No. 619,909. Patented Feb. 21, 1899.

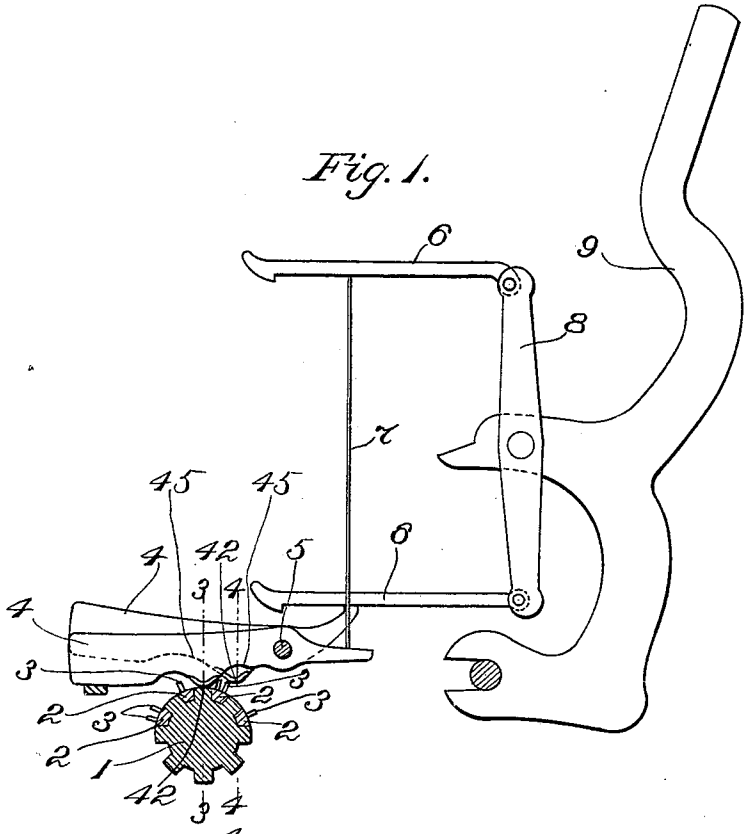
G. W. STAFFORD.

INDICATING DEVICE FOR DOBBIES FOR LOOMS.

(Application filed June 23, 1898.)

(No Model.)

Fig. 1.



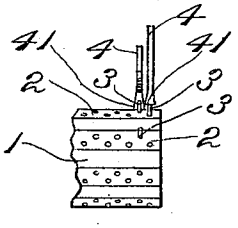


Fig. 2

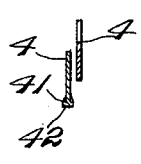


Fig. 3.

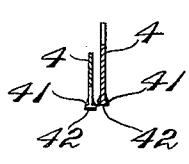


Fig. 4.

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UNITED STATES PATENT OFFICE.

GEORGE W. STAFFORD, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO THE CROMPTON & KNOWLES LOOM WORKS, OF WORCESTER, MASSACHUSETTS.

INDICATING DEVICE FOR DOBBIES FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 619,909, dated February 21, 1899.

Application filed June 23, 1898. Serial No. 684,232. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. STAFFORD, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Indicating Devices for Dobbies for Looms, of which the following is a specification, reference being had therein to the accompanying drawings.

Figure 1 of the said drawings is a view representing in vertical section a pattern-barrel such as is employed in connection with shedding mechanisms for looms, as well as part of a pattern-chain, and also representing in side elevation a pair of indicator-fingers, the needle and hooks which are controlled in position by the said indicator-fingers, the jack to which said hooks are pivoted, and the harness-lever with which said jack is connected. Fig. 2 is a view of the pattern-cylinder, pattern-chain bars, and indicator-fingers in elevation looking from the right-hand side in Fig. 1. Figs. 3 and 4 are views in vertical section on the dotted lines 3 3 and 4 4, respectively, in Fig. 1.

In the said drawings, 1 designates a pattern-barrel of the character which is in common use in dobbies and other forms of shedding mechanisms for looms. 2 2 designate bars of a pattern-chain passing around the same. 3 3 are indicator pins or pegs applied to the said bars. 4 4 are indicator fingers or levers which are intended to be acted upon by the said pins or pegs 3 3, the said fingers or levers being mounted on a rod 5 and serving to control in known and usual manner the position of the usual hooks 6 6. In the drawings one of the said hooks rests on the inner end of one of said fingers or levers. A vertical needle 7 is supported by the inner end of the other finger or lever, and the other hook rests on the upper end of the said needle. 8 is the jack, having the said hooks pivoted to its opposite ends, and 9 is the harness-operating lever, to which the jack is connected. The foregoing parts are of usual character, construction, and operation, save in the respects which are indicated hereinafter.

Customarily the surface on the lower edge of each of the indicator fingers or levers with which the pins or pegs 3 3 engage is grooved to receive the ends of the said pins or pegs, and heretofore the construction of the finger or lever has been such that it has been necessary to make the said edge comparatively narrow. It has been sought to reduce the cost and weight (more particularly the latter) of the pattern-chain as much as possible. Various considerations beside that of cost contribute to render it a matter of comparatively great importance to keep the said chain as small, short, and light as possible. For instance, the sudden and frequent advancing movements which are communicated to the pattern-chain in the use thereof have a tendency to break apart a long or heavy chain. With this end in view the series of indicator fingers or levers and the parts which are operated in connection therewith are made as thin as consistent with proper strength and other practical requirements and are brought as closely together as possible in order to reduce the necessary length of the bars of the pattern-chain to the minimum. Sometimes in order to reduce the number of bars two rows of indicator pins or pegs (answering two successive sheds) are applied to each bar of the pattern-chain, as shown in the drawings. The indicator pins or pegs upon the bars, both when a single row of pins or pegs is used thereon (single index) and a double row (double index) is used, are spaced closely to agree with the spacing of the indicator fingers or levers. The foregoing features of construction give rise to certain practical disadvantages. The indicator fingers or levers are hung on the rod 5 somewhat loosely and are in consequence somewhat liable to become shifted slightly to one side or the other of the center lines of the indicator pins or pegs which are intended to act upon the same. Hence in consequence of the close compactness or crowding of the parts it happens occasionally that a pointed, inclined, or crooked pin or peg on coming into place adjacent to the indicator fingers or levers will pass to one side or the other of the indicator finger or lever which should be moved thereby. This quite frequently is the case at present, and

the result is a mispick or imperfection in the cloth being woven. With the ordinary construction of indicator fingers or levers, also, it frequently happens that a little defect in the chain or the fingers—for example, an inclined or crooked pin or peg or a slight displacement of the fingers—will cause two fingers to be indicated by a single pin or peg when but one thereof should be indicated, which of course occasions an imperfection in the cloth. For the sake of lightness it frequently is the case that indicator pins or pegs made of wood are employed. When wood pins or pegs are employed, they wear out rapidly in consequence of their contact with the narrow grooved edges of the indicator fingers or levers, and it frequently is found difficult to weave satisfactorily on a double-index dobby having indicator fingers or levers of ordinary form and construction, for the ends of the wood pins or pegs which come in contact with the said fingers or levers fray out and spread so as to engage with or indicate two adjoining fingers or levers when one of them alone should be indicated.

The object of my present invention is to provide an improved construction of indicator fingers or levers which shall be free from the foregoing disadvantages.

The invention consists in the particular features of construction which I now will proceed to describe with reference to the accompanying drawings, in which latter is illustrated the best embodiment thereof which I have yet contrived.

The distinguishing characteristics of the invention are particularly pointed out and distinctly defined in the claims at the close of this specification.

In the drawings the projecting portions on the under edges of the indicator fingers or levers, with which projecting portions the indicator pins or pegs engage, instead of being located at the same point in the length of each of the two indicator fingers or levers which are concerned in controlling the operation of a given harness-lever, so that the projections on the pair of fingers or levers come side by side, which is customary in practice, are, on the contrary, located at different places in the lengths of the respective fingers or levers, so that the projection of one finger or lever is located in advance of the similar projection on the other finger or lever of the same pair. This obviates the likelihood of mispicks resulting from two indicator fingers or levers being raised by the action of a single pin or peg on the pattern-chain. Moreover, the lower portion of each of the said projections is broadened, as at 41 41, so as to present a surface 42 to the action of the pattern pins or pegs which is considerably broader than the acting edges of the indicator fingers or levers have heretofore been made. This surface 42 is flat, preferably. The advantages gained by thus broadening the acting edges of the indicator fingers or levers are very great. It enables a broader pin or peg to be used on the pattern-chain, which saves wear upon the indicator-finger and also upon the pin or peg, thus facilitating the use of wood pins or pegs, as well as obviating mispicks in consequence of the pin or peg passing to one side of a finger which has worked a little to one side. Heretofore the construction of the indicator fingers or levers has not permitted of this broadening of the edges of the projections; but by locating the projection on one finger or lever somewhat in advance of the other finger or lever of such pair and in addition cutting away the material of each finger or lever adjacent its projection, as at 45 45, no difficulty is experienced in giving sufficient breadth to the acting portion of each of the projections and in providing free clearance for the widened portions in the movements of the indicator fingers or levers, while the said fingers or levers are permitted to lie as close together side by side as heretofore.

I claim as my invention—

1. The improved indicating devices for dobbies and the like mechanisms, comprising the pattern-chain with its indicator pins or pegs, and the indicator fingers or levers located side by side and having the projections which are acted upon by the said pins or pegs located one in advance of the other upon the respective fingers or levers, with the acting surfaces of the said projections broadened, and with the adjacent portions of the fingers or levers shaped to give clearance to the broadened portions of the fingers or levers in the movements of the parts, substantially as described.

2. The combination with the harness-lever, the hooks in operative connection therewith, and the pattern-chain with its indicator fingers or pegs, of the indicator fingers or levers in operative connection with said hooks, located side by side and having the projections which are acted upon by the said pins or pegs located one in advance of the other upon the respective fingers or levers, with the acting surfaces of the said projections broadened, and with the adjacent portions of the fingers or levers shaped to give clearance to the broadened portions of the fingers or levers in the movements of the parts, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE W. STAFFORD.

Witnesses:

EMMA NISBET,

WILLIAM G. ANTHONY.