No. 711,382. Patented Oct. 14, 1902.

W. E. BUSER.

TUFTING MACHINE.

(Application filed Dec. 18, 1901.)

(No Model.) 3 Sheets—Sheet 1.

Fig. 1.

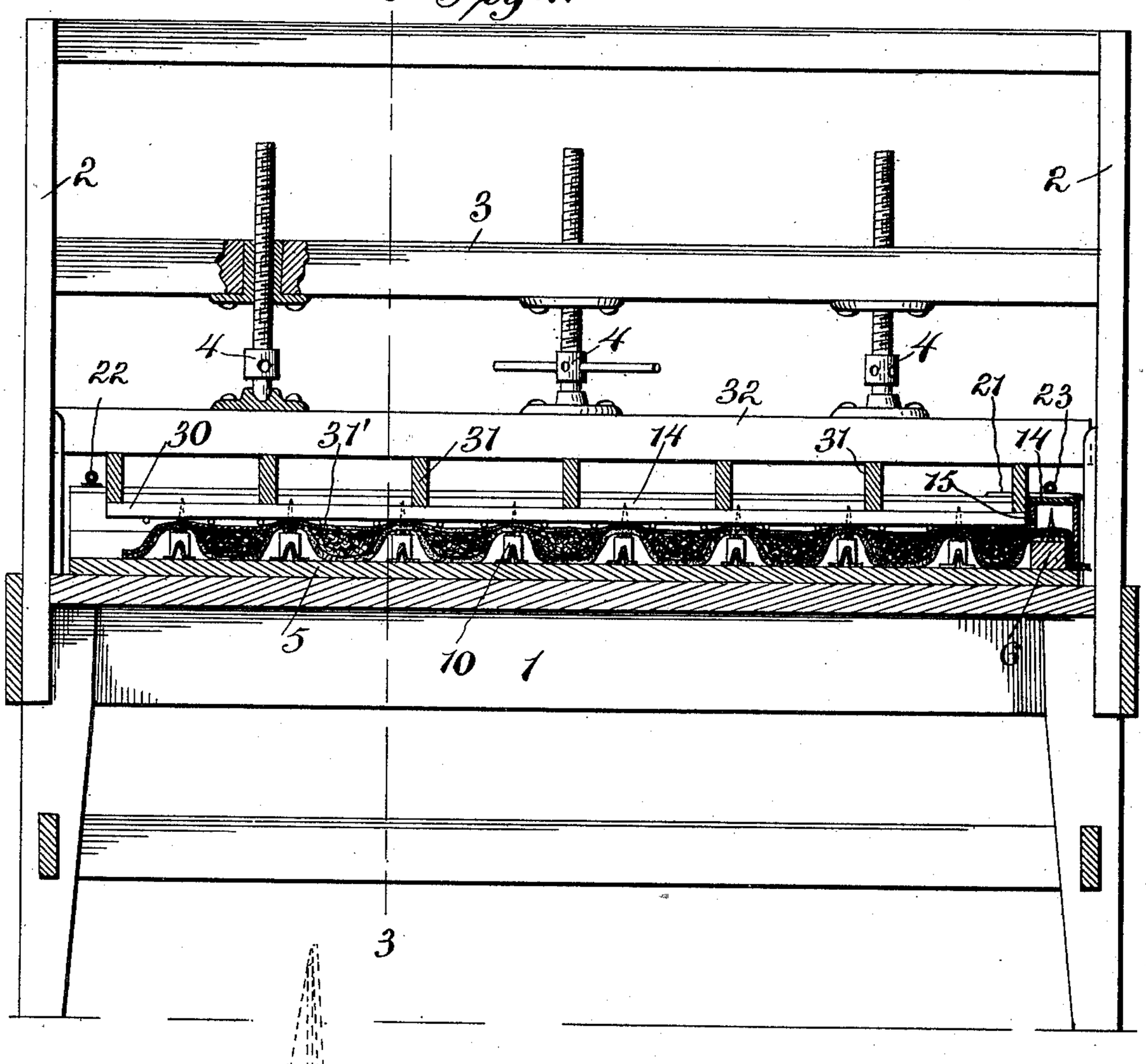


Fig. 7.

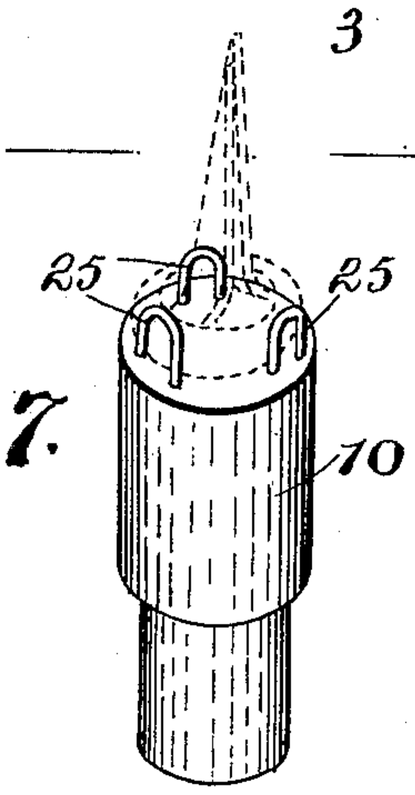
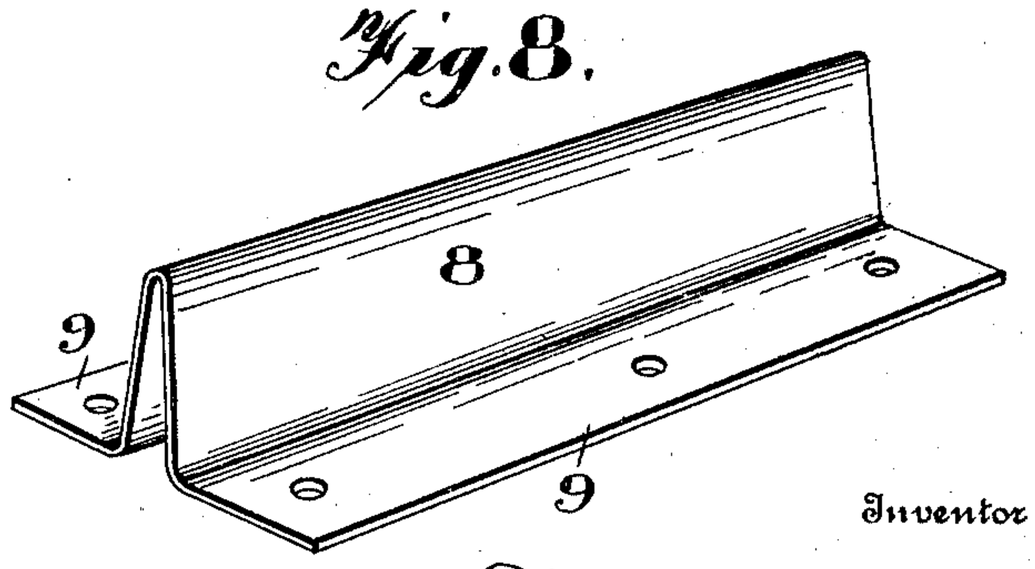


Fig. 8.



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(No Model.) 3 Sheets—Sheet 2.

Fig. 2.

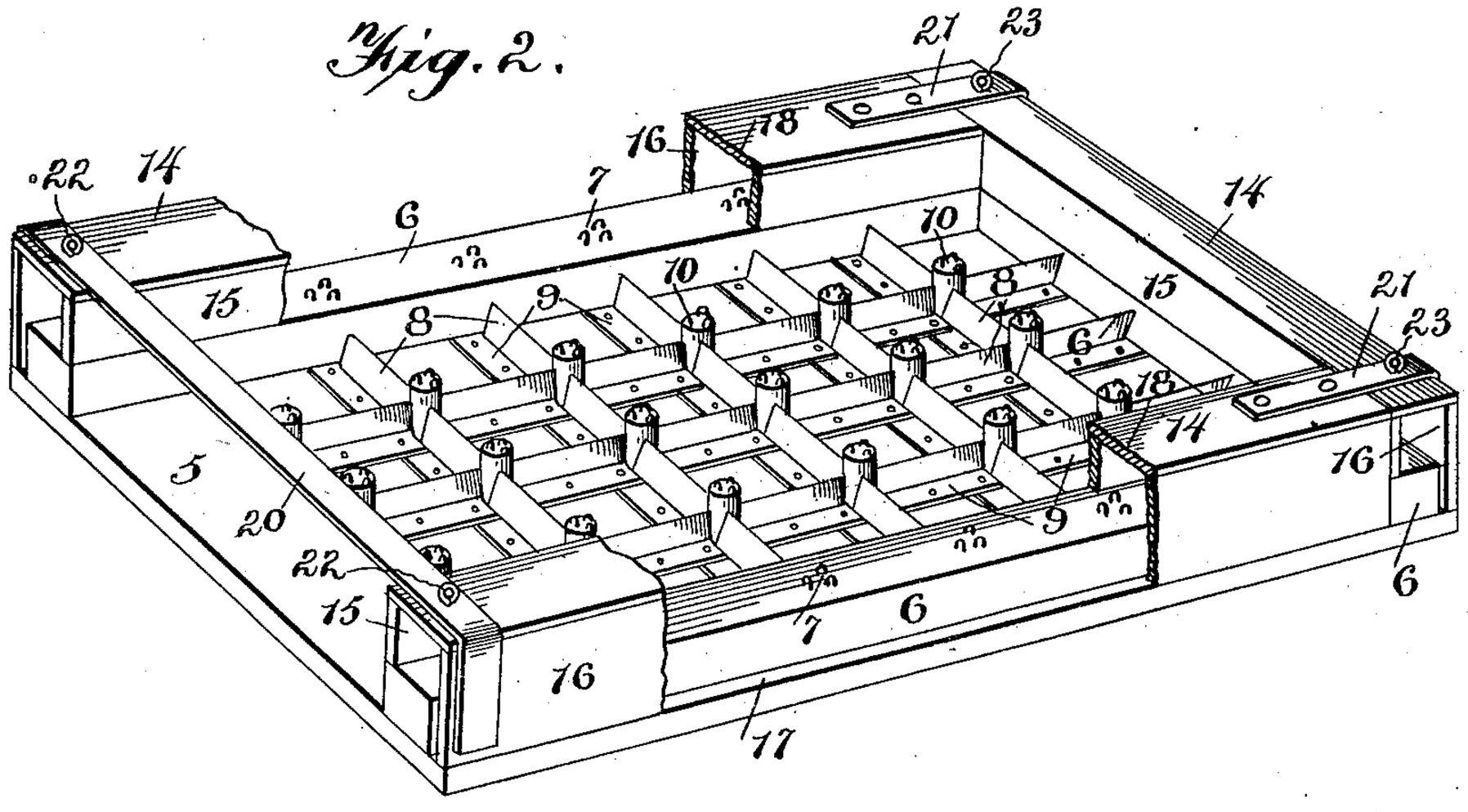

Fig. 4.

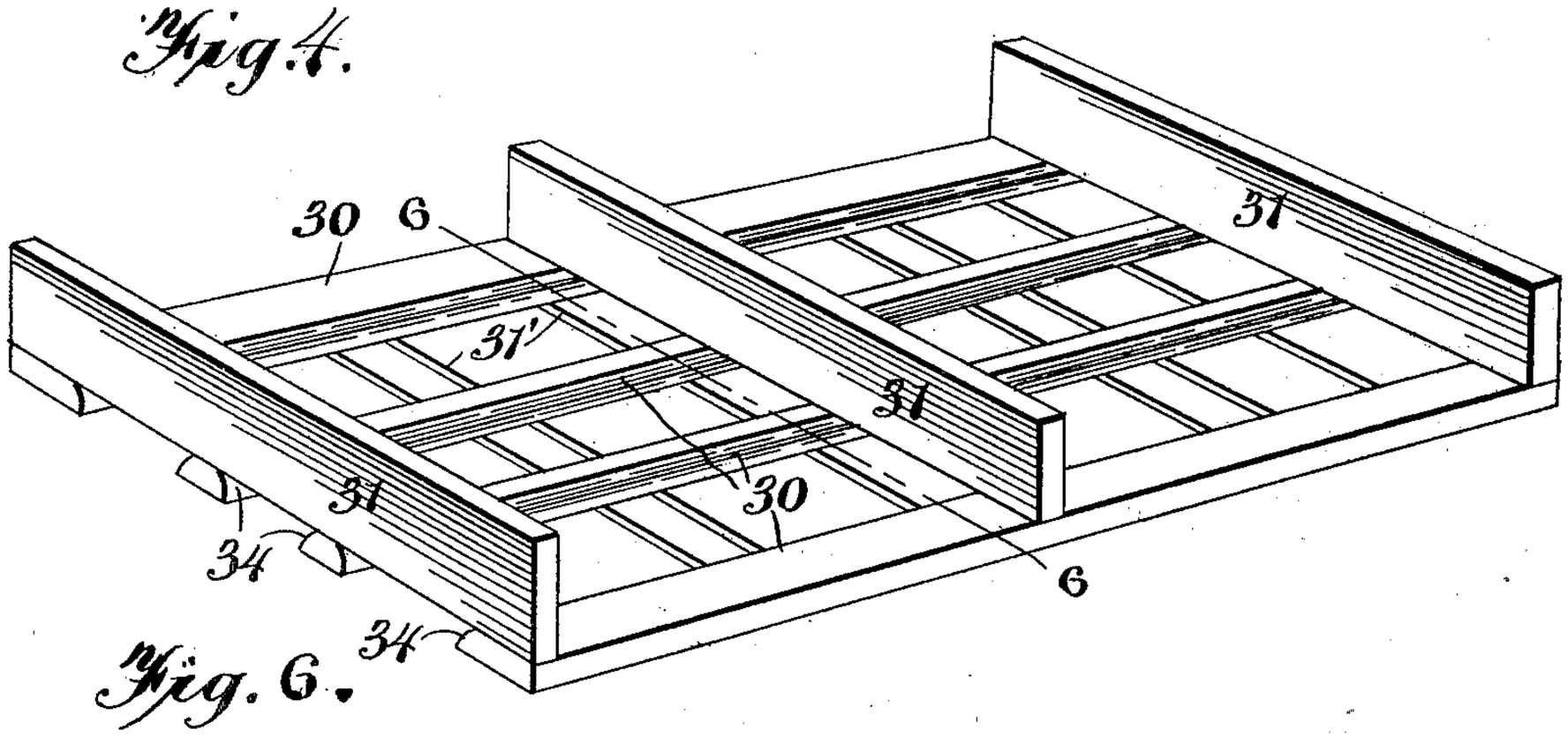

Fig. 6.

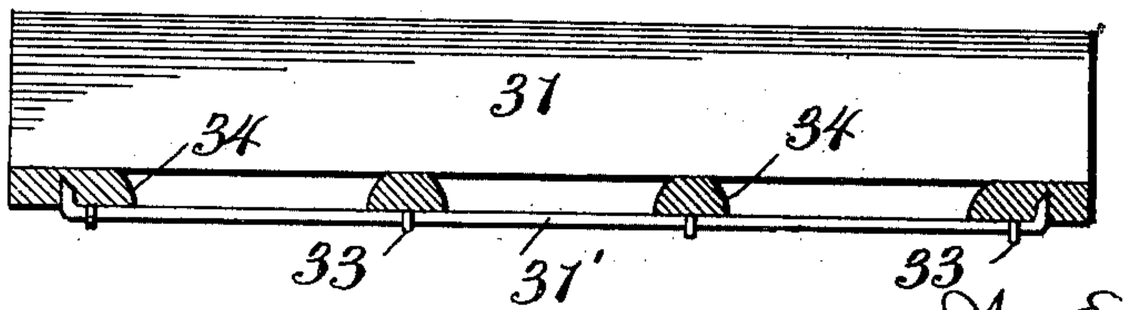

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Fig. 3.

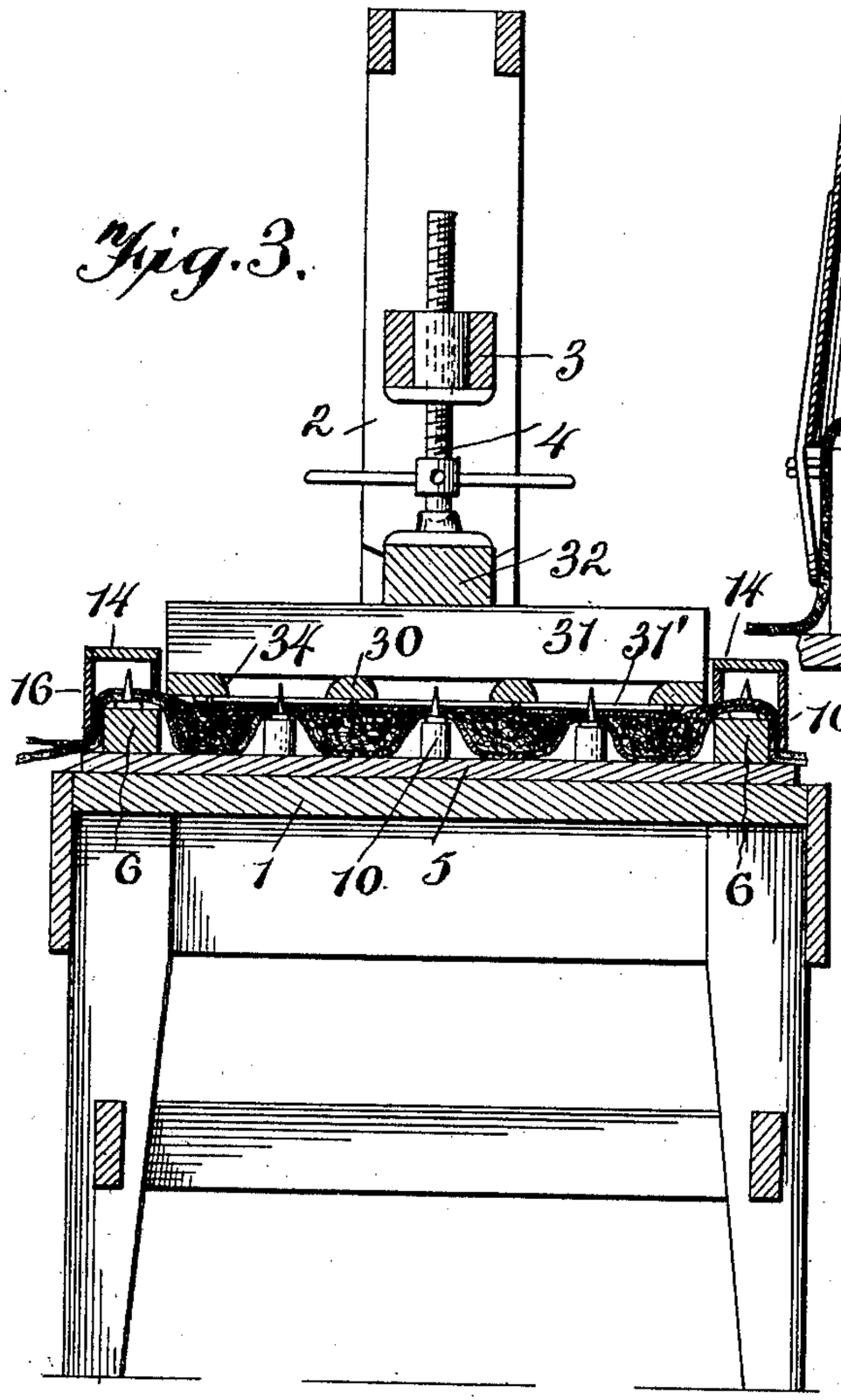


Fig. 9.

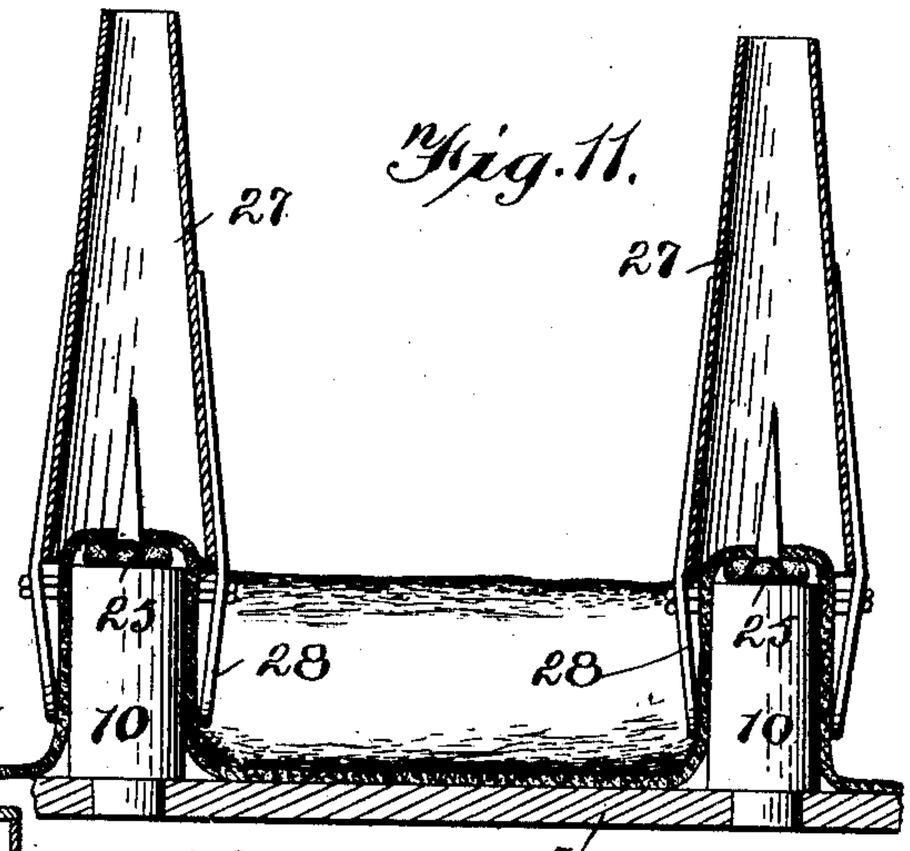
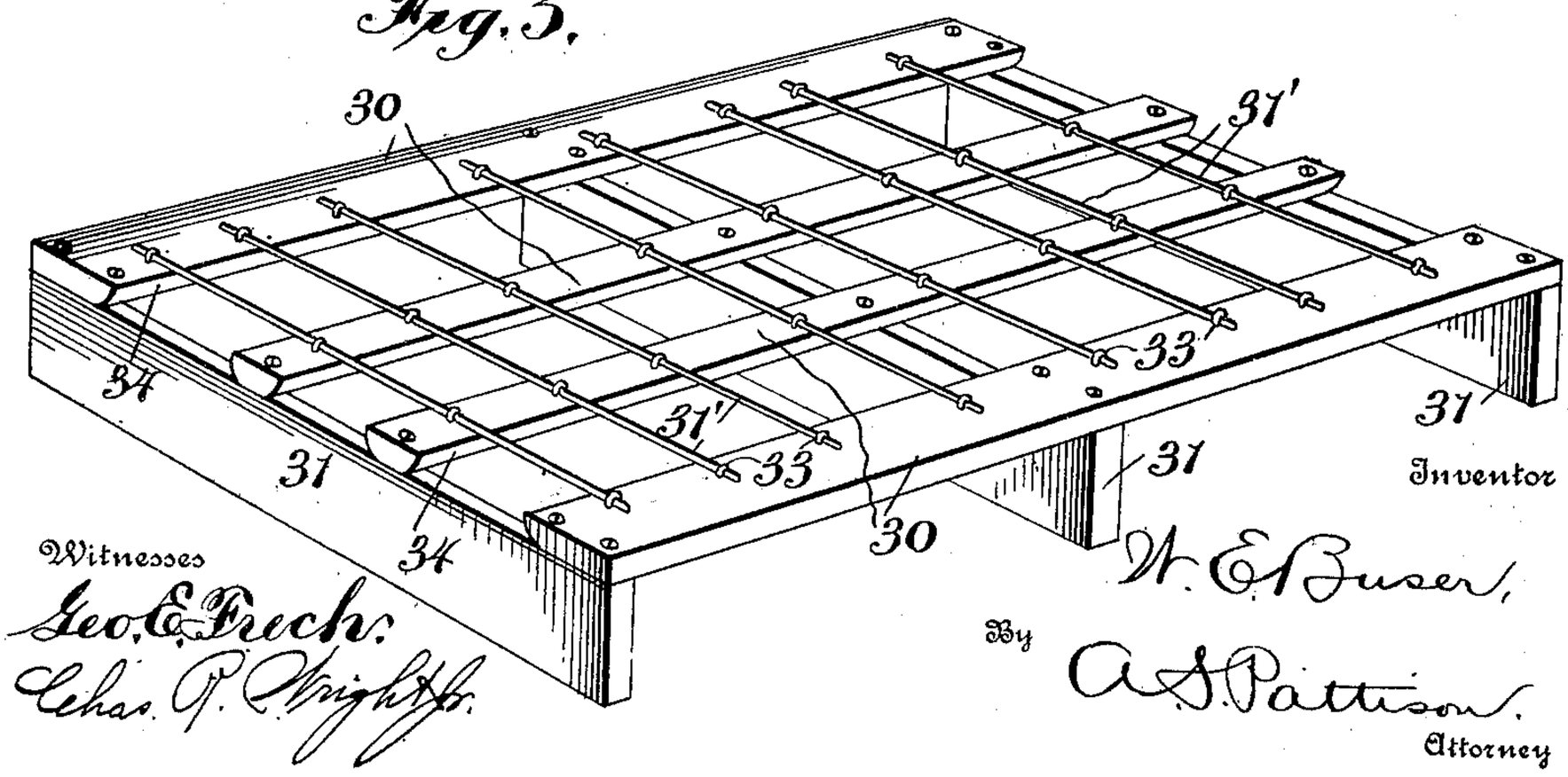


Fig. 11.

Fig. 10.

Fig. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM E. BUSER, OF CHILLICOTHE, OHIO.

TUFTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 711,382, dated October 14, 1902.

Application filed December 18, 1901. Serial No. 86,422. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. BUSER, a citizen of the United States, residing at Chillicothe, in the county of Ross and State of Ohio, have invented new and useful Improvements in Tufting-Machines, of which the following is a specification.

My invention relates to improvements in tufting-machines, all of which will be fully described hereinafter and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a transverse longitudinal sectional view of a tufting-machine embodying my invention. Fig. 2 is a detached perspective view of the moldboard, partly shown in section. Fig. 3 is a transverse sectional view taken on the line 3 3 of Fig. 1. Fig. 4 is a detached perspective view of my improved cloth or tow presser looking at the upper side thereof. Fig. 5 is a detached inverted perspective view of my improved cloth or tow presser. Fig. 6 is a transverse sectional view of my cloth or tow presser, taken on the line 6 6 of Fig. 4. Fig. 7 is an enlarged detached perspective view of my improved spring button-holder. Fig. 8 is a detached perspective view of my proved division-plate for forming the pocket of the moldboards. Fig. 9 is a detached perspective view of my improved cloth-plaiter and button-protector. Fig. 10 is a detached perspective view of a button usually used in connection with tufting-machines. Fig. 11 is an enlarged sectional view showing my improved cloth-plaiter and button-protector in position.

In the accompanying drawings, 1 indicates a table, stand, or other support from which projects the vertical standards 2. Connecting these vertical standards at a desired point is a beam 3, and adjustable in this beam 3 is any desired number of screw-pressers 4. My improved tufting apparatus is placed upon this table or stand 1, and the screw-pressers are used for the purpose of forcing the cloth or tow presser downward, and thus forcing the tow into the pockets of the moldboard, all of which will be fully described hereinafter.

The base 5 of my improved moldboard consists of a solid board, as here shown, and exending across one end and along opposite sides of the moldboard 5 is my improved continuous combined nail or button holder and tow-guide 6, and this combined button and tow-guide consists of continuous strips, as illustrated, and carried by these continuous strips are my improved button-holders 7, which will be specifically described presently. The pockets of the moldboard are formed by my improved metal walls 8, (specifically illustrated in Fig. 8,) which consist of essentially V-shaped metal plates, with outturned flanges 9, by means of which they are secured to the base 5 of the moldboard. At the intersection of the pockets formed by these improved metal pocket-walls 8 are situated the button-holding rods or projections 10. (Specifically shown in Fig. 7.) The combined button-holder and tow-guide 6 serves to strengthen the moldboard very much and also serves to keep the moldboard straight. They also serve to guide the tow into the pockets and to prevent it from spreading outward, as will be readily understood from Fig. 2.

By means of my improved metal pocket-walls 8 I provide a construction which is very strong and in practice is found to be practically indestructible.

In Fig. 2 is shown but one size, approximately, for the moldboard; but it will be readily understood that different moldboards may be provided and having pockets of various sizes to suit the particular work in hand.

Placed over my improved continuous button-holders and tow-guides are the combined hollow button-protectors and guides 14, which are here constructed to have their inner walls 15 rest upon the inner edges of the said guide 6 and their outer relatively wider walls 16 to rest upon a projecting ledge 17 of the base 5 of the moldboard and a top 18, the whole serving to protect the buttons held by the button-holders thereunder from the tow or material and at the same time serve as guides or holders for preventing the spreading of the tow outward, as will be readily understood, thus concentrating it and causing it to be forced into the pockets of the mold. These combined button-protectors and guides 14 are removable from the moldboard for the purpose of enabling the clenching of the buttons. When, however, they are in position, as shown in Fig. 2, they are prevented from being displaced or spreading through the medium of

the metal straps 20 and 21. The former span the moldboard, as shown, and have their ends extended downward at the outer sides of the combined button-protectors and guides 14 and are detachably held in position through the medium of detachable pins 22. The metal straps 21 have one end connected with the longitudinally-extending protectors 14 and their opposite ends extending downward and along the outer side of the end protector 14, and this is removably connected through the medium of the removable pins 23. By means of this construction the hollow protectors and guides 14 are firmly and reliably held in their proper positions during the pressing operation and are readily removable for the purpose of permitting access to the stems of the button for the purpose of enabling them to be turned over or clenched, as is well understood by those skilled in this art.

My improved button-holder, which is used both in connection with the projecting rods at the central or interior portion of the moldboard and also upon the continuous button supports and guides 6, consists of the U-shaped members 25, three of which are so situated as to constitute a button-holder, as clearly shown in Fig. 7. These U-shaped members or staples are capable of yielding sufficient to tightly clamp the button. This construction of button-holder is simple and strong and enables the cloth to be forced down in contact with the head of the button, since these members 25 do not project materially beyond the inner side of the head of the button when they are in position, as shown in Figs. 11 and 7.

My improved combined cloth-plaiter and button-protector to be used in connection with the button projections 10 consists of a metal tube 27, having secured thereto the U-shaped spring wire members 28, which have their outer free ends converging, as shown in Fig. 9. The stems of these members 28 are secured to the metal tube in any desired manner, but preferably by solder, which I find serves to hold them firmly in position. As shown in Fig. 11, these protectors and plaiters force the cloth down in contact with the inner side of the head of the button and also straddle the walls of the pockets. Being formed as here shown and described they are practically indestructible under proper service, and are therefore a great improvement over the form in common use. These button-protectors and plaiters, as is well understood by those skilled in the art, are placed over the buttons, and the tow or filling is placed in position by hand. The protectors are then removed, and a tow or cloth presser is then used to force the tow or filling into the pocket of the mold.

My improved cloth or tow presser consists of the longitudinally-extending members 30, there being one for each row of buttons and adapted to pass between them, as clearly shown in Fig. 3. Connected to the upper side of these longitudinal bars 30 and serving to connect them are the boards or transverse beams 31, upon which rests a suitable beam 32, as shown in Figs. 1 and 3, and the screw-compressors 4 engage this beam 32 by forcing the cloth-presser downward, and consequently the tow or filling, into the pockets of the mold. My improved presser also embodies transverse wires 31′, held in position by having their ends driven into the side bars of the pressers, as shown in Fig. 6, and by means of suitable staples 33. Attention is called to the fact that the upper side of the longitudinal bars are beveled or cut away, as shown at 34, whereby in connection with the said wires 31 free and ready access is had to the stems of the buttons, thus enabling them to be readily and firmly turned downward or clenched, a provision which has not, so far as I am aware, been adequately provided for in other forms of tufting-machines. By use of the spring-wire rods at the bottom of the presser the spring-wire rods of the presser will adjust themselves to any position, while in a perforated solid board of the form usually in use such action cannot be obtained. Also by means of this construction the spring-wire rods will press the cloth much closer to the head of the buttons and much tighter than the form of presser heretofore used.

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

1. In a tufting-machine, the combination of a moldboard having a plurality of pockets and button-holders, each holder consisting of a plurality of pairs of projecting arms, between which the rounded portions of the buttons project, each pair of projecting arms connected by a transverse portion under and between which the heads of the buttons project.

2. In a tufting-machine, the combination of a moldboard having a plurality of pockets, and button-holders, each holder consisting of a plurality of inverted projecting U-shaped members between the arms and under the transverse portions of which members the heads of the buttons project.

3. In a tufting-machine, the combination of a moldboard having a plurality of pockets, the outer walls of the outer series of pockets consisting of a continuous strip, button-holders carried by the said continuous strip, and a continuous cover for the said continuous strips, substantially as described.

4. In a tufting-machine, the combination of a moldboard having a plurality of pockets, button-holders situated in a line with the walls of the said pockets, and elongated covering members adapted to extend over and cover the outer row of button-holders and serve also as tow-guides and retaining members, substantially as described.

5. In a tufting-machine, the combination of a moldboard having a plurality of pockets, button-holders, elongated covers for the outer rows of button-holders, and connecting mem-

bers for the ends of the elongated covers, substantially as described.

6. In a tufting-machine, the combination of a moldboard having a plurality of pockets, the outer walls of the outer series of pockets consisting of elongated strips, and elongated essentially inverted-U-shaped members extending over the elongated strips, and button-holders carried by the elongated strips and at proper points between the pockets and the moldboard, substantially as and for the purpose described.

7. In a tufting-machine, the combination of a moldboard having a plurality of pockets, the outer walls of the outer series of pockets consisting of continuous strips provided with button-holders, and removable elongated essentially inverted-U-shaped combined button-protectors and guides, extending over the top of the continuous strips, substantially as and for the purpose described.

8. In a tufting-machine, the combination of a moldboard having a plurality of pockets, projecting button-carriers located in a line with the walls of the said pockets, and a button-protector and cloth-plaiter consisting of a hollow member provided with doubled projecting spring members secured to the hollow member, substantially as described.

9. In a tufting-machine, the combination of a moldboard having a plurality of pockets and button-holders, of a button-protector and cloth-plaiter, consisting of a hollow member provided with a plurality of doubled spring members having their free ends secured to the hollow member, and their doubled ends projecting and adapted to span the button-holders, substantially as described.

10. In a tufting-machine, the combination with a moldboard having a plurality of pockets and button-holders, of a cloth or tow presser provided with a plurality of parallel strips adapted to pass between said button-holders, and a plurality of laterally-yielding spring members extending at right angles to and in parallel lines across said strips.

11. In a tufting-machine, the combination of a moldboard having a plurality of pockets, the walls of the pockets consisting of metal plates separate from the moldboard, the said plates being essentially V-shaped in cross-section and having oppositely and outwardly extending flanges resting upon and secured to the upper side of the base of the moldboard, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WILLIAM E. BUSER.

Witnesses:
SUE SENFF,
WM. M. WOODROW.