No. 803,270. PATENTED OCT. 31, 1905.

T. H. BUTLER.

WALL PAPERING MACHINE.

APPLICATION FILED MAR. 8, 1905.

2 SHEETS—SHEET 1.

Fig. 1.

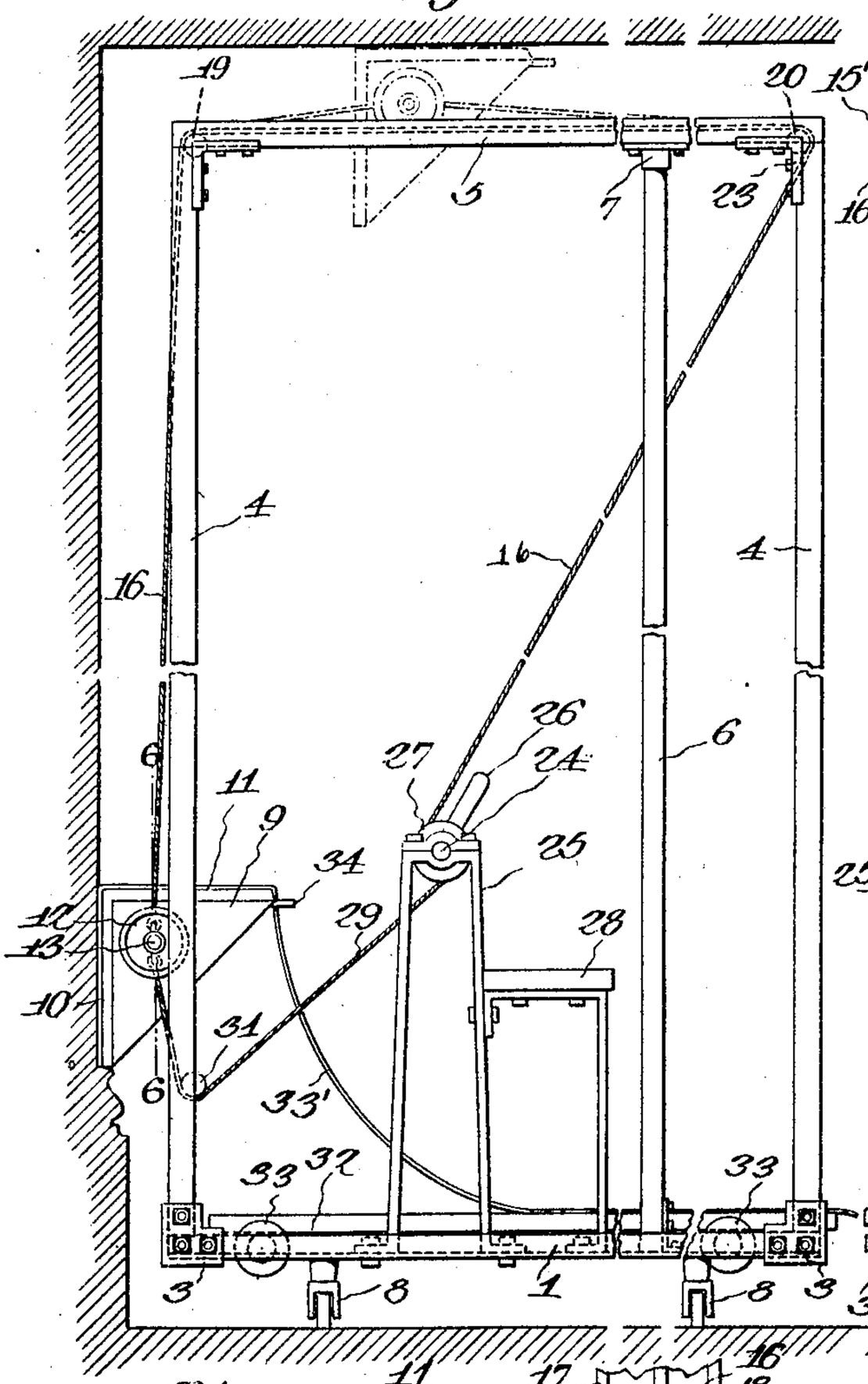
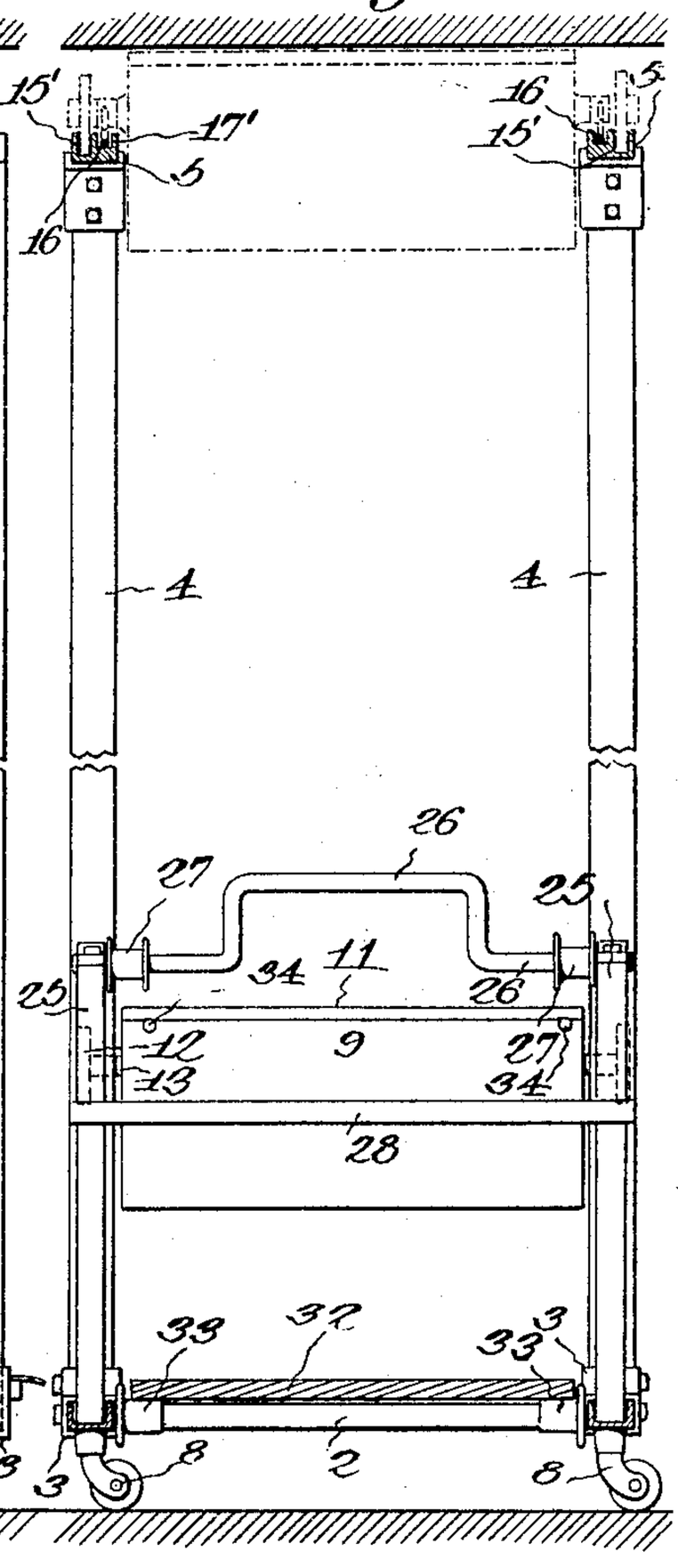


Fig. 2.



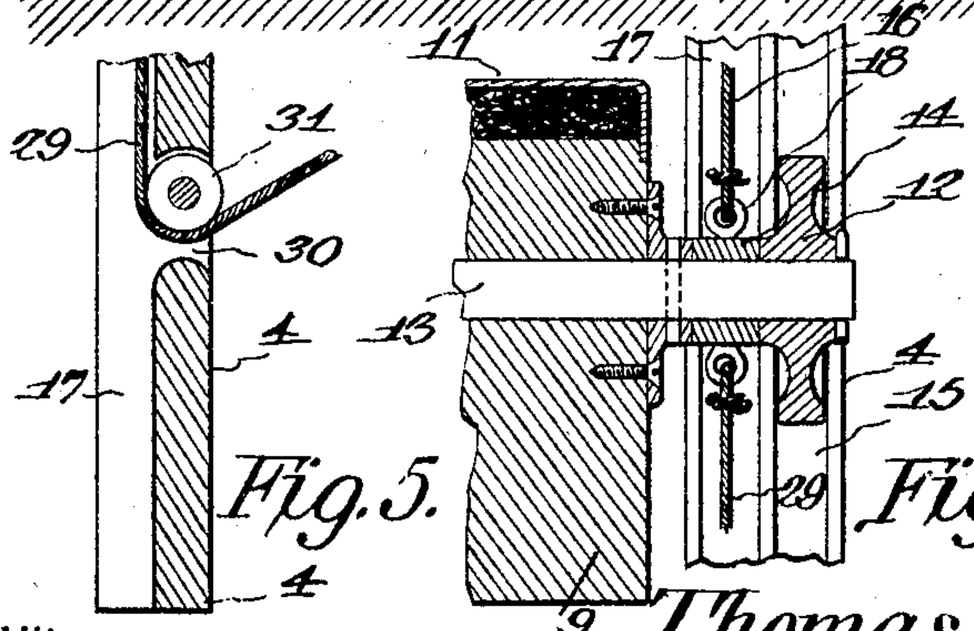


Fig. 5.

Fig. 6.

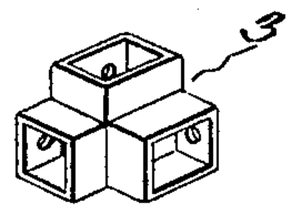


Fig. 7.

Witnesses

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WALL PAPERING MACHINE.

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2 SHEETS—SHEET 2.

Fig. 3.

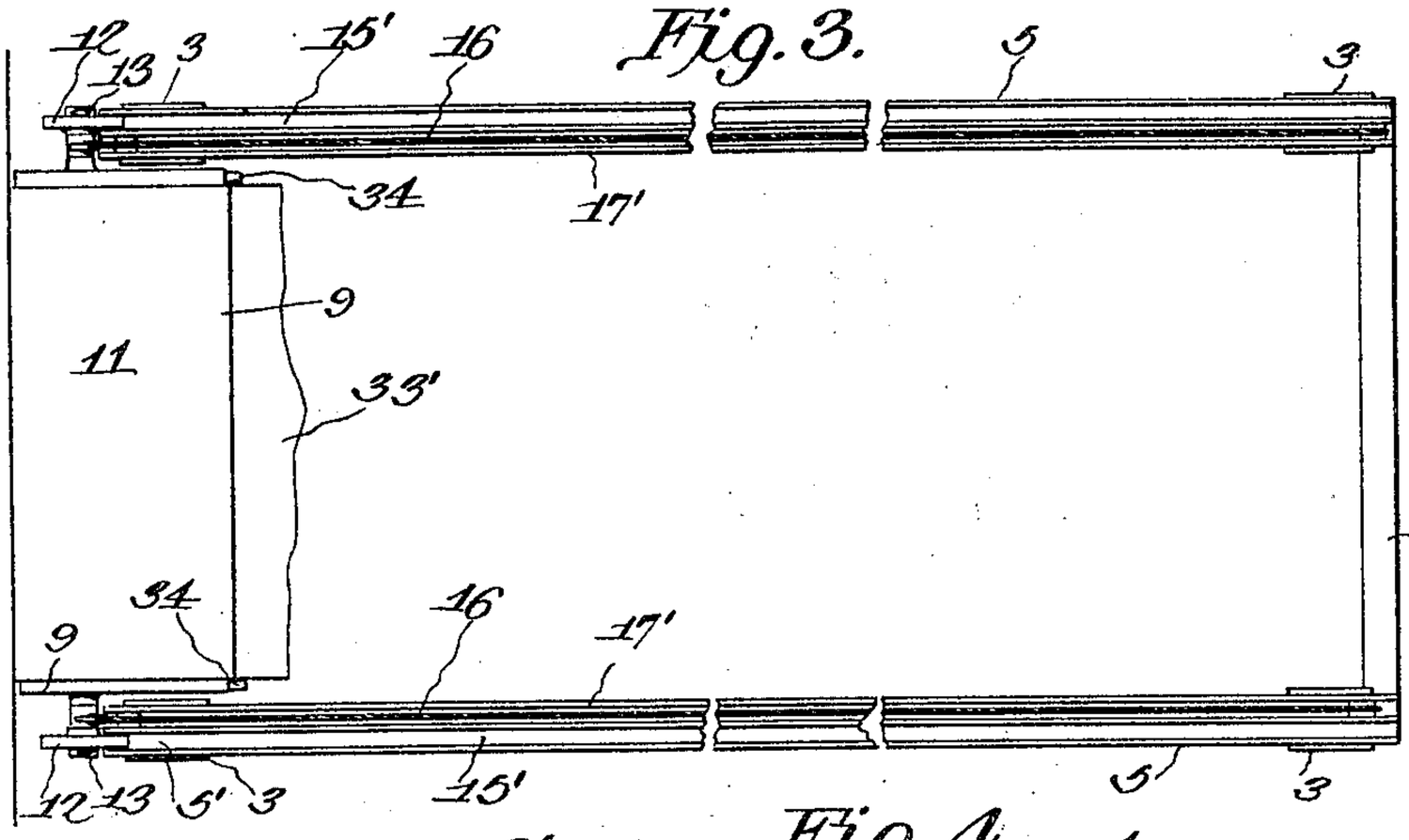
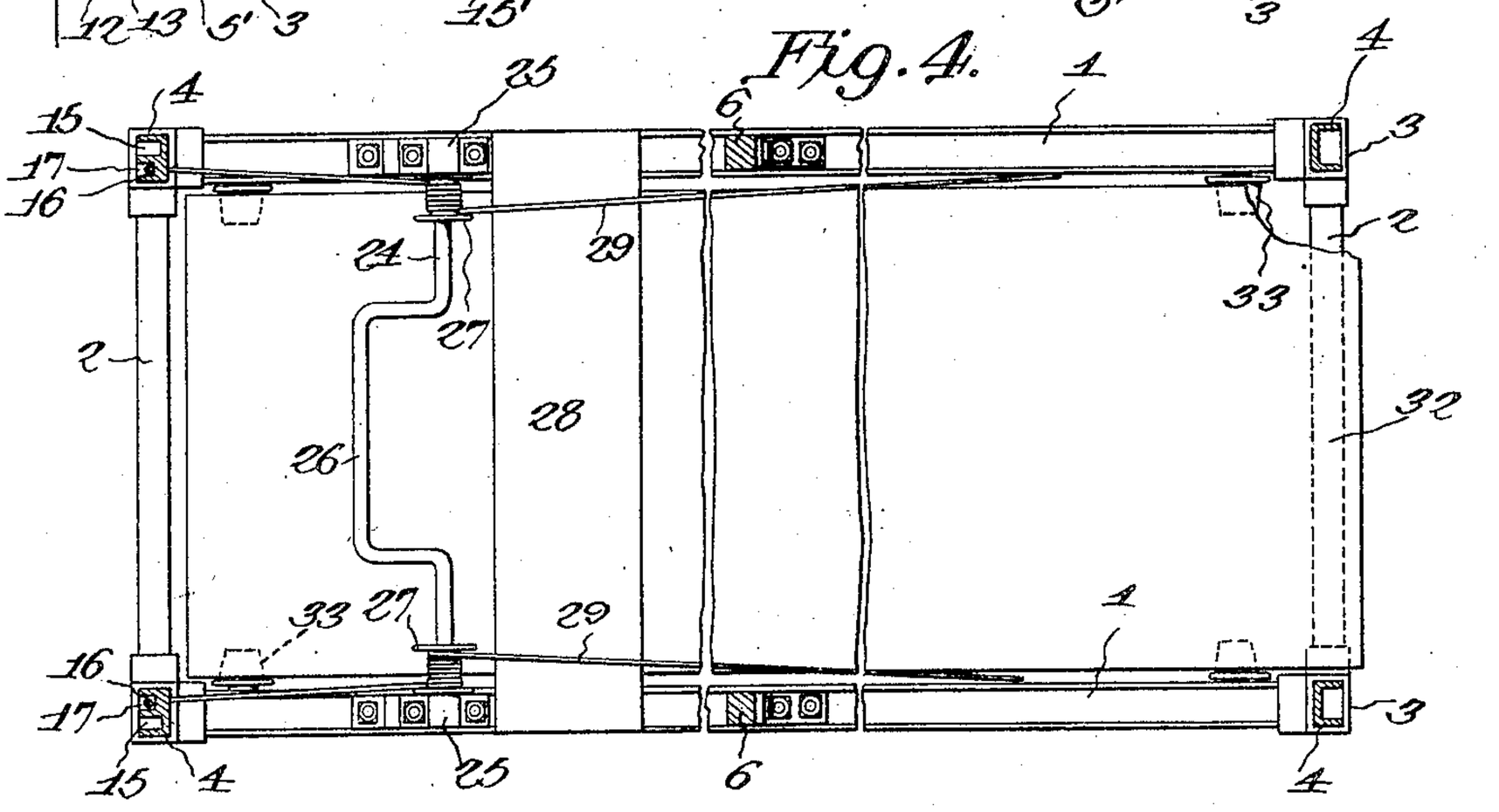


Fig. 4.



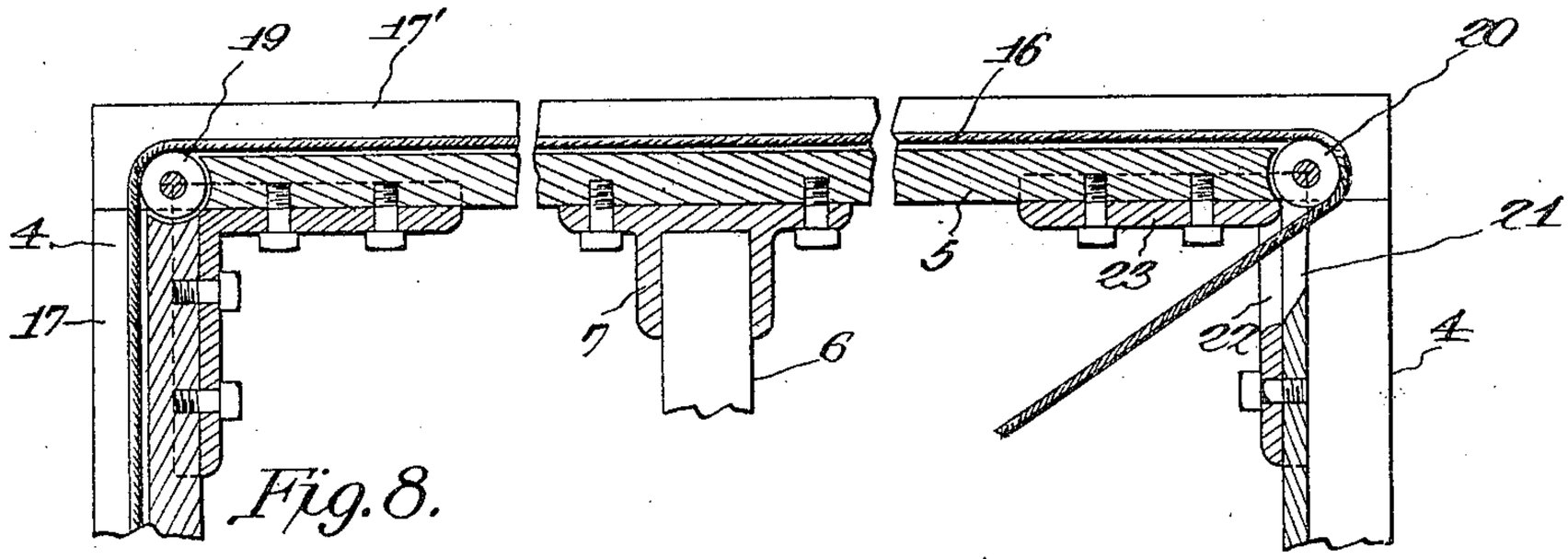


Fig. 8.

Witnesses

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UNITED STATES PATENT OFFICE.

THOMAS H. BUTLER, OF BIRMINGHAM, ALABAMA.

WALL-PAPERING MACHINE.

No. 803,270. Specification of Letters Patent. Patented Oct. 31, 1905.

Application filed March 8, 1905. Serial No. 249,090.

To all whom it may concern:

Be it known that I, THOMAS H. BUTLER, a citizen of the United States, residing at Birmingham, in the county of Jefferson and State of Alabama, have invented a new and useful Wall-Papering Machine, of which the following is a specification.

This invention relates to wall-papering machines, and has for its object to provide certain new and useful improvements in the construction and arrangement of such devices whereby the operation of handling and pasting paper upon walls and ceilings is materially facilitated and the proper meeting of the edges of the strips of paper is insured. It is also proposed to have the paper-smoothing brush or wiper feed the paper to the wall by the traveling movement of the brush, thereby to insure the proper feeding of the paper and to prevent interference of the brush by surplus paper or a lack of paper.

A further object of the invention is to provide for working the paper-smoothing brush or wiper upwardly upon the wall and thence across the ceiling to successively apply the wall and the ceiling papers in a simple and improved manner without requiring any manual handling of the paper after the latter has been placed upon the machine and engaged with the wiper.

Other objects and advantages will appear in the following disclosure of the invention, the latter consisting in the combination and arrangements of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a side elevation of a wall-papering machine embodying the features of the present invention and shown in operative position. Fig. 2 is a vertical transverse sectional view of the machine. Fig. 3 is a top plan view thereof with certain portions of the operating mechanism omitted. Fig. 4 is a plan section. Fig. 5 is a detail fragmentary sectional view showing one of the lower front guides for the operating-cable. Fig. 6 is an enlarged detail sectional view on the line 6 6 of Fig. 1. Fig. 7 is a detail perspective view of one of the corner-brackets of the frame. Fig. 8 is an enlarged detail sectional view taken longitudinally through one of the upper frame-bars.

Like characters of reference designate corresponding parts in each and every figure of the drawings.

For the support of the operating parts of the present machine there is a skeleton substantially rectangular frame, including a pair of lower frame-bars or base-sills 1, which are connected at opposite ends by front and rear cross-bars 2, there being three-way corner-brackets 3 connecting the adjacent ends of these frame-bars. At each corner of this base-frame there is a post or standard 4, which is fitted in the upright socket of the adjacent corner-bracket. The tops of each pair of front and rear posts or standards is connected by an upper frame-bar 5. Where the length of the frame requires an additional support for the upper frame-bars, an intermediate post or standard 6 may be employed, with its lower end resting upon one of the base-sills and its upper end connected to the under side of the adjacent upper bar by means of a socket or coupling 7, provided upon the under side of the bar 5. Suitable caster-wheels 8 are provided upon the under sides of the base-sills to facilitate the moving of the frame. It will here be explained that it is proposed to provide sets of posts or standards 4 and 6 of different lengths to accommodate the machine to rooms of different heights, and therefore the connections between the standards and the upper and lower frame-bars should be conveniently detachable to permit of the interchangeable employment of the different sets of posts or standards.

The paper-smoothing brush or wiper 9 works vertically between the front uprights or posts 4 and, as clearly indicated in Fig. 1, has the cross-sectional shape of a right-angle triangle, with its vertical face 10 projected in front of the front standard and its top face 11 disposed horizontally and projected rearwardly between the standards. At each end of this brush or wiper there is a wheel or roller 12, mounted upon a fixed shaft 13, carried by the wiper and projected beyond the end thereof, the roller 12 being spaced from

the adjacent end of the wiper by a suitable spacer 14, preferably in the nature of a tubular bracket embracing the shaft and secured to the wiper. As best indicated in Figs. 3 and 6, it will be noticed that the ends of the shaft 13 overlap the front sides of the front standard 4 in order that the wheels or rollers 12 may run in the guideways or tracks 15, preferably grooves of channels formed in the front faces of the standards and continuing in the top faces of the upper frame-bars 5, as shown at 15′ in Fig. 3 of the drawings. It will here be explained that the shaft 13 is fixed upon the wiper, and the wheels or rollers 12 rotate loosely thereon, as it is intended to make use of the projected portions of the shaft to support the wiper.

For the support of the paper-smoothing brush or wiper there is a pair of cables, (designated 16,) which work in channels or guideways 17 in the front faces of the front standards 4 and in continuations 17′ of said guideways in the upper faces of the upper frame-bars 5. One end of each of these cables is connected to the adjacent projected end of the shaft or axle 13 of the wiper in any preferred manner—for instance, as shown in Fig. 6, by being tied or hooked into an eye 18, projecting upwardly from the top of the spacer 14, from which the cable extends upwardly and passes over and rearwardly across a guide-pulley 19, mounted in the forward end portion of the guideway 17′ in the adjacent upper frame-bar 5 at the intersection of the guideways 17 and 17′. A similar guide-pulley 20 is mounted in the rear end of each guideway 17′, from which the cable is inclined downwardly and forwardly through an opening 21 in the adjacent rear standard 4 and also through a corresponding opening 22 in the internal corner-bracket 23, which is employed to connect the rear standard 4 with the upper frame-bar 5. At a suitable distance in rear of the front standards 4 there is a substantially horizontal shaft 24, terminally mounted in bearing-brackets 25, rising from the sills 1, said shaft being provided midway of its ends with a crank-bend 26, constituting a handle for rotating the shaft. Upon each end of the shaft and rotatable therewith is a drum 27, around which is wound the end of that portion of the cable which inclines downwardly and forwardly from the adjacent rear guide-roller 20. In rear of the drum-shaft 24 there is a seat 28 for the operator, who rotates the drums by manipulation of the crank-handle 26 to wind the cables upon the drums, so as to draw the paper-smoothing brush or wiper upwardly and thence rearwardly across the top of the frame, as indicated by dotted lines in Fig. 1 of the drawings. Another cable 29 is hung from each of the spacers 14 and passes downwardly through the guideway 17 and thence rearwardly through an opening 30 in the standard and across a guide-pulley 31, mounted in said opening, from which the cable extends to the adjacent drum 27 and is wound thereon reversely with respect to the cable 16. By this arrangement when the drums are rotated in a direction to wind the cables 16 thereon, and thereby elevate the wiper 9, the cable 29 will be paid out to permit of this elevation of the wiper. After the wiper has been moved upwardly and thence rearwardly upon the top frame-bars 5 the drums are rotated in the reverse direction, so as to wind the cables 29 upon the drums, and thereby draw the wiper back to its original position.

It is proposed to carry the wall-paper upon the frame of the machine in position to be taken up by the paper-smoothing brush or wiper, and this feature is attained by means of a paper table or platform 32, which is capable of being inserted and removed between the rear uprights or standards 3 of the frame and beneath the seat 28 and the shaft 24, there being antifriction supporting-rolls 33, projected inwardly from the base-sills 1, adjacent the front and rear ends thereof for the support of this table or platform.

In practice the paper table or platform 32 is drawn rearwardly out of the machine and placed upon the paper-hanger's table, whereupon the wall-paper is placed face downward upon the platform and the paste applied to the upper reverse face of the paper in the usual manner, after which the platform is run into the machine and placed in the position shown in Figs. 1 and 2. The wall-paper, with the paste applied thereto, is indicated at 33′ in Fig. 1 with its front end portion passed forwardly over the top of the wiper 9 and thence downwardly across the front of the wiper, with the pasted side uppermost, so that when the machine is run up to a wall the front extremity of the pasted paper will be pressed firmly against the wall by the wiper 9. The operator then seats himself upon the seat 28 and manipulates the crank-handle 26 so as to wind the cables 16 upon the drum, and thereby elevate the wiper, which draws the paper upwardly and wipes across the same, so as to press it firmly against the wall, to which it adheres. To prevent edgewise displacement of the paper from the wiper, the latter is provided with a pair of rearwardly-directed guard fingers or projections 34, extending from the rear upper portion of the wiper and spaced to receive the paper therebetween. When the wiper reaches the upper end of the wall, its upper face 11 is then pressed against the ceiling and the wiper is

worked rearwardly across the top of the frame, so as to apply the ceiling-paper in the same manner as described for the application of the wall-paper. In this connection it will of course be understood that the ceiling-strip of paper is pasted to what will be the upper end of the wall-paper strip prior to the application of the paper to the wall, whereby the ceiling-paper is lifted with the wall-paper under the ascending movement of the wiper and the continuous movement of the wiper upwardly at the front of the machine and thence rearwardly across the top thereof to apply the paper in a simple and expeditious manner without requiring that the machine be stopped at the completion of the application of the wall-paper preparatory to applying the ceiling-paper.

A very important advantage of the present invention resides in the fact that the paper is automatically fed by the brush or wiper itself from the lower portion of the wall upwardly and thence across the ceiling, whereby there can be neither a surplus amount nor a lack of paper in front of the wiper, and thus a smooth and neat papering of the wall and ceiling is insured. Moreover, after the paste has been applied to the paper and the latter placed upon the paper table or platform with its forward end passed over the top of the wiper and thence downwardly at the front thereof no further manual handling of the paper is necessary, as the wiper is controlled by the crank-handle 26 and the paper is fed to the wall by the wiper itself.

Having thus described the invention, what is claimed is—

1. A paper-hanging machine comprising a supporting-frame, a substantially horizontal normally fixed paper-supporting table carried by the frame, and a paper-smoothing wiper working vertically upon the frame at one end of the table, said wiper constituting a feed device to lift the paper from the table during the upward movement of the wiper.

2. A paper-hanging machine comprising a frame and a traveling paper-smoothing wiper working upwardly across the frame and rearwardly across the top thereof, said wiper having a vertical front face projected in front of the frame and a substantially horizontal top face projected above the top of the frame when the wiper is moving thereacross.

3. A paper-hanging machine having a vertical track and a transverse track leading rearwardly from the top of the vertical track, a paper-smoothing wiper traveling upon the two tracks, winding mechanism carried by the frame, a cable leading upwardly and rearwardly through guides at the top of the upright track and at the rear of the transverse track and thence downwardly to the winding mechanism, and another cable depending from the wiper through a guide at the bottom of the upright track and thence wound around the winding mechanism reversely with respect to the first-mentioned cable.

4. A paper-hanging machine comprising a frame having a vertical track, a paper-smoothing wiper traveling upon the track, cable-guides at the top and bottom of the track, winding mechanism mounted upon the frame and including a substantially horizontal shaft having an intermediate crank-bend constituting an operating-handle therefor, drums upon the shaft at opposite sides of the crank-bend, a hoisting-cable leading upwardly from the wiper through the upper cable-guide and thence around one of the drums, and another cable leading downwardly from the wiper through the lower cable-guide and wound around the other drum reversely with respect to the first-mentioned cable.

5. In a paper-hanging machine, the combination with a frame having spaced front uprights and upper frame-bars leading rearwardly therefrom, each of said uprights and the adjacent frame-bar having parallel guideways therein with the corresponding guideways of the upright and the frame-bar in communication, a paper-smoothing wiper having rollers working in corresponding guideways, cable-guides at the tops and bottoms and the rear ends of the other guideways, winding mechanism mounted upon the frame, hoisting-cables rising from the wiper in said other guideways and passing rearwardly through the upper guides thence rearwardly and downwardly through the rear guides to the winding mechanism, and other cables depending from the wiper and extending rearwardly through the lower cable-guides and engaged with the winding mechanism reversely with respect to the first-mentioned cable.

6. In a paper-hanging machine, the combination with a frame, of a paper-smoothing wiper mounted to travel upon the frame, and a removable table arranged to hold cut sheets of paper in a flat state.

7. In a paper-hanging machine, the combination with a frame having front and rear pairs of spaced uprights, a paper-smoothing wiper working vertically upon the front pair of uprights, and a paper-table insertible and removable through the space between the rear uprights.

8. In a paper-hanging machine, the combination with a frame, of a paper-smoothing wiper mounted to travel upon the frame, antifriction-rollers carried by the frame, and an endwise-removable paper-table supported upon the antifriction-rollers.

9. In a paper-hanging machine, the com-

bination with a frame, of a paper-smoothing wiper traveling upon the frame, winding mechanism mounted upon the frame and including an intermediate crank-bend constituting an operating-handle, a cable-guide at the top of the frame, a hoisting-cable connected to the wiper and the winding mechanism and engaging the cable-guide, and a paper-supporting table mounted upon the frame below the lower limit of the wiper and below the winding mechanism.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

THOMAS H. BUTLER.

Witnesses:

CHARLEY JOINER,

JAMES RILEY.