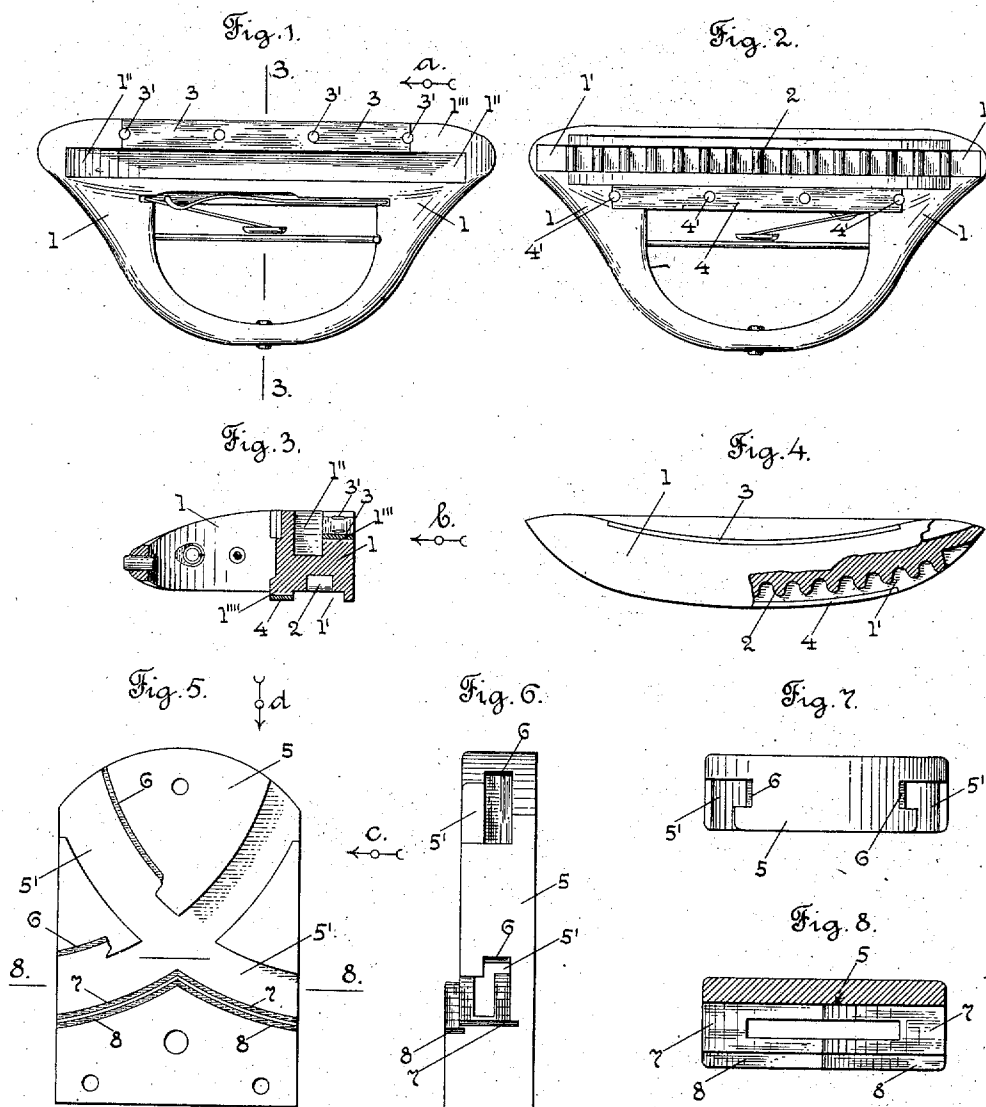


W. WATTIE.
SHUTTLE AND SHUTTLE BLOCK FOR NARROW WARE LOOMS.
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989,091.

Patented Apr. 11, 1911.



Witnesses
M. Brett.
M. Glass.

Inventor
William Wattie.
By John C. Dewey,
Attorney.

UNITED STATES PATENT OFFICE.

WILLIAM WATTIE, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO CROMPTON & KNOWLES LOOM WORKS, A CORPORATION OF MASSACHUSETTS.

SHUTTLE AND SHUTTLE-BLOCK FOR NARROW-WARE LOOMS.

989,091.

Specification of Letters Patent.

Patented Apr. 11, 1911.

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To all whom it may concern:

Be it known that I, WILLIAM WATTIE, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Shuttles and Shuttle-Blocks for Narrow-Ware Looms, of which the following is a specification.

My invention relates to shuttles, and shuttle blocks for narrow ware looms, and the object of my invention is to provide an improved shuttle, and shuttle block for looms of the class referred to.

In my improved construction of a shuttle, and a shuttle block, I make the bearing surfaces on the shuttle, and on the shuttle block, of a material which is harder and more durable than the rest of the shuttle or shuttle block, which are ordinarily made of wood. I preferably make said bearing surfaces of fiber, which are secured to the shuttle, and to the shuttle block.

I have shown in the drawing one form of a shuttle, and of a shuttle block, for narrow ware looms, embodying my improvements.

Referring to the drawing:—Figure 1 is a top or plan view of a shuttle embodying my improvements. Fig. 2 is an underside view of the shuttle shown in Fig. 1. Fig. 3 is a section, on line 3, 3, Fig. 1, looking in the direction of arrow *a*, same figure. Fig. 4 is a rear edge view of the shuttle, looking in the direction of arrow *b*, Fig. 3; a portion of the rear part of the shuttle is broken away. Fig. 5 is a front view of a shuttle block used in connection with the shuttle shown in the previous figures. A part of the face of the block is broken away to show the bearing surface on the upper side of the groove or race. Fig. 6 is an edge view of the shuttle block shown in Fig. 5, looking in the direction of arrow *c*, same figure. Fig. 7 is a top view of the block shown in Fig. 5, looking in the direction of arrow *d*. Fig. 8 is a section, on line 8, 8, Fig. 5, looking in the direction of arrow *d*, same figure.

In the accompanying drawing, 1 is a shuttle for a narrow ware loom, which shuttle may be of any usual shape, and has the heel or attached portion provided with a recess 1' on one side for the rack teeth 2. The opposite side of the shuttle 1 is provided with an elongated groove 1'', and the rear edge

is recessed and flattened as shown at 1'''. The opposite side of the shuttle, on its inner portion is also flattened, as shown at 1''', in Fig. 3.

All of the above mentioned parts may be of the usual and well known construction. I will now describe my improvements.

The surface 1'' of the shuttle 1, which ordinarily forms a bearing surface of the shuttle on the shuttle block is provided with a facing or strip of material 3, as fiber, which is harder than the material of which the shuttle is made, ordinarily wood, and is attached to the shuttle preferably by means of hard wood pins 3'. The surface 1''' of the shuttle 1, which ordinarily forms a bearing surface of the shuttle, is provided with a facing or strip of material 4, as fiber, and is secured to the shuttle preferably by means of hard wood pins 4'.

The shuttle block 5, in connection with which the shuttle 1 is used, may be of any usual construction, and has the undercut groove or race 5' for the shuttle, in the usual way. The upper side of the race 5' is adapted to be engaged in this instance by the bearing surface 3 on the shuttle 1, and the lower side of the race 5' is adapted to be engaged in this instance by the bearing surface 4 on the shuttle 1. The upper side of the race 5' is provided with a surface of harder material 6, as fiber, made in the form of a strip, and secured to the shuttle block in any suitable manner. The lower side of the race 5' of the shuttle block 5, is provided preferably with two strips of harder material, as 7, and 8, which form bearing surfaces for the shuttle 1 and are secured upon the shuttle block in any suitable manner. The strip 8 forms a shelf or support for the shuttle, of harder material than the body of the shuttle block, and extends outside of the face of the main block, as shown in Fig. 6.

The advantages of my improvements will be readily appreciated by those skilled in the art. I provide a shuttle, having the surface on which the most wear comes, of harder and more durable material than the rest of the shuttle. I also provide a shuttle block, having the surfaces on which the most wear and friction of the shuttle come, of harder and more durable material than the rest of the shuttle block.

In the form of narrow ware loom to which my invention relates the shuttles are

fitted to work in undercut raceways or grooves in the shuttle blocks, the shuttles and shuttle blocks being usually of wood. Owing to gravity and to the pressure of the pinions which engage the racks formed in the under sides of the back or heel portions of the shuttles the most of the wear on the shuttles and shuttle blocks occurs at the top and bottom bearing portions of the shuttle and the top and bottom bearing portions of the grooved raceways in the shuttle blocks, and I have therefore applied the non-metallic facings, composed preferably of thin strips of vulcanized fiber, to the registering portions of the shuttles and shuttle blocks at which the wear mainly occurs. It will thus be seen that the invention provides such contacting rubbing surfaces as will resist wear at the particular points at which the greatest pressure, and consequent greatest friction, occurs.

It will be understood that the details of construction of my improvements may be varied if desired.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. A non-metallic shuttle for narrow ware looms, combined with a shuttle block having a groove adapted to receive the heel portion of said shuttle, one of said parts having bearing portions or facings of harder material than its body, to resist wear.

2. A non-metallic shuttle for narrow ware looms having a heel portion fitted to work in a grooved race-way in a shuttle block, and which heel portion is provided with a rack, the upper and lower bearing surfaces of said heel portion of said shuttle having, at the points at which the greater friction occurs, non-metallic facings of harder material than the body of the shuttle, combined with a shuttle block, having a groove adapted to receive said heel portion of said shuttle.

3. A non-metallic shuttle for narrow ware looms, having a heel portion fitted to work in a grooved race-way in a shuttle block, and which heel portion is provided with a rack, combined with a shuttle block having a groove adapted to receive said heel portion of said shuttle, the top and bottom bearing portions of said block being provided with facings of harder material than the body of said block, to resist wear.

4. A non-metallic shuttle for narrow ware looms having a heel portion fitted to work in a grooved raceway in a shuttle block and which heel portion is provided with a rack, the upper and lower bearing surfaces of the said heel portion of said shuttle having non-metallic facings of harder material than the body of the shuttle at the points at which the greatest friction occurs, combined with a shuttle block having a groove adapted to receive the said heel portion of said shuttle, the top and bottom bearing portions of said block being provided with facings, registering with the said facings on the shuttle, of harder material than the body of said block, to resist wear.

5. A wooden shuttle for narrow ware looms having a heel portion fitted to work in a grooved raceway in a shuttle block and which heel portion is provided with a rack, the upper and lower bearing surfaces of the said heel portion of said shuttle having facings of fiber at the points at which the greatest friction occurs, combined with a wooden shuttle block having a groove adapted to receive the said heel portion of said shuttle, the top and bottom bearing portions of said block being provided with facings, registering with the said facings on the shuttle, of fiber, to resist wear.

WILLIAM WATTIE.

Witnesses:

JOHN C. DEWEY,
M. HAAS.