Jan. 31, 1933. F. S. BOYD 1,895,843

MACHINE FOR CUTTING AND SHEARING FLOAT OR BRIDGE THREADS

Filed Sept. 11, 1931

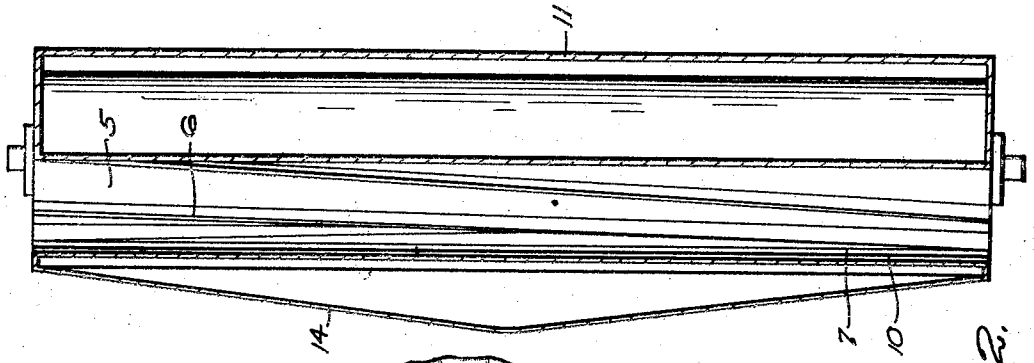


Fig. 2.

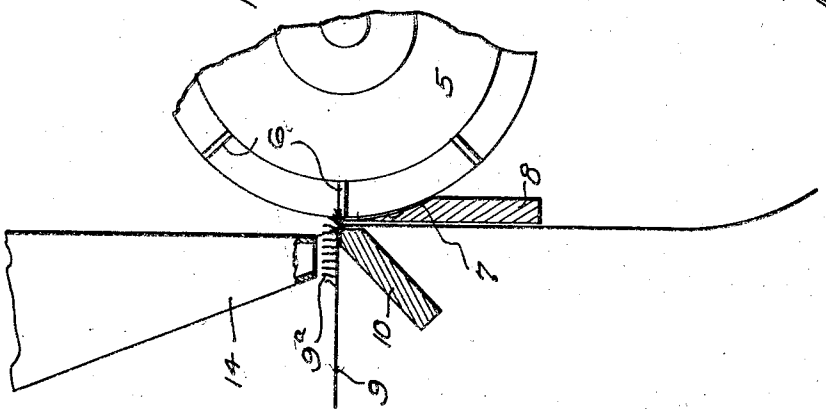


Fig. 3.

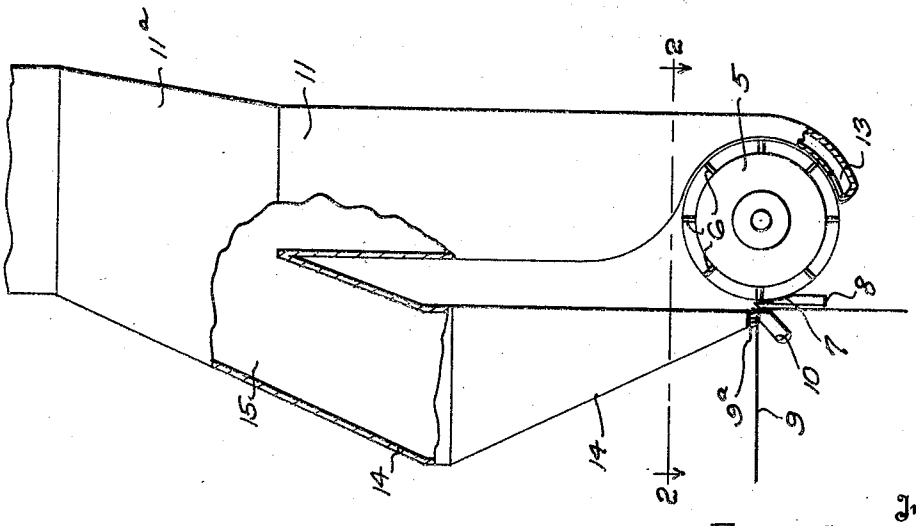


Fig. 1.

Inventor

FRED S. BOYD,

By Stephens & Campbell

Attorneys.

Patented Jan. 31, 1933 1,895,843

UNITED STATES PATENT OFFICE

FRED S. BOYD, OF LAURENS, SOUTH CAROLINA, ASSIGNOR OF ONE-THIRD TO H. J. WARD, OF LAURENS, SOUTH CAROLINA, AND ONE-THIRD TO C. C. RUSH, OF GREENVILLE, SOUTH CAROLINA

MACHINE FOR CUTTING AND SHEARING FLOAT OR BRIDGE THREADS

Application filed September 11, 1931. Serial No. 562,403.

This invention relates to machines for cutting and shearing float or bridge threads on cotton, silk, rayon, jacquard patterns and other goods which are woven with either filling, warp, or lappet spots.

Machines of this general character are well known in the art, some of which employ brushes for brushing up the fibre or threads so that the knives can get hold of them. However, the machines at present in use miss so many of the threads that it is necessary to run the cloth through the machine as many as six times in order to cut off all of the loose ends.

Under the present invention it is proposed to employ a suction hood so located with respect to the cloth and with respect to the cutting off mechanism as to cause the threads to stand up from the cloth and be carried over a right angle guide while in this standing position in such way that the knives can get hold of the threads in a more effective manner. By virtue of this arrangement, I am able to effect marked economies in the finishing of these cloths and reduce the number of times that it is necessary to pass the cloth through the machine anywhere from thirty to fifty percent.

In the accompanying drawing

Figure 1 is a diagrammatic transverse sectional view through those portions of a cutting and shearing machine to which the invention has application.

Fig. 2 is a horizontal sectional view on line 2—2 of Fig. 1, and

Fig. 3 is an enlarged view of a portion of Fig. 1.

Like numerals designate corresponding parts in all the figures of the drawing.

One machine of the character described which is in common use comprises a rotative cylinder 5 having spirally disposed blades 6 upon its periphery which co-act with the curved face 7 of a knife bar 8. The cloth to be trimmed is indicated at 9 and said cloth passes over a guide bar 10, making a substantially right angle turn over said bar and passing downwardly between said guide bar and the knife bar. However, since many of the loose threads, indicated at 9*a* and which are to be trimmed off, would be lying flat upon the cloth, in the absence of some means for elevating them, many of these threads pass downwardly with the cloth without being engaged by the knife edge.

The machine disclosed, as being in common use, includes a suction duct 11, a curved portion of which is carried around a rotary cylinder and terminates in an open suction mouth 13. This suction duct in which subnormal air pressure may be maintained by any suitable vacuum creating apparatus, such as a fan or otherwise, not shown, serves to collect and carry away the cut off threads which cling to the blades until they come into alignment with the mouth or orifice 13. My invention comprises a suction hood 14 in which a partial vacuum may be created by any suitable air moving means or the top of this hood may be connected by a branch conduit 15 with the suction conduit 11 so that a single air moving means may serve both of the ducts. If this is done, the capacity of the duct 11 may be increased, as indicated at 11*a*, at the point where the hood 14 is connected with the duct 11.

It will be observed that the lower end of the hood 14 is spaced above the cloth and that said hood is also spaced such a distance away from the cylinder 5 that the suction will substantially cease to exert its effect upon the threads just as they pass over the turn of the guide bar, so that these threads in tending to resume their former flat position will actually move over the cutting edge of the knife bar 8. This will bring such threads in position to be engaged and sheared off by the blades 6 of the cylinder 5. It has been found in actual practice that the threads retain their substantially upright position long enough to be caught by the knife edge and sheared off by the blade 6. The result is to effect a much cleaner and more effective removal of the threads than is possible by any of the known, widely used and relatively expensive machines.

It will be understood that the invention is not limited to the precise construction set forth, but that it includes within its purview whatever changes fairly come within either

the terms or the spirit of the appended claim.

Having described my invention, what I claim is:

The herein described method of shearing float threads from the face of a cloth web which consists of imparting a traveling movement to said cloth past a cutting blade and imparting a sharp bend to the cloth at the moment of its engagement by said cutting blade, imparting a suction action to the threads up to the moment of their passage about said sharp bend to cause the individual threads to stand out from the face of the web and releasing said threads from the influence of said suction action at such moment as will cause them to spring over the cutting blade under their tendency to resume their normal position.

In testimony whereof I affix my signature.

FRED S. BOYD.