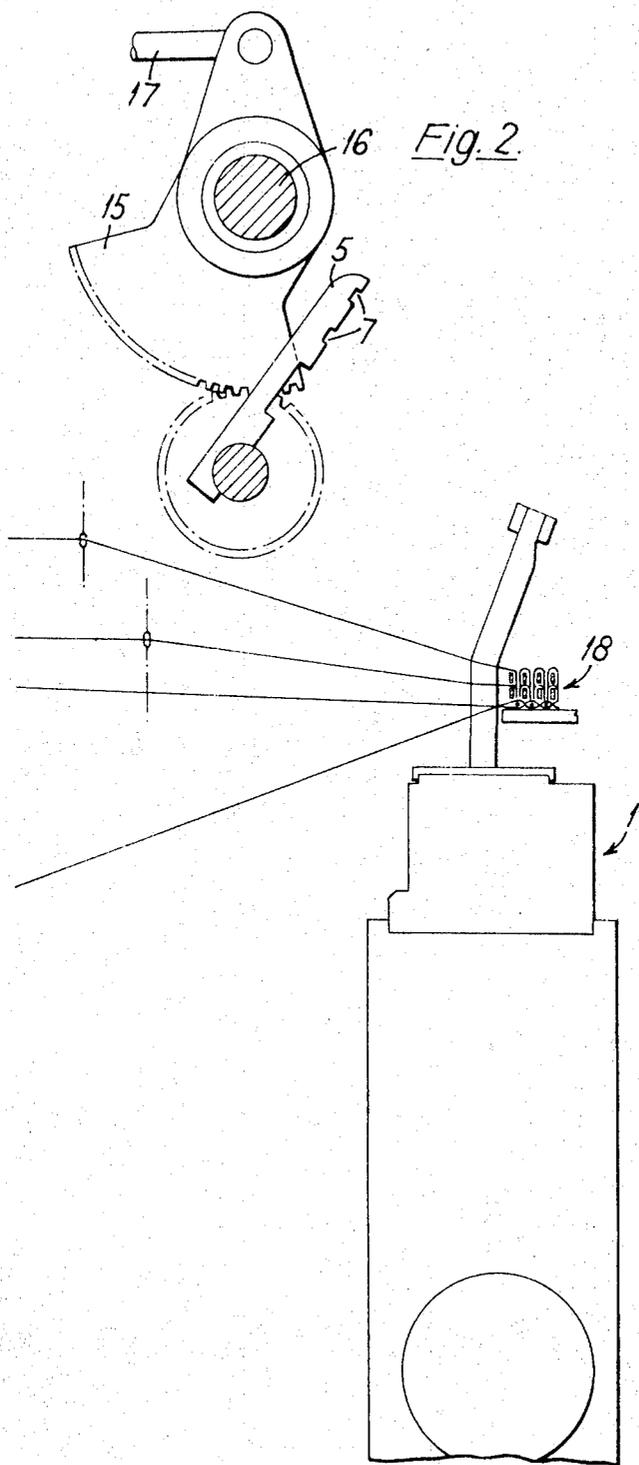
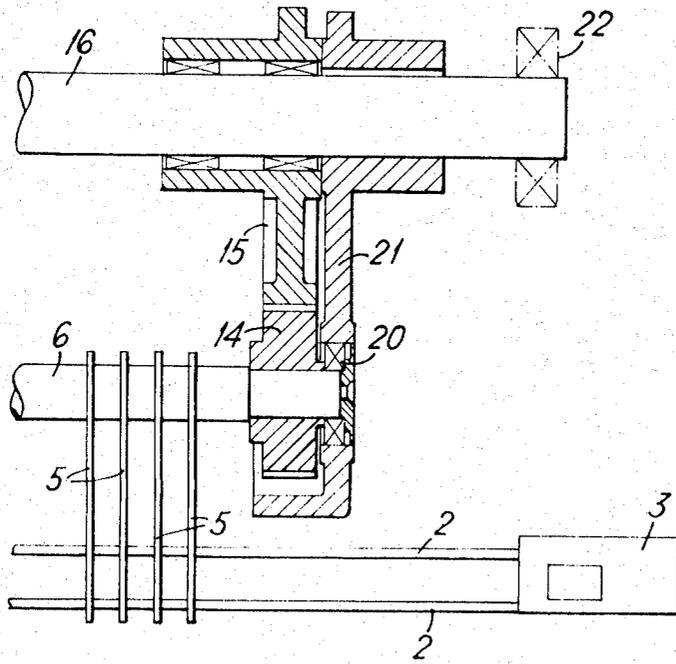


Fig. 3.



WILTON CARPET LOOMS

The pile wires used in Wilton carpet looms are extremely flexible and owing to the need for high velocity insertion there is frequently difficulty in controlling the wire during its passage across the shed of the loom. This increases with the width of the loom and is aggravated particularly when using so-called "split" wires which effectively consist of two spaced wires which permit the production of two different heights of pile. As a result of these difficulties split wires have never been used successfully on wide looms e.g. of the order of 15 feet.

According to the present invention a movable guide is provided so as to cooperate with the sley to define a passage across the width of the loom for the insertion of each successive wire together with mechanism for moving the guide out of the path of the inserted wire during the beat-up movement of the sley and for returning it to its operative position in relation to the sley prior to the insertion of the next wire. The combination of the guide and the sley provides an enclosed path for the wire or separate enclosed paths for the two halves of a split wire, thus maintaining complete control over the wire and permitting insertion of successive wires at any speed required, even for the widest looms.

Preferably the guide is constituted by spaced fingers each formed with a slot and extending downwardly from a cross-member mounted to rotate so as to swing the fingers into and out of their operative position. In the operative position the open face of each slot bears against the face of the sley so as to define the enclosed passage previously referred to. As soon as the wire has been inserted in position, the fact that the slots have open faces enables the fingers to be swung upwardly out of the path of the sley to enable beat-up to proceed. Such a construction of guide has relatively little inertia and thus permits very high speeds of operation.

A construction of mechanism in accordance with the invention will now be described in more detail, by way of example, with reference to the accompanying drawings, in which:

FIG. 1 is a diagrammatic side elevation showing the mechanism in position for the insertion of a wire;

FIG. 2 is a view similar to FIG. 1 but showing the position of the parts of the mechanism at the conclusion of beat-up; and

FIG. 3 is a sectional end view of the upper portion of FIG. 1 seen from the right hand side.

Apart from the provision of the guide mechanism which is the subject of the present invention, the loom to which the mechanism is fitted is of standard construction and is therefore neither illustrated nor described. The only part of the normal construction of the loom shown in the drawings is the sley which is indicated generally as 1 in FIGS. 1 and 2. The guide mechanism is intended for the guiding of split wires, one of which is seen in FIG. 3 and comprises two spaced wires 2 extending from a common member 3 at one end. The individual wires are extremely flexible and, particularly with very wide looms, are difficult to control during insertion.

Guide mechanism for this purpose comprises number of fingers 5 spaced at regular intervals along a shaft 6, as best seen in FIG. 3. As best seen in FIGS. 1 and 2, each finger is formed with a pair of open sided

guide slots 7 for the reception of the two wires 2. In the operative position shown in FIG. 1, each finger 5 bears against the face of the sley 1 to form an enclosed passage into which the wire can be inserted. The warp yarns are shown diagrammatically in FIGS. 1 and 2, the pile warps being indicated as 8 and 9. The healds controlling the shed are indicated diagrammatically as 10. It will be seen that each individual wire 2 is inserted beneath one of the pile warps 8 and 9.

Owing to the provision of the enclosed passages defined by the slots 7 and the sley 1, the wires can be inserted very rapidly and as soon as the insertion is complete, the fingers 5 are lifted from the position shown in FIG. 1 to that shown in FIG. 2. For this purpose the shaft 6 is caused to rotate by the engagement between a toothed wheel 14 mounted on the shaft which meshes with a toothed sector 15 mounted on a rocker shaft 16 and controlled by a rod 17. Movement of the rod 17 to the right from the position of FIG. 1 to the position of FIG. 2 causes the shaft 6 to rotate in an anticlockwise direction to swing the fingers 5 upwardly to the position of FIG. 2, thus removing them from the path of the sley 1. Beat-up is then able to proceed and the sley 1 moves rapidly to the right into the position shown in FIG. 2, carrying the split wires 2 with it so that they are beaten up into a body of the carpet shown as 18. During the movement from the position of FIG. 1 to the position of FIG. 2, the two wires 2 are moved much closer together until they take up the position shown in FIG. 2 in which they define the two different heights of pile in the carpet. Neither the weft yarns nor the weft insertion mechanism are shown in the drawings, but a shot of weft is, of course, beaten up with the wires so as to bind them into the carpet.

As soon as beat-up is complete, the sley 1 returns to the position of FIG. 1 and reverse movement of the rod 17 swings the fingers 5 downwardly back from the position of FIG. 2 to the position of FIG. 1 in which they again bear against the face of the sley in readiness for the insertion of the next wire.

The mechanical details of the mechanism just described are shown rather more clearly in FIG. 3. This indicates the close spacing of the fingers 5 which in a typical example are 5 inches long, three-sixteenths inch wide and spaced at approximately $\frac{1}{8}$ inch pitch across the width of the loom. The wire is thus supported at very frequent intervals across the full width of the loom and is thus maintained fully under control during insertion. The shaft 6 is mounted to turn in a bearing 20 mounted in a bracket 21 and the shaft 16 turns in a similar bearing 22. As can be seen, the sector 15 is keyed to the shaft 16 so as to turn with it and thus to transmit drive to the wheel 14 and thus to the shaft 6. The rod 17 is driven from the normal driving mechanism of the loom so that the parts just described are driven in synchronism with the normal steps of operation.

I claim:

1. In a Wilton carpet loom having a sley for beating up weft yarns in a weaving process and mechanism for inserting pile wires across the width of the loom, the improvement which comprises a movable guide cooperating with said sley to define a passage across the width of said loom for the insertion of successive pile-defining wires, said guide comprising a shaft and a

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plurality of spaced fingers extending downwardly from said shaft, each finger being formed with a guide slot, a toothed wheel fitted to said shaft, a toothed sector meshing with said wheel, and a rocker shaft carrying said sector, whereby said rocker shaft controls the movements of said guide fingers to move said fingers out of the path of said sley during beat-up movement of said sley and to return said fingers to their cooperating

positions in relation to said sley prior to the insertion of a further wire.

2. A loom improvement as claimed in claim 1 in which said guide is formed with two guide slots positioned to cooperate with said sley to define two passages, one for receiving each half of a split pile wire.

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