No. 638,595. Patented Dec. 5, 1899.

Z. RABY & W. T. SPEAR.

PITMAN FOR LOOMS.

(Application filed Mar. 6, 1899.)

(No Model.)

Fig: 1.

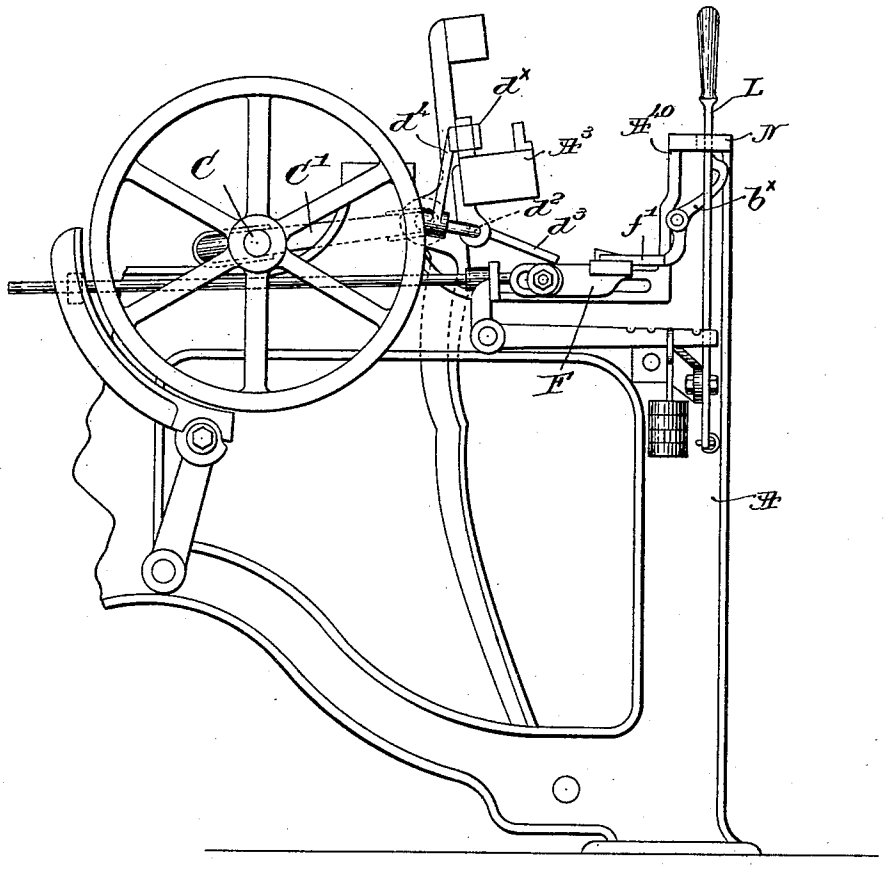


Fig: 2.

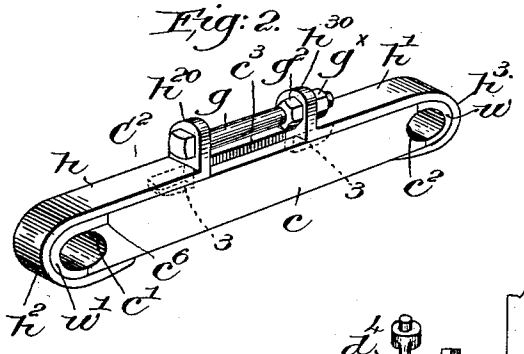
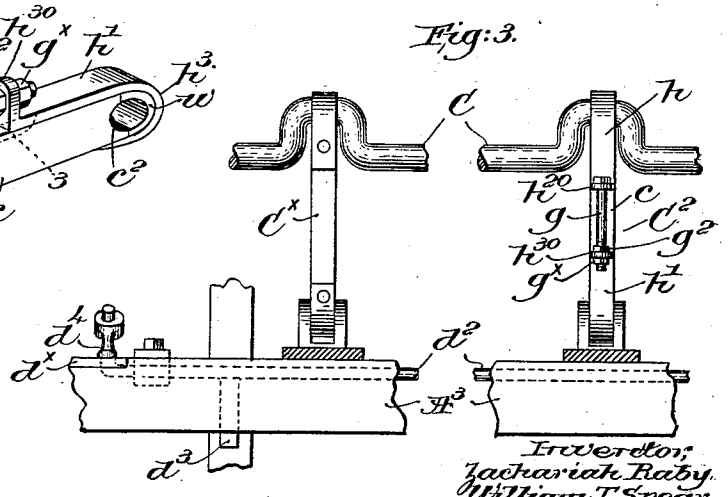


Fig: 3.



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UNITED STATES PATENT OFFICE.

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PITMAN FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 638,595, dated December 5, 1899.

Application filed March 6, 1899. Serial No. 707,826. (No model.)

To all whom it may concern:

Be it known that we, ZACHARIAH RABY and WILLIAM T. SPEAR, of Nashua, county of Hillsborough, State of New Hampshire, have invented an Improvement in Pitmen for Looms, of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

The protector mechanism usual on looms commonly includes a rock-shaft mounted on the lay and provided at or near each end with a dagger, each dagger engaging a frog-lift on a sliding frog mounted to travel one on each loom side. The engagement of the frog-lift by the dagger causes a great strain on all the parts, and to prevent twisting of the lay it has been necessary to use two daggers and frogs, as otherwise the shock of the engagement of a single frog and dagger would bring such strain on the pitmen of the lay, and particularly on that pitman remote from the dagger, that the bearings thereof would wear loose so rapidly as to necessitate the substitution of a new pitman after a very few operations of the protector mechanism. In our present invention we have devised a novel pitman particularly adapted to resist such strains, and by its use we are enabled to dispense with one dagger and its coöperating frog, while greatly increasing the effective life of the pitman.

Figure 1 is a left-hand side elevation of a sufficient portion of a loom to be understood, with our present invention applied thereto. Fig. 2 is an enlarged perspective view of a pitman embodying our invention; and Fig. 3 is a top or plan view, on a reduced scale and centrally broken out, showing the manner of using our novel pitman in connection with a pitman of usual construction with a single dagger.

The loom-frame A, lay A^3, main crank-shaft C, breast-beam A^{40}, having the holding-plate N for the shipper-lever L, the knock-off lever $b^\times$ for the shipper-lever, adapted to be operated by an arm f', fast on the single frog F, mounted to slide on the loom side, the rock-shaft d^2, mounted on the lay and controlled by the usual back-binders $d^\times$ through the fingers d^4, only one of which is herein shown, and a single dagger d^3, fast on the rock-shaft d^2, may be and are all of usual or well-known construction, it being noted, however, that but a single dagger and its coöperating frog are herein employed, the adjacent pitman $C^\times$, Figs. 1 and 3, being also of usual construction. The pitman C^2, however, remote from the dagger is of novel construction and most clearly shown in Fig. 2, said pitman comprising a preferably wooden body portion *c*, having its ends transversely recessed, as at c' c^2, a longitudinal slot c^3 being formed in the upper face of the body portion, as herein shown. At each end of said body portion we have provided strong metallic shoes h h', herein shown as overturned or bent around the ends of the body, as at h^2 h^3, to form with the concave ends c' c^2 thereof substantially circular bearings for the crank-pin and the usual pin connecting the pitman with the lay-sword. These shoes are herein shown as substantially U-shaped, the upper legs resting upon the top of the body portion *c* and provided with depending longitudinal ribs 3 (see dotted lines, Fig. 2) to enter and be guided by the slot c^3, and the inner ends of the said legs are provided with upturned lugs or ears h^{20} h^{30}. A headed bolt *g*, threaded at one end, is passed through holes in said ears and a nut $g^\times$ is screwed upon the threaded end of the bolt, at the outer side of the ear h^{30}, while, if desired, a check-nut g^2 may be provided at the opposite side of the ear. By tightening the nut $g^\times$ the shoes, which form tension members for the pitman, are drawn toward each other and securely held in place on the body portion *c*.

Lining-pieces w w', of leather or other suitable material, are inserted within the bends of the shoes to form with the concaved ends of the body portion *c* non-metallic wearing-surfaces for the bearings. In Fig. 2 the body is shown as recessed at its larger end, as at c^6, to receive one end of the lining w' between it and the adjacent shoe *h*.

It will be obvious that when the pitman is subjected to tensile strain it will be resisted by the metallic tension members h h' and transmitted from one to the other through the rigid connection *g*, so that there will be

no tendency to split or shatter the body portion *c*, and the journals or pivot members within the bearings at the ends of the pitman will bear directly against the non-metallic linings *w w'* for the tension members, nor will there be any movement of the tension members relative to each other.

When the single dagger d^3 engages its frog, the momentum of the lay tends to twist it; but this sudden strain upon the parts and the tendency of the lay to twist is effectually resisted by the tension members of the pitman C^2, remote from the dagger, and owing to its construction as described the said pitman cannot be readily disarranged or broken.

Having fully described our invention, what we claim, and desire to secure by Letters Patent, is—

1. A pitman comprising a wooden body portion having transversely-concaved ends, and longitudinally slotted along one of its faces, metallic tension members mounted on the slotted face of said body portion and provided with ribs to enter and be guided by the slot, the free ends of said members being bent over the concaved ends of the body portion to form bearings therewith, and means to connect adjustably and rigidly the adjacent ends of said members independently of the body portion.

2. In a loom, the lay, and pitmen for the lay, the pitman remote from the frog side of the loom comprising a body portion, metallic tension members mounted thereupon and overturned at its ends, and means to connect rigidly and adjustably the adjacent ends of said members independently of the body portion while their overturned ends are non-attached to the body portion, said tension members preventing twisting of the lay when the frog is actuated.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

ZACHARIAH RABY.
WILLIAM T. SPEAR.

Witnesses:
WILLIAM W. SPEAR,
ELMER E. SHEDD.