

(No Model.)

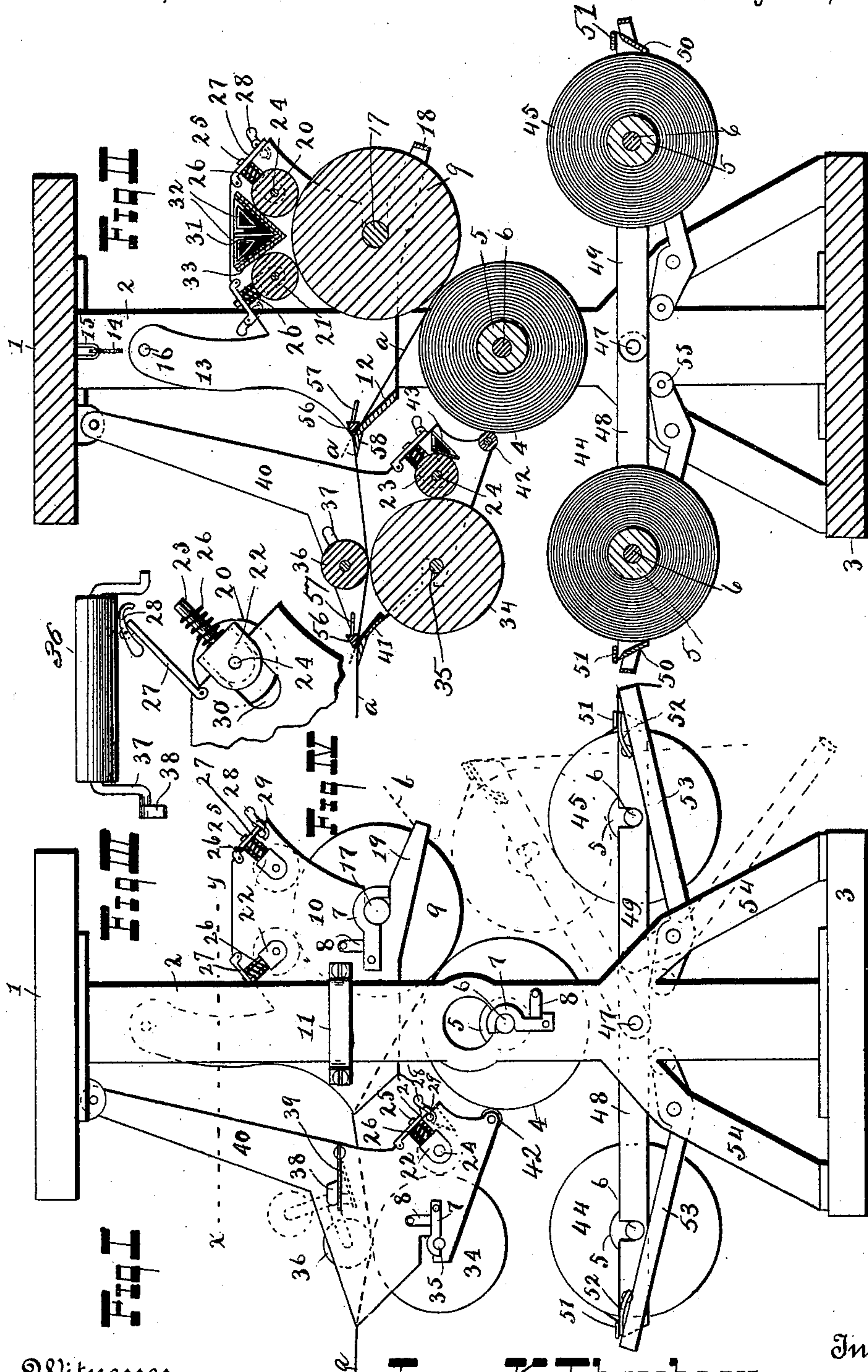
2 Sheets—Sheet 1.

J. K. THOMPSON.

ROLL PAPER HOLDER AND PRINTING MACHINE.

No. 587,247

Patented July 27, 1897.



Witnesses.
Warren D. House,
Alex. Scott

James K. Thompson, Inventor,
H. M. Plummer & Goldborough, His Attorneys.

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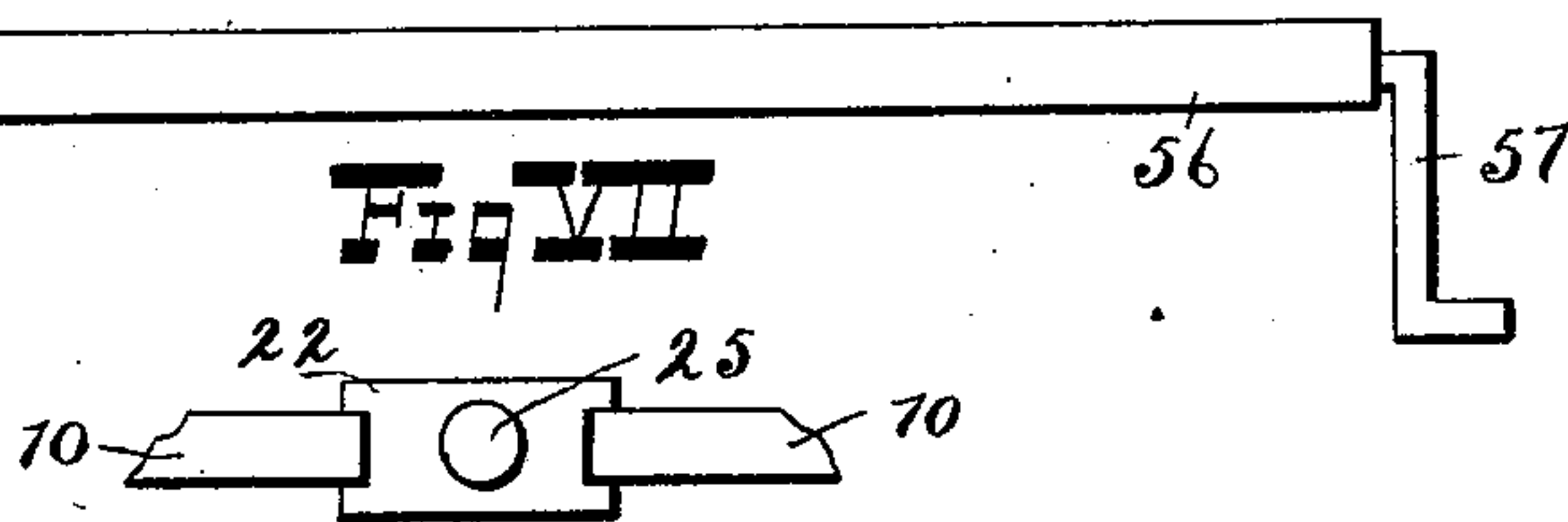
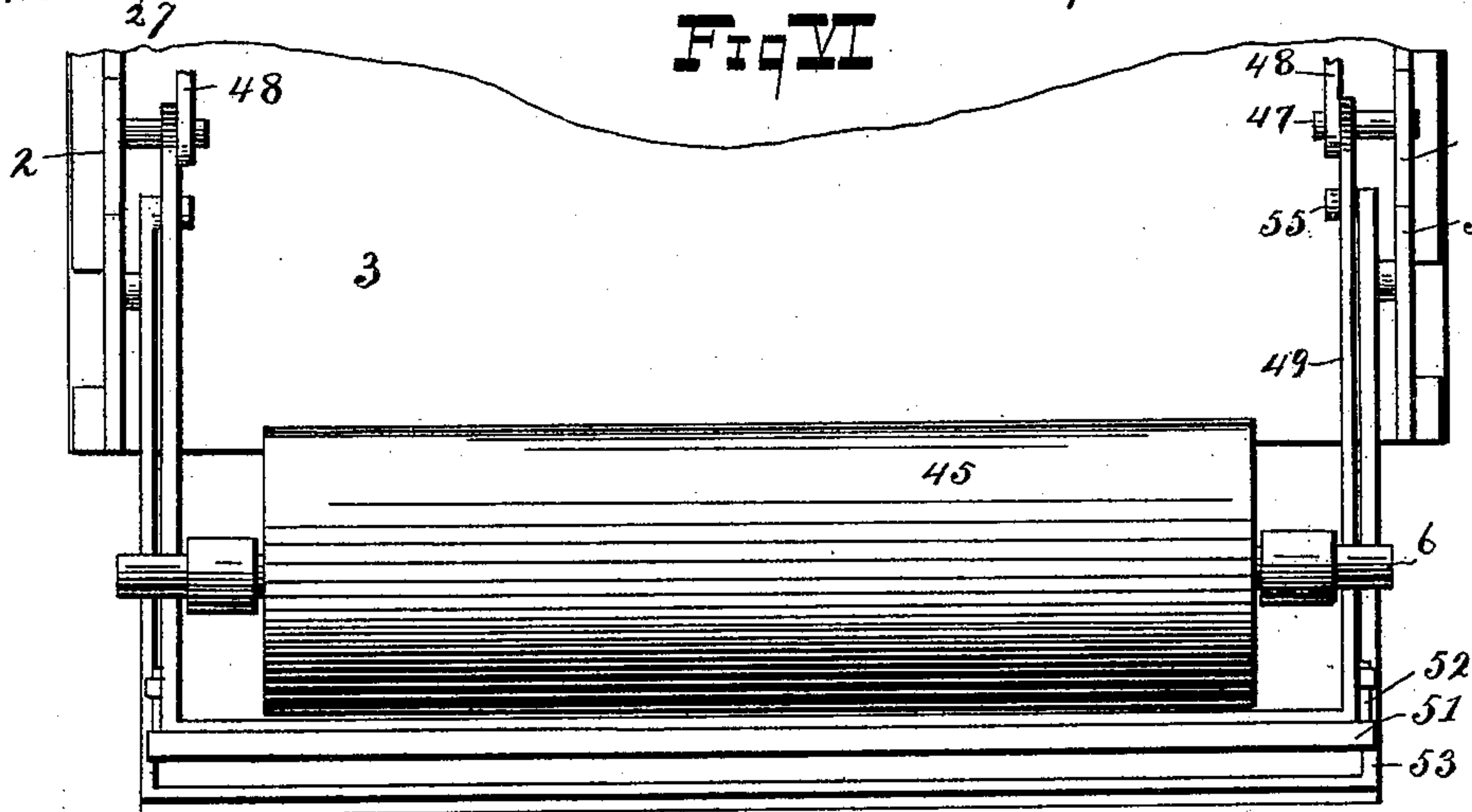
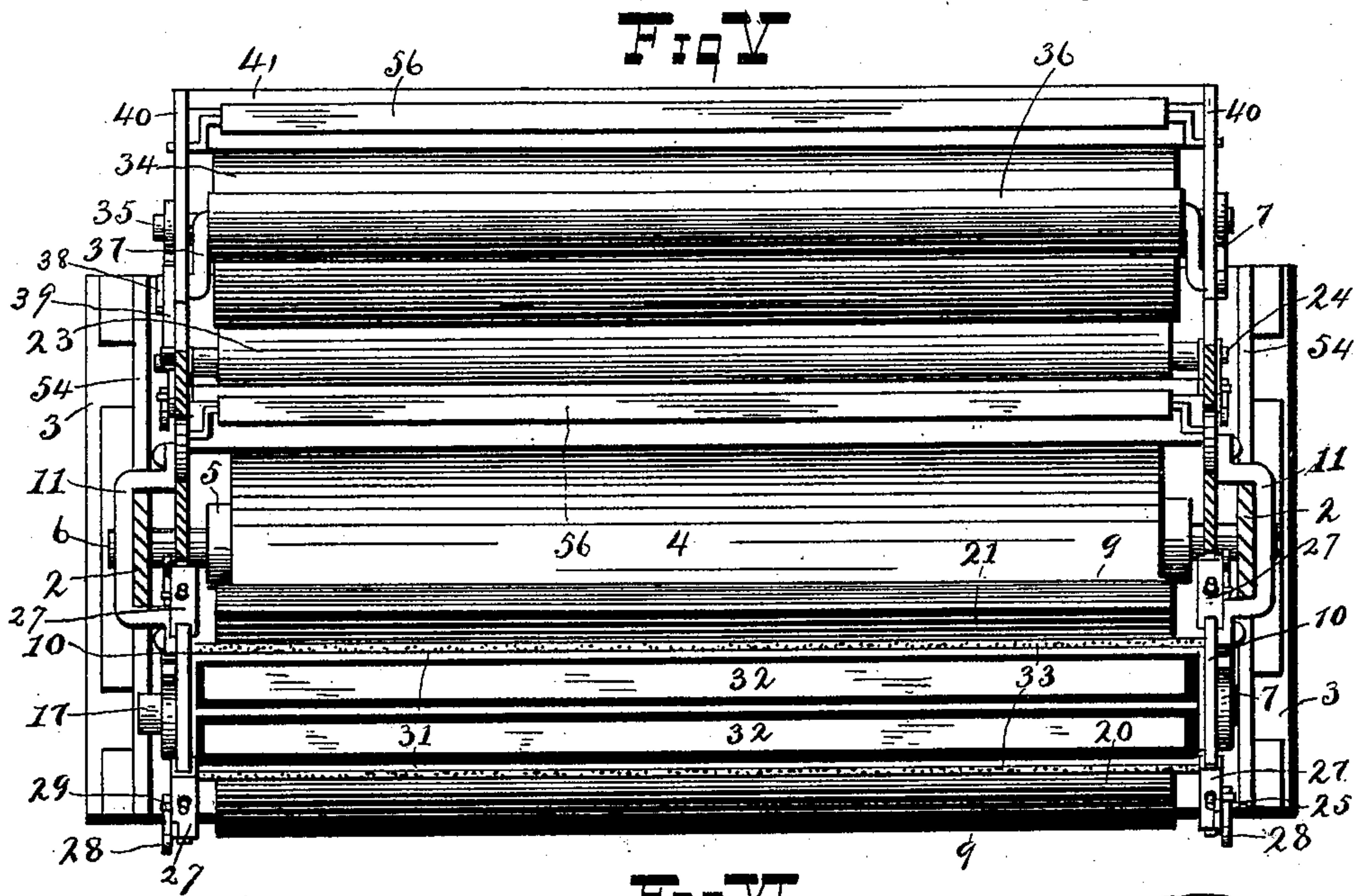


Fig VIII

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Witnesses.

Warren D. House,

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By *Thurman Goldborough*,

His Attorneys.

UNITED STATES PATENT OFFICE.

JAMES K. THOMPSON, OF KANSAS CITY, MISSOURI.

ROLL-PAPER HOLDER AND PRINTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 587,247, dated July 27, 1897.

Application filed September 12, 1896. Serial No. 562,246. (No model.)

To all whom it may concern:

Be it known that I, JAMES K. THOMPSON, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Roll-Paper Holders and Printing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in a combined roll-paper holder and printing-machine.

The object of my invention is to provide, with a roll-paper holder having certain novel features hereinafter described, printing mechanism adapted to imprint characters upon one or both sides of the sheet and operated by withdrawing the sheet of paper from the roll-holder.

In the accompanying drawings, which illustrate my invention, Figure 1 represents an end elevation of a machine constructed in accordance with the principles of my invention. Fig. 2 represents a transverse vertical sectional view of the same. Fig. 3 represents a plan view of the pressure-roller 36 and its cranked shaft. Fig. 4 represents a fragmental portion of the frame 10 in end elevation, showing the inking-roller 20 partially removed from the frame. Fig. 5 represents a horizontal sectional view taken on the dotted line *xy* of Fig. 1, some of the lower parts being omitted. Fig. 6 represents a plan view of one of the auxiliary paper-holders. Fig. 7 represents a plan view of the gravity paper-retainer 56. Fig. 8 represents an end view of one of the grooved slide-blocks 22.

Similar numerals of reference indicate similar parts throughout the several views.

1 indicates a horizontal plate, to the under side of which are secured the upper ends of the two vertical end plates 2, the lower ends of which are secured to a horizontal base-plate 3. A roll of paper 4, provided with an axial drum 5, is horizontally pivoted between the end plates 2 by means of a shaft 6, secured to and extending through the drum 5, the ends of the said shaft being revoluble in openings similarly located in each of the end plates of the roll-holder frame. One of the

said openings has an enlarged portion through which the drum 5 may be inserted in mounting the roll of paper 4. This enlarged upper portion of the opening is shown in Fig. 1. The roll of paper is held in position by means of a hook 7, pivoted to the outer side of the plate 2, that is provided with the enlarged opening for the reception of the drum 5. An arm 8 is pivoted to the plate 2 above named and to the right of the hook 7. After the hook 7 has been placed so as to engage the end of the shaft 6 the pivoted arm 8 is swung so that its free end lies against the rear side of the hook, and thus prevents its displacement. A similar locking device is provided for each end of the shafts upon which the type-rollers 9 and 34, respectively, are mounted.

To the right of and adapted to rest against the roll of paper 4 is a type-roller 9, horizontally pivoted between two vertical plates 10, which form the sides of a framework adapted to be moved vertically between the end plates 2 of the roll-holder frame. Each of the plates 10 has secured to it a horizontal U-shaped strap 11, which embraces the adjacent upright 2, upon which the strap is vertically movable. The left ends of the plates 10, as viewed in Fig. 2, are connected by means of a rearwardly-inclined transverse plate 12, the forward edge 58 of which is horizontal and is provided with a knife-edge, over which the paper from the roll 4 may be drawn. A similar transverse plate 18 connects projections 19, one of which extends rearwardly from the right edge of each plate 10. If found desirable for any purpose, the paper from the roll 4 may be withdrawn over the plate 18 instead of the plate 12, as indicated by *b*, Fig. 1. Each of the plates 10 is provided with a vertical extension 13, having a transverse opening 16 near its upper end adapted to be engaged by a hook 14, which is secured to a staple 15, secured to the top plate 1 above the arm 13. When it is desired to insert or take out the roll 4, the frame holding the type-roller 9 is raised and the hooks 14 made to engage the openings in the upper ends of the extensions 13.

Parallel with the type-roller 9 and resting upon its upper side are two inking-rollers 20 and 21. Each of the inking-rollers is provided with a central shaft 24, the ends of

which extend beyond the ends of the inking-rollers. Each end of the shaft 24 is pivoted in a transverse opening through a block 22, which is movably fitted within an obliquely-inclined slot in the upper edge of the plate 10. The slide-block 22 is provided with grooved edges fitted so as to engage the plate 10. The upper end of each slide-block 22 is provided with a stem 25, upon which is coiled a spring 26. A plate 27 covers the slot in the plate 10, one end of the plate being hinged to the plate 10 at one side of the slot, the other end being provided with an arm 28, hinged thereto and having one end hook-shaped, so as to engage a projecting pin 29, located upon the outer side of the plate 10. The plate 27 is provided with an opening through which the upper end of the stem 25 is movable. The upper end of the coil-spring 26 is adapted to rest against the under side of the plate 27. When it is desired to remove a roller for cleaning or any other purpose, the hooked end of the arm 28 is released from the pin 29 and the arm 27 can then be swung upon its hinged connection, so as to uncover the slot in the plate 10, after which the inking-roller, together with the two slide-blocks 22, may be withdrawn. Parallel to the inking-rollers 20 and 21 and secured at its ends to the plates 10 between the inking-rollers is a hollow prism-shaped receptacle 31, which forms the inking-fountain for the two rollers 20 and 21.

The ink-fountain 31 has the upper side open, and each of its other sides is provided with perforations through which the ink may pass. The sides of the fountain provided with perforations upon their outer surfaces have secured to them, one on each side, a porous plate, preferably of felt or other analogous substance, (indicated by 33,) and against which the inking-rollers 20 and 21 bear, respectively. A vertical plate extending from end to end divides the inking-fountain into two chambers, thus affording the use of two different colors or kinds of inks. Each chamber has located within it a float 32, having a prism shape, the function of which is to force the ink through the perforations in the sides of the fountain. The type-roller 9 may be made of wood or any suitable material and have the type integral with the roller or secured to its periphery in any suitable manner—as, for instance, the type may be on a rubber sheet secured upon the roller in any desirable manner. The type-roller 9 is provided with a central shaft 17, having projecting ends adapted to be placed within slots in the rear edges of the plates 10, above the projections 19. The roller is secured within the slots by means of a hook 7, pivoted to the outer side of each of the plates 10 and having the hooked end engaging the outer end of the shaft 17. The hook is held from displacement by means of an arm 8, pivoted above the hook, as shown in Fig. 1.

To the left of the uprights 2 is a frame consisting of two vertical plates 40 and a transverse connecting-plate 41 at its left side. Between the plates 40 is a revoluble type-roller 34, similar in construction to the type-roller 9 and similarly secured by its shaft 35 within slots in the left edges of the plates 40. To the right of the type-roller 34, between the plates 40, is an inking-roller 23, which is provided with a central shaft 24, the ends of which are pivoted in sliding blocks 22, constructed similarly to those already described and similarly secured within obliquely-inclined slots in the rear edges of the plates 40 and provided with similar tension-springs 26. To the rear of the inking-roller and parallel therewith and secured at its ends to the plates 40 is an inking-fountain similar in construction to one side of the inking-fountain 31. This fountain is indicated by 43. The upper ends of the plates 40 are pivoted to downwardly-extending projections from the upper bent ends of the uprights 2. The sheet of paper (indicated by *a*) from the roll 4 is passed over the type-roller 34 and the transverse plate 41, the upper edge of which is provided with a knife-edge for cutting the sheet off.

A pressure-roller 36 is revoluble upon a U-shaped shaft 37, the ends of which are pivotally mounted within openings in the plates 40. One end of the shaft at 38 is provided with a squared outer end adapted to have a bearing against a flat spring 39, one end of which is rigidly secured to the outer side of one of the plates 40. The disposition of the said squared portion is such that the roller 36 may be held in two positions, one of which is illustrated in solid lines in Fig. 1. In this position the roller forces the sheet of paper against the upper side of the type-wheel 34, but when the shaft is revolved into the position shown in dotted lines in the same figure the flat spring bearing upon another face of the squared end of the crank-shaft 37 holds the roller 36 in an elevated position, so that the sheet of paper may be withdrawn from the roller 4 with only its upper side printed. A gravity paper-retainer consisting of a transverse body portion 56, preferably triangular in section, is provided with a crank-arm 57 at each end. The said crank-arms are pivoted in openings through the plates 10. The position of the paper-retainer when in use is such that the triangular portion will lie upon the inclined part of the transverse plate 12. A similar retainer is similarly pivoted between the plates 40.

Pivoted upon a pin 47, located one upon each of the uprights 2 upon its inner side and below the shaft 6 of the roll 4, are two horizontal U-shaped frames 48 and 49. The said frames are disposed one upon each side of the upright 2 and are pivoted at their ends. Upon each of the said frames is revolvably mounted a roll of paper, (indicated, respectively, by 44 and 45,) the respective

shafts 6 of which are mounted at their ends in grooves provided in the upper edges of the frames 48 and 49. The transverse portion of the frames (indicated by 50) is provided with a knife-edge and has bearing down upon its sharpened upper edge a transverse plate 51, each end of which has secured to it a spring 52, the other end of which is secured to the frame. The parts just described constitute a paper-retainer. The lower end of each of the uprights 2 is provided upon the right and left sides with a downwardly-extending bracket 54, the lower ends of which are secured to the base-plate 3. Pivoted between corresponding brackets at each side of the uprights 2 is a U-shaped lever 53, the pivotal points being below the frames 48 and 49. The inner ends of the legs of the said levers are provided with friction-rollers 55, adapted to bear upon the under sides of the legs of the frames 48 and 49. The shafts 6 of the paper-rolls 44 and 45 may extend beyond the frames 48 and 49 sufficiently to rest upon the upper sides of the levers 53, thus supporting the outer ends of the said frames, or, as shown in Fig. 1, the springs 52 may serve to prevent the outer ends of the frames 48 and 49 from falling too low by resting upon the levers 53. By tilting the levers downwardly at their outer ends the rollers 55, bearing against the frames 48 and 49, will cause the frames to be rocked upwardly, so that they may be made to bear against the printing-rollers 34 or 9, as the case may be.

In Fig. 1 I have represented in dotted lines the roller 45 raised in the manner described, so as to bear against the printing-roller 9. The paper is passed from the roller 45 under the plate 51 and over the lever 53. By bearing down upon the outer end of the lever 53 the lever may be tilted into the position shown by the dotted lines. If the paper is then withdrawn, the printing-roller 9 will be rotated and will imprint its characters upon the side of the sheet next to it. The same operation may be applied to the mechanism upon the opposite side and the paper on the roll 44 be pressed against the printing-roller 34. A roller 42 is pivoted between the plates 40, so as to have a bearing upon the roll 4, thus keeping the frame 40 a uniform distance from the roll 4 and preventing friction while withdrawing paper from the roll 4.

My invention is operated as follows: If it is desired to print only upon one side of the paper on the roll 4, the roller 36 is raised and the paper drawn over the plates 12 and 41 until sufficient paper has been withdrawn, after which it is cut off by drawing downwardly over the knife 41. If desired, the mechanism held between the plates 40 may be dispensed with, in which case the paper can be cut off over the knife 12, which is provided for that purpose. If it is desired to print from both rollers 9 and 34, the pressure-roller 36 is lowered, as hereinbefore described,

and the paper is withdrawn, the withdrawal causing the printing-rollers to rotate and imprint upon both sides of the paper. As the paper is withdrawn from the roll 4 the frame 10 descends upon the uprights 2, keeping the printing-roller 9 constantly against the roll of paper. One or both of the printing-rollers and their frames and appurtenances may be dispensed with and the device used as a roll-paper holder only. Different widths of rolls of paper may be used at the same time upon different shafts.

The printing mechanisms shown may be utilized upon various other styles or roll-holders than the one I have described, and many modifications of my invention may be made while still keeping within its spirit.

With reference to the paper-retainer indicated by 56, it will be noted that the triangular piece rests over the rearwardly-inclined portion of the plate 12, so that after the paper has been torn off over the horizontal front edge the weight of the retainer causes the cut edge of the paper to raise, so that it may be easily seized for the purpose of drawing off more paper at any time.

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

1. In a roll-paper holder and printing-machine, the combination with a suitable framework, of a printing-roller revoluble in bearings having a sliding connection with the framework, a roll-paper drum revoluble in the framework and located in the path of the printing-roller, an auxiliary roll-paper holder hinged to the framework and having a roll-paper drum revolubly mounted thereon, and means for swinging the hinged holder so as to force the paper-roll against the printing-roller when paper is withdrawn from the roll, substantially as described.

2. In a roll-paper holder and printing-machine, the combination with a suitable framework, of a printing-roller revolubly mounted thereon, an auxiliary frame hinged to the framework and having a roll-paper drum revolubly mounted thereon and normally held out of contact with the printing-roller, and means for swinging the hinged frame so as to force the paper-roll against the printing-roller when paper is withdrawn from the roll, substantially as described.

3. In a roll-paper holder and printing-machine, the combination with a suitable framework, of a printing-roller revoluble in bearings which have a sliding connection with the framework, a roll-paper drum located in the path of the printing-roller, an auxiliary frame having a hinged connection with the main framework and adapted to rest by gravity against the paper-roll, a printing-roller revoluble in the said auxiliary frame and located normally out of the path of the paper as it is withdrawn from the drum, and means for bringing the auxiliary printing-roller and paper in contact, substantially as described.

4. In a roll-paper holder and printing-machine, the combination with a suitable framework, of a printing-roller revoluble in bearings which have a sliding connection with
5 the framework, a roll-paper drum located in the path of the printing-roller, an auxiliary framework having a hinged connection with the main frame, a friction-roller pivotally mounted in the auxiliary frame and adapted
10 to rest against the roll of paper by gravity, an auxiliary printing-roller pivotally mounted in the auxiliary frame and located out of the path of the paper as withdrawn from the

drum, a presser-roller having a swinging connection with the auxiliary frame and adapted 15 to force the paper against the second printing-roller, and means for locking the presser-roller in the depressed position, substantially as described.

In testimony whereof I affix my signature 20 in presence of two witnesses.

JAMES K. THOMPSON.

Witnesses:

WARREN D. HOUSE,
R. H. HOUSE.