

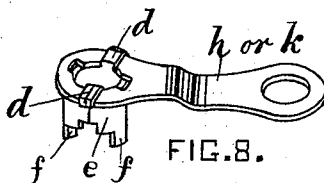
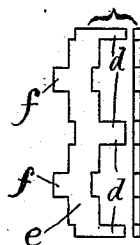
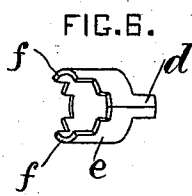
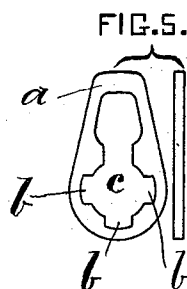
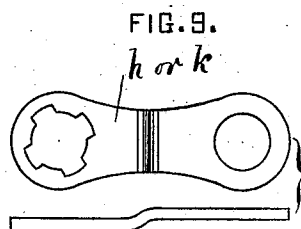
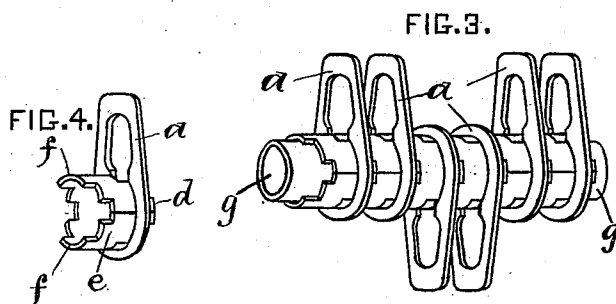
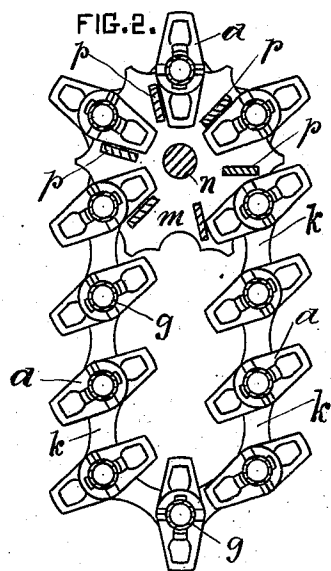
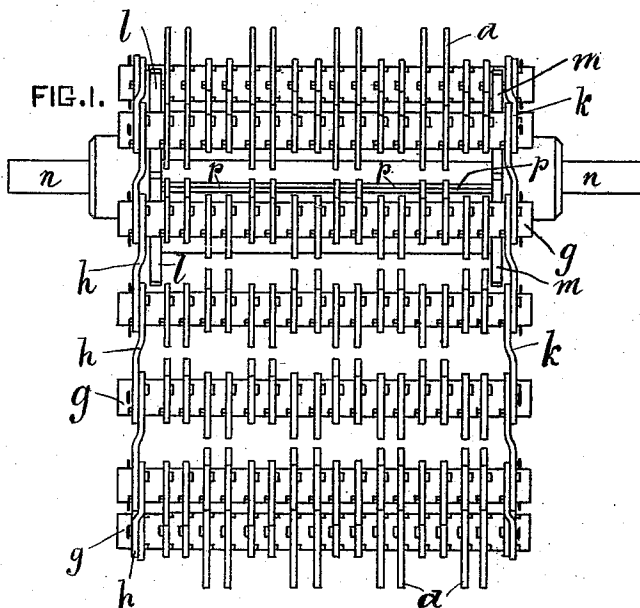
(No Model.)

E. HILL.

LOOM PATTERN CHAIN AND BARREL THEREFOR.

No. 486,337

Patented Nov. 15, 1892.



Witnesses
W. E. Clandaniel
T. E. Robertson.

Inventor
Edward Hill
By J. W. Robertson
Attorney

UNITED STATES PATENT OFFICE.

EDWARD HILL, OF KEIGHLEY, ENGLAND.

LOOM PATTERN-CHAIN AND BARREL THEREFOR.

SPECIFICATION forming part of Letters Patent No. 486,337, dated November 15, 1892.

Application filed March 21, 1892. Serial No. 425,809. (No model.)

To all whom it may concern:

Be it known that I, EDWARD HILL, a subject of the Queen of Great Britain, residing at 35 Ethel Street, Keighley, in the county of York, England, have invented a new and useful Improvement in Loom Pattern-Chains and Barrels Therefor, of which the following is a specification.

My invention relates to improvements in loom pattern-chains of the class wherein cams are mounted upon bars or pins coupled or joined together by links; and the object of my invention is to construct said cams and links in such a manner that they may be cheaply and quickly produced, and so that when complete they shall be sufficiently strong to perform their functions, yet less cumbersome than are those as heretofore constructed, and to construct the barrel over which they operate, so as to assist the links in the holding of said cams in position when they are being brought into connection with the parts that they are designed to operate. These objects I attain by constructing said cams in parts, so that they may be made of sheet metal, which is stamped or cut by dies, the parts thus formed being then folded and fixed together to form the whole, while between the sprocket ends of the barrel I fix longitudinal ribs in such relative positions with those assumed by the cams in their movements around said barrel that when in certain positions they (said cams) are supported by these said ribs.

My invention is illustrated by the accompanying sheet of drawings, of which—

Figures 1 and 2 are front and sectional end elevations of the pattern-chain and its barrel. Fig. 3 is a perspective view, enlarged, showing the cams mounted upon their tube; and Fig. 4 is a similar view showing the cam detached. Figs. 5 and 6 are illustrative of the blank bearing the cam-surface and the bended or folded hub, which when attached to said blank forms the complete cam. Fig. 7 shows the blank from which the hub is formed by same being bent, as shown by Fig. 6. Fig. 8 is a perspective view of a link to which a hub is attached, as is the hub to the cam, while Fig. 9 shows the link without the hub, the one without the hub, Fig. 9, being used at one extremity of the tube carrying

the cams and the other with the hub, Fig. 8, being used at the other extremity of said tube.

Each of the cams forming the subject-matter of this invention is formed by the part or blank *a*, of the contour shown, being stamped or cut out of sheet metal, said blank *a* having radial notches *b b b* made in the circular part of its central opening *c*, into which notches *b* are made to fit the longitudinal projections *d* of the hub *e*, these said projections *d* being bent over the edges or rims of the parts *a*, so as to be thereby securely attached thereto and held in proper relative position therewith, while the other projections *f* are made to extend longitudinally from said hub *e*, so that they may fit loosely within in order to be detachable from the radial openings *b* in any cam that may be placed in proximity therewith when mounted upon the tubes *g*, by which means they are enabled to hold each other in position.

The hub *e* is formed by the stamped or cut blank shown by Fig. 7, being made cylindrical by any of the well-known methods, and since the cams *a* are to couple with the links *h* and *k*, mounted, respectively, upon each of the extremities of the tubes *g*, upon which said cams are mounted, in order to be held in position by these links *h* and *k* I attach one of these hubs *e* to one or other of the said links *h* or *k*—such as, say, the link *k*—this attachment being effected as its attachment to the part *a* already described. The links *h* or *k*, having the hubs *e* rigidly attached to them, are only used at one or other of the extremities of the tubes *g*, the other and opposite extremities of said tubes *g* being occupied by links, to which the hubs *e* are only detachably coupled, for the obvious reason that said hubs will be attached to the cams adjoining them.

The barrel around which the pattern-chain above described has to operate is formed by the sprocket-wheels *l* and *m*, being mounted upon the shaft *n*, and in the space between these wheels *l* and *m* are fixed the longitudinal ribs *p*. The positions occupied by these ribs *p* are such as not to interfere with the cams *a*, that are extending from their respective tubes *g* inwardly, from freely assuming any position they may occupy in their course around said barrel, yet these ribs *p* are so placed that they lend their aid to the support-

ing of the said cams *a* while performing their respective operations, this support being effected by said ribs *p* by reason of those of said cams *a* that extend inwardly abutting against them, so that those cams *a* that are thus otherwise inoperative assist those that are in operating positions to perform their functions properly.

As is shown by Fig. 2, the respective positions in which the ribs *p* are placed are not so that their radial center lines will converge in the center of the shaft *n* but so far out of such positions as to make the outer lateral surfaces of said ribs *p* conform to the contour of the cams *a*. Otherwise said cams *a* would not be permitted to assume their proper and desired positions when passing around their operating-barrel.

Having thus described the nature and object of my invention, what I wish to secure by Letters Patent is—

1. A cam consisting of two parts of sheet metal, one piece being a hub and the other the cam-piece proper, the latter being provided with notches, said hub having projections extending in opposite directions from the ends thereof, the projections on one end extending through and fastened in notches in the cam-piece and the projections on the opposite end adapted to enter notches in the next adjacent cam, substantially as described.

2. A pattern-surface cam consisting of two parts, one part being a hub and the other a plate having an aperture the walls of which surround and hold the hub, substantially as described.

3. A chain-link composed of a plate and a hub, said hub being inserted in an aperture in one end of the link and provided with projections for securing said hub and link together, substantially as described.

4. In a pattern-chain, in combination with cams having recessed hubs, a link comprising a plate, and a hub made of separate pieces, the hub being inserted in the plate and provided with projections on one end engaging with said plate and on its other end with projections engaging in the recesses in the hubs of the cams, substantially as described.

5. The combination of a pattern-barrel having sprocket-wheels at the ends and ribs extending from wheel to wheel, of a pattern-chain having operative and inoperative cams locked together and its inoperative cams arranged to come in contact with said ribs and thus support the operative cams, substantially as described.

EDWARD HILL.

Witnesses:

JOHN WHITEHEAD,
HARRY ELLISON.