May 5, 1942. J. J. KAUFMANN, JR 2,282,191

LOOM SHUTTLE

Filed March 13, 1941

Fig. 1.

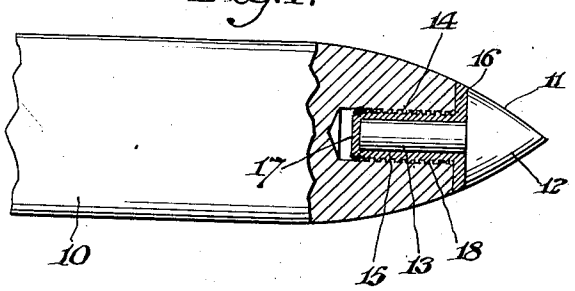


Fig. 2.

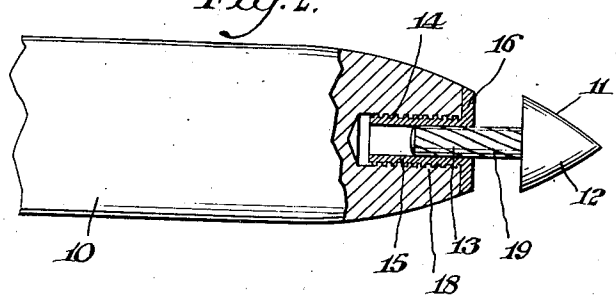


Fig. 3.

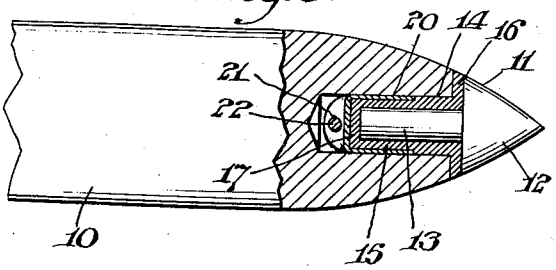
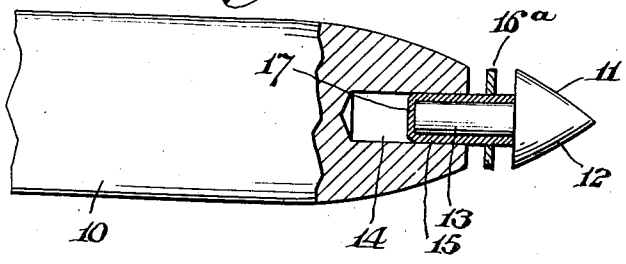


Fig. 4.



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Patented May 5, 1942

2,282,191

UNITED STATES PATENT OFFICE

2,282,191

LOOM SHUTTLE

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Application March 13, 1941, Serial No. 383,069

5 Claims. (Cl. 139—196)

This invention relates to loom shuttles, and it relates more particularly to the provision of improved means in a loom shuttle for cushioning or reducing the shock which occurs when the shuttle impacts against the picker stick in the operation of the loom. Attempts have heretofore been made to provide rubber inserts in the metallic tip portion of the shuttle, but these have not proved satisfactory in use for certain reasons which it is unnecessary to set forth herein.

The principal object of the present invention is to provide improved means for cushioning the tip portion of a shuttle, to reduce the impact shock which occurs at the time the movement of the shuttle is checked as it encounters the picker stick at the end of its travel. Such means will not only serve to soften the impact of the shuttle against the end of the picker stick, but will also minimize loosening of the shuttle tips and the disengagement of the same from the body of the shuttle. It will also serve to reduce the operating noise to an appreciable extent in mills in which a large number of looms are simultaneously operated.

The nature and characteristic features of the present invention will be more readily understood from the following description, taken in connection with the accompanying drawing forming part thereof, in which:

Figure 1 is a view partly in elevation, and partly in section, of an end portion of a shuttle having incorporated therein cushioning means embodying the main features of the present invention;

Fig. 2 is a similar view illustrating a slightly modified form of the invention, the tip member in this instance being shown in an intermediate position during the mounting of the same in the shuttle body;

Fig. 3 is a view similar to Fig. 1 illustrating another modified form of the invention; and

Fig. 4 is a view similar to Fig. 2 illustrating another modified form of the invention.

It will, of course, be understood that the description and drawing herein are illustrative merely, and that various modifications and changes may be made in the structure disclosed without departing from the spirit of the invention.

Referring now more particularly to Fig. 1 of the drawing, the shuttle there shown comprises a shuttle body 10, of any preferred form, provided with a metallic tip 11 of a usual type having a pointed nose portion 12, and a cylindrical pin or shank 13 by means of which it is secured to the body 10 of the shuttle. The opening 14 in the body of the shuttle to receive the shank 13 of the tip member is bored sufficiently large to enable the shank 13 of the tip member to be covered by a sleeve 15 made of rubber or similar resilient material. The sleeve member 15 is also provided with a flange portion 16, in this instance integral therewith, which extends between the nose portion 12 of the tip member and the end of the body 10 of the shuttle. The sleeve member may also be provided with a portion 17, at the end remote from the flange 16, which extends across the inner end of the shank 13 of the tip member.

The bore 14 in the body of the shuttle for the reception of the shank of the tip member is also preferably serrated, as at 18, to permit a better gripping action of the rubber insert, and a better binding of any cement which may be used in connection therewith, it being of course understood that such a cement is preferably employed for securing the rubber insert to the body portion of the shuttle. In this form the resilient member is preferably initially secured to the tip member before the same is mounted at the end of the shuttle body.

In Fig. 2 of the drawing there is shown another form of the invention in which the resilient insert is first mounted in the body of the shuttle and the shank 13 of the tip member 11 is thereafter forced into the interior of the resilient member causing the same to fill out the space between the shank and the bore in the end of the shuttle body 10. In this instance there is also shown a tip member 11 of the type in which the shank 13 thereof is provided with helical serrations 19 in the nature of elongated threads which will cause the tip member to be rotated as the same is pushed into place, thus facilitating the insertion of the same and also serving to hold the tip member in place with greater efficiency.

In Fig. 3 of the drawing there is shown another modified form of the invention in which there is provided a metallic sleeve 20 mounted on the inner end of the sleeve portion 15 of the resilient member. This will facilitate the insertion of the shank 13 of the tip member 11 in the end of the shuttle body 10, as the provision of this sleeve 20 will prevent the bunching of the rubber insert as the same is pushed to place in the assembling of the parts. In this instance the metal sleeve 20 may also be provided with a hole as at 21, for the passage therethrough of a

pin 22 which will serve to lock the tip assembly in place when the same is mounted at the end of the shuttle.

In Fig. 4 of the drawing, there is shown an arrangement which is substantially the same as that shown in Fig. 1, with the exception that the flange portion 16a is made of a separate washer of rubber or the like instead of making the same integral with the sleeve portion 15 which surrounds the shank 13 of the tip member.

It will be noted that in the use of any of the foregoing arrangements the main shock from the impact will be taken up in each instance by the flange portion of the resilient member. The sleeve portion 15 of the resilient member, which surrounds the pin or shank of the tip member will permit such amount of sidewise movement of the tip member as may be required to take care of any component lateral shock which may be incidental to the main action.

I claim:

1. In a loom shuttle comprising a shuttle body and a metallic tip member mounted therein, said tip member having the usual nose portion and a shank for mounting the tip member in a bore in the shuttle body, a resilient member surrounding the shank of the tip member in said bore and having a flange portion extending between the nose portion of the tip member and the end of the shuttle body.

2. In a loom shuttle comprising a shuttle body and a metallic tip member mounted therein, said tip member having the usual nose portion and a shank for mounting the tip member in a bore in the shuttle body, a resilient member surrounding the shank of the tip member in said bore and having an integral flange portion extending between the nose portion of the tip member and the end of the shuttle body.

3. In a loom shuttle comprising a shuttle body and a metallic tip member mounted therein, said tip member having the usual nose portion and a shank for mounting the tip member in the shuttle body, a resilient member surrounding the shank of the tip member and having a flange portion extending between the nose portion of the tip member and the end of the shuttle body, and a metallic sleeve mounted on the inner end of the resilient member.

4. In a loom shuttle comprising a shuttle body and a metallic tip member mounted therein, said tip member having the usual nose portion and a shank for mounting the tip member in the shuttle body, a resilient member surrounding the shank of the tip member and having a flange portion extending between the nose portion of the tip member and the end of the shuttle body, a metallic sleeve mounted on the inner end of the resilient member, said metallic sleeve having an inner extension and a pin passing through said extension and through the shuttle body.

5. In a loom shuttle comprising a shuttle body and a metallic tip member mounted therein, said tip member having the usual nose portion and a shank for mounting the tip member in a bore in the shuttle body, a resilient member including a portion interposed between the nose portion of the tip member and the end of the shuttle body and a portion between the shank and the bore.

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