

No. 637,605.

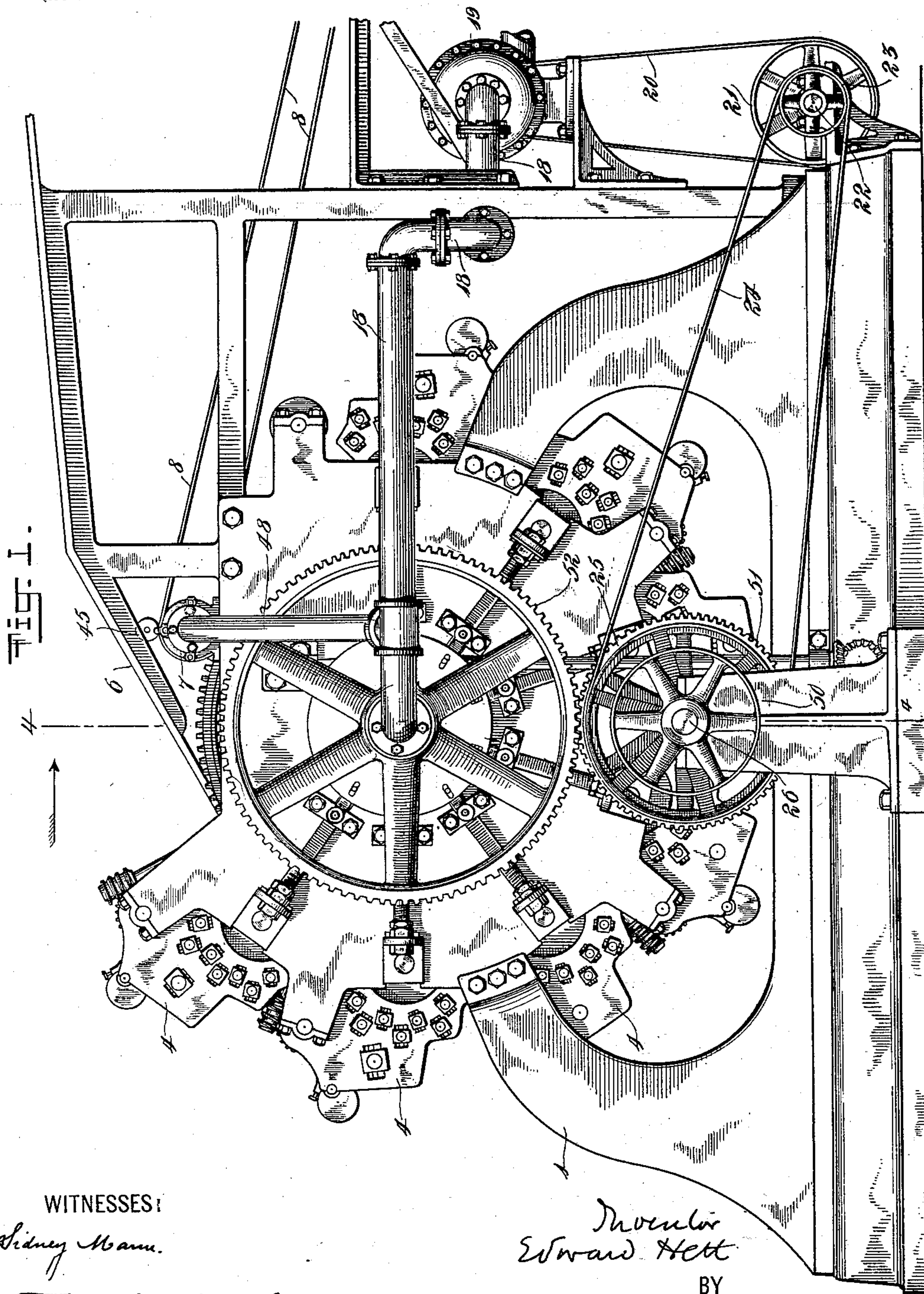
Patented Nov. 21, 1899.

E. HETT.
PRINTING PRESS.

(Application filed Mar. 6, 1899.)

(No Model.)

6 Sheets—Sheet 1.



WITNESSES:

Sidney Mann.

F. N. Roehrich

Inventor
Edward Hett

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ATTORNEYS

No. 637,605.

Patented Nov. 21, 1899.

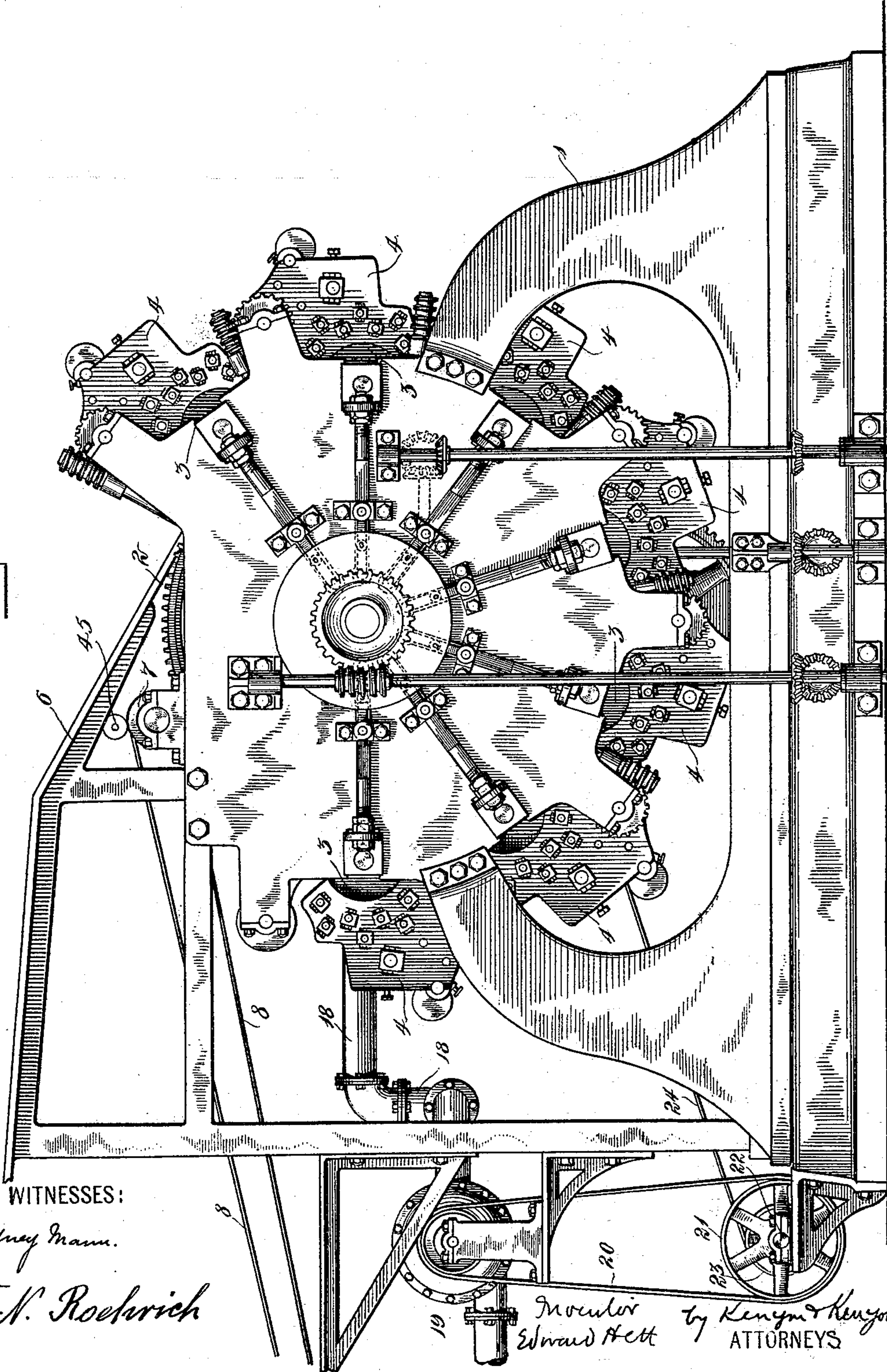
E. HETT.
PRINTING PRESS.

(Application filed Mar. 6, 1899.)

(No Model.)

6 Sheets—Sheet 2.

Fig. 2.



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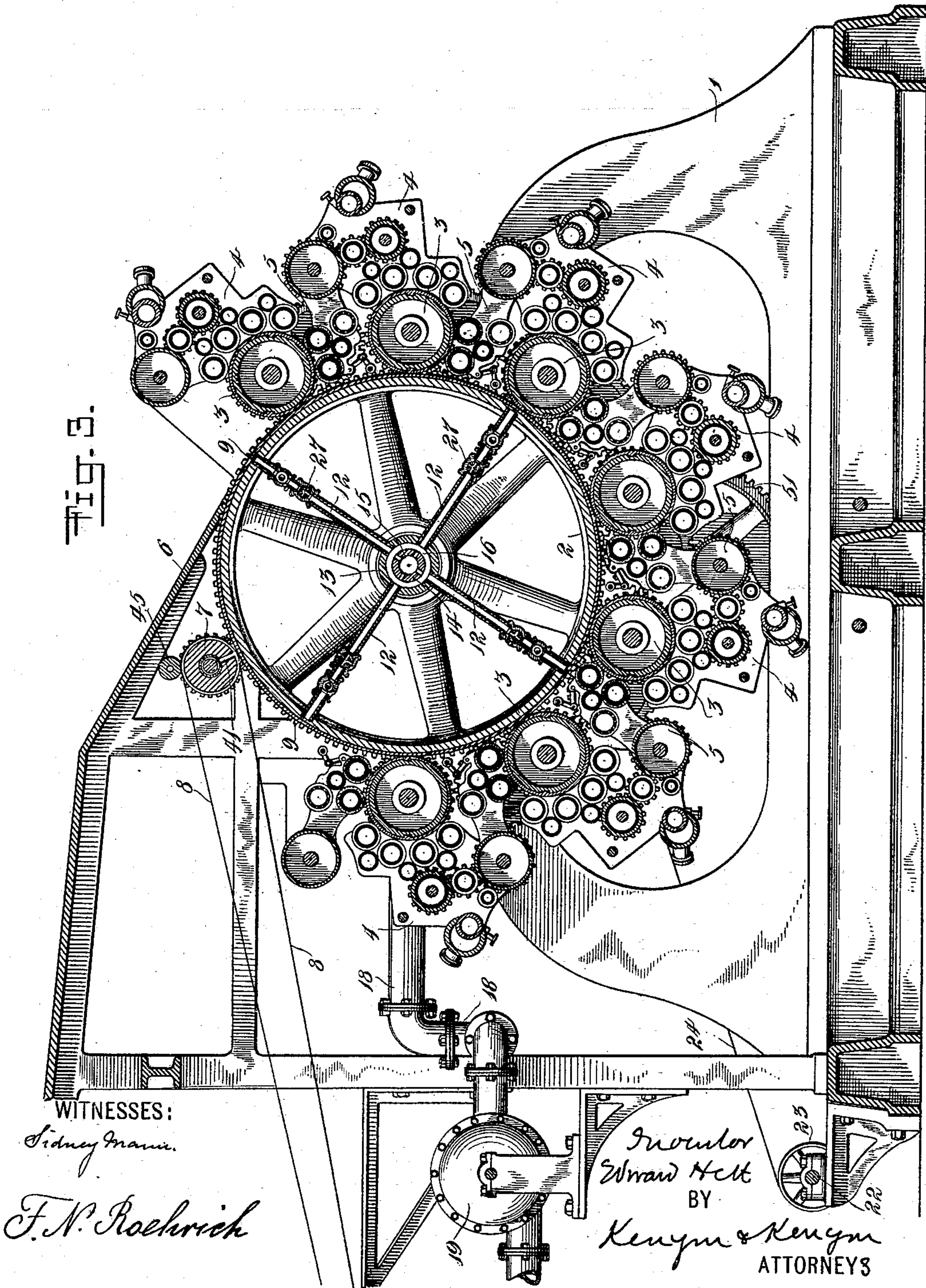
Patented Nov. 21, 1899.

**E. HETT.
PRINTING PRESS.**

(Application filed Mar. 6, 1899.)

(No Model.)

6 Sheets—Sheet 3.



No. 637,605.

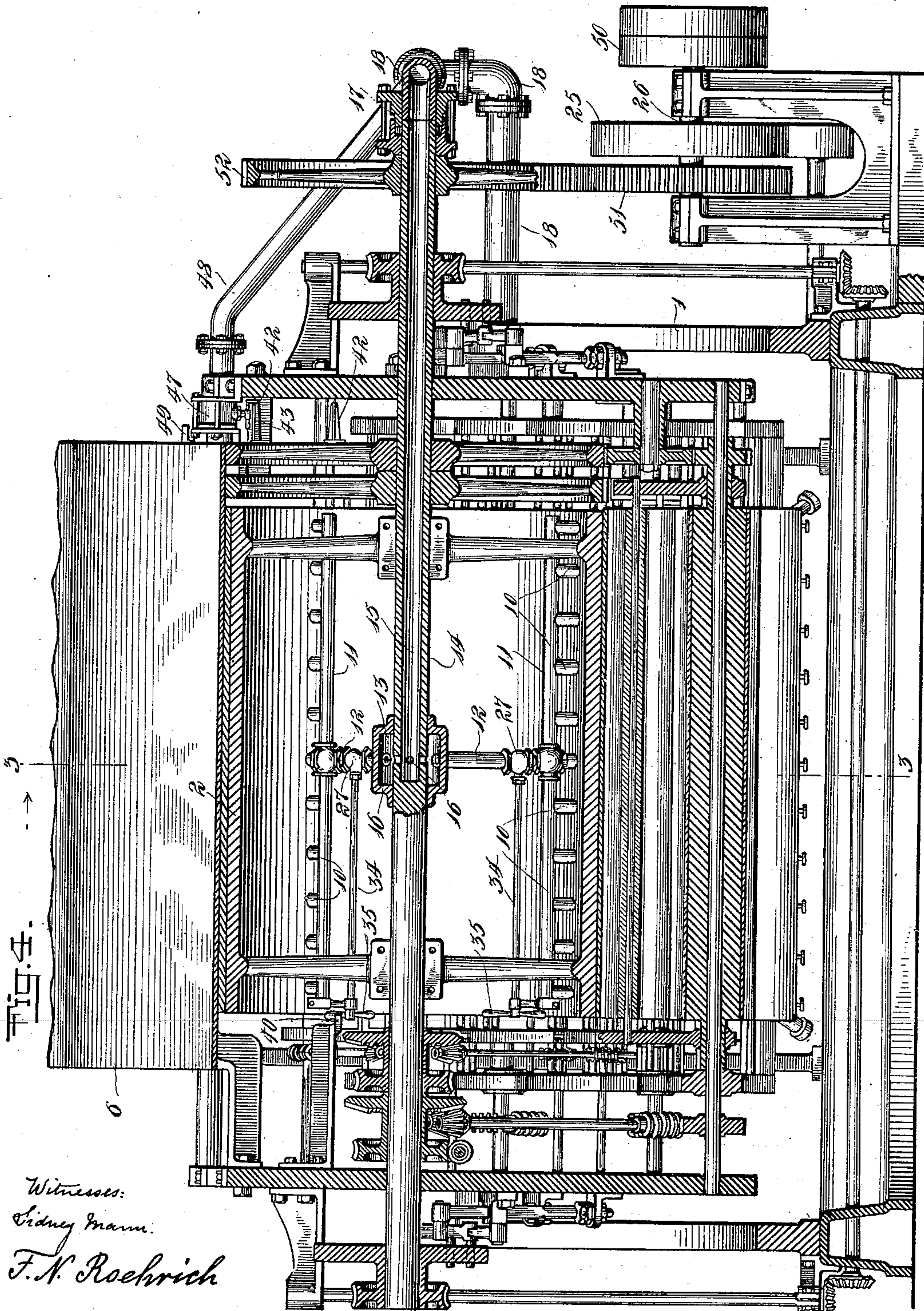
Patented Nov. 21, 1899.

E. HETT.
PRINTING PRESS.

(Application filed Mar. 6, 1899.)

(No Model.)

6 Sheets—Sheet 4.



Witnesses:
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No. 637,605.

Patented Nov. 21, 1899.

E. HETT.
PRINTING PRESS.

(Application filed Mar. 6, 1899.)

(No Model.)

6 Sheets—Sheet 5.

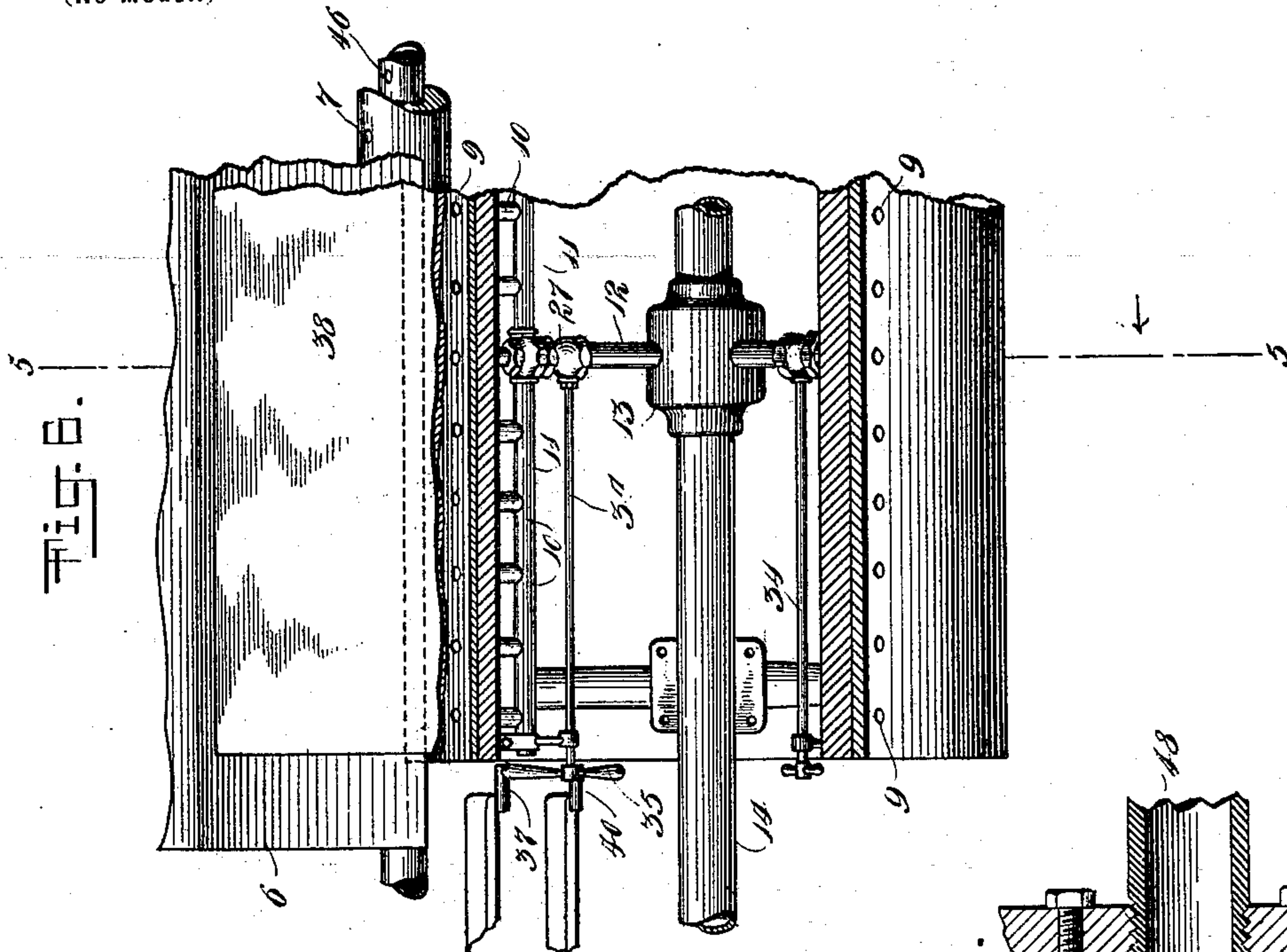


Fig. 5.

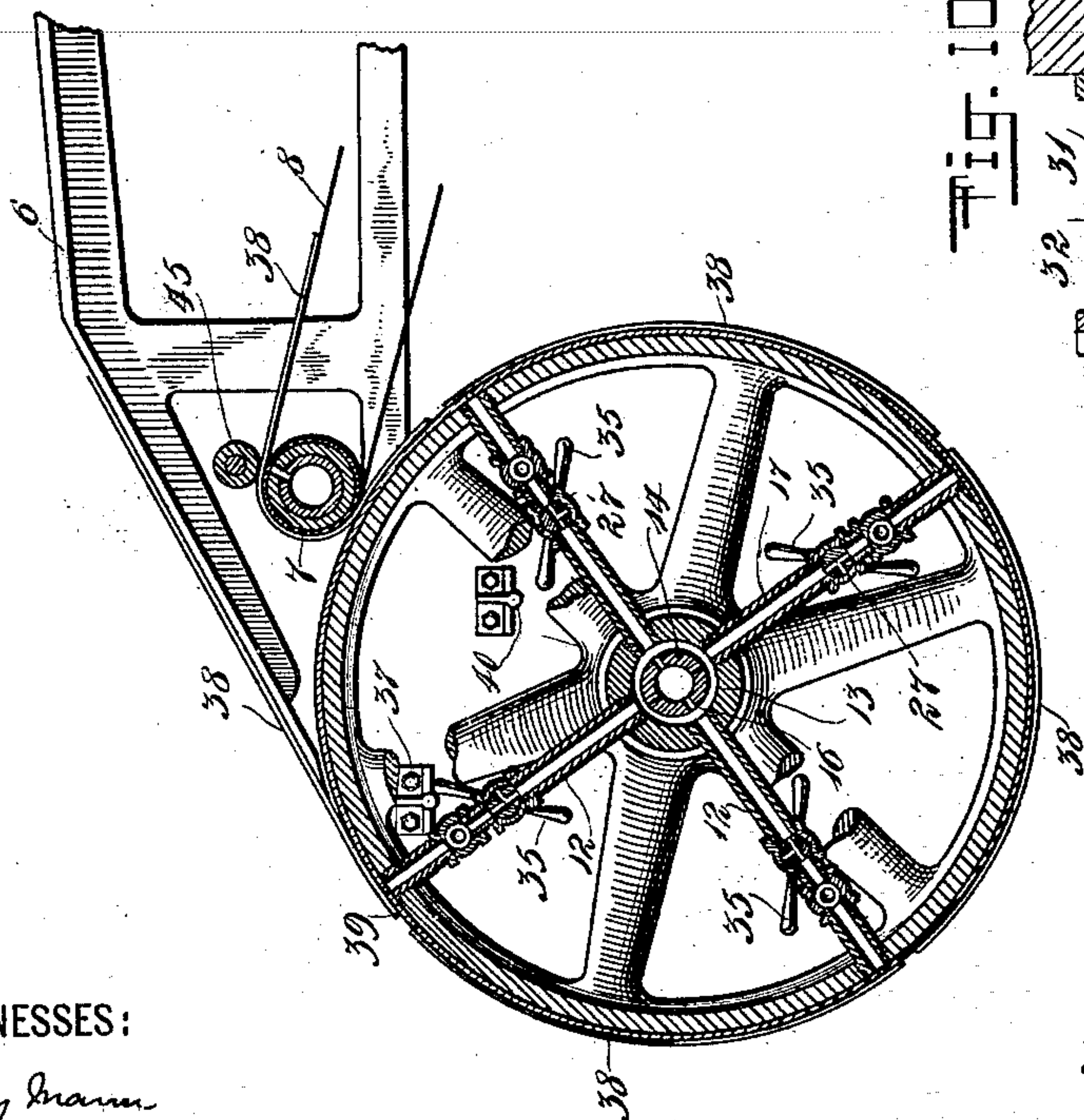
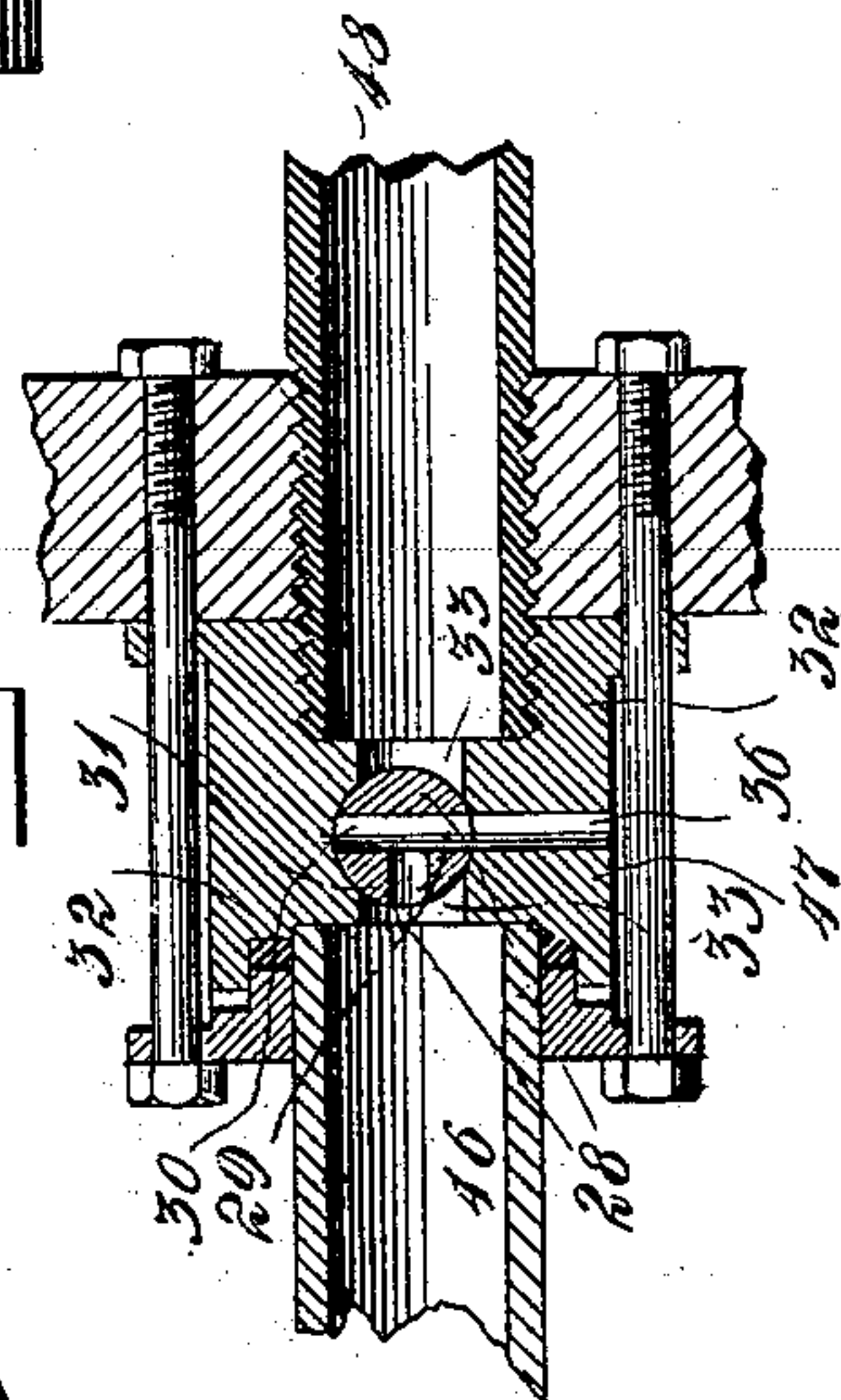


Fig. 10.



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PRINTING PRESS.

(Application filed Mar. 6, 1899.)

(No Model.)

6 Sheets—Sheet 6.

Fig. 6.

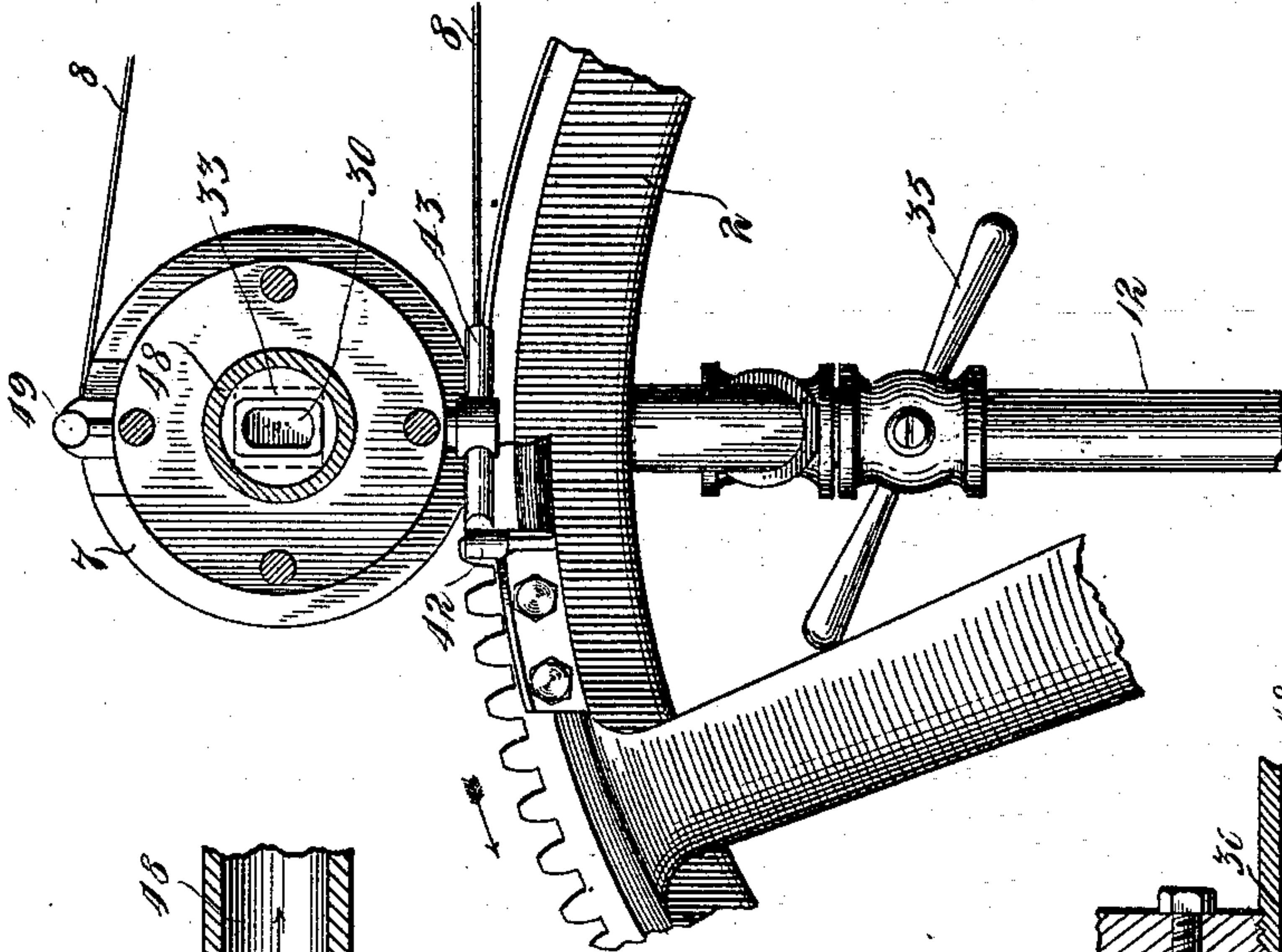


Fig. 7.

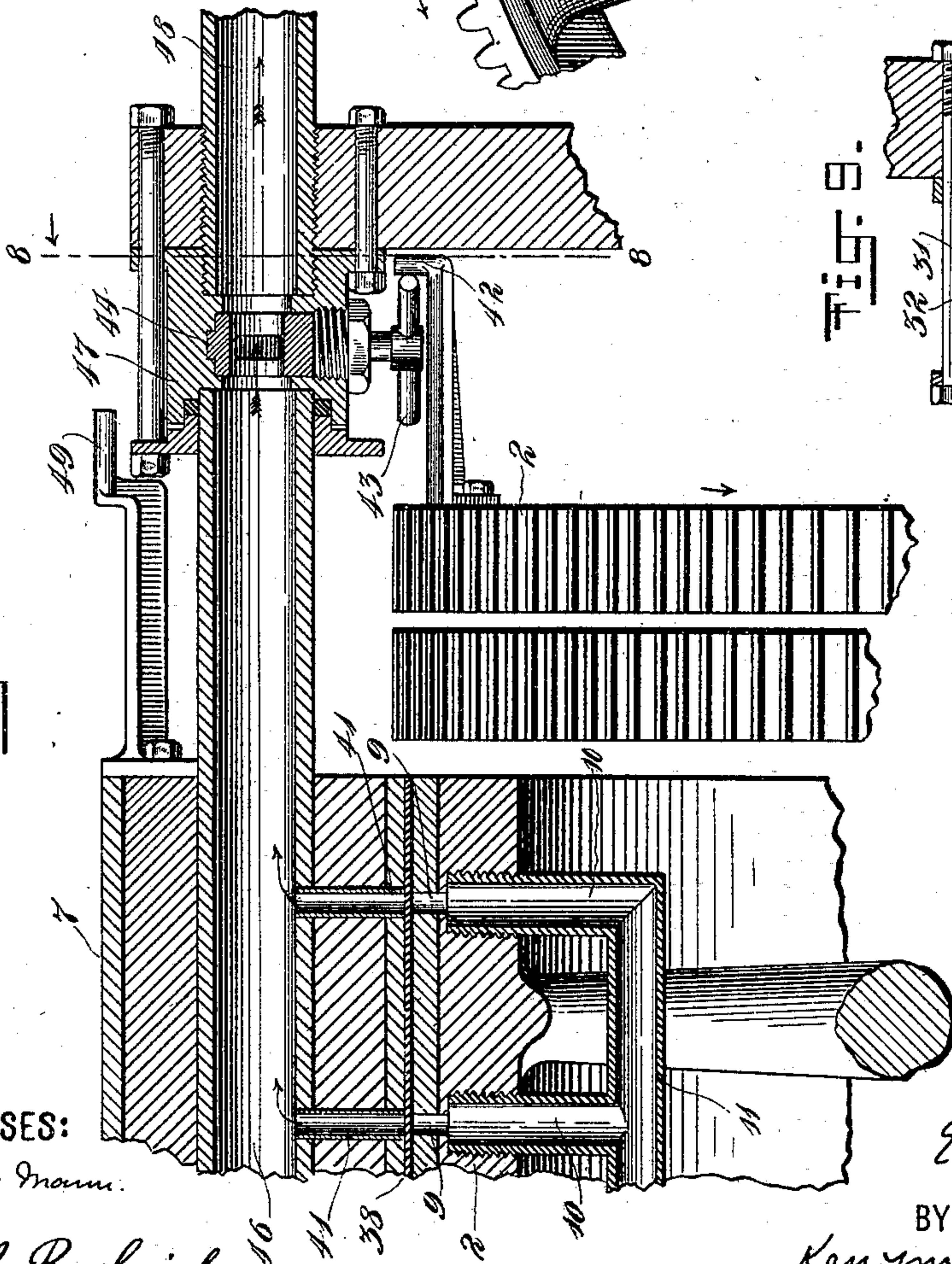
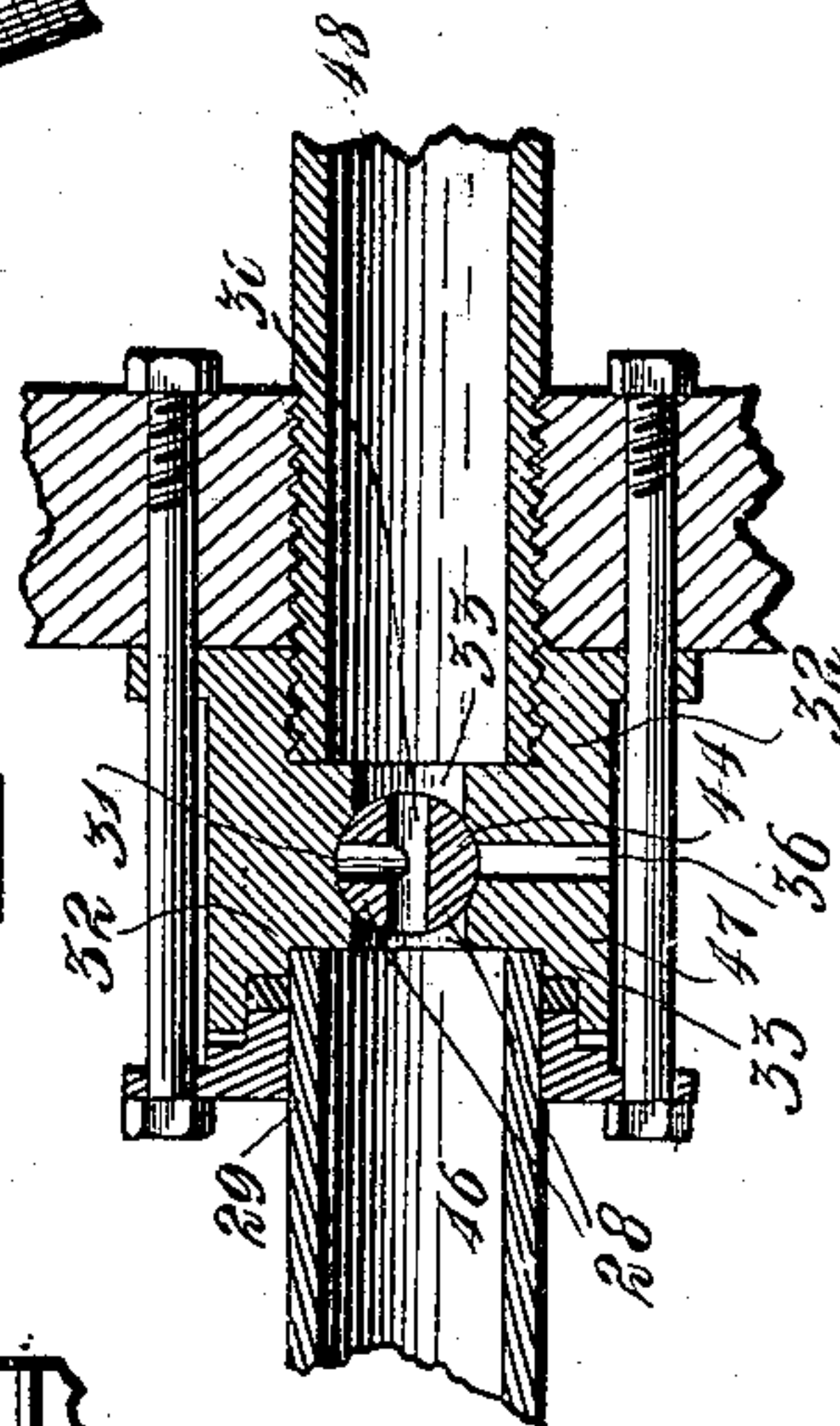


Fig. 8.



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UNITED STATES PATENT OFFICE.

EDWARD HETT, OF NEW YORK, N. Y.

PRINTING-PRESS.

SPECIFICATION forming part of Letters Patent No. 637,605, dated November 21, 1899.

Application filed March 6, 1899. Serial No. 707,922. (No model.)

To all whom it may concern:

Be it known that I, EDWARD HETT, of New York, (New Dorp,) in the county of Richmond and State of New York, have invented a new and useful Improvement in Printing-Presses, of which the following is a specification.

My invention relates to presses, and especially to rotary sheet-presses.

It has for its object to provide improved means for gripping the paper or holding it upon the impression-drum during the printing operation; also, to provide improved means for delivering the paper, and also to provide an improved impression-surface.

It consists of the novel devices herein shown and described.

Heretofore it has been customary, especially in rotary sheet-printing presses, whether lithographic or typographic, to employ mechanical grippers for seizing the sheet and for holding it against or upon the impression-drum, and it has also been customary in such presses, by reason, among other things, of the presence of such mechanical grippers, to make the impression-surface broken or discontinuous, leaving a space to accommodate the grippers between the end and the beginning of the impression-surface or, where more than one impression-surface is employed upon the same drum, between the adjacent ends of adjacent impression-surfaces. It has also been customary in such presses to use mechanical grippers for seizing the sheet after the printing operation for the purpose of withdrawing it from the impression-surface and delivering it. In my improved device I dispense with mechanical grippers and substitute pneumatic or suction grippers in place thereof, not only for gripping or holding the sheets upon the impression-surface during the printing operation, but also for gripping and seizing the paper after the printing operation for the purpose of leading it away from the impression-surface and delivering it, and I also preferably employ an impression-drum with a continuous impression-surface.

In the drawings I have shown my invention in its preferred form as embodied in a rotary sheet-press having a plurality of printing-cylinders, although in its broad aspects the invention is not limited to use in such a press, but may be used in a press having but a sin-

gle printing-cylinder or printing on the web or not on a rotary press. I have also shown my invention in the drawings herein as embodied in a lithographic-printing press, although it is obvious that it may be employed in a typographic press.

In the drawings accompanying this specification and forming part hereof, and in which similar reference characters in the different figures refer to corresponding parts, I have shown an embodiment of my invention in its preferred form, which I will now proceed to specifically describe.

Figure 1 is a view of my improved machine taken from one side, and Fig. 2 a view taken from the other side. Fig. 3 is a vertical cross-section taken on the line 3 3 of Fig. 4, viewed as shown by the arrow. Fig. 4 is a vertical longitudinal section taken on the line 4 4 of Fig. 1, viewed as shown by the arrow. Fig. 5 is a vertical cross-section through the impression-drum and delivery-cylinder, with the other parts of the press omitted, this view being taken on the line 5 5 of Fig. 6, viewed as shown by the arrow. Fig. 6 is a front view of the part shown in Fig. 5, with part of the impression-drum cut away to disclose the interior mechanism. Fig. 7 is a vertical longitudinal section through a part of the delivery-cylinder. Fig. 8 is a vertical cross-section on the line 8 8 of Fig. 7, viewed as shown by the arrow. Fig. 9 is a horizontal cross-section through the three-way valve of the delivery-cylinder; and Fig. 10 is a vertical cross-section similar to Fig. 5, showing one valve closed.

In the drawings my improved devices are shown as embodied in a seven-color rotary sheet lithographic-printing press, in which 1 is the framework of the press; 2, the impression-drum; 3 3, printing-cylinders; 4 4, the inking-frames carrying the inking devices, and 5 5 the damping-frames carrying the damping devices. The inking and damping devices may be of any suitable form and construction, and as they form no part of my present invention they are not shown in detail and will not be further described. The sheets are fed into the press from the feed-board 6, are seized and held in place upon the impression-drum, during the printing operation, by pneumatic gripping devices, presently

to be described, which preferably are automatic in their operation and are automatically released when the sheets reach the delivery-cylinder 7. The sheets are then seized and
 5 held upon the delivery-cylinder, during part of its rotation, by pneumatic gripping devices, presently to be described, and when they have reached the proper point for discharge are released therefrom automatically and are dis-
 10 charged from the press upon endless delivery-tapes 8, which pass around the delivery-cylinder and carry the sheets to any desired point.

I will now proceed to describe my improved
 15 pneumatic gripping devices for seizing and holding the sheets upon the surface of the impression-drum during the printing operation. For this purpose I provide at suitable distances apart on the surface of the impression-
 20 drum sets of openings 9, one set adapted for holding each sheet. These openings may be made of any desired form. As shown in the drawings, they consist of a line of holes in the surface of the impression-cylinder. Each
 25 set of openings is connected by air-passages with a common air-chamber within the interior of the drum, and the common air-chamber is connected by suitable air-passages with an exhaust device. In the form shown in the
 30 drawings each hole in the surface of the impression-cylinder is connected by a short pipe 10 to a common pipe 11, the latter being connected by a radial air-passage 12 with a common air-chamber 13 within or connected to
 35 the shaft 14 of the impression-drum. One-half of shaft 14 is made hollow, as at 15, the hollow space 15 extending from substantially the center of the shaft to one end. At the center of the shaft openings 16 connect
 40 the hollow part 15 with the common air-chamber 13. At its outer end shaft 14 is connected by an air-tight joint or stuffing-box 17 of any suitable construction to an air-pipe 18, which leads to an exhaust device 19. This
 45 exhaust device may be of any suitable construction and may be operated by any suitable means. As shown in the drawings, it is driven by belt 20, pulley 21 on shaft 22, pulley 23, belt 24, and pulley 25 on main driving-
 50 shaft 26. The details of construction of the exhaust device are not shown and will not be further described. As a sheet is fed into the press one edge of the sheet lies over a line
 55 of openings 9, and at this juncture the air is exhausted or partially exhausted through openings 9, pipes 10 11, and radial passage 12, in the manner presently to be described. The edge of the sheet is thus pressed firmly down
 60 against the impression-drum and is firmly held in that position during the entire printing operation and until the printing operation is completed and the edge of the sheet has reached the delivery devices.

The operation of exhausting the air to hold
 65 the sheet upon the impression-drum and of releasing it is preferably done automatically by the following means: In each radial pas-

sage 12 is placed a valve, preferably a three-way valve 27. The construction of this valve
 70 is the same as that shown in Fig. 9, and consists of a solid core or center 28, having a three-way passage through it, which consists of ports 29, 30, and 31, all connected together,
 75 core 28 being surrounded by an outer casing 32, having at each side an opening 33. Core 28 is connected by a rod 34 to a handle 35. This handle is automatically turned one way or the other, as presently to be described,
 80 thus rotating core 28 and bringing it into the position shown in Fig. 9, where the ports 29 and 30 register with the openings 33 33, or into the position shown in Fig. 10, one-quarter way around to the left from that shown
 85 in Fig. 9, where port 31 registers with one of the openings 33, and port 29 will then register with a third opening 36 in the walls of outer casing 32. Opening 36 communicates with the outer air. In one position of the
 90 valve in each radial passage 12 ports 29 and 30 register with openings 33 and the two parts of radial passage 12, thus connecting the openings 9 with the common air-chamber 13 and with the exhaust device. The valve is automatically turned into this position each
 95 time that a sheet is fed into the press or as soon as the edge of the sheet lies over the openings 9 9. This is accomplished by means of a projection 37 upon the framework of the press, against which handle 35 is adapted to
 100 strike as the drum reaches the proper position, as shown in Fig. 5, in which position the sheet 38 will have its forward edge 39 lying over the openings 9. Projection 37 turns handle 35 so as to cause ports 29 and 30 in
 105 the valve to register with openings 33 33 in the outer casing and with the line of radial passage 12. The air underneath the openings 9 will then be exhausted or partially exhausted, holding the forward end 39 of sheet
 110 38 firmly upon the impression-drum. The sheet will then be carried around the impression-drum and will receive the various impressions from the different printing-cylinders until the printing operation has been
 115 completed and the sheet is in proper position for delivery. When the sheet reaches this position, a projection 40, also secured to the framework of the press, strikes handle 35. This gives the handle a quarter-turn, back to its original position, so that port 29 of the
 120 valve registers with openings 36 through the outer casing of the valve, and 31 registers with one of the openings 33. This position of the valve connects the openings 9 with the atmosphere, thus relieving the vacuum in the openings and under the edge of
 125 the sheet and releasing the sheet. At the same time the sheet has a position where its edge lies opposite to delivery-cylinder 7. The revolution of this cylinder is so timed that a
 130 line of openings 41 in the surface of the delivery-cylinder are at this juncture brought opposite to the impression-drum, so that the edge of the sheet just released lies immedi-

ately over these openings. At substantially the same time also a projection 42, secured to the impression-drum and rotating with it, strikes against a handle 43 of a three-way valve 44. This valve is located in an air-pipe 48, which connects the openings 41 in the delivery-cylinder with the exhaust device 19, and the valve is constructed in the same manner as the three-way valves 27, already referred to, and is shown in vertical cross-section in Figs. 9 and 10. When projection 42 strikes valve 43, it gives it a one-quarter turn, bringing it into the position shown in Fig. 9, serving to connect the openings with the exhaust device and to exhaust the air wholly or partially in the openings and under the edge of the sheet, thus serving to grip the sheet and hold it firmly upon the delivery-cylinder, by which it is then carried around for a part of its rotation until it passes under biting-roller 45, when it is discharged upon delivery-tapes 8, by which it is discharged from the machine. In my preferred form the openings 41 in the delivery-cylinder communicate directly with an air-chamber 46, contained within the shaft of the delivery-cylinder, this chamber extending to the end of the shaft and entering a stuffing-box 47, which furnishes an air-tight joint between it and air-pipe 48, a part of the stuffing-box in this casing forming outer casing 32 of the valve. Valve 44 is preferably located in the air-pipe 48. By means of the air-tight joint furnished by stuffing-box 47 delivery cylinder 7 is free to rotate without in any way affecting the communication between air-chamber 46 and air-pipe 48. When the sheet reaches the point for discharge upon delivery-tapes 8, a projection 49, secured to and rotating with delivery-cylinder 7, strikes against handle 43, giving it a quarter-turn back to its original position, (indicated in Fig. 10,) closing the communication between chamber 46 and air-pipe 48 and the exhaust device and connecting chamber 46 and openings 41 with the atmosphere, thus relieving the vacuum in the openings and air-chamber and releasing the edge of the sheet, so that it can be carried away by delivery-tapes 8.

In a press having a plurality or series of printing-cylinders, such as shown in the drawings herein, I provide sets of openings 9 arranged at convenient distances apart on the surface of the impression-cylinder, each set of openings having its radial air-passage and valve, the radial passages preferably opening into a common air-chamber within the shaft of the impression-drum, as shown. By this arrangement and by means of my improved pneumatic gripping devices I can use an impression-drum having a continuous impression-surface and the sheets can be fed into the press very rapidly, one following closely after another, as shown in Fig. 5.

By my improved devices a large number of printing-cylinders can be employed within a comparatively small space, sheets can be fed

into the press and be printed much more rapidly than has heretofore been possible, and the devices for gripping and holding the same upon the impression-drum during the printing operation are effective and certain in operation, occupy but little room, do not tend to tear the sheets, although holding them by a firm grip upon the impression and delivery cylinder, and are easily and automatically controlled, each sheet being held firmly upon the impression-drum during the printing operation, no matter what the number of printing-cylinders employed, and being released at the proper point, and being then firmly and automatically gripped by the delivery-cylinder and carried upon it during part of its rotation, and then being automatically released at the point of delivery upon the delivery-tapes. The mechanism employed for this gripping is simple in character, efficient in operation, and occupies comparatively but a small space.

26 is the main driving-shaft of the press. Rotation is communicated to this from pulley 50 from any suitable source of power. Rotation is imparted to drum 2 from spur-gear 51 on shaft 26 meshing with spur-gear 52 on the shaft of the impression-drum. The means for imparting motion to the other parts of the mechanism form no part of the present invention and will not therefore be further described.

The mechanism shown in the drawings can of course be widely varied without departing from my invention, and my invention can be used not only in multicolor lithographic printing presses, such as that shown in the drawings herein, but also in sheet and web presses of any character and having one or any number of printing-surfaces.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a rotary press the combination of an impression-drum having a continuous impression-surface, one or more printing-surfaces, suitable inking devices therefor, a series of sets of openings in the drum over which the paper is adapted to lie as it passes around the impression-drum, air-passages connecting each set of openings with a common air-chamber, valves in the air-passages adapted, when in one position to connect their respective sets of openings with the common air-chamber, and, when in another position, to connect the said openings with the atmosphere, handles for said valves, a projection on the framework of the press against which the handle of each valve is adapted to strike as the paper comes over the set of openings connected with the passage in which the said valve is located, to turn the said valve into position to connect its set of openings with the common air-chamber, another projection on the framework of the press against which each handle is adapted to strike when the paper has reached the delivery-point to turn its valve into position to connect the said

openings with the atmosphere, air-passages connecting the said chamber with an exhaust device, and an exhaust device, whereby the paper is held closely upon the surface of the impression-drum during the printing operation and is automatically released at the point of delivery.

2. In a rotary press the combination of an impression-drum having a continuous impression-surface, one or more printing-surfaces, suitable inking devices therefor, a series of sets of openings in the drum over which the paper is adapted to lie as it passes around the impression-drum, air-passages connecting the sets of openings with an exhaust device, valves in the air-passages adapted, when in one position to connect their respective sets of openings with the exhaust device, and, when in another position, to connect the said openings with the atmosphere, handles for said valves, a projection on the framework of the press against which the handle of each valve is adapted to strike as the paper comes over the sets of openings connected with the air-passage in which the said valve is located, to turn the said valve into position to connect its set of openings with the exhaust device, another projection on the framework of the press against which each handle is adapted to strike when the paper has reached the delivery-point to turn its valve into position to connect said openings with the atmosphere, and an exhaust device, whereby the paper is held closely upon the surface of the impression-drum during the printing operation and is automatically released at the point of delivery.

3. In a rotary sheet-press, the combination of an impression-drum, one or more printing-surfaces, suitable inking devices therefor, sets of openings in the drum over each set of which an edge of a sheet is adapted to lie when fed into the press, a common air-chamber within the interior of the drum, air-passages connecting each set of openings with the common air-chamber, a valve in each air-passage adapted, when in one position, to connect its set of openings with the common air-chamber and, when in another position, to connect the said openings with the atmosphere, a handle for each valve, a projection on the framework of the press against which the handle of each valve is adapted to strike, as the edge of a sheet, fed into the press, comes over the set of openings connected with the air-passages in which the said valve is located, to turn the valve into position to connect its set of openings with the common air-chamber, another projection on the framework of the press against which each handle is adapted to strike, when the sheet has been printed and has reached the delivery-point, to turn its valve into position to connect said openings with the atmosphere, air-passages connecting the common air-chamber with an exhaust device, an exhaust device and suitable delivery devices, whereby each sheet will be held in place

on the impression-drum during the printing operation and will be released when the printing is done.

4. In a rotary sheet-press, the combination of an impression-drum, one or more printing-surfaces, suitable inking devices therefor, sets of openings in the drum over each set of which an edge of a sheet is adapted to lie when fed into the press, a common air-chamber contained within the shaft of the impression-drum and extending to one end of the shaft, radial air-passages connecting each set of openings with said common air-chamber, a valve in each of said radial air-passages adapted, when in one position, to connect its set of openings with the common air-chamber and when in another position to connect them with the atmosphere, a handle for each valve, a projection on the framework of the press, against which the handle is adapted to strike, as a sheet is fed into the press and the edge thereof comes over the openings in the drum corresponding with the radial air-passages in which said valve is located, to turn said valve into position to connect the said openings with the common air-chamber, another projection upon the framework of the press against which the handle is adapted to strike, after the sheet has been printed and has arrived at the point of delivery, to turn the valve into position to connect the said openings with the atmosphere, an air-pipe communicating with said common air-chamber and leading to an exhaust device, an air-tight joint between the shaft and the said air-pipe adapted to permit the free rotation of the shaft, an exhaust device and suitable delivery devices, whereby each sheet will be automatically held in place upon the impression-drum during the printing operation and will be automatically released when the printing is done.

5. In a rotary sheet-press, the combination of an impression-drum having a continuous impression-surface, one or more printing-surfaces, suitable inking devices therefor, sets of openings in the drum over each set of which an edge of a sheet is adapted to lie when fed into the press, a common air-chamber contained within the shaft of the impression-drum extending to one end of the shaft, radial air-passages connecting each set of openings with said common air-chamber, a valve in each of said radial air-passages adapted, when in one position, to connect its set of openings with the common air-chamber, and, when in another position, to connect them with the atmosphere, a handle for each valve, a projection on the framework of the press, against which each handle is adapted to strike, as a sheet is fed into the press and the edge thereof comes over the opening in the drum corresponding with the radial air-passages in which said valve is located, to turn said valve into the position to connect the said openings with the common air-chamber, another projection upon the framework of the press against which handle is adapted to strike,

after the sheet has been printed and has arrived at the point of delivery, to turn the valve into position to connect the said openings with the atmosphere, an air-pipe communicating with said common air-chamber and leading to an exhaust device, an air-tight joint between the shaft and the said air-pipe adapted to permit the free rotation of the shaft, an exhaust device and suitable delivery devices, whereby each sheet will be automatically held in place upon the impression-drum during the printing operation and will be automatically released therefrom when the printing is done.

6. The combination with the impression-surface of a press and suitable devices for gripping and holding the paper thereon and for releasing the same, of a delivery-cylinder having openings in its surface over which the paper is adapted to lie when released from the impression-surface, an exhaust device, air-passages connecting the openings with the exhaust device, a valve in said air-passages adapted, when in one position, to connect the openings with the exhaust device and, when in another position, to connect the openings with the atmosphere, a handle for said valve, a projection adapted to operate the said handle, when the printing is completed and the paper has been brought over the openings in the delivery-cylinder, to turn the valve into position to connect the said openings with the exhaust device, a projection adapted to operate the said handle, when the paper has been carried sufficiently around the delivery-cylinder to permit of its discharge from the press, to turn the said valve into position to connect the said openings with the atmosphere, whereby the paper will be automatically held upon the delivery-cylinder after its release from the impression-surface and during part of the rotation of the delivery-cylinder, and will then be automatically released from the delivery-cylinder.

7. The combination with an impression-surface of a press and suitable devices for gripping and retaining the paper thereon and for releasing the same, of a delivery-cylinder having openings in its surface over which the paper is adapted to lie when released from the impression-surface, an air-chamber contained within the shaft of the delivery-cylinder extending to one end of said shaft and connected with the openings on the surface of the cylinder, an exhaust device, an air-pipe communicating with said air-chamber and with the exhaust device, an air-tight joint between the end of the shaft of the delivery-cylinder and said air-pipe adapted to permit the rotation of the said cylinder, a valve in said air-pipe adapted, when in one position, to connect the air-chamber with the exhaust device, and, when in another position, to connect the chamber with the atmosphere, a handle for said valve, a projection mounted upon the impression-surface and adapted to strike the

said handle, when the printing is completed and the paper has been brought over the openings in the delivery-cylinder, to turn the valve into position to connect the said air-chamber with the exhaust device, a projection upon the delivery-cylinder which is adapted to strike the said handle, when the paper has been carried sufficiently around the delivery-cylinder to permit of its discharge from the press, to turn said valve into position to connect the said air-chamber with the atmosphere, whereby the paper will be automatically held upon the delivery-cylinder after its release from the impression-surface and during part of the rotation of the delivery-cylinder, and will then be automatically released from the delivery-cylinder.

8. In a rotary sheet-press, the combination of an impression-drum, one or more printing-surfaces, suitable inking devices therefor, openings in the drum over which an edge of the sheet is adapted to lie when fed into the press, an exhaust device, air-passages connecting the openings with the exhaust device, a valve in said air-passages adapted when in one position to connect the openings with the exhaust device, and when in another position to connect them with the atmosphere, a handle for said valve, a projection from the framework of the press against which the valve is adapted to strike, as a sheet is fed into the press and as the edge of the sheet projects over the openings in the drum, to turn said valve into position to connect the said openings with the exhaust device, another projection from the framework of the press against which the said handle is adapted to strike, when the printing upon the sheet has been completed, to turn the valve into position to connect the said openings with the atmosphere, a delivery-cylinder having openings in its surface over which the edge of the sheet is adapted to lie when released from the impression-drum, air-passages connecting the openings with an exhaust device, a valve adapted, when in one position, to connect the said openings with the exhaust device and, when in another position, to connect said openings with the atmosphere, a handle for said valve, a projection from the impression-drum adapted to strike said handle, when a sheet has been printed and its edge projects over the openings in the delivery-cylinder, to turn said valve into position to connect the said openings with the exhaust device, a projection upon the delivery-cylinder adapted to strike said handle, when the sheet has been carried by the delivery-cylinder to the proper point for discharge, to turn said valve into position to connect the said openings with the atmosphere, whereby the sheet will be automatically held in place upon the impression-drum during the printing operation, will be automatically released therefrom when the printing is completed, will then be automatically held upon the delivery-cylinder during

part of its rotation and will be automatically released therefrom at the proper point for delivery.

9. In a rotary sheet-press, the combination
 5 of an impression-drum, one or more printing-surfaces, suitable inking devices therefor, a series of sets of openings in the impression-drum over one of which sets an edge of a sheet is adapted to lie when fed into the
 10 press, a common air-chamber contained within the shaft of the impression-drum and extending to one end of the shaft, radial air-passages connecting each set of openings with said common air-chamber, a valve in each of
 15 said air-passages adapted, when in one position, to connect its set of openings with the common air-chamber, and, when in another position, to connect the set of openings with the atmosphere, a handle for each of said
 20 valves, a projection upon the framework of the press adapted to strike the handle, as a sheet is fed into the press and as it projects over the openings of the radial passages with which said handle and valve are connected,
 25 to move said valve into position to connect the said openings with the common air-chamber, another projection on the framework of the press adapted to strike said handle, after the sheet has been printed, to turn the valve
 30 into position to connect the said openings with the atmosphere, an exhaust device, an air-pipe connecting the common air-chamber with the exhaust device, an air-tight joint around the end of the shaft between the said
 35 common air-chamber and the air-pipe adapted to permit the free rotation of the shaft, a delivery-cylinder having openings in its surface over which the edge of the sheet is adapted to lie when released from the impression-
 40 drum, an air-chamber contained within the

shaft of the delivery-cylinder extending to one end of said shaft, air-passages connecting the openings with the said air-chamber, an air-pipe connecting said air-chamber with the exhaust device, an air-tight joint between
 45 the end of the shaft of the delivery-cylinder and said air-pipe adapted to permit the rotation of the said cylinder, a valve in said air-pipe adapted, when in one position, to connect the said air-chamber with the exhaust
 50 device and, when in another position, to connect it with the atmosphere, a handle for said valve, a projection from the impression-drum adapted to strike said handle, when a sheet has been printed and its edge projects over
 55 the openings in the delivery-cylinder, to turn said valve into position to connect the said openings with the exhaust device, and a projection upon the delivery-cylinder adapted to strike said handle, when the sheet has been
 60 carried by the delivery-cylinder to the proper point for discharge, to turn said valve into position to connect the said openings with the atmosphere, whereby the sheet will be automatically held in place upon the impression-
 65 drum during the printing operation, will be automatically released therefrom when the printing is completed, will then be automatically held upon the delivery-cylinder during part of its rotation and will be automatically
 70 released therefrom at the proper point for delivery.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWARD HETT.

Witnesses:

EDWIN SEGER,
 GEO. W. MILLS, Jr.