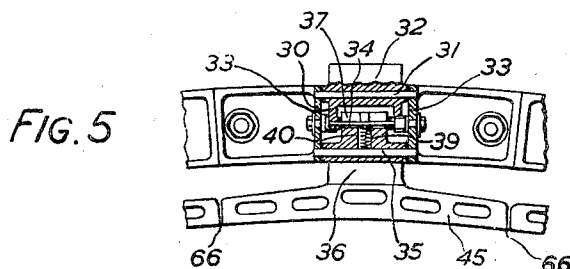
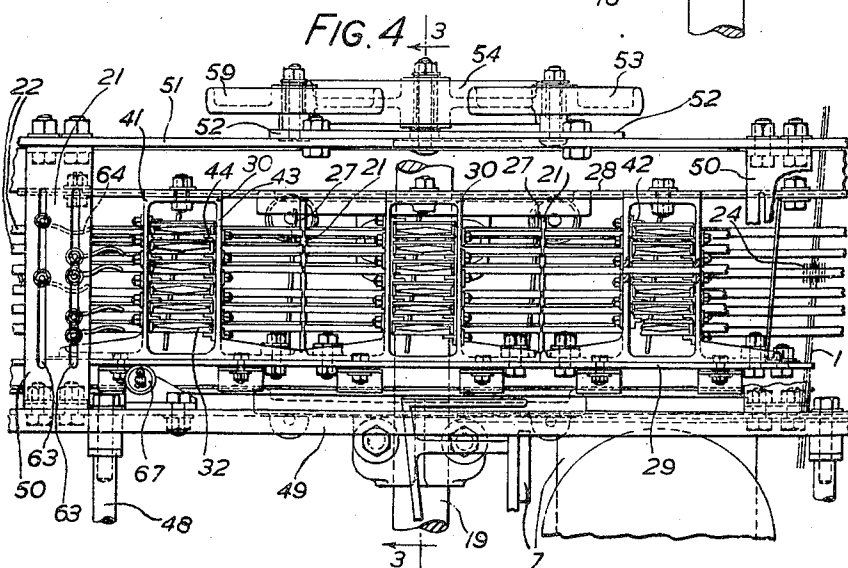
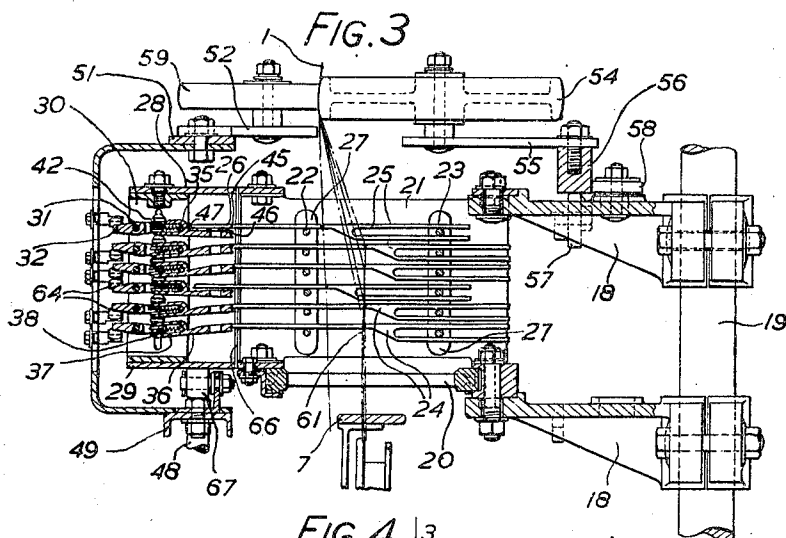


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SHEDDING MECHANISM FOR CIRCULAR LOOMS

Filed Oct. 28, 1936

3 Sheets-Sheet 2



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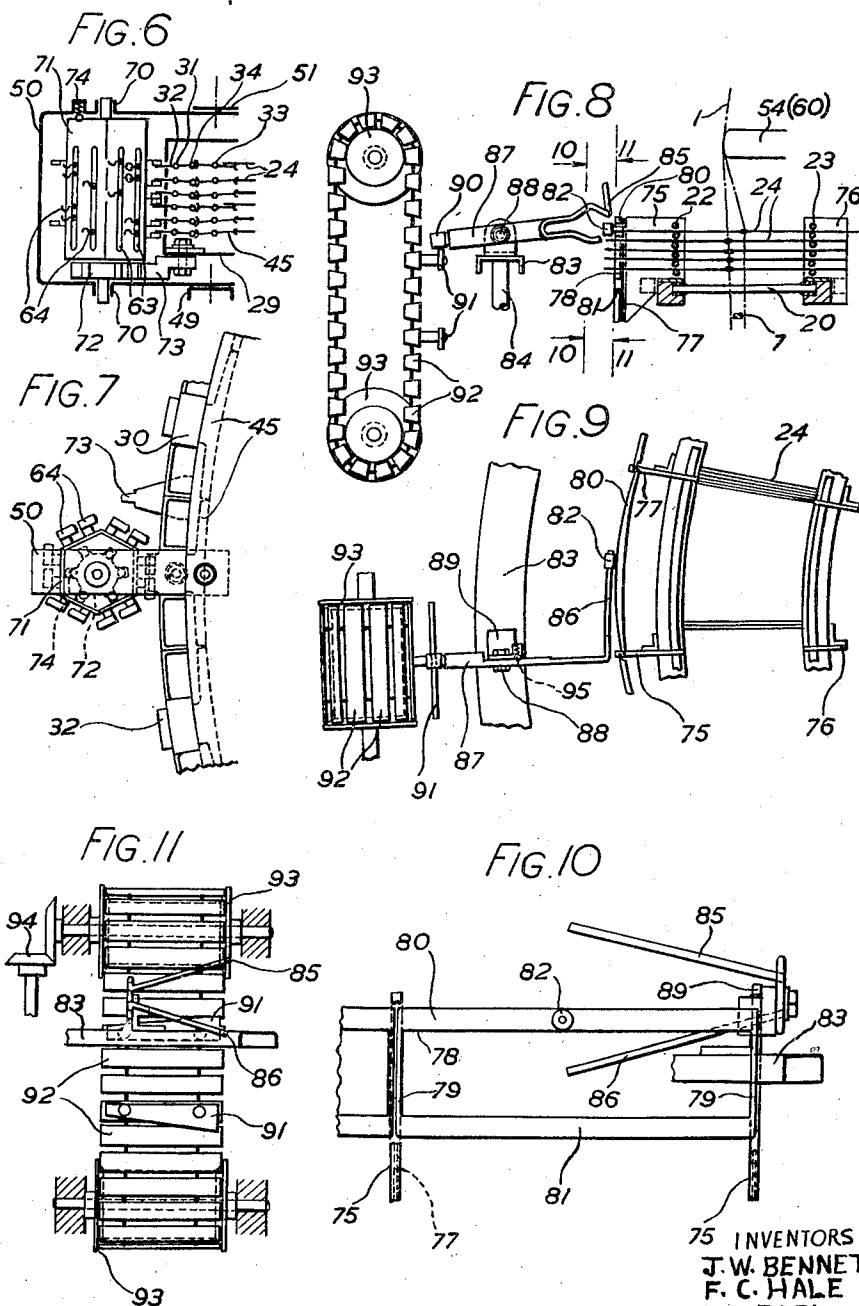
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SHEDDING MECHANISM FOR CIRCULAR LOOMS

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3 Sheets-Sheet 3



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SHEDDING MECHANISM FOR CIRCULAR
LOOMS

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9 Claims. (Cl. 139—16)

This invention relates to circular looms, and in particular to shedding mechanism therefor.

The control of the warp threads for shedding purposes in a circular loom weaving fabrics with closely spaced warps presents considerable difficulty for several reasons. In the first place, in order to weave a fabric of commercial width and yet keep the over-all dimensions of the loom down to a convenient size, it is advisable to guide the warps so that they form a cylinder passing smoothly into the tube of fabric woven on the loom. In this way, the radial dimensions of the loom can be made not unduly greater than the radius of the fabric tube, and the warps, shedding mechanism and shuttles are easy of access. However, with the warps thus disposed, the shedding movement must take place in a radial direction, which gives rise to difficulty in bringing about corresponding movement of the healds or other shedding elements directly controlling the warps.

Secondly, if the shedding mechanism involves any heald movement having a substantial divergence from the radial, the free movements of the healds may be impaired and the healds, moreover, may rub excessively across the warps passing between them. Further, the close spacing resulting from the large number of healds necessary to give a warp of high density makes it extremely difficult to select particular healds from the remainder to bring about any desired shedding, except for the production of fabrics with simple weaves.

The present invention provides a shedding mechanism in which these difficulties are avoided, and one which is suitable for varied types of patterning ranging from the fairly simple shedding involved in such fabrics as taffetas, twills and satins to pattern effects of considerable complexity.

The shedding mechanism according to the invention, which is particularly well adapted for use with a loom having a vertical axis and a substantially cylindrical disposition of its warps, comprises a plurality of banks of light healds adapted to engage the warp threads, means to deflect the warp threads to one side of the normal line that they follow in approaching a shuttle from the warp supply, stop means in association with the banks of healds, and means to bring any selected bank of healds and stop means into line with each other to allow the healds not encountered by stop means to follow the deflection imposed by the deflecting means, thus bringing about a separation between the warp threads engaged by such healds and the warp threads en-

gaged by the healds that have encountered the stop means. The warp threads are thus separated into two sheets to form a shed into which the shuttle can enter during the relative circular motion between shuttle and warps with respect to the axis of the loom.

In a loom in which the warps and the healds have no circumferential movement, the shuttles being rotated round the axis of the loom, the warp thread deflecting means rotate round the loom axis at the same rate as the shuttles. The means for bringing the healds and the stop means into line with each other likewise rotate at the same rate as the shuttles. It is important, however, that there should be no relative circular movement between the stop means and the healds, and, in consequence, no sliding of the healds along the surface of the stop means. In this way, the stop means do not tend to bend or deform the healds, and these latter may therefore be made very light, in fact only just stiff enough to prevent themselves from bending when impelled against the stop means under the relatively light force exerted by the warp threads.

Arising from this is another important feature of the invention, viz. that the healds of each bank instead of being separated from each other so as to cause them to partake of the desired radial movement can remain substantially unconfined in a circumferential direction. Thus, the healds lie close packed against each other free from the movement-restricting friction that arises where the healds are caused to pass between spacing pieces or through holes in perforated plates. At the same time, a much greater heald-density may be employed than when the healds are spaced apart to pass through separate slots or holes. With the healds free in a circumferential direction, means may be provided to prevent their crossing each other, as will appear from the more detailed description following hereafter.

Various methods may be adopted for bringing the stop or stops into position against appropriate banks of healds at different shuttles. Thus, the stops may be pivoted in character and engaged by suitable cams in advance of the warp deflection at each shuttle, or the stop or stops may slide into position.

The cams or like members for positioning the stops operate in connection with each shuttle, and may be arranged always to produce the same shedding motion of the warps at any one shuttle, or the cams or the like may themselves be controlled so as to vary the shedding.

The further controlling means may be operated

by one or more devices disposed round the loom periphery to give a very varied number of patterns. This number of patterns may depend not only upon the number, position, and actuation of the stops, but upon the way in which the warps are entered in various banks.

The invention will now be described in greater detail with reference to the accompanying drawings in connection with a loom in which the warp cylinder is disposed about a vertical axis, and in which the shuttles rotate about the loom axis while the warps remain stationary in a circumferential direction.

In the drawings:

Fig. 1 is a diagrammatic front elevation of the loom, partly in section;

Fig. 2 is a diagrammatic plan view of a number of shuttles and their associated shedding mechanism;

Fig. 3 is a vertical section of a detail of Fig. 1 on a larger scale, taken on the line 3—3 of Fig. 4;

Fig. 4 is a front elevation corresponding to Fig. 3, partly in section;

Fig. 5 is a part-sectional plan view of part of Figs. 3 and 4;

Figs. 6 and 7 show diagrammatically in part-sectional elevation and plan respectively the application of additional patterning means to the mechanism shown in Figs. 1-5;

Figs. 8-11 are diagrammatic views of an alternative form of heald-selecting mechanism, also provided with additional patterning mechanism, Fig. 8 being a part-sectional elevation;

Fig. 9, a plan view of part of Fig. 8;

Fig. 10, a view taken on the line 10—10 of Fig. 8; and

Fig. 11 a view taken on the line 11—11 of Fig. 8.

Warp threads 1 are led from beams 2 over rollers 3 and downwards to a spacing comb 4 and lease rods 5, below which they pass in substantially cylindrical form to the shedding mechanism 6 mounted above the shuttles 7.

Weft is inserted from each shuttle 7 between the shedded warp threads 1 into the fell of the fabric, which lies substantially at the level of the upper edge of the fabric-supporting ring 8. The fabric 9 proceeds downwards over the surface of the ring 8 and the member 10 constituting an extension of the ring 8, and passes in doubled form round a roller 11 of a take-up device disposed at the bottom of the loom.

The shuttles 7 are held in position within the shedded warp threads by means of pairs of vane wheels 12 penetrating the outermost sheet of warp threads to make contact with the shuttle body, the wheels 12 being mounted on rotatable shafts 13 mounted in columns 14 carried by a rotatable ring 15. As the ring 15 is driven round the loom (by means not shown), the engagement of the vane wheels 12 with the bodies of the shuttles 7 causes the shuttles to be propelled round the loom at the same rate. At the same time the rotation of the vane wheel shafts 13 enables the threads of the outer sheet of warp threads to be penetrated by the vanes of the wheels 12, so enabling the warp threads to pass the vane wheels notwithstanding the driving contact between the vane wheels and the shuttles. On the inside of each shuttle remote from the vane wheels 12 a roller 16 is supported by a rubber-covered circular race 17, between which and the roller 16 the innermost sheet of warp threads is free to pass.

The shedding mechanism 6 comprises two main members, the one supporting the healds so that

they do not partake of the rotation of the shuttles about the loom axis, and the other rotating with the shuttles to bring about the shedding motion of the healds in advance of each shuttle.

Referring to Fig. 3, brackets 18 carried by stationary columns 19 inside the warp cylinder support an annular reed 20 and a series of radial supporting plates 21. Carried by the plates 21 are two sets of wire rings 22, 23 mounted respectively outside and inside the position occupied by the warp threads 1, six pairs of rings 22, 23 being provided. Resting on the rings 22, 23 are six banks of flat metal healds 24 forked at their inner ends 25 so as to embrace the rings 23, and normally projecting at their outer ends 26 slightly beyond the outer edges of the plates 21. The forked construction of the healds 24 enables the healds to rest edge-uppermost on the rings 22, 23, thus enabling a large number of healds to be mounted close together on each pair of rings, as shown in Fig. 3; the healds are also prevented from crossing each other. At intervals between the plates 21 the rings 22, 23 pass through spacing members 27 to maintain the spacing of the rings.

Annular rings 28, 29, to which the outer ends of the plates 21 are connected, are connected at intervals round the loom by box-like brackets 30 in which are pivoted six series of toggle mechanisms serving to effect heald selection. On the outermost pivots 31 are carried the members 32 extending outside the brackets 30 and extending inwardly in the form of arms 33 connected by a pin 34. On the innermost series of pivots 35 are carried members 36 having an outer arm 37 passing between the arms 33 of the members 32, and slotted at 38 to embrace the pin 34. A recess 39 in the arm 37 accommodates a spring 40 bearing against the pin 34 and the pivot 35.

On one side 41 of each bracket 30, are mounted stops 42 adapted to be engaged by the upper sides of the arms 33 of the members 32 and on the other side 43 of the brackets 30 are similar stops 44 adapted to engage the under sides of the arms 33. When, therefore, any of the members 32 projecting beyond the bracket 30 is depressed, the spring 40 urges its arms 33 upwards until the stop 42 is encountered. The upward movement of the arm 33 results in a corresponding downward movement of the part of the member 36 extending inwardly beyond the pivot 35. Similarly, when the member 32 is raised, the inwardly-projecting part of the member 36 is raised, the movement being limited by the stop 44.

The projecting portion of each member 36 is widened into a blade 45 notched along the length of its edge as shown at 46. When the blade 45 is depressed it lies below the level of the corresponding bank of healds 24. When it is raised the notch 46 lies opposite the outer ends of the healds, which are slightly inclined, as shown at 47, to correspond with the inclination of the upper side of the notch 46.

Carried by columns 48 from the ring 15 by which the shuttles 7 are carried and propelled round the loom is a ring 49. Supported at circumferential distances corresponding to the space occupied by a single shuttle are brackets 50 embracing the annular rings 28, 29 and connected at their upper ends by an annular ring 51. Projecting inwardly from the ring 51 are brackets 52 carrying freely rotatable rollers 53 to press against rollers 54 freely rotatable on brackets 55. One such pair of rollers 53, 54 is shown in Fig. 2, and it is to be understood that

similar pairs, say four in number, are disposed at regular intervals round the loom.

The brackets 55 are carried by a ring 56 supported by rollers 57 carried by the upper brackets 18 and guided by rollers 58 on the brackets 18. Therefore, during the rotation of the ring 49 the rollers 53 by their pressure on the rollers 54 cause the ring 56 to rotate at the same rate about the axis of the loom. In order to prevent the ring 56 over-running the ring 49 a check roller 59 is carried by the ring 51 slightly in advance of each of the rollers 54 with a slight clearance between its periphery and that of the roller 54.

In addition to providing for the driving of the ring 56 the rollers 54 act as shedding rollers. Between the rollers 54, the ring 56 carries freely rotatable shedding rollers 60, there being either a roller 54 or a roller 60 disposed slightly in advance of each of the shuttles 7. The diameter of the rollers 54, 60 is such that they deflect the warp threads 1 outwardly beyond the vertical line joining the eyes 61 of the healds 24 when these latter are in their innermost positions. The ring 51 may also support freely rotatable rollers 62 near the rear ends of the shuttles 7, the rollers projecting inwards beyond the said vertical line, for a purpose to be explained later.

The brackets 50 are provided with slots 63 providing for the adjustable mounting of two sets of blade cams 64 adapted to engage the members 32. The members 32 are, as shown in Fig. 4, approximately diamond-shaped in section, so as to present inclined surfaces to the cams 64. One of the slots 63 supports downwardly bent cam blades serving to deflect downwardly any of the members 32 that they meet. The cam blades mounted in the other slots 63 are bent upwardly for an upward deflection of the members 32.

The operation of the shedding mechanism is as follows:—

The ring 49 rotates round the loom at the same speed as the shuttle 7, and thus carries with it the brackets 50 to bring the cams 64 carried by the bracket into engagement with the members 32 of each of the brackets 30 in turn. At the same time the ring 56 carries the rollers 54, 60 round the loom at the same speed as the shuttles. The outward deflection of the warp threads 1 by the rollers 54, 60 in advance of each shuttle causes the threads to urge the healds 24 outwardly across their supporting rings 22, 23.

If the member 32 associated with any particular bank of healds is in its downward position, i. e. with one arm 33 resting against the upper stop 42, the blade 45 is also in its downward position and the outer ends of the healds 24 of that particular bank are free to pass above the blade 45, as is the case with banks 1 and 4 (counting from the top) in Fig. 3. If, however, a member 32 has been deflected upwardly by the upwardly-bent cam blade carried in the slot 63 the associated blade 45 is likewise deflected upwardly, and the first slight outward movement of the corresponding bank of healds under the urge of the warp threads brings the inclined outer ends of the healds into engagement with the notch 46 along the edge of the blade 45. In this way, that section of the particular bank of healds extending over the length of the blade 45 is prevented from partaking of more than the slightest outward movement, as is the case with banks 2, 3, 5, and 6 in Fig. 3.

Since the individual warp threads are only capable of exerting a slight urging force on the

healds through the eyes 61 of which they are threaded, the rigidity of the healds causes the eyes of healds that have been stopped by the blades 45 to remain substantially in their normal vertical line so that below the eyes 61 of the undeflected healds the warp threads remain in this line. On the other hand where healds of one or more banks have not been stopped by the blades 45, the heald eyes 61 move outwardly with the healds and below these heald eyes the corresponding threads are deflected from the normal vertical line.

There is, thus, effected a selection of the warp threads into sheets, undeflected threads forming the inner sheet and deflected ones the outer sheet. This deflection is completed by the wheels 54, 60 some little distance in advance of the nose 65 of any particular shuttle, and is maintained until the nose can pass between the two sheets of warp threads. Thereafter the inner sheet passes over the inner surface of the shuttle 7 and the outer sheet over the outer surface of the shuttle until the two sheets of threads are able to join into a single sheet at the rear of the shuttle. The tension of the threads serves to retract deflected healds after the corresponding threads have reached the rear of a shuttle. The partition of the warp threads at the level of the shuttles and their subsequent joining up will be evident from Fig. 2.

The threads are then ready for a further selection in advance of the nose of the succeeding shuttle, this further selection being determined by the particular disposition of the cams 64 in the corresponding bracket 50, i. e. if the healds of a particular bank that have been stopped by a blade 45 in advance of one shuttle are to be free to move in advance of the next shuttle the corresponding member 32 is engaged by a downwardly bent cam 64 in the succeeding bracket 50. If, on the other hand, at two shuttles in succession the healds of a particular bank are to remain undeflected, or to be deflected as the case may be, there is no necessity for any cam to be used for that bank at the second shuttle, since the toggle spring 40 retains the blade 45 in the desired position for the succeeding shuttle.

It will be observed from Fig. 4 that there are three of the blades 45 covering the circumferential distance allotted to a single shuttle, and that the bracket 50 is placed sufficiently in advance of the shedding wheel 54 (or 60) to ensure that any blade 45 is brought by its cam 64 into the desired heald-stopping or heald-freeing position before the healds thus to be stopped or freed have been reached by the wheel 54 (or 60). Selection of the healds 24 thus proceeds by the relatively small sections covered by successive blades 45. Actually, the selection begins while the warp threads controlled by the healds are still engaged by a previous shuttle, this being possible by reason of the freedom of the outer ends 26 of the healds to be lifted above the rings 22 when any blade 45 over which they happen to be lying is lifted by a cam 64. Then, when all the healds 24 return to their normal position as the rear end of the preceding shuttle is reached, the lifted ends 26 of the raised healds slide clear of the lifted blade 45 and drop again on to the ring 22, so that on their next outward urge under the action of the wheel 54 (or 60) they encounter the notch 46 of that blade and are stopped.

As many selections as there are shuttles round the periphery of the loom may be made by suitably arranging the cams 64 in the brackets 50.

All the selections may be different or similar selections may be made at two or more brackets, especially where weaves of comparatively simple character are desired.

- 5 The rollers 62 may be used to ensure the return of the healds 24 to normal position by inwardly deflecting the outer sheet of warp threads before they reach the rear of the shuttle so that
10 the extra tension caused by its deflection makes it snap suddenly inwards, thus overcoming any tendency for its heald to stick on the rings 22, 23.

It will be observed from Fig. 4 that the warp threads 1 are somewhat inclined to the vertical when viewed in elevation. This disposition of the warp threads facilitates their passage through the slots in the vane wheels 12. The radial supporting plates 21 and the spacing members 27
20 are correspondingly inclined.

In order to prevent healds 24 from passing into the space between the ends of adjacent blades 45, a wire 66 slightly thicker than the width of this space is carried between the plates 28, 29.

- 25 Rollers 67 carried by the ring 49 assist in supporting the weight of the mechanism carried above the ring 29 and also oppose the downward thrust of the cams 64 on the members 32.

Referring to Figs. 6 and 7, the bracket 50 is extended outwards to provide bearings 70 for a 6-sided drum 71, each side of which has pairs of slots 63 to receive cams 64. A 6-toothed star-wheel 72 is secured to the drum 71 and, as the ring 49 carrying the brackets 50 rotates, is
30 brought into engagement with teeth 73 projecting from the ring 29. The sides of the drum 71 are thus brought in turn alongside the brackets 30, so that the members 32 projecting from the brackets 30 are selectively operated in accordance
40 with the arrangement of the cams 64 on the side of the drum 71 for the time being in operation. A ball catch 74 holds the drum 71 in each of its six positions.

Figs. 8 to 11 show sliding means for effecting
45 selection between the banks of healds 24, together with additional patterning means for controlling the sliding selector member. The healds 24 are supported by and free to slide between two series of rings 22, 23 mounted in radial plates 75, 76
50 connected by the reed 20. The plates 75 extend below the level of the reed 20, as shown in Fig. 8, and are formed near their outer edges with vertical slots 77. A frame 78 is positioned with its narrow vertical members 79 resting in the slots 77
55 so as to be capable of a vertical movement that carries its horizontal upper bar 80 from the level of the uppermost bank of healds 24 to that of the lowermost bank. The member 80 and the lower horizontal member 81 of the frame 78 are made
60 of U-section for stiffening purposes.

At the centre of the member 80 a roller 82 projects outwardly into the path of a cam member carried by a ring 83 supported by columns 84 so as to be carried round the loom at the same
65 rate as the shuttles. The cam member consists of two horns 85, 86 converging, as shown in Fig. 10, to a point at which they are bent to connect with their supporting lever 87.

The lever 87 is pivoted at 88 to a bracket 89
70 carried by the ring 83. One such pair of horns 85, 86 is provided in connection with each shuttle 7, and in accordance with their vertical positioning with respect to the roller 82 one or other of the horns raises or lowers the frame 78 to the
75 position desired for that particular shuttle. The

member 80 of the frame can thus be brought into line with the healds of any desired bank so as to stop those healds from partaking of the outboard movement that the shedding wheel 54 or 60 tends to impose on them by deflecting the warp threads
5 1. Therefore, the member 80 of the frame 78 in association with any particular shuttle effects a selection among the bank of healds to form a shed into which that shuttle can enter. By suitable selection of the healds at all the shuttles disposed round the loom, different sheds can be formed for the different shuttles in accordance with the pattern desired.

The pivotal mounting of the lever 87 enables the vertical positioning of the horns 85, 86 to be
15 varied so that not only can different sheds be formed for the different shuttles, but at any particular shuttle the shed can be changed as desired to extend the patterning scope. A roller 90 projecting from the end of a lever 87 is adapted to be engaged by plate cams 91 carried by the links 92
20 of an endless pattern chain running round rollers 93 mounted on a suitable part of the loom frame and driven through gearing 94 from any suitable part of the loom-driving mechanism. The cams 91 have inclined edges, as shown in Fig. 11, so that as they are brought into the path of the roller 90 as the latter rotates round the loom, the roller is raised or lowered according as it meets
30 with the upper edge or lower edge of the cams 91 presented by the movement of the pattern chain. The horns 85, 86 are correspondingly moved to bring the member 80 into the desired position. The lever 87 is held in selected position by a ball or like catch 95.

With the heald selecting mechanism according to the invention, a considerable variety of patterns can be woven. Thus, using the fixed
40 cams 64 of Figs. 3 and 4, a selection can be made between any desired combinations of the several banks of healds mounted on the rings 22, 23. This possibility of selecting the banks of healds, together with the possibility of entering the warp threads 1 in a variety of ways in the several banks, enables a large variety of patterns to be woven in a repeat that recurs at each weaving revolution.
45 Similarly with the heald selector mechanism shown in Fig. 8, considerable complexity of patterns can be woven, quite apart from the possibility of varying the selective action of the horns 85, 86. Thus, assuming that this mechanism is used in a 10-shuttle loom with one-fifth of the warp threads entered in each of the five heald banks, the same selection by the member 80 of a single bank of healds at each shuttle in the order
50 1, 3, 5, 4, 2, 1, 3, 5, 4, 2 provides for weaving 5-shaft satin. If, however, the dobby chain is used to vary the position of the horns, 85, 86 larger patterns, e. g. patterns extending over more than 5 or 10 picks can be woven. Patterning possibilities can likewise be extended by suitably entering the warp threads in the healds 24, as well as by stopping more than one bank of healds at any particular shuttle, e. g. by having the member 80 wide enough to stop two adjacent
55 banks simultaneously.

Similarly, with the additional patterning mechanism of Figs. 6 and 7 the extent of the pattern can be increased beyond the number of picks laid in each weaving revolution, and in the example shown, in which the drum 71 has six sides, six different selections of the heald banks can be made at each shuttle.

The range of selection can be made greater if
75

more than six arrangements of the cams 64 are provided for each shuttle.

Having described our invention what we desire to secure by Letters Patent is:—

5 1. Shedding mechanism for a circular loom, comprising a plurality of banks of light healds adapted to engage the warp threads, means to deflect the warp threads to one side of the normal line that they follow in approaching the shuttle from the warp supply, stop means in association with the banks of healds, said stop means being mounted so that there is no relative circular movement between them and the healds, and selecting means operating without direct contact 15 with the healds to bring any selected bank of healds and its stop means into line with each other, thereby allowing the healds not encountered by stop means to follow the deflection imposed by the deflecting means, thus bringing about a separation between the warp threads engaged by such healds and the warp threads engaged by the healds that have encountered stop means. 20

25 2. Shedding mechanism for a circular loom in which the shuttles rotate about the loom axis while the warps remain stationary in a circumferential direction, said mechanism comprising a plurality of banks of light healds adapted to engage the stationary warp threads, means rotatable at the same rate as the shuttles and adapted to deflect the warp threads to one side of the normal line that they follow in approaching a shuttle from the warp supply, selecting means rotatable at the same rate as the shuttles, and 35 movable stop means in association with the banks of healds and mounted between the healds and the selecting means with no relative circular movement between themselves and the healds, the selecting means operating to bring any selected bank of healds and its stop means into line with each other to allow the healds not encountered by stop means to follow the deflection imposed by the deflecting means, thus bringing about a separation between the warp threads engaged by such healds and the warp threads engaged by the healds that have encountered the stop means. 45

3. Shedding mechanism for a circular loom comprising a plurality of banks of light healds adapted to engage the warp threads, means to deflect the warp threads to one side of the normal line that they follow in approaching a shuttle from the warp supply, pivoted stop means in association with the banks of healds, and means to 55 rock any selected stop means about its pivot into line with the corresponding bank of healds so as to prevent such healds from following the deflection imposed by the deflecting means, thus bringing about a separation between the warp threads engaged by such healds and the warp threads engaged by the healds that have not encountered the stop means. 60

4. Shedding mechanism for a circular loom comprising a plurality of banks of light healds adapted to engage the warp threads, means to deflect the warp threads to one side of the normal line that they follow in approaching a shuttle from the warp supply, pivoted stop means in association with the banks of healds, toggle mechanisms connected to the stop means, and means to operate the toggle-mechanisms so as to rock any selected stop means and hold it in or out of line with the corresponding bank of healds so as to prevent healds encountered by stop means from following the deflection imposed by 75

the deflecting means, thus bringing about a separation between the warp threads engaged by such healds and the warp threads engaged by the healds that have not encountered the stop means. 5

5. Shedding mechanism for a circular loom comprising a plurality of banks of light healds adapted to engage the warp threads, means to deflect the warp threads to one side of the normal line that they follow in approaching a shuttle from the warp supply, slidable stop means in association with the banks of healds, and means to slide any selected stop means into line with the corresponding bank of healds so as to prevent such healds from following the deflection imposed by the deflecting means, thus bringing about a separation between the warp threads engaged by such healds and the warp threads engaged by the healds that have not encountered the stop means. 10 15 20

6. Shedding mechanism for a circular loom comprising a plurality of banks of light healds adapted to engage the warp threads, means to deflect the warp threads to one side of the normal line that they follow in approaching a shuttle from the warp supply, stop means in association with the banks of healds, cam mountings, means for adjustably fixing cams in each mounting in accordance with the selection of healds desired at such mounting, and means to bring the stop means into contact with the cams so that each mounting causes its cams to bring the stop means into line with any selected bank of healds to allow the healds not encountered by stop means to follow the deflection imposed by the deflecting means, thus bringing about a separation between the warp threads engaged by such healds and the warp threads engaged by the healds that have encountered the stop means. 25 30 35

7. Shedding mechanism for a circular loom comprising a plurality of banks of light healds adapted to engage the warp threads, means to deflect the warp threads to one side of the normal line that they follow in approaching a shuttle from the warp supply, stop means in association with the banks of healds, movable cams adapted to position the stop means and means for selectively moving the cams into a position in which they engage the stop means to bring the stop means thus engaged into line with the corresponding healds, thus allowing the healds not encountered by stop means to follow the deflection imposed by the deflecting means, and bringing about a separation between the warp threads engaged by such healds and the warp threads engaged by the healds that have encountered the stop means. 40 45 50 55

8. Shedding mechanism for a circular loom comprising a plurality of banks of light healds adapted to engage the warp threads, two rings adapted to support the healds close-packed against each other in each bank, means to deflect the warp threads to one side of the normal line that they follow in approaching a shuttle from the warp supply, stop means in association with the banks of healds, said stop means being mounted so that there is no relative circular movement between them and the healds, and selecting means operating without direct contact with the healds to bring any selected bank of healds and its stop means into line with each other to allow the healds not encountered by stop means to follow the deflection imposed by the deflecting means, thus bringing about a separation between the warp threads engaged by such 75

healds and the warp threads engaged by the healds that have encountered the stop means.

9. Shedding mechanism for a circular loom comprising a plurality of banks of light healds adapted to engage the warp threads, two rings adapted to support the healds close-packed against each other in each bank, the healds being flat and forked to embrace one of the rings so as to ensure that the healds rest edgewise on the rings, means to deflect the warp threads to one side of the normal line that they follow in approaching a shuttle from the warp supply, stop

means in association with the banks of healds, and means to bring any selected bank of healds and stop means into line with each other to allow the healds not encountered by stop means to follow the deflection imposed by the deflecting means, thus bringing about a separation between the warp threads engaged by such healds and the warp threads engaged by the healds that have encountered the stop means. 5

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