No. 650,215. Patented May 22, 1900.

J. T. AVERY.

WALL PAPER TRIMMING AND PASTING MACHINE.

(Application filed July 24, 1899.)

(No Model.) 2 Sheets—Sheet 1.

Fig. I.

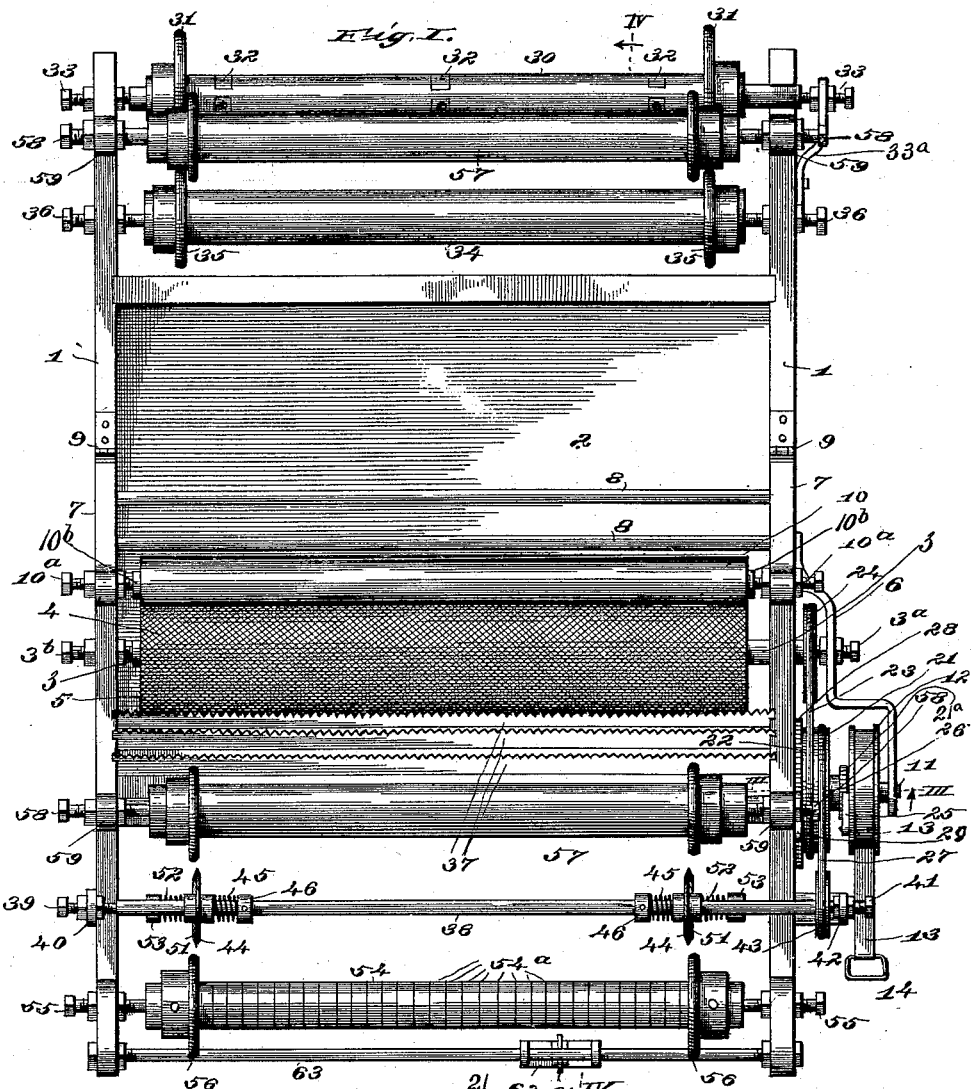


Fig. II.

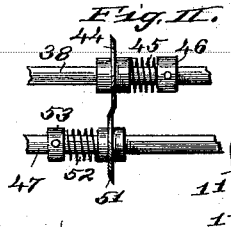


Fig. III.

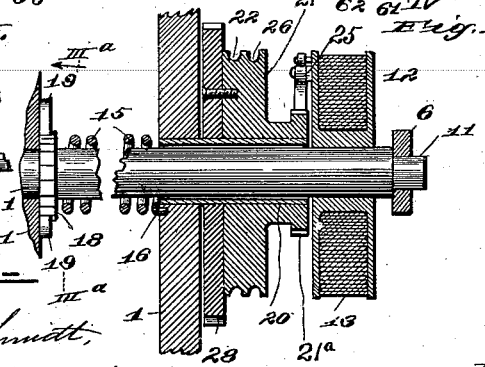
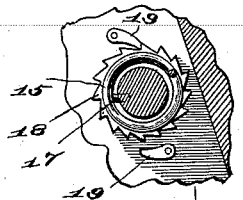


Fig. III a



Witnesses—

G. A. Paubenschmidt,

A. F. Alexander.

Inventor—

John T. Avery

By Wright Bros

Attorneys

No. 650,215. Patented May 22, 1900.

J. T. AVERY.

WALL PAPER TRIMMING AND PASTING MACHINE.

(Application filed July 24, 1899.)

(No Model.) 2 Sheets—Sheet 2.

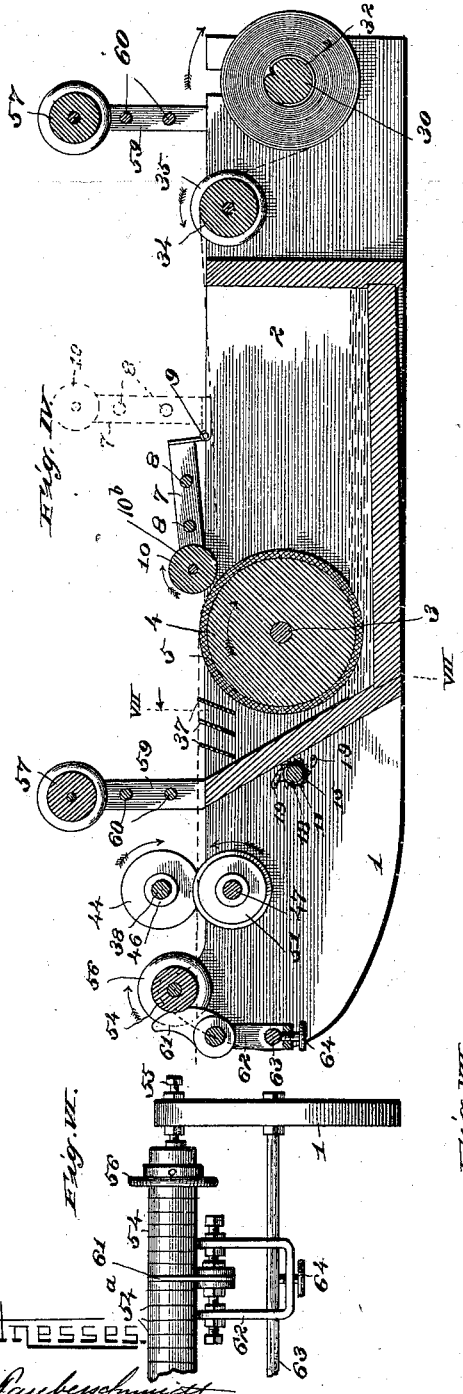


Fig. IV.

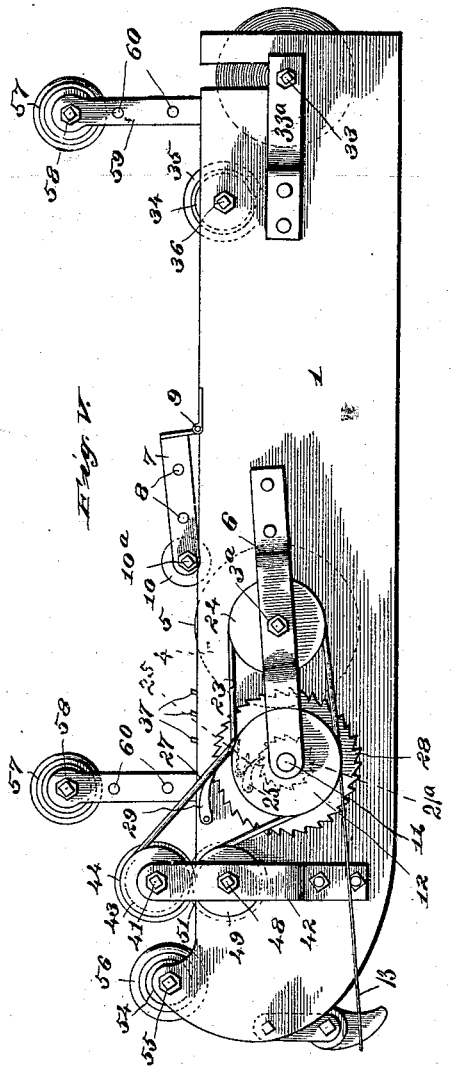


Fig. V.

Fig. VI.

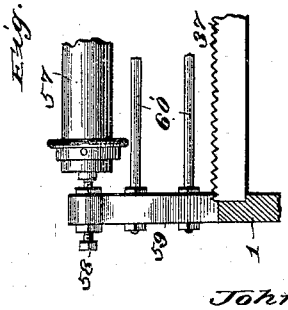


Fig. VII.

Witnesses.

G. A. Paubenschmidt.

A. J. Alexander.

Inventor.

John T. Avery

By Wright, Brown & Quinby

Attorneys

UNITED STATES PATENT OFFICE.

JOHN T. AVERY, OF ST. LOUIS, MISSOURI, ASSIGNOR OF TWO-THIRDS TO FRANK T. FLETCHER AND JOHN HUBER, OF SAME PLACE.

WALL-PAPER TRIMMING AND PASTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 650,215, dated May 22, 1900.

Application filed July 24, 1899. Serial No. 724,898. (No model.)

To all whom it may concern:

Be it known that I, JOHN T. AVERY, a citizen of the United States, residing at the city of St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Wall-Paper Pasting and Trimming Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to a machine for applying paste to wall-paper and for trimming the edges thereof preliminary to affixing the paper to the walls or ceiling of a room.

My invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

Figure I is a top or plan view of my machine. Fig. II is an enlarged detail view showing two of the adjustable rotary cutters. Fig. III is an enlarged detail sectional view taken on the line III III, Fig. 1, looking in the direction indicated by the arrow crossing said line. Fig. III^a is a section taken on the line III^a III^a, Fig. III, looking in the direction indicated by the arrow crossing said line. Fig. IV is a sectional view taken on line IV IV, Fig. I, looking in the direction indicated by the arrow crossing said line. Fig. V is a view in side elevation. Fig. VI is a detail view of the delivery-roller and adjustable slitting-knife adapted to operate thereagainst. Fig. VII is a vertical sectional view taken on line VII VII, Fig. IV, looking in the direction indicated by the arrow crossing said line.

1 designates the frame of the machine, containing a paste-receiving box 2, the bottom of which is preferably inclined, so that the paste will run to the forward end of the box. Mounted in the side walls of the frame 1 is a shaft 3, on which a roller 4 is carried and which rotates in the direction indicated by the arrow thereon in Fig. IV. One end of the shaft 3 extends through one side of the frame 1 and is journaled to a bearing-screw 3^a, mounted in a bracket 6, located exterior of the frame 1. The opposite end of the shaft 3 is journaled to a similar bearing-screw 3^b, mounted in the other side of the frame 1.

On the roller 4 is a covering 5, adapted to travel in the paste contained by the box 2. The covering 5 may be of any suitable absorbent material, such as cloth, or a cylindrical brush may be applied to the circumference of the roller.

7 designates arms located over the sides of the frame 1 and connected by tie-rods 8 and movably secured to the said sides by hinges 9. The arms 7 carry a pressure-roller 10, adapted to rotate in the direction of the arrow associated therewith to bear upon the wall-paper (indicated by a dotted line extending through the machine) and hold it to the pasting-roller 4 when the said pressure-roller is in the lowered position shown by full lines in Fig. IV. The shaft of the roller 10 is mounted in bearing-screws 10^a, extending through the arms 7. When the pressure-roller is not in use, it may be elevated into the position shown by dotted lines, Fig. IV. The arms 7 are set back on the sides of the frame 1, so that the roller 10 is not directly over the center of the roller 4, which position of the roller 10 causes the wall-paper to be held against the periphery of the roller 4 a greater distance than it would were the roller 10 directly over the roller 4.

11 is a shaft journaled at one end in one side of the frame 1, extending through the other side of the frame 1 and journaled at the other end in the bracket 6. On one end of the shaft 11 is a tight tape-drum 12. (See Fig. III.) Wound upon the drum is a tape 13, provided with a handhold 14. By pulling on the tape 13 the shaft 11 is revolved, and to wind up the tape when released the shaft is surrounded by a coiled spring 15, one end of which is made fast at 16 to one side of the frame 1, the other end being secured at 17 to a ratchet-wheel 18, carried by the shaft. If it is desired to hold the shaft from turning back when the tape has been pulled out, this may be done by pivoting pawls 19 to a side of the frame 1, so as to engage the ratchet-wheel when desired, as shown in Figs. III and III^a. On a sleeve 20, that is secured to a side of the frame and which fits over the shaft 11 next to the drum 12, is a loose pulley 21, having an inner groove 22 to receive a belt 23, that passes over a pulley 24 on a

shaft 3 of the paste-roller, so that the paste-roller is revolved when the drum is turned by pulling on the tape 13, the pulley 21 having a ratchet 21^a and a spring-pawl connection 25 (see dotted lines, Fig. V) with the drum 12. When the tape 13 is being wound up, the pawl 25 slips over its ratchet 21^a. The pulley 21 has a second or outer groove 26 to receive a belt 27, that drives the cutters, hereinafter referred to. Secured to the inner face of the pulley 21 is a ratchet-wheel 28, engaged by a pawl 29, pivoted to the frame 1. (See Fig. V.) The pulley 21 is thus held from turning backward.

30 designates a receiving-roller provided with guide-flanges 31 and spring-clips 32. The roller is journaled in bearing-screws 33. The inner bearing-screw is mounted in a side of the frame 1. The journal of the roller 30 extends through the other side of the frame 1 to the outer bearing-screw 33, which is mounted in a bracket 33^a.

In the practical use of the machine when a roll of wall-paper has been placed on a supporting-spindle (not shown) the free end of the paper is carried to the roller 30 and connected to said roller by passing it under the spring-clips 32. The roller is then turned by hand and the wall-paper is wound from its original roll, face inward, onto the roller 30 ready for the pasting and trimming operation.

34 designates an idler-roller (which turns in the direction of the arrow associated therewith) having guide-flanges 35 and the shaft of which is journaled in bearing-screws 36, mounted in the sides of the frame 1. When the paper is wound onto the roller 30, as explained, (the roller 30 turning in the direction of the arrow associated therewith,) its free end is grasped and drawn over the idler 34 and therefrom onto the pasting-roller 4, passing under the pressure-roller 10, it being understood that the reverse side of the paper is always presented downmost to the pasting-roller. As the paper leaves the pasting-roller it passes over a series of scrapers 37, seated in the sides of the frame 1, which also form the side walls of the paste-box and extending thereacross, said scrapers being designed to remove the surplus paste from the paper. The upper contacting edges of these scrapers may be serrated, as shown in Fig. I.

38 designates a shaft, one end of which is journaled against a bearing-screw 39, seated in a bracket 40. The opposite end of the shaft 38 is journaled against a bearing-screw 41, seated in a bracket 42. The shaft 38 carries a pulley 43, that receives the belt 27. As will be observed, the pulley 43 is of lesser diameter than the pulley 21. Hence the shaft 38 is adapted to be driven at a higher rate of speed than the shaft 3, that carries the pasting-roller.

On the shaft 38 is a pair of circular cutters 44, loosely keyed to the shaft. Each cutter 44 is backed by a coiled spring 45, held in place by a set-collar 46. Immediately beneath the shaft 38 is a similar shaft 47, the ends of which are journaled in bearing-screws 48. On the shaft 47 is a pulley 49, that also receives the belt 27, as shown in Fig. V. On the shaft 47 are circular cutters 51, that cooperate with the cutters 44, which are also loosely keyed to the carrying-shaft. The cutters 51 are backed by springs 52, held forward by set-collars 53. The cutters turn in the direction of the arrows shown associated therewith in Fig. IV. The arrangement of these cutters is clearly illustrated in Fig. II. As the paper leaves the scrapers 37 it is carried between the circular cutters 44 and 51, which are held together by the springs 45 and 52, and the trimming of the paper is thereby accomplished. If it is desired to trim but one edge of the paper, the cutters 44 and 51 at the opposite side of the machine may be moved to the ends of the shafts 38 and 47 by releasing the set-screws in the collars 46 and 53.

On leaving the cutters the paper passes to the delivery-roller 54, beneath the latter, the shaft of which is mounted in bearing-screws 55. The delivery-roller 54 is provided with guide-flanges 56, adapted to direct the course of the paper as it passes under said roller. The paper is taken from beneath the delivery-roller 54 to the wall to be covered, and when the desired length has been ascertained the part applied to the wall is severed from the remainder of the paper in the usual manner. In applying the paper to a ceiling it is carried from the roller 54 (which turns in the direction of the arrow associated therewith) over idler-rollers 57, journaled on bearing-screws 58, seated in standards 59, that are connected by tie-rods 60 and supported from the frame of the machine.

The parts thus far described are those employed when the paper is only to be pasted and trimmed before applying it to the wall or ceiling. When, however, the paper is to be slitted to produce a narrow width, a slitting-knife 61 is brought into use. This knife 61 is carried by a frame 62, pivotally hung on a rod 63, mounted in the frame of the machine. The frame 62 contains a set-screw 64, adapted to bear against the rod 63 to maintain said knife-carrying frame in contact with the delivery-roller 54, (see Fig. IV,) the delivery-roller being provided with a series of grooves 54^a, adapted to receive said knife. It will therefore be seen that the slitting-knife 61 may be held in any desired location along the delivery-roller 54, so that as the paper is drawn thereagainst it will be slitted to reduce it to the desired width. When the slitting-knife is not in use, it may be lowered by loosening the set-screw 64 and allowing the frame 62 to hang suspended from the rod 63, as shown in Fig. V.

When the paper is to be used, a roll sup-

ported on a spindle (not shown) is placed close to the roller 30. The operator then takes the end of the paper and places it face inward under the clamps on the roller and turns the roller. This the operator does by simply putting the hands on the roller and turning it. It of course turns very easily, as there is no pull on the paper. After the paper has been wound onto the roller 30 the operator takes hold of the end of the paper and passes it over the roller 34 and on through the machine, as shown by dotted lines. As it passes through it comes in contact with the roller 4, which causes it to be pasted. As it comes out of the machine it is trimmed, and the operator places it against the wall. Supposing the machine to be resting on the floor, he would conduct the end of the paper to the wall at the ceiling and with a brush, as usual, cause the paper to be smoothed on the wall down to the mop-board. The operator would then cut it off at the mop-board and take the end up to the ceiling again and repeat the operation. While the paper is being pulled through the machine by the left hand, the handhold 14 of the tape-coil is grasped by the right hand to rotate the tight pulley 11. The pulley 11 is connected up with the paste-roller and cutters to paste and trim the papers simultaneously with the passage of the paper through the machine. The rotating of the tight pulley 11 winds up the spring on the power-shaft to wind up the tape each time it is unwound.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. The combination of a frame provided with a paste-box, a paper-roller, a pressure-roller under which the paper is passed, a pasting-roller over which the paper travels, located in the paste-box working against the pressure-roller and beneath the latter, means for rotating the pasting-roller in the same direction as the pressure-roller and in the opposite direction to the direction in which the paper is passing through the machine, a scraper over which the pasted paper is passed, and a delivery-roller under which the paper is pulled; substantially as described.

2. The combination of a frame provided with a paste-box, a paper-roller, an idler-roller, adjacent to the paper-roller, over which the paper is passed from the paper-roller, a pressure-roller under which the paper is passed from the idler-roller, a pasting-roller over which the paper travels, located in the paste-box working against the pressure-roller and beneath the latter, means for rotating the pasting-roller in the same direction as the pressure-roller and in the opposite direction to the direction in which the paper is passing through the machine, a scraper over which the pasted paper is passed and a delivery-roller under which the paper is pulled; substantially as described.

3. The combination of a frame provided with a paste-box, a paper-roller, a pressure-roller, under which the paper is passed, a pasting-roller, over which the paper travels, located in the paste-box working against the pressure-roller and beneath the latter, means for rotating the pasting-roller in the same direction as the pressure-roller, and in the opposite direction to the direction in which the paper is passing through the machine, a scraper over which the pasted paper is passed, a delivery-roller under which the paper is pulled, the standards secured to the frame and the idle rollers supported on the standards over which the paper is carried to a ceiling; substantially as described.

4. The combination of a frame provided with a paste-box, a paper-roller, a pressure-roller under which the paper is passed, pivoted arms whereby the pressure-roller is supported, a pasting-roller over which the paper travels, located in the paste-box working against the pressure-roller and beneath the latter, means for rotating the pasting-roller in the same direction as the pressure-roller and in the opposite direction to the direction in which the paper is passing through the machine, a scraper over which the pasted paper is passed, and a delivery-roller under which the paper is pulled; substantially as described.

5. The combination of a frame provided with a paste-box, a paper-roller, a pressure-roller under which the paper is passed, a pasting-roller over which the paper travels located in the paste-box working against the pressure-roller and beneath the latter, means for rotating the pasting-roller in the same direction as the pressure-roller and in the opposite direction to the direction in which the paper is passing through the machine, a scraper over which the pasted paper is passed, rotatory trimming paper-cutters located in advance of the scraper, means for rotating the paper-cutters, and a delivery-roller located in advance of the paper-cutters under which the paper is pulled; substantially as described.

6. The combination of a frame provided with a paste-box, a paper-roller, a pressure-roller under which the paper is passed, a pasting-roller, over which the paper travels, located in the paste-box working against the pressure-roller and beneath the latter, means for rotating the pasting-roller in the same direction as the pressure-roller and in the opposite direction to the direction in which the paper is passing through the machine, a scraper over which the pasted paper is passed, a delivery-roll having a series of grooves, and under which the paper is passed, and a pivoted frame having an adjustable slitting-knife working in connection with the grooves; substantially as described.

7. The combination of the pasting-roller and paper-cutters of the operating mechanism common to the pasting-roller and to the paper-cutters comprising the pulley secured to the shaft of the pasting-roller, the pulleys

secured to the paper-cutter shafts, the fixed sleeve, the spring-shaft extending through the sleeve, the tape-drum provided with a pawl and fixed to the spring-shaft, the loose pulley having a ratchet-wheel with which the drum-pawl engages, and the belts connecting the loose pulley with pulley on the pasting-roller pulley and the paper-cutter pulleys respectively; substantially as described.

J. T. AVERY.

In presence of—
GEO. H. KNIGHT,
N. V. ALEXANDER.