Sept. 4, 1928. 1,683,296

A. S. MITCHELL

APPARATUS FOR STUFFING PLAITS

Filed March 9, 1927 3 Sheets-Sheet 1

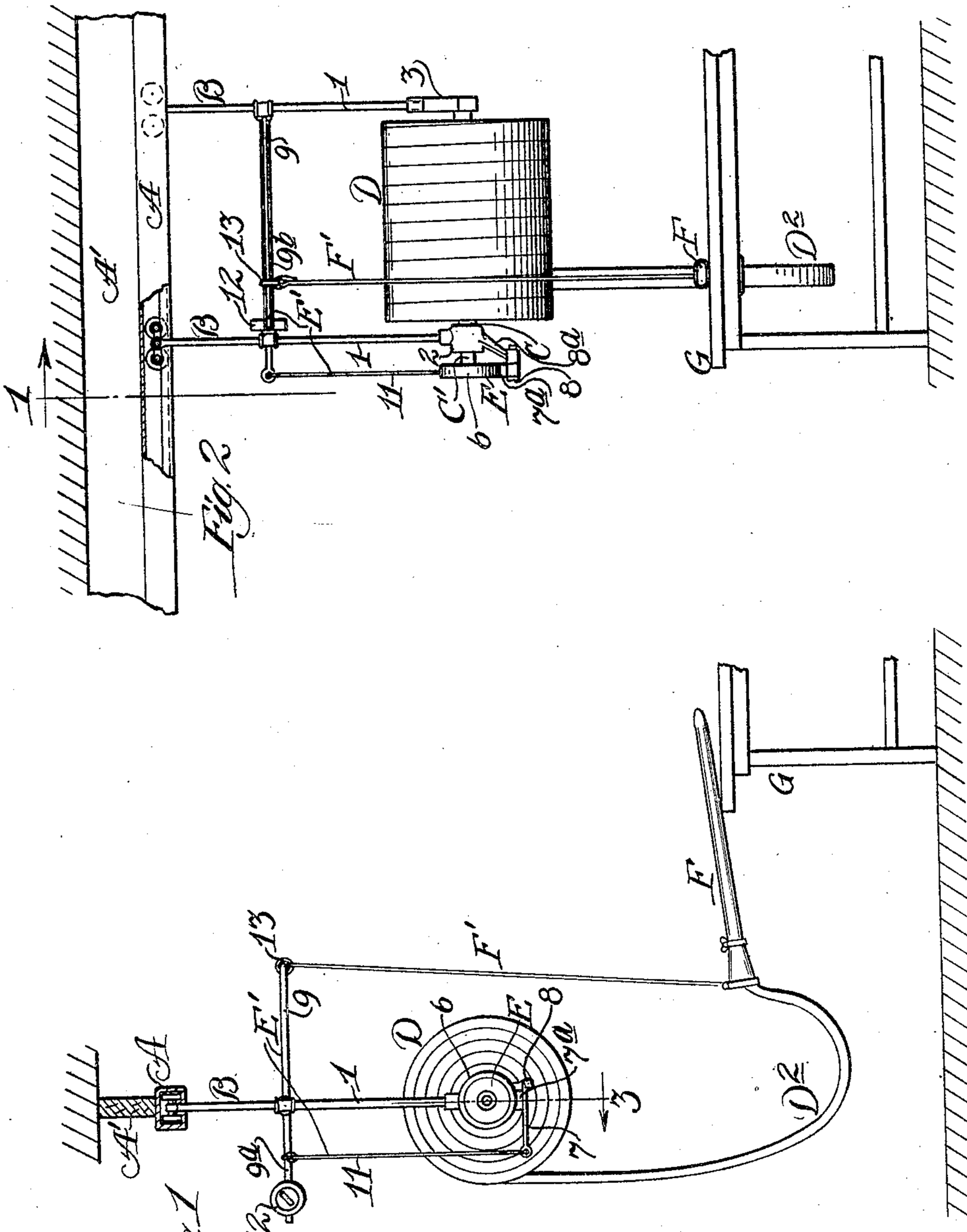

Fig. 2

Fig. 1

Inventor:
Allister S. Mitchell,
By Dyrenforth, Lee, Christton & Wiles,
Attys.

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Fig. 3.

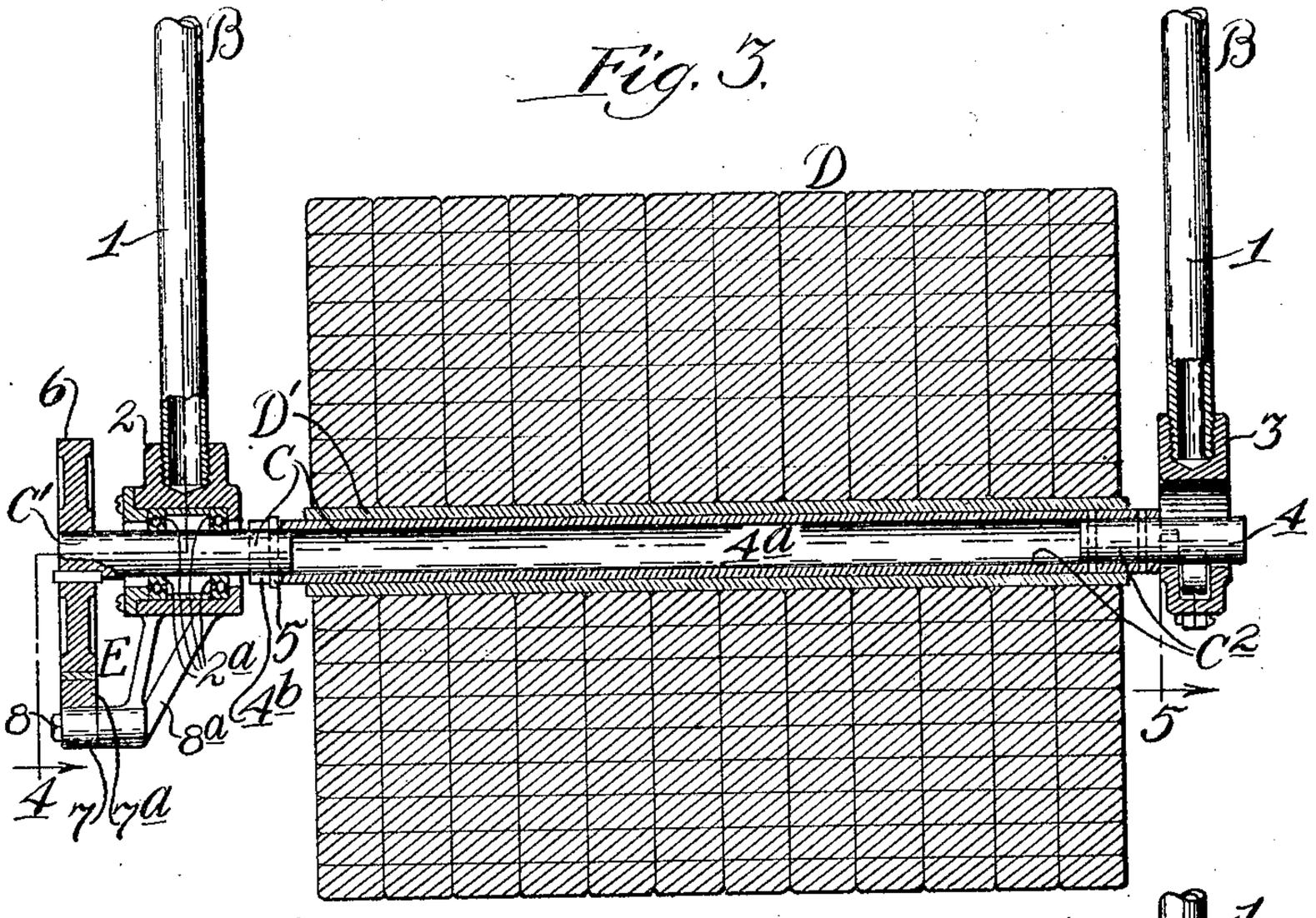


Fig. 4

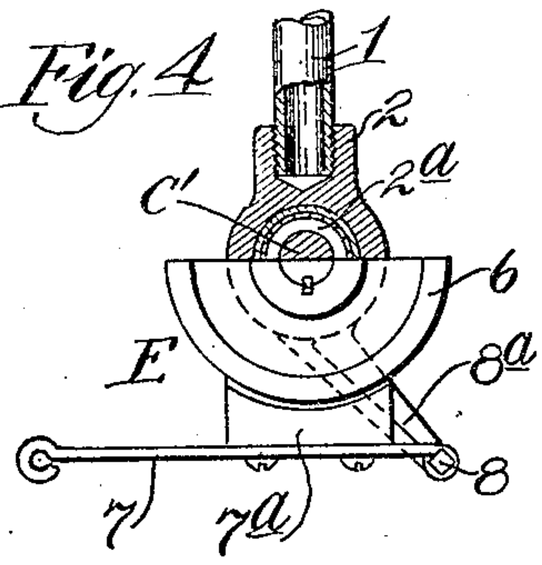


Fig. 5

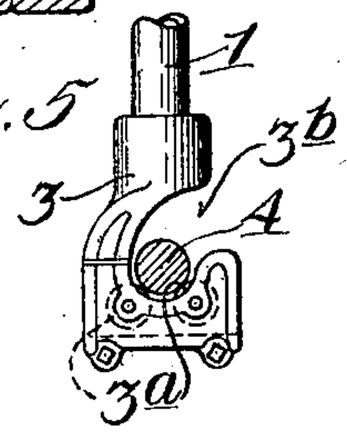
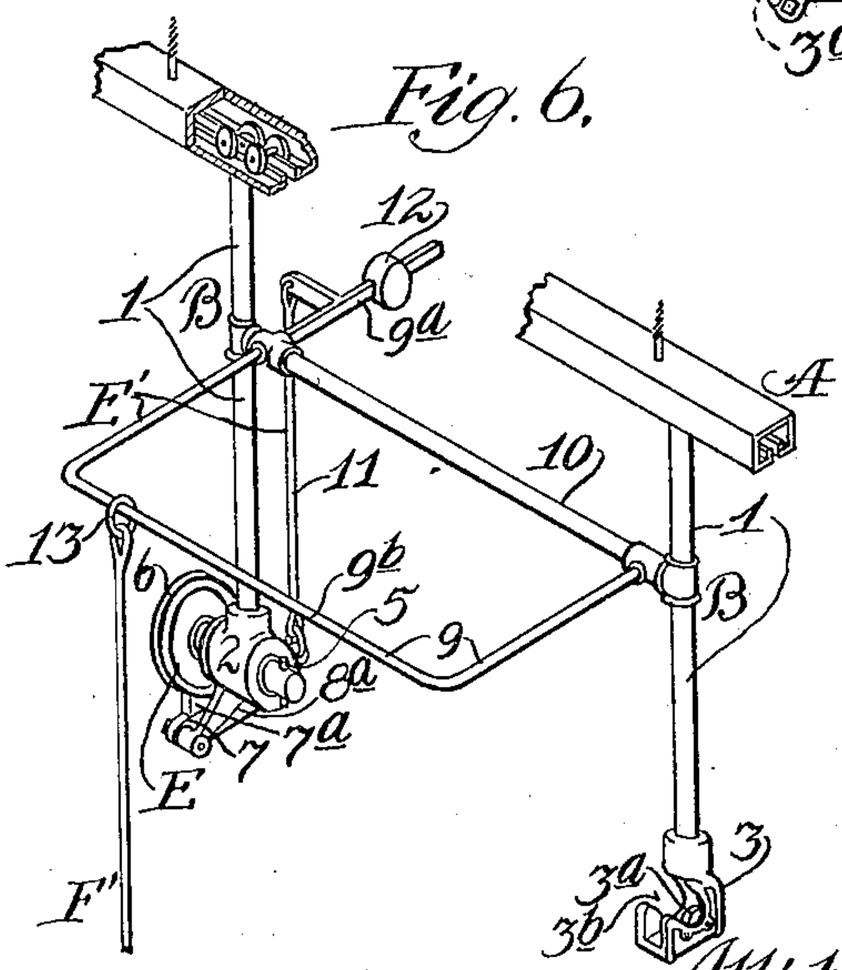


Fig. 6.



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By Dyrenforth, Lee, Chritton & Wiles,
Attys.

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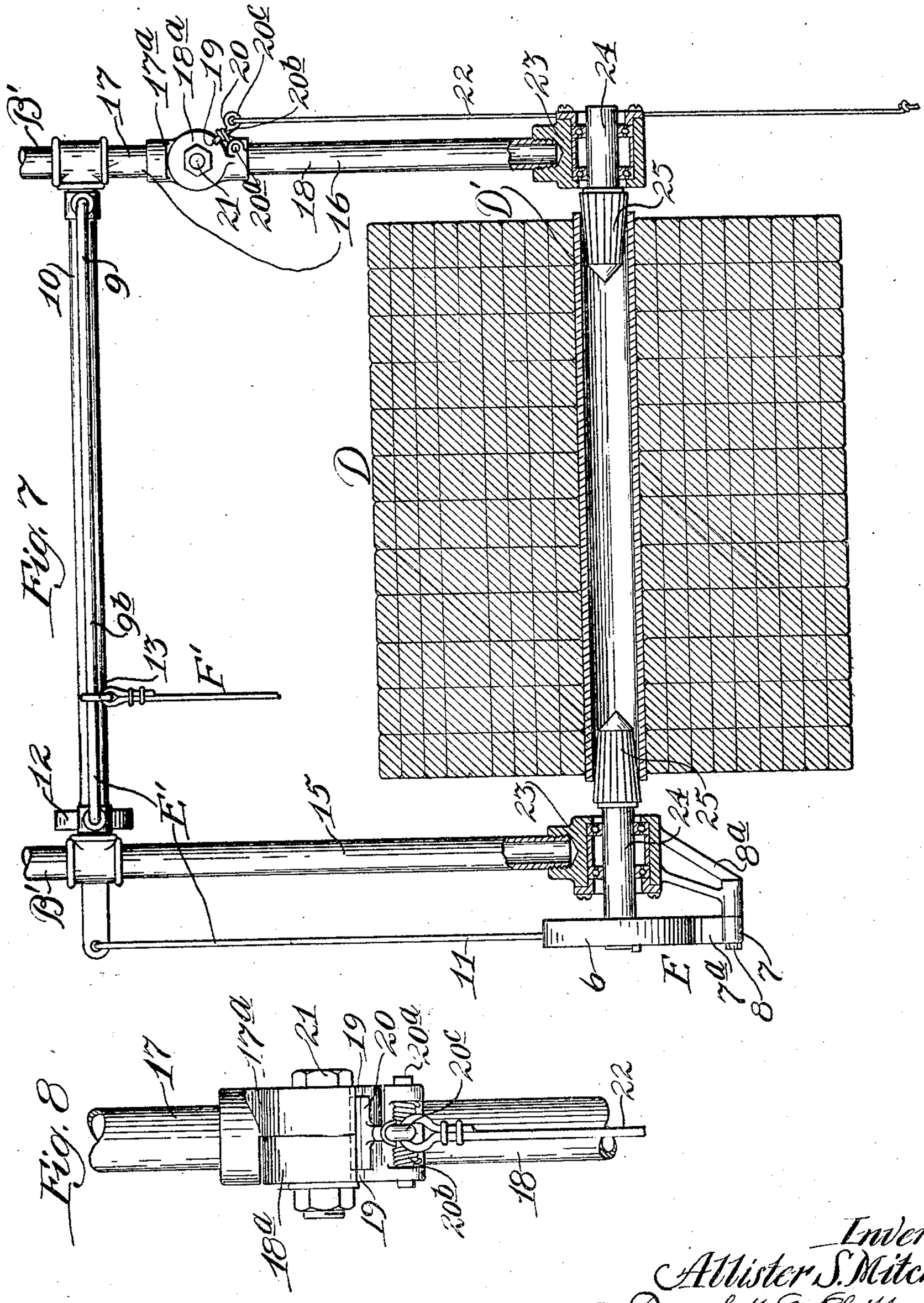

Inventor:
Allister S. Mitchell,
By Dyrenforth, Lee, Christton & Miles.
Attys.

Patented Sept. 4, 1928. 1,683,296

UNITED STATES PATENT OFFICE.

ALLISTER S. MITCHELL, OF OAKLAND, CALIFORNIA, ASSIGNOR TO CALIFORNIA COTTON MILLS COMPANY, OF OAKLAND, CALIFORNIA, A CORPORATION OF CALIFORNIA.

APPARATUS FOR STUFFING PLAITS.

Application filed March 9, 1927. Serial No. 173,877.

This invention pertains particularly to apparatus adapted to the purpose of stuffing the pipes, or plaits, of cushions, or upholstery; and the primary object of the invention is to provide apparatus particularly well adapted for use in practicing the Mitchell process of stuffing upholstery which is described in my Reissue Patent No. 16,283, granted March 9, 1926. In the process described in said patent, the advance end of a continuous strip of batting drawn from a suitable supply is confined within a tubular insertion-tool; the tool is inserted in a plait; the advance end of the strip is then held while the tool is withdrawn from the plait, thus reloading the tool; the strip is then severed at the advance end of the tool by giving the tool a lateral jerk; and the operation is continued in this manner to fill successive plaits.

The process described now is employed for stuffing practically all of the plaited seat-cushions and backs used in automobiles in this country, some of these cushions being manufactured by automobile companies, or subsidiaries, such as body builders, and some being manufactured by large trim shops.

In carrying out the process heretofore, it has been the practice, ordinarily, to draw the strip from a box or reel located across the aisle adjacent the bench where the operators work in carrying on the plait-stuffing operations. There are various objections to this practice, one of the objections being the cluttering of the aisle and the danger that the strips extending across the aisle may become entangled with the feet of operators.

In accordance with the present invention the continuous strip of batting used for stuffing plaits is carried on a reel suspended, at a suitable height, back of the position which the operator occupies; and preferably the rotation of the reel for unwinding purposes is controlled by a brake, whose operation is controlled by the plait-stuffing tool. In the practice of the Mitchell process, the operator inserts the tubular tool, within which the advance end of the strip is compressed, into the plait; then withdraws the tool while holding the front end of the strip against withdrawal; then, pressing down upon the near end of the filled plait while holding the front portion of the tubular tool collapsed, the operator gives a twitch, or lateral jerk, to the tool which severs the strip. While this severing operation is taking place, the base end of the tool naturally is allowed to drop; and in the apparatus embodying the present invention, the weight of the tool serves to set the brake.

The arrangement may be varied, however.

The invention is illustrated in a preferred embodiment in the accompanying drawings, in which—

Fig. 1 is a sectional elevational view taken as indicated at line 1 of Fig. 2, showing apparatus embodying the invention; Fig. 2 is an elevational view, partly in section, of the apparatus shown in Fig. 1, the view being taken from a point to the right of Fig. 1; Fig. 3 is an enlarged, broken, sectional view illustrating the manner in which the reel is mounted in the hangers; Fig. 4, a broken sectional view taken as indicated at line 4 of Fig. 3; Fig. 5, a broken section taken at line 5 of Fig. 3; Fig. 6, a broken perspective view of the apparatus; Fig. 7, a broken sectional view of a modification; and Fig. 8, a broken elevational view of the jointed supporting member shown at the right-hand portion of Fig. 7.

In the embodiment illustrated in Figs. 1–6, A designates a track which supports a traveling carrier, or hanger device B; C, a shaft comprising a permanently mounted section C′, and a demountable section C^2; D, a continuous strip of batting wound upon a pasteboard tube D′ adapted to receive the removable section C^2 of the shaft; E, a brake-device equipped with controlling means E′; and F, a tubular insertion-tool having its base end portion suspended from the device E′ through the medium of a flexible member, or cord, F′.

The track A may be omitted, if desired, in which case the carrier B may be suspended from a stationary support. The track may be of any suitable construction adapted to support the carriage and permit it to be shifted to any desired point. The track is shown supported by an overhead member A′ which may constitute a part of the building structure.

The carrier B may be of any suitable construction. It is shown as comprising hangers 1 fitted at their lower ends with bearings 2 and 3. The bearing 2 is shown as a closed bearing equipped with anti-friction bearings

2^a, in which the shaft-section C′ is permanently journalled. Bearing 3 is shown equipped with rollers 3^a adapted to support the end portion 4 of the shaft-section C^2. Bearing 3 is cut away, or recessed, as indicated at 3^b, so that the complete bearing is in the form of a hook, as shown in Fig. 5, permitting the shaft-section C^2 to be readily removed.

The shaft-section C^2 is shown as comprising the stub-portion 4 and a main tubular part 4^a secured thereto and provided at its free end with a slot 4^b adapted to fit over a stud 5 with which the adjacent end of the shaft-section C′ is equipped.

In practice, the trim shop will receive a continuous strip of batting wound upon a tubular pasteboard core D′; the shaft-section C^2 will be slipped through the tubular core; and the loaded shaft-section will then be placed in the hangers, the tubular member 4^a telescoping with the shaft-section C′ and engaging the stud 5 and the member 4 being received in the open bearing 3.

The brake device E is shown as comprising a brake-wheel 6 secured on the shaft-section C′, and a brake-lever 7 equipped with a brake-shoe 7^a adapted to engage the brake-wheel. The lever 7 is shown pivoted to a stud 8 carried by a bracket 8^a depending upon the bearing 2.

The brake-controlling device E′ is shown as comprising a rock-member 9 pivoted on a connecting member 10 extending between the hangers 1; and a link, or rod, 11 connecting one arm 9^a of the rock-member with the brake-lever 7. The arm 9^a is shown equipped with an adjustable weight 12. The member 9 is also provided with a member 9^b which extends parallel with the axis of the reel. From the member 9^b depends the flexible member F′, which is equipped at its upper end with a ring 13 adapted to slide on the member 9^b.

In the use of the improved apparatus, the plaited upholstery fabric (not shown) is placed upon the work bench G. The operator, if a right handed person, stands at the left of the tool as illustrated in Fig. 1, facing the bench. While inserting the tool into the plait, the weight upon the cord F′ is relieved, thus permitting the brake to be released, which, in turn, permits the weight of the loop D^2 of the batting-strip to turn the reel and pay out a required amount of the batting-strip from the reel. When the operator, after withdrawing the tool from the plait, allows the base end to drop, the weight of the tool serves to set the brake and prevent the paying out of an undue amount of batting-strip from the reel.

The operation described may be reversed. That is, the construction and arrangement may be such that the brake will be released by the weight of the tool when the base end of the tool is dropped. In this case, the batting-strip will be paid out from the reel during the period when the severing of the strip is being effected, and the brake will operate to hold the reel while the strip is being inserted in the plait.

It is possible for an operator to properly regulate the paying out of the batting-strip from the reel without interfering with the free operation of the tool in the plait-stuffing process.

In the modification shown in Figs. 7 and 8, provision is made for supporting the pasteboard tube D′ and the strip of batting D wound thereon directly on a pair of stub-shafts journalled in suitable hangers B′. The hangers are designated 15 and 16. The hanger 16 is jointed. The jointed hanger comprises an upper member 17 fitted at its lower end with a hinge-disk 17^a; and a lower member 18 fitted with a hinge-disk 18^a. The peripheries of said disks are provided with registering notches 19 which are engaged by a locking-pawl 20 which is pivotally mounted at 20^a and yieldingly held in the locking position by a torsion-spring 20^b. The hinge-disks 17^a and 18^a are pivotally connected by a bolt 21.

The locking-pawl 20 is equipped with an arm 20^c with which is connected a cord 22. The lock may be released by pulling upon the cord 22, whereupon the section 18 of the hanger may be swung outwardly.

The hangers are fitted at their lower ends with anti-friction bearings 23 in which are journalled stub-shafts 24, one of which has connected therewith the brake-wheel 6 of the brake device E′, which is of the construction previously described.

The stub-shafts are fitted with tube-engaging members 25 which preferably are tapered slightly. These tapered plugs engage the ends of the pasteboard tube D′. Obviously, when it is desired to introduce a fresh bale of batting strip, this may be done by releasing the locking-pawl 20 and swinging the hanger-section 18 outwardly, thus permitting the removal of the tube of the previous bale and enabling a loaded tube to be inserted.

The foregoing detailed description has been given for clearness of understanding only, and no unnecessary limitations should be understood therefrom, but the appended claims should be construed as broadly as permissible, in view of the prior art.

What I regard as new, and desire to secure by Letters Patent, is:

1. Plait-stuffing apparatus comprising a reel, a brake controlling said reel, and an insertion-tool controlling the operation of said brake.

2. Plait-stuffing apparatus comprising a reel adapted to carry a continuous strip of batting a brake controlling said reel, a rock-

member controlling said brake, and an insertion-tool suspended from said rock-member.

3. Plait-stuffing apparatus, comprising a reel adapted to carry a continuous strip of batting, a brake controlling said reel, a rock member controlling said brake, an insertion-tool, and a suspension member connected with the base end portion of said insertion-tool and shiftably connected with said rock-member.

4. Apparatus for the purpose set forth, comprising a suspended reel, a brake-device controlling the operation of said reel, a pivoted member controlling the operation of said brake device, a tubular insertion-tool, and a flexible member connecting the base end portion of said tool with said pivoted member.

5. Apparatus for the purpose set forth, comprising a pair of hanger-members, a shaft having a bearing in one of said hanger members, a brake-device connected with said shaft, means for supporting a roll of batting material on said shaft and the other hanger, said means permitting insertion of fresh rolls in the hangers, and an insertion-tool connected with and controlling the action of said brake-device.

ALLISTER S. MITCHELL.