

(No Model.)

T. P. BUTCHER.
SHUTTLE FILLER.

No. 547,766.

Patented Oct. 15, 1895.

Fig. 1.

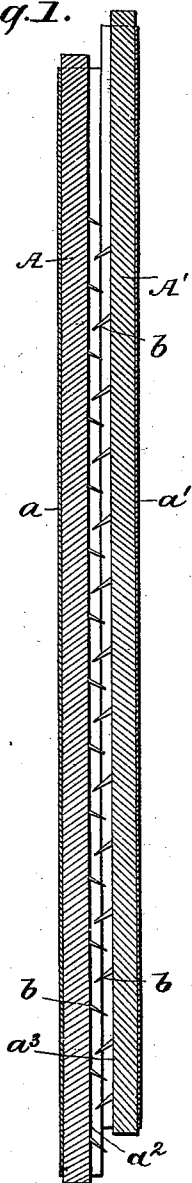


Fig. 2.

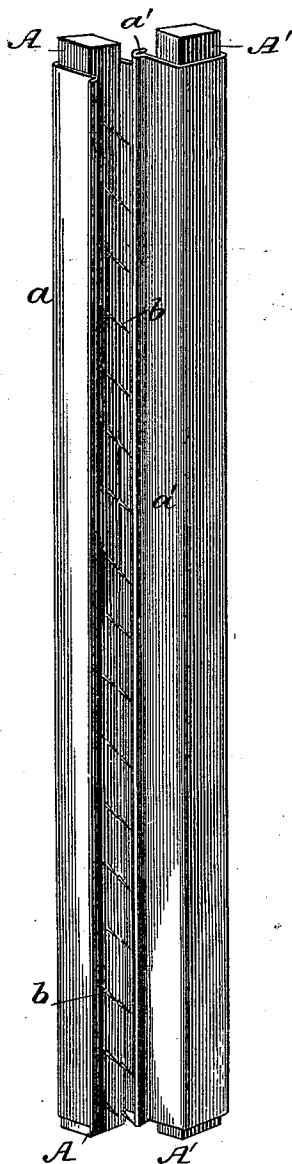


Fig. 4.

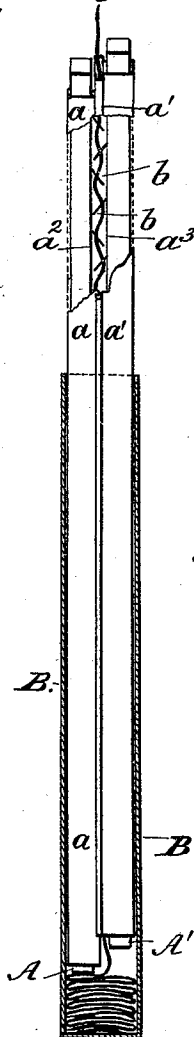
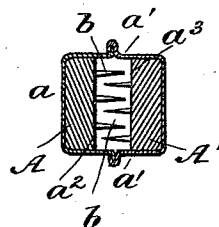


Fig. 3.



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SHUTTLE-FILLER.

SPECIFICATION forming part of Letters Patent No. 547,766, dated October 15, 1895.

Application filed September 25, 1894. Serial No. 524,123. (No model.)

To all whom it may concern:

Be it known that I, THEODORE P. BUTCHER, a citizen of the United States, residing at Jackson, in the county of Jackson and State of Michigan, have invented certain new and useful Improvements in Shuttle-Fillers; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to shuttle-fillers, and has for its object to provide simple and improved mechanism for conveniently and effectively filling loom-shuttles with the rags or material used as filling in weaving, so that the filling will be delivered freely without tangling while being woven. In weaving coarse fabrics, especially rag carpets, shuttles have been heretofore employed which have a can or tube or tubular cavity into which the rags or substance or material used as filling in weaving is folded or wadded with a view to securing free delivery of the filling without tangling while being woven, and it is well understood in the art that when rags or any coarse material are folded into the cavity in a shuttle the material will be discharged more freely and with less strain and "jerking" than when wound on a cop or spool, because the sudden starting of the shuttle is liable to break the thread before the spool starts to roll. The ravelings are also liable to wind around the spool and tangle or break in weaving rags, as in rag carpets.

My invention is designed to overcome the disadvantages and objections previously existing in the art by providing simple and effective means for folding the rags or other material into the cavity of the shuttle, by which, when the shuttle is drawn onto the filling mechanism and recedes, as it is filled, the rags or filling material are properly deposited in the cavity of the shuttle and pressed in in such a manner that it will be freely delivered during the operation of weaving.

My invention is also designed for effective use and adaptability in the filling of the shuttle with various grades of material, as employed in various weavings.

To these ends my invention comprises in its main features two narrow strips or pieces of wood or other suitable material adapted to

the interior of the tube or cavity and adapted to slide or reciprocate with relation to each other, the inner or opposing faces of said strips being provided with inclined or slanting barbs, whereby when the material is placed between the barbed faces of said strips and the latter are inserted in the tube and relatively reciprocated the material is forced into the tubes in properly folded position and rammed in, substantially as hereinafter fully described, and particularly pointed out in the claims.

In the drawings, Figure 1 is a vertical sectional view illustrating the slides with the barbs between them. Fig. 2 is a perspective view showing the slides separated. Fig. 3 is a transverse sectional view of the slides with their barbs and inclosing sheath, showing how the latter is connected. Fig. 4 is a perspective view of the slides locked together and inserted in the cavity of the shuttle with the filling material between them.

Corresponding parts in all the figures are denoted by the same letters of reference.

Referring to the drawings, A and A' designate, respectively, two strips or pieces of wood or other suitable material forming slides, which are adapted to be received by the shuttle tube or cavity B, and having their outer faces so shaped as to approximately conform to the interior walls of the shuttle-tube B. The end of the slides A and A' that are to be inserted in the shuttle tube or cavity are flat or blunt, as shown in Fig. 1, to provide for ramming the filling into the shuttle. These strips are of suitable length and are adapted to slide or reciprocate upon each other, and are normally locked or connected together in some suitable manner. For instance, in one way to effect this the slides A and A' are inclosed on their outer sides in a sheathing of tin or other suitable metal, the edges of which project beyond the inside corners of each slide a proper distance and are so shaped that they properly lock or connect the slides together in the following way: In the edges of the sheathing *a'*, that incloses the slide A', is a slot or groove so formed as to open on the inside, and on the edges of the sheathing *a*, that incloses the slide A, is formed a flange or projection which enters the groove in the edges of the flange *a'*. Thus the slides are

locked or connected together, as shown in Fig. 3, so they will slide or reciprocate at the proper distance from each other with an inclosed space between them, or they may be so connected in any other suitable manner or way.

Upon the inner face a^2 of the slide A and the inner face a^3 of the slide A' are provided barbs or pins b , which are inclined or slanted in the direction in which the filling material c is fed into the tube or cavity of the shuttle B. These barbs or pins b are preferably formed of steel points nearly but not quite long enough to reach the opposite slide in its normal position, and are arranged in diagonal rows across and nearly the whole length of the inner face of their respective slides. They are placed at an angle of about thirty degrees to the face of their respective slides, being so placed and arranged that the barbs on one slide shall closely pass the barbs on the opposite slide, but not squarely strike them when the slides are slid or reciprocated. It will be understood that the number and inclination of the barbs and the length and coarseness or size of the same will vary according to the materials used in the shuttle, my invention being adapted for use in connection with either coarse rags or threads of different degrees of fineness, and in this connection I refer especially to coarse thread, such as jute, or to different degrees of fineness in carpet-rags. The distance separating the slides A and A', or the space between the same as formed by the intervening bore or cavity, will be adapted to the material used in the shuttle. The length and outward conformation of the slides will vary according to the shape and length of the cavity in the shuttle used, my invention being adapted to fill different kinds of shuttles with longer, shorter, or different-shaped cavities. The slides may be placed in any position from vertical to horizontal, and may be inserted in the tube of the shuttle, and will operate to force the filling and pack it in. The slides may be slid or reciprocated by hand or by any suitable machinery, it being understood that they must at least slide as far as the barbs are apart. The barbs of one side will thus take the material from the barbs of the other side and so carry it forward into the shuttle. It will be noted that the barbs or pins are preferably provided in a series arranged or extending longitudinally over the greater part of the inner face of the slide, and that the barbs are also preferably disposed in diagonal transverse rows, as shown in Fig. 2. I also prefer to have the points of the pins or barbs respectively projecting from the opposite faces of the slides, slightly overlapping each other, as shown.

The operation and advantages of my invention will be readily understood by those skilled in the art to which it appertains. The relatively-operating slides A and A', separated a suitable distance to leave an intervening cen-

tral space into which the barbs project, forming the main feature of my invention and improvements, will effectually operate to force the filling material into the shuttle tube or cavity in a properly-folded position and ram the same down, so that the filling will be freely and perfectly delivered during the operation of weaving without danger of tangling or breaking, and my invention is adapted for filling the shuttle tube or cavity with any filling material of different degrees of coarseness or fineness.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. A shuttle filler, comprising slides or strips adapted to relatively reciprocate within a shuttle tube or cavity and provided with projecting barbs or pins upon their opposing faces, said slides being separated a suitable distance to form an intervening bore or cavity through which the filling material is fed and carried into the shuttle by the projecting barbs or pins, and the slides being provided with ramming ends at their bottoms adapted to ram the filling material in the shuttle, substantially as and for the purpose set forth.

2. A shuttle filler, comprising slides or strips adapted to relatively reciprocate or slide within a shuttle-tube or cavity and having means for folding and carrying the filling material into the shuttle-tube or cavity, said slides being provided with blunt or flat bottom ends for ramming or packing the filling material during the operation of the slides, substantially as and for the purpose set forth.

3. A shuttle filler, comprising slides or strips adapted to relatively reciprocate or slide within a shuttle-tube or cavity and provided with projecting barbs or pins inclined or slanted in the direction in which the filling material is fed into the shuttle-tube, whereby the barbs are adapted to fold and carry the filling material into said tube, and with flat or blunt bottom ends for ramming the filling material in the shuttle, substantially as set forth.

4. A shuttle filler, comprising slides or strips adapted to relatively reciprocate or slide within a shuttle tube or cavity and arranged with an intervening longitudinal bore or cavity through which the filling material is fed, the slides being provided upon their opposite faces with a longitudinally-arranged series of inclined barbs or pins projecting from said faces, the projecting barbs upon said opposite faces overlapping each other, and with ramming ends at the bottom adapted to ram the filling material in the shuttle as it is fed from the longitudinal bore between the slides, substantially as and for the purpose set forth.

5. A shuttle filler, comprising slides or strips adapted to relatively reciprocate or slide within a shuttle tube or cavity and arranged with an intervening longitudinal bore or cavity through which the filling material is adapted to be fed, the opposite faces of said

slides being provided with a longitudinally-
arranged series of barbs or pins projecting
from said faces into the intermediate bore or
cavity, and the slides being provided with
5 ramming ends at their bottoms adapted to ram
the filling material in the shuttle as it is fed
from the longitudinal bore between the slides,
substantially as and for the purpose set forth.

10 6. A shuttle filler, comprising slides or
strips adapted to relatively reciprocate or slide
within a shuttle tube or cavity and arranged
with an intervening longitudinal bore or cav-

ity of uniform width, the opposite faces of
the slides being provided with a longitudi-
nally-arranged series of barbs or pins dis- 15
posed in diagonal transverse rows and pro-
jecting in the intervening bore or cavity, sub-
stantially as and for the purpose set forth.

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

THEODORE P. BUTCHER.

Witnesses:

L. H. LONG,

JENNIE GORDAN.