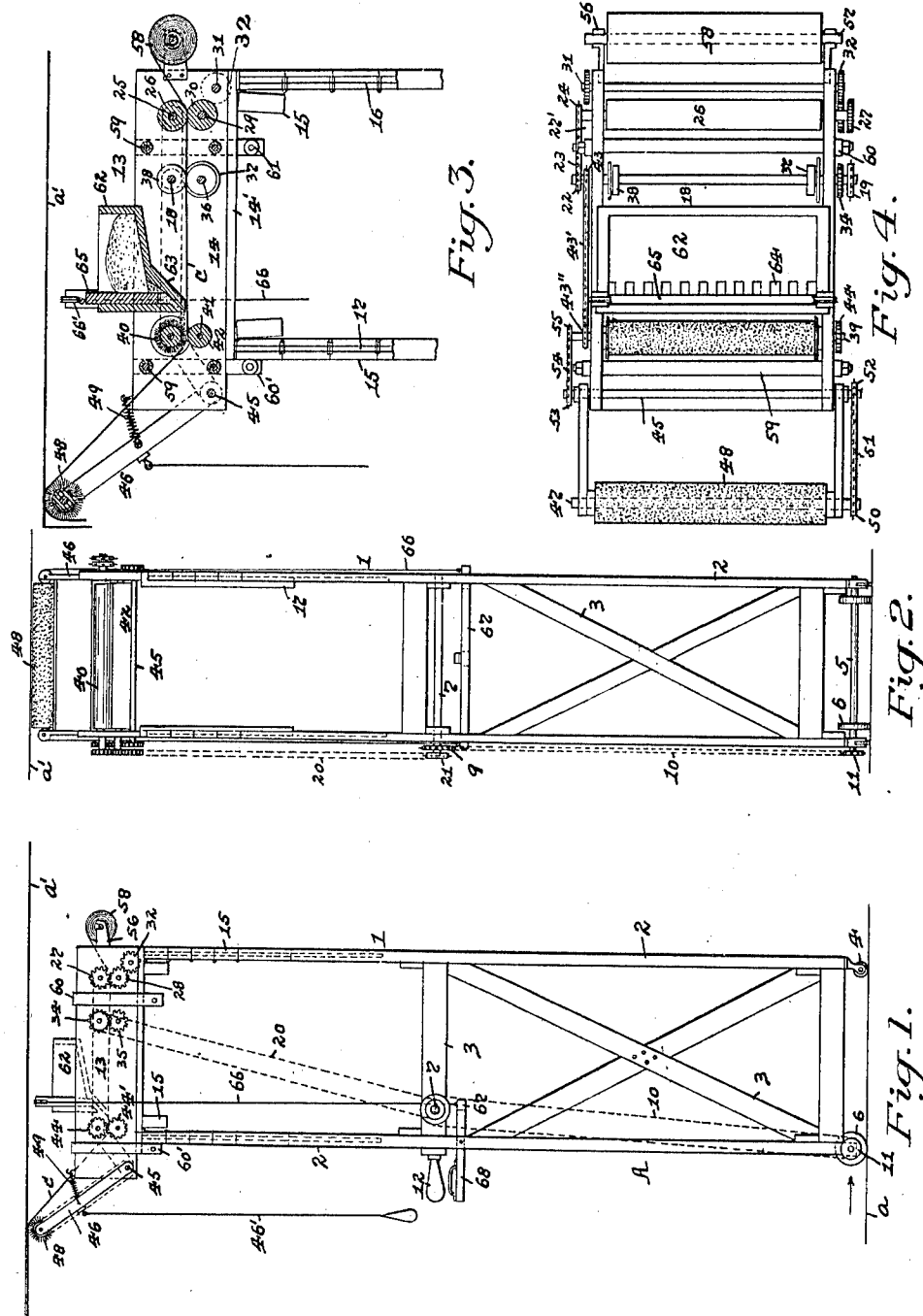


992,533.

J. ATKINSON.
PAPER HANGING MACHINE.
APPLICATION FILED NOV. 22, 1909.

Patented May 16, 1911.

2 SHEETS—SHEET 1.



WITNESSES

A. D. P. Miller.
O. L. Thompson.

INVENTOR

James Atkinson,
By J. M. Cooke,
attorney.

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2 SHEETS-SHEET 2.

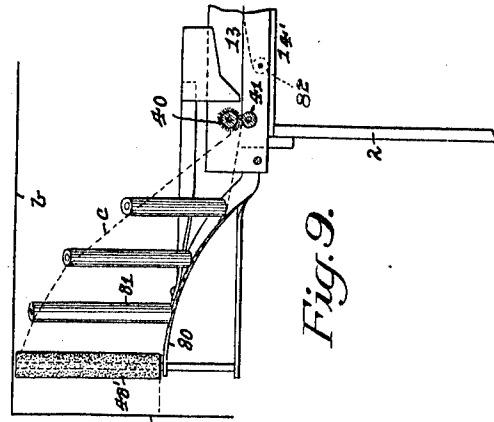


Fig. 9.

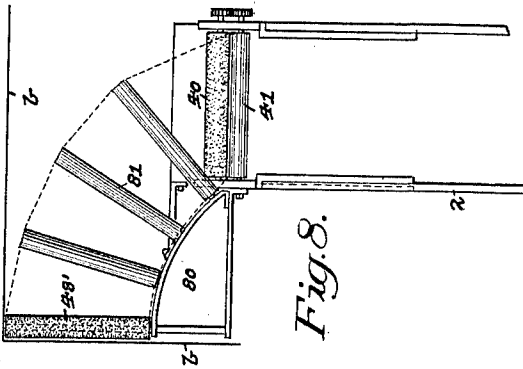


Fig. 8.

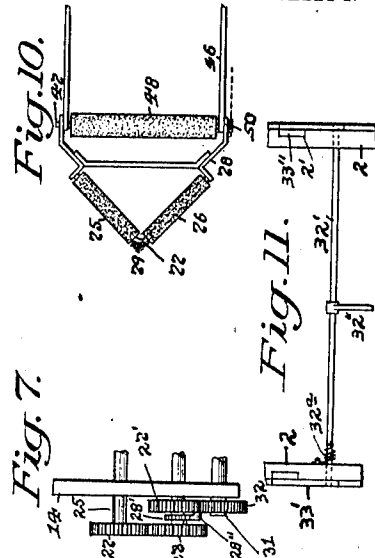


Fig. 10.

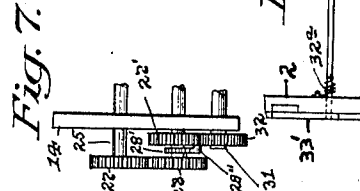


Fig. 11.

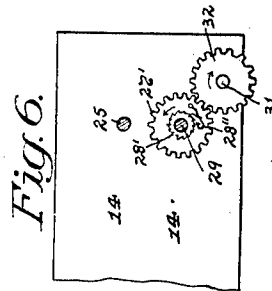


Fig. 6.

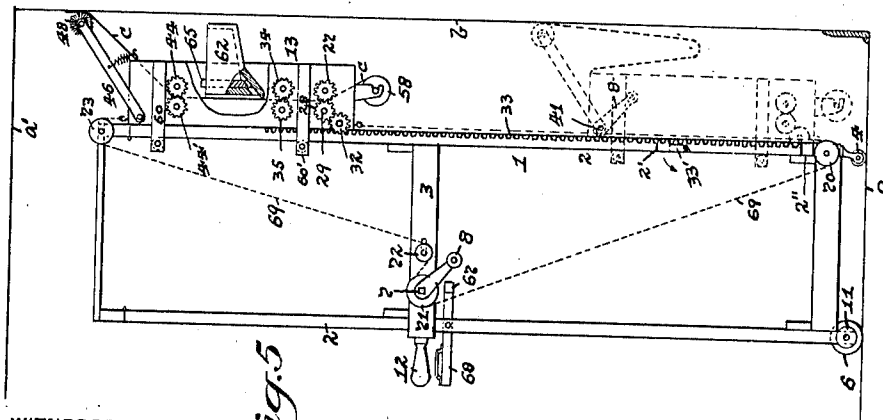


Fig. 5.

WITNESSES

A. D. P. Miller.
O. L. Thompson.

INVENTOR

James Atkinson.
By J. C. Cooke,
Attorney.

UNITED STATES PATENT OFFICE.

JAMES ATKINSON, OF PITTSBURG, PENNSYLVANIA.

PAPER-HANGING MACHINE.

992,533.

Specification of Letters Patent.

Patented May 16, 1911.

Application filed November 22, 1909. Serial No. 529,396.

To all whom it may concern:

Be it known that I, JAMES ATKINSON, a resident of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Paper-Hanging Machines; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to an apparatus for hanging paper, and has special reference to a machine for the hanging of paper on walls, ceilings and other like places.

The object of my invention is to provide a cheap, simple and efficient apparatus for the hanging of wall, ceiling and other like papers, whereby such papers can be automatically hung or secured to the walls or ceilings in a rapid and easy manner, as well as such an apparatus, which can be easily and quickly moved along the floor, and placed at different positions, so that the paper can be hung on both the walls and ceilings.

Another object of my invention is to provide such an apparatus, in which the paper to be hung is carried thereby, will be automatically fed and will be automatically trimmed and pasted in its movement and before it is hung in place.

Another object of my invention is to provide such an apparatus which can be adjusted for different heights for its use in hanging paper on ceilings and walls.

Another object of my invention is to provide such an apparatus which can be used in the hanging of borders automatically through such paper being carried on the apparatus and automatically fed, trimmed and pasted in its movement before being hung in place.

To these ends my invention consists, generally stated, in the novel arrangement, construction and combination of parts, as hereinafter more specifically set forth and described and particularly pointed out in the claims.

To enable others skilled in the art to which my invention appertains to construct and use my improved apparatus for hanging paper, I will describe the same more fully, referring to the accompanying drawings, in which—

Figure 1 is a side elevation of my improved apparatus for hanging paper and showing the same in position for hanging the paper on a ceiling. Fig. 2 is a front end

view of the same. Fig. 3 is an enlarged sectional view of the upper portion of the apparatus showing the same in position for hanging ceiling paper. Fig. 4 is an enlarged top plan view of the same. Fig. 5 is a side elevation of the apparatus showing the same in position for hanging paper on a side wall. Figs. 6 and 7 are detail views of the same. Figs. 8 and 9 are detail views of the border hanging device or attachment. Fig. 10 is a detail view of the attachment for hanging corner paper. Fig. 11 is a detail view of a part of the apparatus shown in Fig. 5.

Like symbols of reference herein indicate like parts in each of the figures of the drawings.

As illustrated in the drawings, A represents the apparatus having the supporting frame or carriage 1, which is adapted to stand in a vertical position, and is composed of the four uprights or standards 2 having the cross-braces or pieces 3 between the same. Casters 4 are journaled on the bottom of the carriage 1 for permitting the movement of the apparatus A along the floor *a*, and a driving shaft 5 extends across the front end of the said carriage and below the bottom of the same for operating the paper hanging device hereinafter described through the medium of driving rollers 6 mounted on said shaft and engaging with said floor. Extending across the carriage 1 and journaled in one of the cross-pieces 3 about midway of said carriage is the intermediate driving-shaft 7, which can also be operated through an ordinary crank-lever 8 applied on one end of the same when the paper hanging device is placed in position for applying paper to a wall, as hereinafter described. The shaft 7 is provided with a sprocket-wheel 9 thereon having a sprocket-chain 10 passing over the same and over a sprocket-wheel 11 on the shaft 5 to move the carriage along the floor *a*. Handles 12 extend out from the front of the carriage 1 to assist in moving and placing the same in the position desired.

When the apparatus A, is applying paper to the ceiling *a'* the top of the carriage 1 has the paper handling device 13 removably mounted thereon at a horizontal position, and is provided with the sides 14 and bottom strip 14' on the same. The bottom strip 14' is adapted to rest upon hinged sections or blocks 15 at the upper ends of the standards 2 to adjust said device to the height desired

for working, and such sections and standards are provided with a slot or groove 16 on the inner side of the same for receiving a strip or tongue 17 extending down from the bottom strip 14' on the sides 14 to hold the device and sections in place.

Journalled in the sides 14 of the device 13 is the shaft 18, which is provided with a sprocket-wheel 19 on one end of the same having a sprocket-chain 20 passing over the same and over the sprocket-wheel 21 on the driving-shaft 7 to operate the parts of said device, as hereinafter described. A sprocket-wheel 22 is mounted on the other end of the shaft 18, which has a sprocket-chain 23 passing over the same and over a like wheel 24 mounted on the end of the shaft 25 journalled in the sides 14 and carrying the roller 26. A pinion 27 is mounted on the end of the shaft 25 for meshing with a pinion 28 mounted on the end of a shaft 29, which is journalled in the sides 14 and carries a roller 30 directly under and in line with the roller 26. A shaft 31 is journalled in the sides 14, which carries at each end a pinion 32 for meshing with the pinion 27' on the shaft 29 and such pinions 32 are adapted to engage with racks 33 on the rear standards 2 when the device 13 is in position for hanging paper on the wall *b* by being mounted on the rear of the carriage 1, as hereinafter described. A ratchet-wheel 28' is mounted on the shaft 29 and a spring operated pawl 28'' mounted on the pinion 27' is adapted to engage with said pawl. The shaft 18 is also provided with a pinion 34 at one end of the same for meshing with a pinion 35 on the shaft 36, which is journalled in the sides 14 directly under and in line with said shaft 18, and is provided with the paper cutting disks 37 thereon for operating in conjunction with disks or rollers 38 on the shaft 18.

At the forward end of the device 13 is a shaft 39, which is journalled in the sides 14 and is provided with the paste distributing brush 40 thereon, while directly under and in line with such shaft is the shaft 41 and carrying the roller 42 mounted thereon. These shafts 39 and 41 are operated from the shaft 18 through a sprocket-wheel 43 on said shaft 18 having a sprocket-chain 43' passing over the same and over a like wheel 43'' on the shaft 39, and through a pinion 44 on the shaft 39 meshing with a pinion 44' on the shaft 41. Connected to a shaft 45 at the forward end of the device 13 and journalled in the sides 14 of the same is the swinging frame 46, which is adapted to extend upwardly from said device, and is provided with a shaft 47 journalled in its outer end having a paper applying brush 48 mounted thereon. A spring 49 is connected to and between the sides 14 of the device and the frame 46 to hold said frame in position for applying the paper to the ceil-

ing wall or ceiling through the brush 48, and such frame is raised and lowered by a rope or cord 46' connected thereto and extending down within easy reach of the operator. The brush 48 is operated through a sprocket-wheel 50 on its shaft 47 having a sprocket-chain 51 passing over the same and over a sprocket-wheel 52 on the shaft 45, and through a sprocket-wheel 53 on the shaft 45 having a sprocket-chain 54 passing over the same and over a like wheel 55 on the shaft 39.

Extending out from the rear ends of the sides 14 on the device 13 are the brackets 56 which is adapted to removably support a shaft 57 therein for carrying the roll of paper 58 to be applied to the wall or ceiling, and such sides are connected together by means of bracing bars 59 connected between the same. These bars 59 also extend through hanging bars 60, which have free ends 60' extending below the bottom strips 14' on the sides 14 and are provided on such ends with an idle roller 61, so that the ends 60' on the front hangers 60 and the rollers 61 will engage with the front faces on the standards 2 or hinged blocks 15 to gage and assist in holding the device 13 in place on the carriage 1, while such rollers and the rollers on the ends of the rear hangers are also adapted to bear against the rear faces of the rear standards when the device 13 is shifted to an upright or vertical position on the carriage 1, as shown in Fig. 5, and as hereinafter described.

Mounted upon the device 13 and between the sides 14 of the same is the paste box or receptacle 62, which is provided with an inclined spout 63 at the front end of the same, and has a series of openings 64 within the same. A vertically movable gate 65 is positioned within the box 62 for opening and closing the spout 63, which gate is operated by means of ropes or cords 66 connected at one end to each side of the same and passing over pulleys 66' mounted on each side of said box, while the other ends of said cords are connected to the ends of a bar 67 pivoted on the front standards 2 and operated by a handle 68.

The operation of my improved apparatus for hanging paper is as follows—When it is desired to apply paper to the ceiling *a'* the paper handling device 13 is positioned in the horizontal position on the top of the carriage 1, and the apparatus A is moved to the place in the room desired for operating by raising the front end of the same so that it can be moved on its real casters 4. When the apparatus A is thus in place the paper *c* from the roll 58 is first placed in position by being passed between the rollers 26 and 30 and between the cutters 37 and disks 38, so that such paper will be trimmed or cut at its side edges by said cutters and disks, and

then it is passed under the spout 63 on the paste box 62 where it receives the paste on its upper side. After passing the spout 63 the paper *c* is passed between the paste distributing brush 40 and roller 41 and over the applying brush 48 to a limited extent, as shown in Fig. 3, which brush 48 has been previously lowered from the ceiling *a'* through the operator pulling down the swinging frame 46 by the cord 46', and after the paper *c* has been thus placed in this position, said frame is allowed to be raised to its position for pressing said paper against the ceiling upon releasing said cord and through the spring 49. When the paper *c* is thus in position the apparatus A is now ready for applying such paper along the ceiling *a'*, and this is accomplished by means of the movement of the carriage 1 carrying the paper handling device 13 along the floor *a* in the direction of the arrow Fig. 1, and by the operator pushing the carriage by the handles 12. In this movement of the carriage 1 the casters 4 and rollers 6 are in engagement with the floor *a* and the revolving of such rollers will rotate the shaft 5 carrying the same in the proper direction so that the intermediate shaft 7 and the shaft 18 on the device 13 will be turned in their proper directions from the shaft 5 through the chain 10 passing around the sprocket-wheels 7 and 9 on said shafts 5 and 7 respectively, and through the chain 20 passing around the sprocket-wheels 21 and 22 on said shafts 7 and 18, respectively. As the shaft 18 is thus turned, the shafts 26, 39, 45 and 47 will be turned in their proper directions by the sprocket-wheel and chain devices heretofore described and connecting these shafts together, while said shafts 18, 26 and 45 will also act to turn the shafts 29, 31, 36 and 41 in their proper directions by the gearing mechanisms heretofore described and connecting said shafts together. When the carriage 1 is thus in movement and the parts are in operation as just described, the paper *c* is fed from the roll 58 by the rollers 26 and 30 through the cutting devices 37 and 38 and under the paste spout 63 and between the brush 40 and roller 41, where the paste is distributed by said brush on said paper, and such paper then passes over the brush 48 and is applied to the ceiling *a'* thereby. After the required length of the paper *c* has been thus applied to the ceiling *a'* such paper is cut at the desired point adjacent to the brush 48 and in case said brush will not apply the ends of such length of paper to said ceiling such ends can be easily applied to the ceiling by the ordinary hand brush. After the length of paper *c* has been thus applied to the ceiling *a'*, the apparatus can be raised on its rear casters 4 and moved to the position for again applying a second length of such paper and such operations repeated

until the entire ceiling has such paper applied thereto.

When it is desired to apply the paper to the walls of the room such as the wall *b*, the paper handling device 13 is placed on the rear and upper end of the carriage 1, and as shown in Fig. 5, in which case the rollers 60' will travel on the inner faces of the rear standards 2, in the up-and-down movement of said device, and such movement in applying the paper *c* to said wall is accomplished by means of a rope or belt 69 which is connected to the lower end of the device 13 at one of its ends and passes around a pulley 70 on the lower end of the carriage 1. This rope or belt 69 then passes around a pulley 71 on the end of the intermediate driving shaft 7, thence around a pulley 72 loosely journaled in the cross-bar 3 and thence around a pulley 73 on the upper end of the carriage 1, so that its other end can be connected to the upper end of the device 13. The operating handle or crank 8 is connected to the shaft 7 for raising and lowering the device 13 through the rope or chain and pulleys just described and in such movements the pinions 32 on such device engage with the racks 33 on the rear standards 2, so that in the downward movement of such device in applying the paper *c* to the wall *b* such paper is fed and trimmed by the mechanism heretofore described, is pasted by the paste from the box 62, which is set at a different position from the box shown in Figs. 1 to 4, through the opening of the gate 65 therein, and is applied to said wall by the brush 48. In this downward movement the ratchet-wheel 28' engages with the pawl 28'', which will thereby revolve the shaft 29, and through the gearing the mechanism contained with the device 13 is operated. When the device 13 has been brought to its lowest position as shown by the dotted lines in Fig. 5, the crank-lever 8 is removed from the shaft 7 and connected to the end of the shaft 41, and upon turning the shaft 41 in the proper direction, through said lever, the shaft 29 will be revolved in the direction as shown by the arrow in Fig. 6 by reason of the mechanisms heretofore described connecting the shafts 41 and 29 together. Upon this rotation of the shaft 29, the pawl 28'' will ride over the ratchet-wheel 28' on said shaft and the required amount of the paper *c* required for the length to be applied to the wall *b* will be drawn, so that such paper can then be cut for such length and its lower end applied by hand to said wall. After this is accomplished the device 13 can be returned to its upper position through the lever 8 being again connected to the shaft 7 and the pinions 32 meshing with the racks 33, while the mechanisms heretofore described for operating the several shafts on said device will remain

inert by reason of the pawl 28'' slipping over the ratchet-wheel 28' on the shaft 29. In order to place the device 13 in position on the rear standards 2 for the application of the side wall paper, such standards are provided with the swinging arms 33', which are mounted on a rod 32' that is journaled within and between said standards and is provided with a lever or handle 32'' thereon. A spring 32^a is connected to the rod 32' and to one of the rear standards 2 for holding the arms 33' in their closed positions on said standards, and a head 33' is formed on the outer ends of said arms for fitting within an opening 2' in the outer faces of said standards and acting to close the same. A like opening 2'' is formed at the lower ends of the rear standards 2 and in the outer faces of the same, so that when it is desired to place the device 13 in position on said standards for hanging the side wall paper, the operator throws out the arms 33' by the lever 32'' and then the upper and lower rollers 61 on said device can be passed through the openings 2' and 2'' respectively. After this is done the device 13 can be slid upwardly on the rear standards 2 by its rollers 61 engaging with said standards, and then upon the handle or lever 32'' being released the arms 33' will be sprung back to place by the spring 32^a to close the openings 2' and 2'' by the heads 33'' thereon, so that such device will then be free to travel along said standards by its rollers 61. The arms 33' being spring controlled can also be forced out of their openings 2' and 2'' and in the direction of the arrow in Fig. 5, by means of the rollers 61 on the device 13 when placing said device in position on the standards 2, and upon raising such device these arms will snap back into position by the spring 32^a for closing said opening. When it is desired to remove the device 13 from the rear standards 2, it will be necessary to open the arms 33' in the direction of the arrow in Fig. 5, by the handle 32'' to allow the rollers 61 a free passage through the openings 2' and 2'' and then such arms will snap back to their closed position by the spring 32^a upon releasing such handle. Each length of the paper *c* can be thus applied to the wall *b* and when it is desired to apply a length of such paper to the corners of said wall, such length is placed on the wall in the same manner from the device 13 through the angular brushes 75 and 76, which are mounted at right angles to each other on a bent shaft 77 journaled in a frame 78 and connected to the shaft 47, as shown in Fig. 10, such shaft being also provided with a brush portion 79 between said brushes 75 and 76 for assisting in applying such corner length to the wall *b* through the movement of the brush 48. When it is desired to apply the border to

the wall *b* the device 13 is placed on the top of the carriage 1 as heretofore described and a brush 48' placed in a vertical position and journaled within a frame 80 connected to said device, as shown in Figs. 8 and 9. In this case idle rollers 81 are set at different inclines in the frame 80 and between the device 13 and brush 48' and such brush operated in any suitable manner from said device, so that the paper *c* as it is fed from such device will be curled some extent from the distribution brush 40 to pass over said rollers with its pasted side against the same and thence under the brush 48' to be applied to the corner of the wall *b*. In case the border roll is composed of two or more widths, the width not being applied can be wound upon a roller 82 on the device 13 after being trimmed, and such roller operated in any suitable manner from the gearing on such device, as desired; while if desired the machine can also be arranged for different widths of paper for both side walls and ceilings by suitable adjustment of the parts of the same or different machines can be used for different widths of such paper.

It will thus be seen that by my improved paper hanging machine the paper to be hung can be carried on the machine and can be automatically fed, trimmed, pasted and applied to the walls or ceiling of rooms, as well as to the corners of the walls, and the border for the wall can also be handled and applied in like manner. The machine can be operated by any unskilled person in a rapid, easy and convenient manner and will enable the placing of paper to the walls or ceilings readily and quickly in a workmanlike manner. Practically the entire surface of the wall or ceiling can have its paper or border applied thereto through the machine and very little manual labor in handling the paper will be required. The machine can be adjusted to different heights of walls and ceilings in applying the paper and can be easily and quickly arranged for placing the paper to the walls, ceilings, corners or borders, while in either applying the paper to the wall or ceiling the parts are so arranged as to be capable of operating through the medium of the operator's hand or by the machine being moved along the floor.

It will also be seen that my improved paper hanging machine is so arranged that the feeding, trimming, pasting or application of the paper to the walls or ceilings can be stopped at any time and such paper will not be liable to become soiled or torn through any handling of the same, while at the same time it can be applied evenly and smoothly to the surfaces of the walls or ceilings, and will not be required to be handled in any manner by the operator.

It will be evident that, if desired, the paper can be trimmed before being placed on

the machine and can also be cut to the required length desired for each layer of paper to be fed and applied, while such paper can also be carried on the frame in any suitable manner, so as to be fed to the paper handling device and the paper can be pasted before it is placed on the machine so that it can be fed in applying the same. It will also be evident that the carriage 1 can be so arranged that its parts are removably connected together so that they can be detached from each other and be folded for packing and handling.

Various other modifications and changes in the design, construction and operation of the various parts and devices composing my improved paper hanging machine may be resorted to, without departing from the spirit of my invention or sacrificing any of its advantages.

What I claim as my invention and desire to secure by Letters Patent is—

1. A paper hanging machine comprising a supporting and traveling frame, a paper handling device on said frame for applying the paper, an intermediate driving shaft on said frame operated by the movement of said frame, and gearing means on said device and connected to said shaft for operating said device.

2. A paper hanging machine comprising a supporting and traveling frame, a paper handling device movable on said frame for applying the paper, an intermediate driving shaft on said frame, gearing mechanism on said device and engaging with said frame for operating the device, and means connected to said device and to said frame and shaft for moving said device on said frame.

3. A paper hanging machine comprising a supporting frame, a paper handling device on said frame, and hinged blocks on said frame for adjusting the height of said device.

4. A paper hanging machine comprising a supporting frame, a paper handling device on said frame, hinged blocks on said frame for adjusting the height of said device, and tongues on said device fitting in slots in frame and blocks for holding the device and blocks in place.

5. A paper hanging machine comprising a supporting frame, a paper handling device on said frame, means to move said device along said frame and operate the same, and means for holding the device inoperative in the backward movement of the same.

6. A paper hanging machine comprising a supporting frame, a paper handling device on said frame, means to move said device along said frame and operate the same, and a ratchet device for holding the device inoperative in the backward movement of the same.

7. A paper hanging machine comprising

a supporting frame, a paper handling device on said frame, and a swinging paper applying brush on said device.

8. A paper hanging machine comprising a supporting frame, a paper handling device on said frame, and a spring operated paper applying brush on said device.

9. A paper hanging machine comprising a supporting frame, a paper handling device, and means connected to said device for applying the border paper to the wall and comprising a frame carrying rollers and an applying brush for such paper.

10. A paper hanging machine comprising a supporting frame having traveling means thereon, a paper handling device on said frame, and means connected to said means and to said device for operating the latter during the traveling of said frame.

11. A paper hanging machine comprising a supporting frame having traveling means thereon, a paper handling device on said frame, and means connected to said means and to said device through an intermediate shaft on said frame to operate said device during the traveling of said frame.

12. A paper hanging machine comprising a supporting frame, a paper handling device on said frame, means for moving said device along said frame and for operating the same, and means for permitting the passing of part of said device through said frame to connect the same thereto.

13. A paper hanging machine comprising a supporting frame, a paper handling device mounted on rollers on said frame, means for moving said device along said frame and for operating the same, and means for permitting the passing of said rollers through said frame to connect said device thereto.

14. A paper hanging machine comprising a supporting frame having openings therein, a paper handling machine mounted on rollers on said frame, means for moving said device along said frame and for operating the same, and means for permitting the passing of said rollers through said openings to connect said device to said frame.

15. A paper hanging machine comprising a supporting frame having openings therein, a paper handling device mounted on rollers on said frame, means for moving said device along said frame and for operating the same, and a swinging device on said frame for permitting the passing of said rollers through said openings to connect said device to said frame.

16. A paper hanging machine comprising a supporting frame having openings therein, a paper handling device mounted on rollers on said frame, means for moving said device along said frame and for operating the same, and a swinging device on said frame having arms for engaging with said open-

ings to permit the passing of said rollers through said openings in connecting said device to said frame.

17. A paper hanging machine comprising
5 a supporting frame having openings therein,
a paper handling device mounted on rollers
on said frame, means for moving said device
along said frame and for operating the
10 vice on said frame having arms for engaging

with said openings to permit the passing of said rollers through said openings in connecting said device to said frame.

In testimony whereof, I, the said JAMES ATKINSON, have hereunto set my hand.

JAMES ATKINSON.

Witnesses:

J. N. COOKE,

JAMES L. WEHN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
