(No Model.) 2 Sheets—Sheet 1.

P. HAUCK.

MACHINE FOR PASTING PAPER STRIPS.

No. 432,751. Patented July 22, 1890.

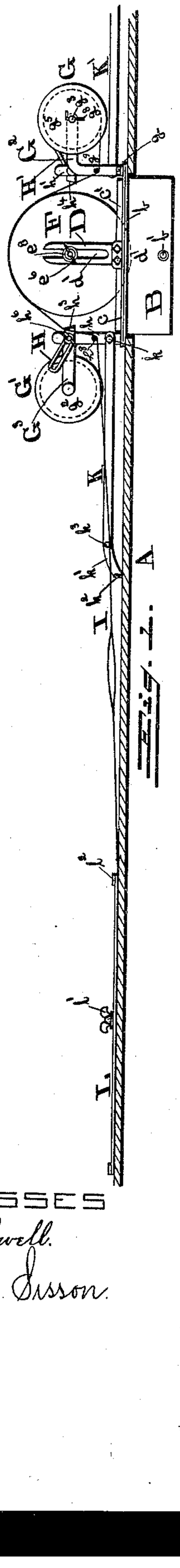

Fig. 1.

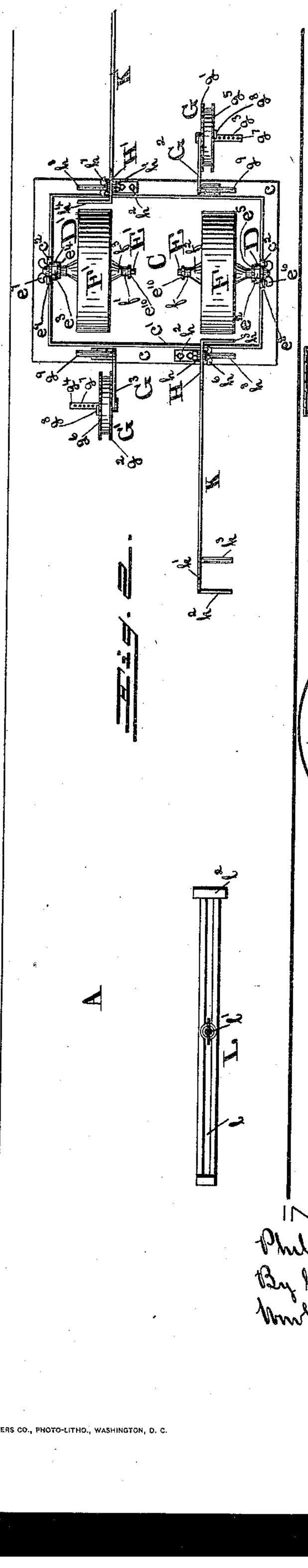

Fig. 2.

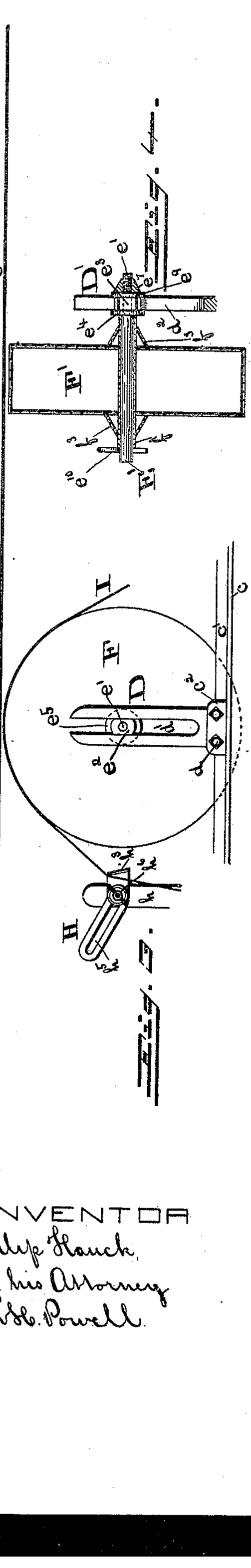

Fig. 4.

Fig. 5.

Fig. 7.

Fig. 3.

WITNESSES

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(No Model.) 2 Sheets—Sheet 2.

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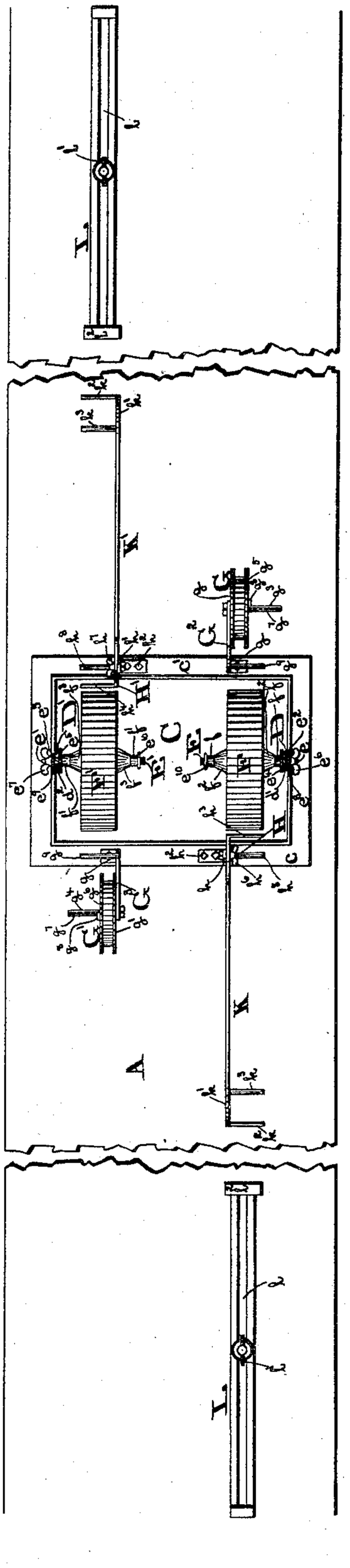

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UNITED STATES PATENT OFFICE.

PHILIP HAUCK, OF PHILADELPHIA, PENNSYLVANIA.

MACHINE FOR PASTING PAPER STRIPS.

SPECIFICATION forming part of Letters Patent No. 432,751, dated July 22, 1890.

Application filed January 10, 1890. Serial No. 336,482. (No model.)

To all whom it may concern:

Be it known that I, PHILIP HAUCK, a citizen of the United States, and a resident of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Machines for Pasting Paper Strips, of which the following is a specification.

My invention has relation to the manufacture of paper boxes, and has for its object the provision of novel, cheap, and efficient means for pasting or gluing the strips of paper which are usually employed for the purpose of securing the end pieces of said boxes in their proper places preparatory to the placing of such strips on the ends of the boxes, thereby conducing to the attainment of an economical result as regards material, labor, and time. Heretofore the gluing of the strips after they have been cut into the required lengths has been usually accomplished by their being placed on a board with their under sides up and the glue or paste applied to them through the medium of an ordinary brush. This process has been found undesirable, owing to the resultant waste of adhesive material due to the fact that as the operation progresses a large proportion of such material which is on the brush comes into contact with and sticks on the board and hardens thereon. In addition to this and of greater moment is the constant wearing out of the brushes, which is an item of considerable expense. Thus, as is perfectly obvious, the preparation of strips for the above-mentioned purpose has been a matter of great expense all through.

My invention consists of a rotary metallic cylinder or drum sustained in such position over the glue pan or pot that its lowest portion will rest in the glue and is vertically adjustable to accommodate it to different depths and thicknesses of glue or paste in said pan, and placed intermediate a rotary reel for the paper and a scraper, so that when the end of said paper is drawn over the topmost part of the cylinder the adhesive material thereon will be transferred to the paper, and said cylinder will rotate in response to such draft and keep constant the supply of such material at the transferring-point. The scraper, over which the glued paper passes and which is located over the glue-pan, serves to remove all surplus glue or paste from said paper and drop the same into said pan. After the paper leaves the scraper, it is twisted so as to bring its glued or pasted side uppermost, and drawn outwardly until it reaches an adjustable gage, which is set to the required degree on the table, where it is cut into the required lengths and then placed, for convenience, on a board, from which it is removed and secured to the box ends in the usual manner.

The details of my invention will be more specifically described hereinafter, and will be clearly understood upon reference being had to the accompanying drawings, wherein—

Figure 1 is a side elevation of my complete invention, the table on which it is placed being in section. Fig. 2 is a plan view of my invention, as in Fig. 1. Figs. 3 and 4 are a side elevation and a vertical transverse section, respectively, of the cylinder and its appurtenances, the nut e^6 and washer e^8 being omitted from Fig. 3. Fig. 5 is a plan view of my invention complete, showing the two gages in position for use, the table on which the same are placed being partly broken away.

A represents the table, provided with the usual opening for the reception of the pan B, which is flanged at b and has the steam-inlet b', all of which are of usual construction and their purposes well known. C is the glue-pot provided with the flange c and the rim c'. So far this pot is of ordinary form and rests within the pan B with its flange resting on that of said pan, the steam in the latter heating the adhesive material in the former.

D D′ are standards secured on opposite sides of the pot C by the bolts d to the lugs c^2, formed on the pot-rim c', said standards having therein the vertical longitudinal slots d' d^2.

E E′ are horizontal shafts having formed or secured rigidly thereon near their threaded ends e' e' the nuts e^2 e^3 of a width slightly less than that of the aforesaid slots, so that said nuts will have freedom of vertical movement in the slots. Said shafts have also formed thereon contiguous to the nuts e^2 e^3 and on their sides opposite to the threaded ends the annular shoulders e^4 e^5, which abut against the inner sides of the aforesaid standards when said nuts are in the slots.

e^6 e^7 are thumb-nuts, and e^8 e^9 are washers

on the ends *e e'* of the shafts E E', said washers bearing against the outer sides of the standards D D', and in conjunction with the shoulders e^4 $e,^5$ when said thumb-nuts are screwed inwardly their full extents, operate to exert a clamping action on both sides of said standards, thus maintaining the shafts E E' in any adjusted position in the slots *d' d²*, while the nuts e^2 e^3 operate to prevent the rotation of said shafts in said slots.

F F' are rotary metallic cylinders having secured at their centers, and on which they are sustained, the horizontal tubes *f f'* and the inclined collars f^2 f^3, which serve to brace and securely fasten said cylinders on said tubes. The inner diameters of the latter are of a size sufficient to allow of the shafts E E' being thrust therein and the free rotation of the cylinders on said shafts, the lengths of these tubes affording an extended journal-bearing for the cylinder, while the eye-pins e^{10} in openings in the free ends of the shafts E E' prevent the cylinders from accidental dislodgment from their positions, and said pins and the shoulders e^4 e^5 prevent lateral movement of said cylinders on said shafts.

G G' are the reels for the rolls of paper, which are sustained on the bent or curved arms G^2 G^3 secured to the flanges *c* of the glue-pot by the bolts *g*, and consisting of the stationary disks or base-plates *g' g²*, the shafts g^3 g^4 and the movable disks g^5 g^6 with central openings for the passage of said shafts, the latter having therein a number of transverse openings g^7 for the reception of the bent pins g^8, which are so shaped for convenience of withdrawal and insertion, said holes permitting of the adjustment of the disks g^5 g^6 to suit various widths of paper, while the positions of the fixed or stationary disks are such as to bring their faces within the lines of the cylinders, so that it matters not whether the paper be narrow or wide, for it will always come into full contact with the glue or paste on the cylinders.

H H' are the glue or paste scrapers mounted on the uprights *h h'*, which are secured to the flanges *c* by the bolts h^2 in such positions as to bring their scraping ends or lateral extensions h^3 h^4 in alignment with the cylinders F F'. The outer free ends of said scrapers have an upward inclination and are provided with the longitudinal slots h^5 for the passage of the shanks of the thumb-screws h^6 h^7, which enter the standards or uprights *h h'*, and secure the scrapers thereon in any adjusted position, governed by the angle of inclination desired at the ends h^3 h^4 or the distance necessary between these extensions and the cylinders F F' and the height of said cylinders relatively to such scrapers, and said ends may be sharpened at their upper ends like a knife-edge, if desired; but the form shown in the drawings is preferred. It will be observed that the arms G^2 G^3 and the uprights *h h'* have laterally-extending pins g^9 and h^8, which serve as guides for the paper I before and after its passage of the cylinder, said pins being so placed as to cause a considerable portion of said paper to hug said cylinder, and thus the more surely cause it to rotate.

K K' are arms extending parallel with the sides of the table A and hinged on bolts *k*, secured in the standards *h h'* beneath the thumb-screws h^6 h^7, the outer ends *k'* of these arms curving downwardly and terminating in lateral extensions k^2 resting edgewise on said table, the weight of which arms serves to keep said extensions in close relation with the table. Arms K K' are also provided with guide-pins k^3 on the same side and of the same length as extensions k^2, which pins are in the straight portions of the arms, as shown in the drawings, and are thus a sufficient distance above the extensions to allow the paper I to clear the latter when passing the former.

Beyond the outer ends of the arms K K' and in alignment therewith are gage-plates L, provided with longitudinal slots *l* for the passage of the thumb-screws *l'*, which secure said plates to the table. As will be observed, these plates are of great length, and the slots therein are almost as long. Consequently said plates have a large range of movement toward or from the ends of arms K K', thus rendering it possible to regulate the lengths of strips for a variety of sizes of boxes. Said plates also have on their ends nearest the above-mentioned arms the transverse heads l^2, which serve to limit the extent of draft on the paper and to indicate to the operator the arrival at the point at which the paper is to be cut.

The operation is as follows: The rolls of paper are placed on the reels. Then the distances between the gage-plates and the ends of the arms K K' are adjusted to a degree equal to the length of paper required for the ends of the boxes. The free ends of the rolls of paper are next passed under the pins g^9 over the topmost portions of the cylinders, whereby they are glued or pasted and said cylinders rotated, next over the ends h^3 h^4 of the scrapers H H', under the pins h^8, after passing which latter they are twisted, as shown at *x* in Fig. 1, so as to bring the sides of the paper with the adhesive material thereon uppermost, then under the pins k^3, and, finally, to the heads l^2, whereupon the operators, through the employment of shears or other cutters, clip the paper at the points nearest the extensions k^2, and the result is the production of glued or pasted strips of paper of uniform and the required length, in a manner cleanly in the highest degree. After the above operation the cut strips are placed on a board or other place and are then ready to be secured on the box for the purpose hereinbefore mentioned. As the quantity of glue or paste in the pot diminishes the cylinders are correspondingly lowered through loosening and tightening of the thumb-nuts on the cylinder-shafts until the supply is exhausted, and when such supply is replenished of

course the cylinders are elevated accordingly. Furthermore, when the operator's work is finished the cylinders are raised clear of the adhesive material and the glue or paste will drip off entirely, owing to the non-absorbent material of which the cylinders are composed, thus obviating the necessity for leaving them stand in the cold glue or paste or for entirely removing them for washing purposes, although the latter may be readily done, if desired.

While I have shown and described the use of a pair of cylinders with their appurtenances arranged oppositely to accommodate an operator on each side of the table, it is quite obvious that a single cylinder may be used to the same advantage, or the glue-pot may be divided into two compartments for the reception of different kinds of adhesive materials. It will be observed, also, that the guide-pins, the extensions on the scrapers and on the arms K K′, and the reel-shafts are of a length equal to the width of the cylinders, so that while the reels are shown as being set for paper of narrow width it is quite obvious that paper as wide as said cylinders can be glued or pasted to the same advantage.

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

1. In a machine for pasting paper strips, the combination of a glue-pot, a shaft or shafts adjustably secured each in a vertical slot above said glue-pot, a rotary cylinder journaled on each shaft and having its lowest portion normally in the glue, and means, substantially as described, adjacent to each cylinder for supporting a strip of paper and bringing it into contact with said cylinder, for the purpose described.

2. In a machine for pasting paper strips, the combination of a glue-pot, one or more vertically-adjustable rotary cylinders with their lowest portions normally in the glue, an adjustable scraper on one side of and a support for a strip of paper on the other end of each cylinder, and means, substantially as described, for bringing such strips into contact with said cylinder and scraper, for the purpose described.

3. In a machine for pasting paper strips, the combination, with the table, of an adjustable gage-plate on said table, means, substantially as specified, for the support of a strip of paper, and means, substantially as specified, intermediate said support and gage-plate for affixing adhesive material to said paper and bringing the same into relation with the gage-plate, for the purpose described.

4. In a machine for pasting paper strips, the combination of a glue-pot, the shafts E E′, provided with the threaded ends e e', the nuts e^2 e^3, the shoulders e^4 e^5, the washers e^8 e^9, the thumb-nuts e^6 e^7, and supporting each a rotary cylinder, the standards D D′, sustained on said glue-pot and provided with the slots d' d^2, and means, substantially as specified, for the support of a strip or strips of paper and bringing the same into contact with the cylinders, substantially as shown and described.

5. In a machine for pasting paper strips, the combination of a glue-pot, a pair of suitably-supported rotary cylinders with their lowest portions normally in the glue, the scrapers H H′, provided with the slots h^5, and the extensions h^3 h^4, the standards h h', the thumb-screws h^6 h^7, supports each for a strip of paper, and means, substantially as specified, for bringing the paper into contact with the cylinders and scrapers, substantially as shown and described.

6. In a machine for pasting paper strips, the combination of a glue-pot, supports each for a strip of paper, the gage-plates L, provided with the slots l, and the heads l^2, the thumb-screws l', the table A, and means, substantially as specified, intermediate said supports and gage-plate for affixing the adhesive material to the paper and bringing the same into relation with said gage-plate, substantially as shown and described.

7. In a machine for pasting paper strips, the combination of a glue-pot, a pair of suitably-supported rotary cylinders with their lowest portions normally in the glue, the scrapers H H′, provided with the slots h^5, and the extensions h^3 h^4, the standards h h', the thumb-screws h^6 h^7, the arms K K′, hinged at one end and having the ends k', the extensions k^2, and the guide-pins k^3, the gage-plates L, provided with the slots l, and the heads l^2, the thumb-screws l', the table A, and supports each for a strip of paper, all combined for operation substantially as shown and described.

8. In a machine for pasting paper strips, the combination of the glue-pot C, having mounted thereon the standards D D′, with the slots d' d^2 therein, an adjustable shaft secured in each said slot, a rotary cylinder journaled on each said shaft, the arms G^2 G^3, supporting the shafts g^3 g^4, with reels thereon, the uprights h h', supporting scrapers, and suitable gage-plates on the table, all combined for operation substantially as shown and described.

In testimony whereof I have hereunto set my hand this 6th day of January, A. D. 1890.

PHILIP HAUCK.

Witnesses:
WM. H. POWELL,
SAMUEL M. SHACK.

Correction in Letters Patent No. 432,751.

It is hereby certified that in Letters Patent No. 432,751, granted July 22, 1890, upon the application of Philip Hauck, of Philadelphia, Pennsylvania, for an improvement in "Machines for Pasting Paper Strips," an error appears in the printed specification requiring correction as follows: In line 46, page 3, the word "end" should read *side;* and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 29th day of July, A. D. 1890.

CYRUS BUSSEY,
Assistant Secretary of the Interior.

[SEAL.]

Countersigned:

C. E. MITCHELL,
Commissioner of Patents.