No. 691,863. Patented Jan. 28, 1902.

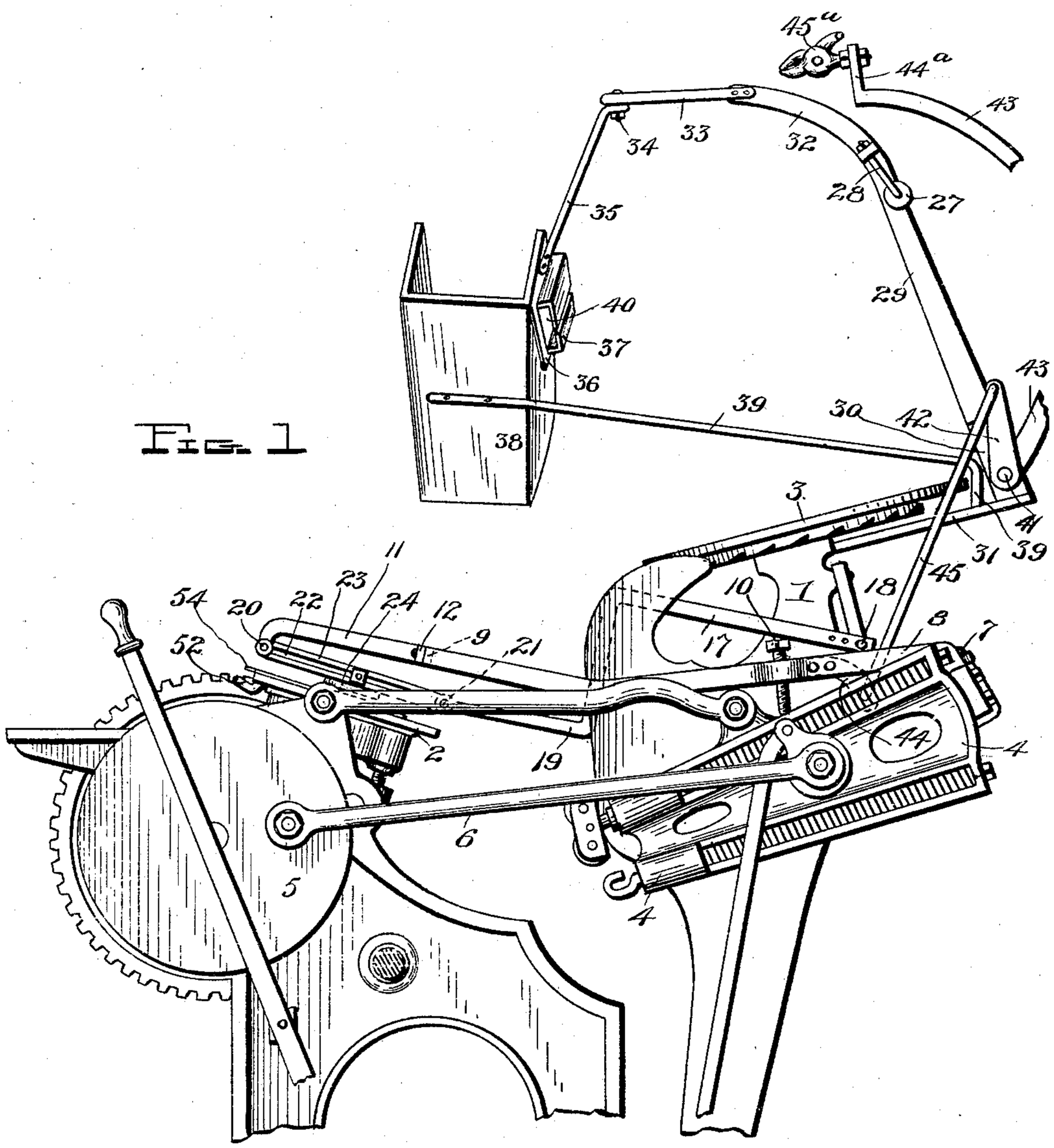
A. J. HOOD.

TINTING AND DELIVERY ATTACHMENT FOR PRINTING PRESSES.

(Application filed Aug. 8, 1901.)

(No Model.) 5 Sheets—Sheet 1.

Fig. 1



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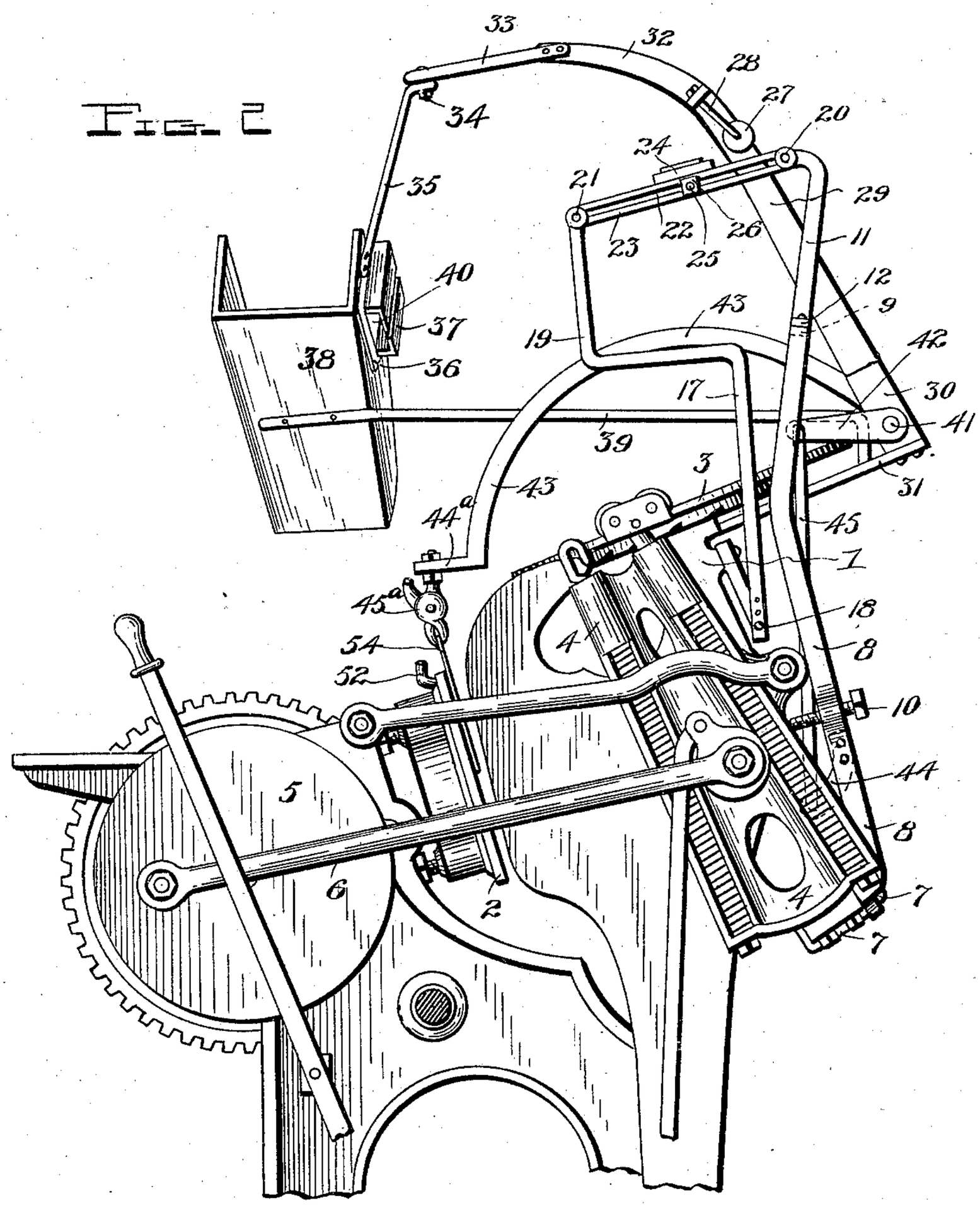
(No Model.) 5 Sheets—Sheet 2.

Fig. 2



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(No Model.) 5 Sheets—Sheet 3.

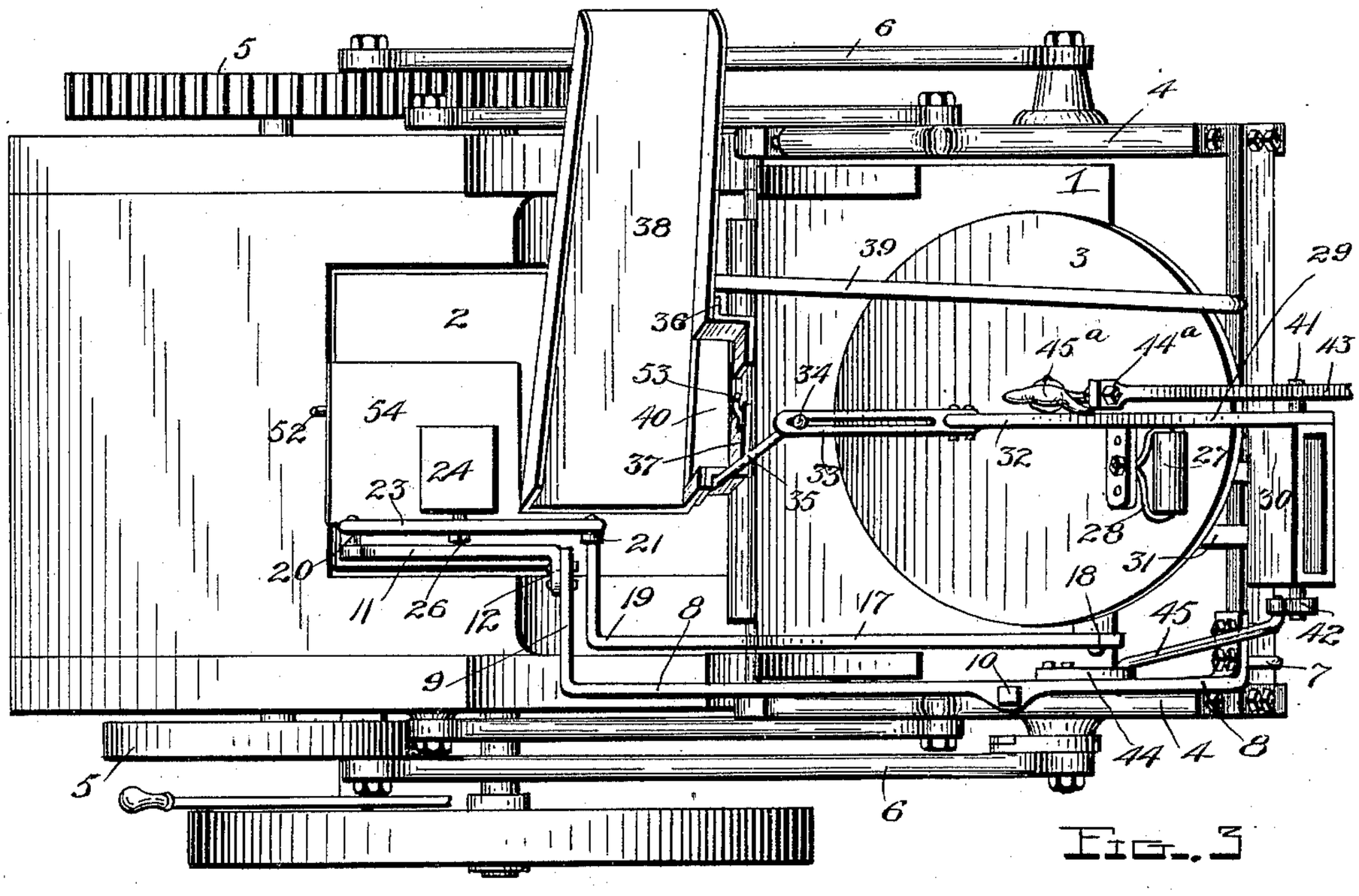

Fig. 3

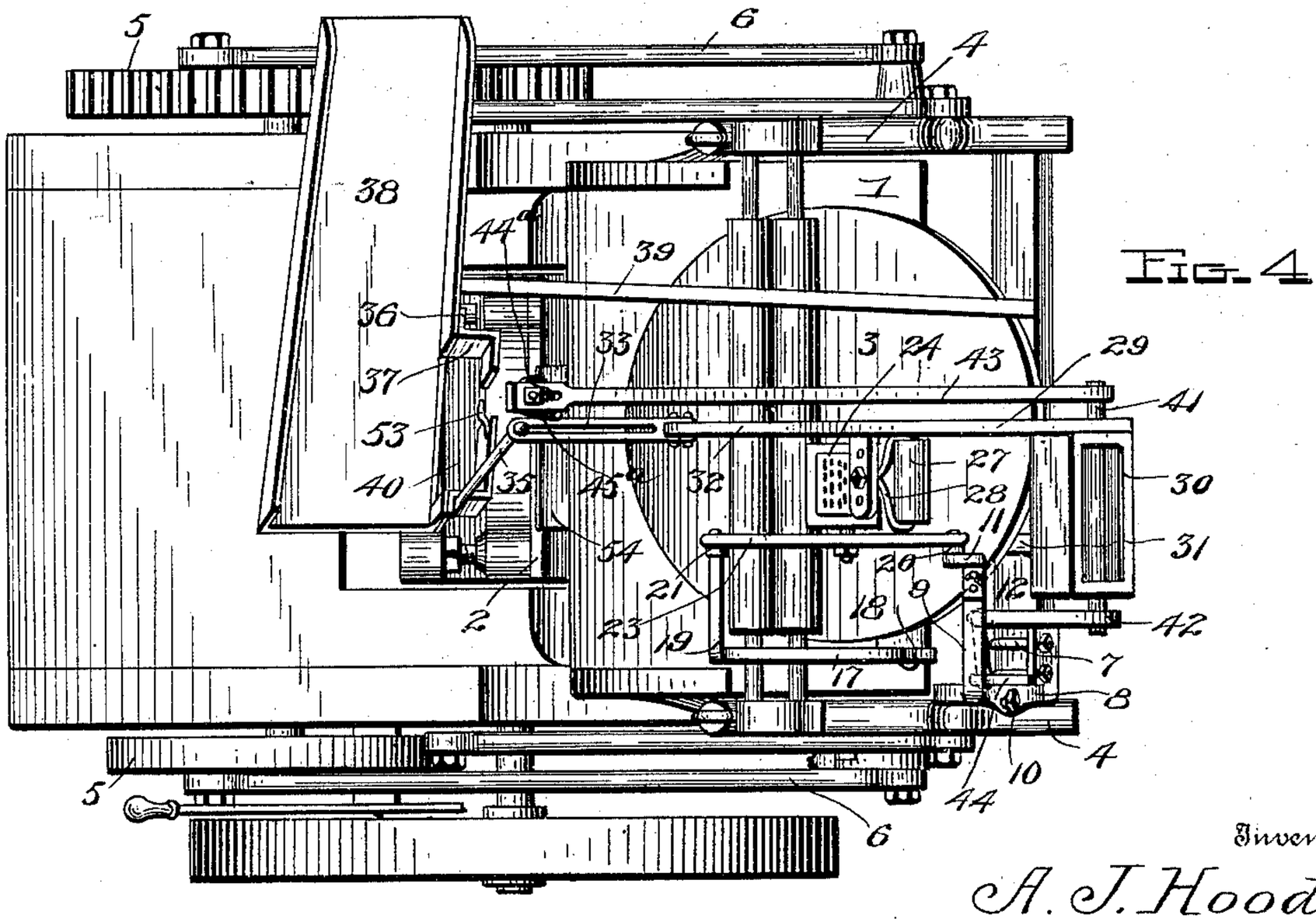

Fig. 4

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(No Model.) 5 Sheets—Sheet 4.

Fig. 5

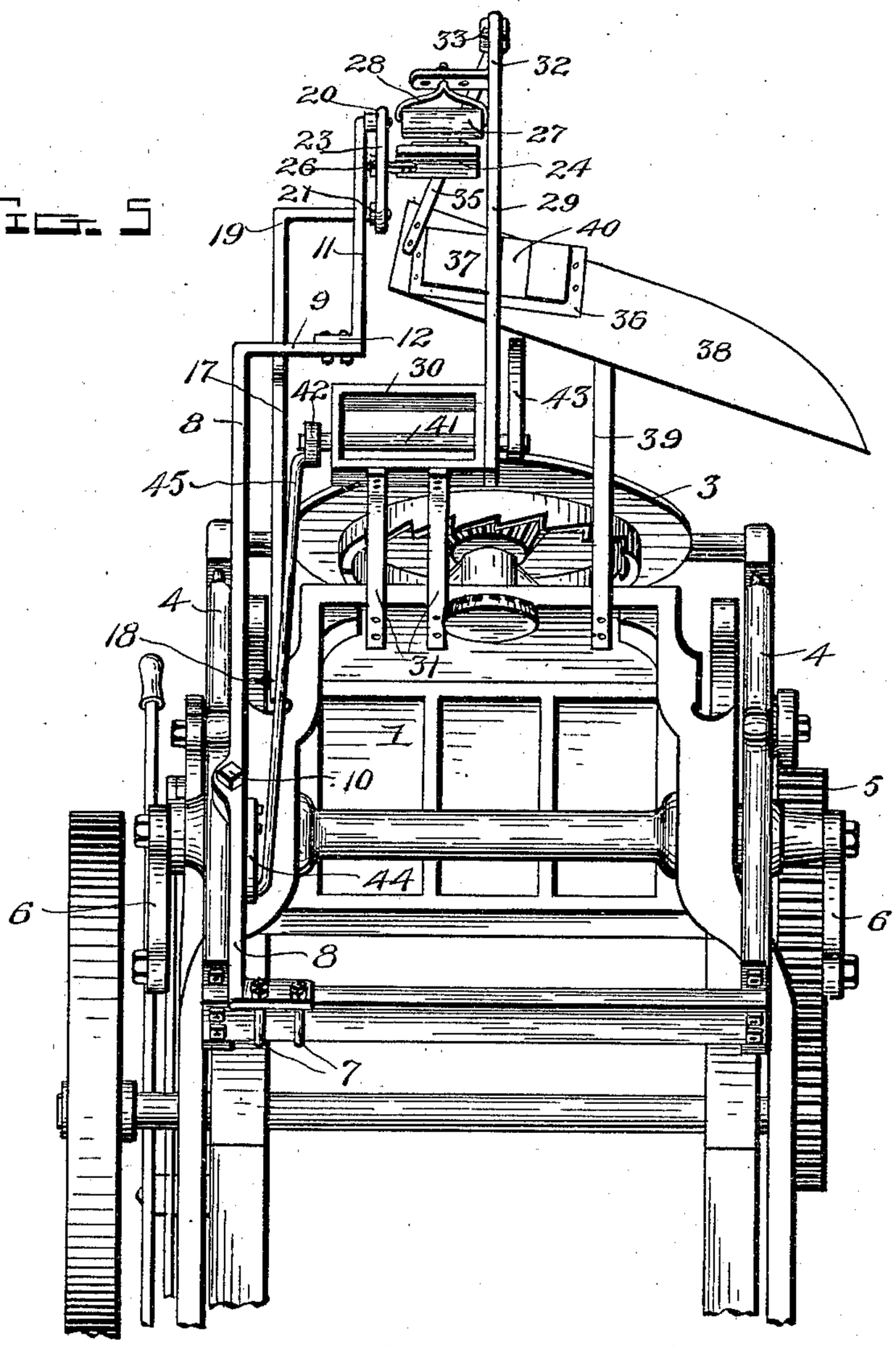
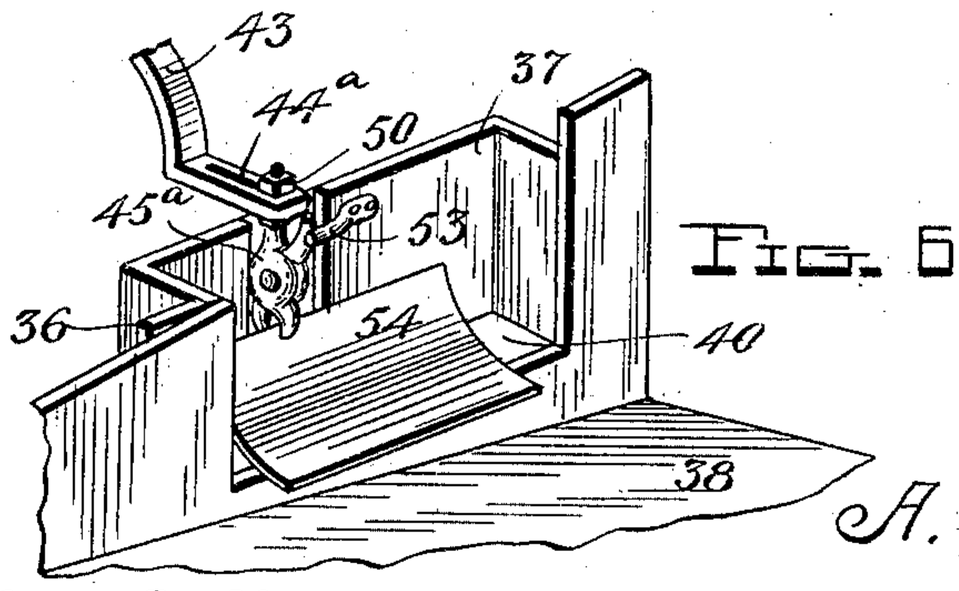


Fig. 6



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(Application filed Aug. 8, 1901.)

(No Model.) 5 Sheets—Sheet 5.

Fig. 7

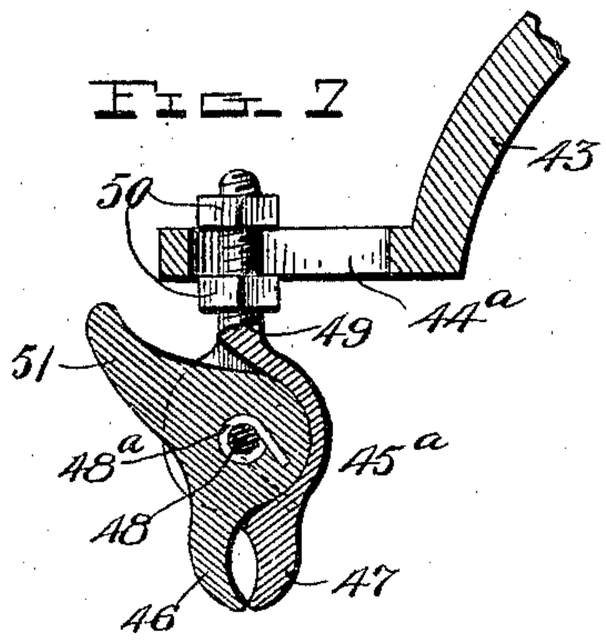


Fig. 8

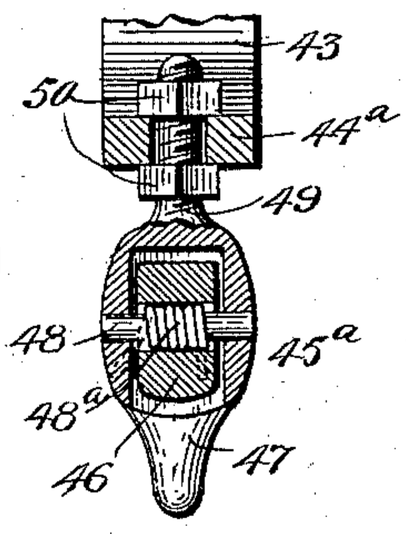


Fig. 9

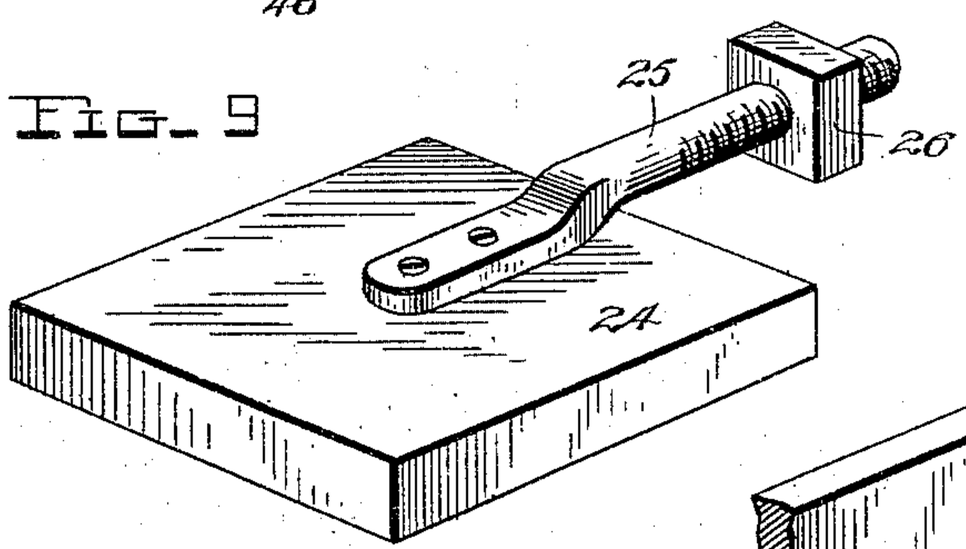


Fig. 10

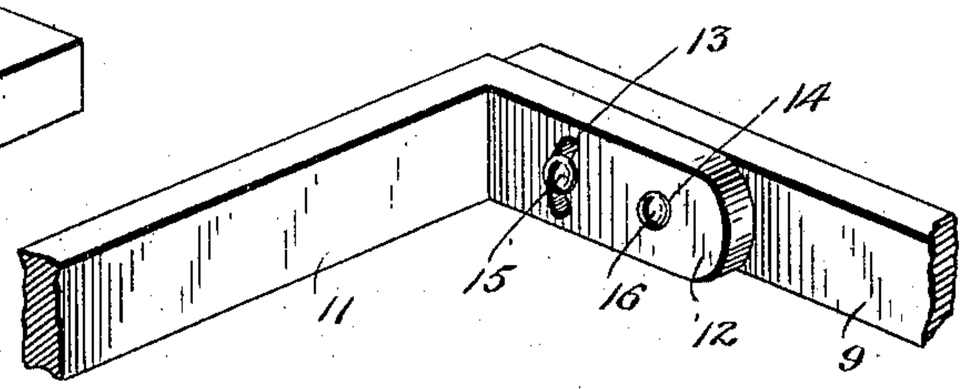
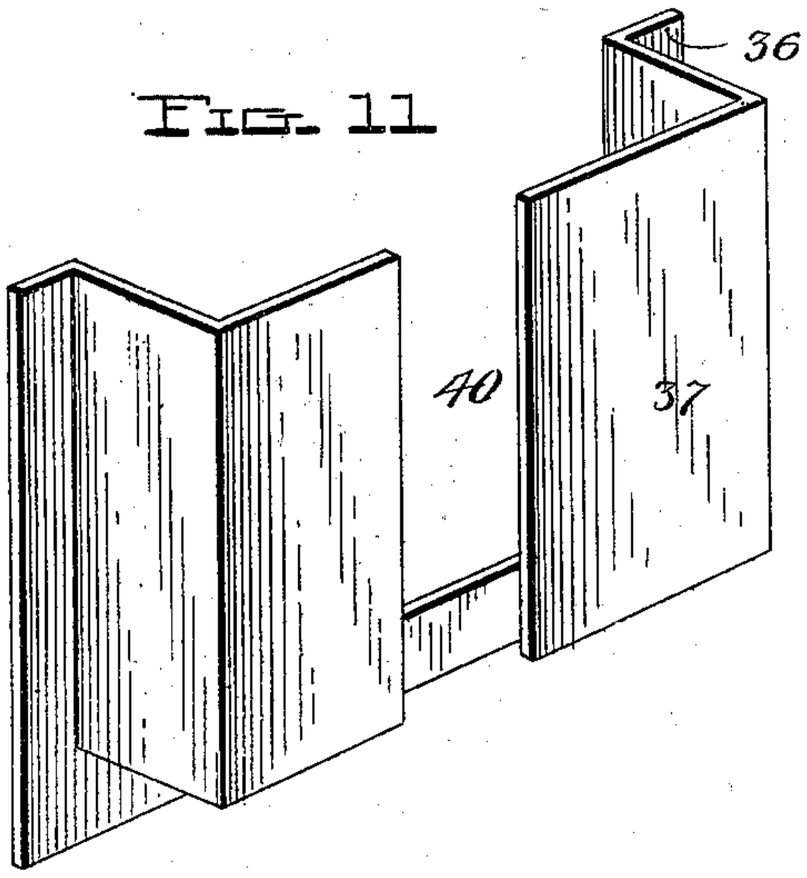


Fig. 11



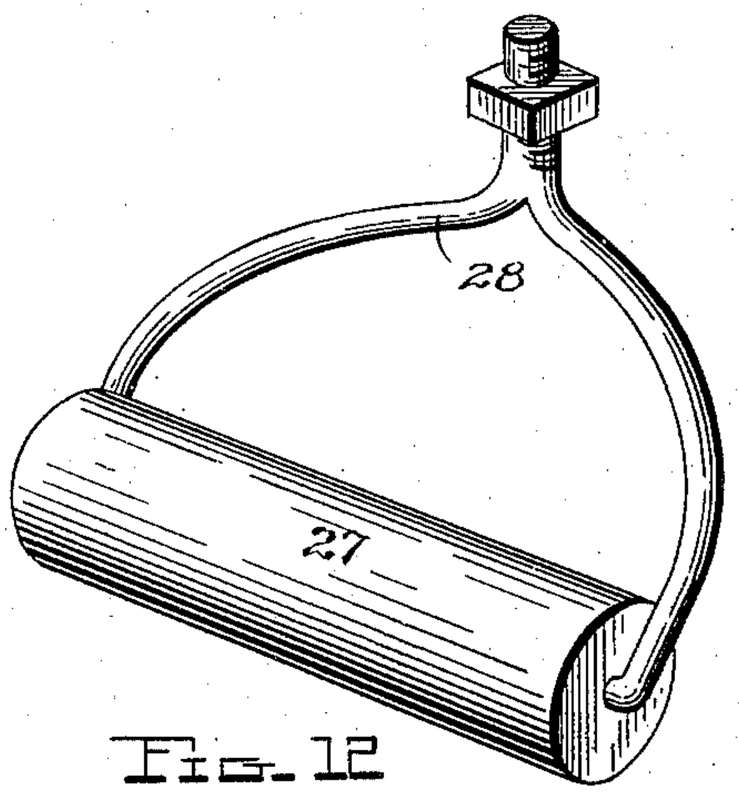


Fig. 12

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UNITED STATES PATENT OFFICE.

ALEXANDER J. HOOD, OF MUSCODA, WISCONSIN.

TINTING AND DELIVERY ATTACHMENT FOR PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 691,863, dated January 28, 1902.

Application filed August 8, 1901. Serial No. 71,384. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER J. HOOD, a citizen of the United States, residing at Muscoda, in the county of Grant and State of Wisconsin, have invented certain new and useful Improvements in Tinting and Delivery Attachments for Printing-Presses; and I do 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.

This invention relates to a tinting and delivery attachment for job-printing presses.

The object of the invention is to provide simple and effective automatic means for tinting or coloring the sheets of paper or other material lying on the platen prior to printing and for delivering the tinted and printed sheets to a suitable receptacle.

With this and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be hereinafter more fully described, and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a side elevation of a printing-press embodying my invention, showing the relative positions of the parts when the printing-block is making an impression. Fig. 2 is a similar view showing the relative positions of the parts when the gripper engages a printed sheet between the form and platen. Figs. 3 and 4 are top plan views of the parts as arranged in Figs. 1 and 2. Fig. 5 is a view looking toward the rear of the press. Fig. 6 is a detail perspective view illustrating the manner in which the printed sheets are fed into the chute. Figs. 7 to 12, inclusive, are detail views of the various parts of the attachment.

Referring now more particularly to the drawings, the numeral 1 represents the bed or frame of a job-printing press of known construction; 2, the platen thereof; 3, the rotating inking-plate; 4, the roller-carrying arms; 5, the crank-disk, and 6 the crank-rod for communicating motion from the disk to said roller-carrying arms.

Fixed to the rear of one of the arms 4 by means of suitable clamps 7 is a supporting bracket or standard 8, which has a limited back-and-forth adjustment and which is provided at its upper end with a laterally-projecting arm 9, extending over the upper rear portion of the plate 3, and at or near its lower end with a set-screw 10, which bears against the arm 4 and by means of which said bracket or standard 8 may be adjusted to regulate the impression of the color printing or tinting block in the manner hereinafter described.

The laterally-projecting arm 9 supports an upright arm 11, which has a lateral foot 12. This foot 12 and the arm 9 are formed with two sets of apertures 13 and 14 for the passage of a pivot-bolt 15 and a clamping-bolt 16, the aperture 13 in the foot being in the nature of a slot to allow the arm 11 to turn upon the bolt 15, so that the printing-block, hereinafter described, may be adjusted in one direction to bring the face thereof into perfect parallelism with the platen 2. A second bracket or standard 17 is pivoted at its lower end to the rear of the bed or frame 1, as indicated at 18, and has an elbow-arm 19, the vertical branch of which is in advance of the arm 9 over the rotary inking-plate 3. The two arms 11 and 19 carry pins or rollers 20 21, which fit and slide within a longitudinal slot 22, formed in an oscillatory link 23. This link carries the printing or stamping block 24, which tints or colors the sheets to be printed, the said block being adjustably secured thereto by means of a threaded stem or shank 25 and a clamping-nut 26, which shank is suitably fixed to the block and extends through the slot 22. The nut 26 clamps the block against the link, so that by loosening the nut the block may not only be adjusted lengthwise of the link, but also turned on its own axis to bring the printing-face thereof when the block is swung downward into accurate parallel relation with the platen 2. The block 24 may carry or embody a stamp or cut or type-matter of any preferred kind the subject whereof is to be transferred to the sheet of paper on the platen prior to the printing thereof in the usual way, so that a tinted surface or colored designs or matter of any desired kind contrasting in color with the matter to be afterward printed in the usual way may be transferred to the paper as it is laid upon the platen while the latter is momentarily at rest. By this means two-color work may be quickly and conveniently turned

out without the necessity of running the sheets a second time through the press, as is customary, for a second impression.

The operation of the parts of the apparatus thus far described is as follows: As the platen 2 moves toward and from the chase or form carried by the bed 1 and the roller-carrying arms 4 rock therewith the standard 8 follows the arc of travel of said arms and oscillates the link 23, thereby causing the block 24 to oscillate with said link, whereby when the platen has been retracted and is momentarily at rest and the inking-rollers are moving downwardly over the surface of the form the standards 8 and 17 will swing downwardly and bring the printing-face of the block downward to come in contact with the sheet of paper resting on the platen, in the manner shown in Fig. 2. When the platen moves forwardly, the parts are restored to their original positions, as illustrated in Fig. 1. It will be seen that as the standard 17 is fixed, while the standard 8 swings with the arms 4, the action of said standard 8 in swinging downwardly causes the link 23 to turn completely over and to swing on the pin 21 as a fulcrum, by means of which the block 24 is given a half-revolution and its printing-face is reversed from the position shown in Fig. 1 to that shown in Fig. 2 to make an impression on the sheet resting on the platen 2 prior to the printing of the sheet in the regular manner. When the platen moves forwardly, the link is thrown back to its original position and turns the block 24 to again throw the printing-face thereof upward. As the block oscillates its printing-face is inked by one or more rollers 27, mounted in a yielding or spring frame 28, supported by a third standard or bracket 29, the rollers being pressed by said frame against the printing-surface of the block to insure the proper supply of ink to said surface. By the adjustable connection of the arm 11 with the arm 9 of the bracket 8 and of the block 24 with the link 23 the said block is made adjustable in two planes at right angles to each other, so that it may be regulated to a nicety to produce a perfect contact between its printing-surface and the sheet to be printed lying on the platen 2.

The bracket or standard 29 is mounted, together with a bearing-block 30, on one or more suitable supports 31, attached to the rear of the bed or frame 1 of the press, and has a forwardly-curved arm 32, terminating at its free end in a slotted plate 33. Adjustably connected to this plate by means of one or more bolts 34, slidably fitted in said slot, is a bracket-arm 35, carrying a bracket-plate 36, to which is secured a chute 37, from which a conductor 38 leads laterally to a suitable receptacle, (not shown,) which may be located off to one side of the machine and is designed to receive the printed sheets from the delivery-gripper. The chute and conductor may be sustained and braced by a rod or bracket 39, extending from the supports 31, and may be made of any suitable material and construction to suit the purpose. The bracket-plate 36 is formed with a T-shaped slot 40, the main portion of which is vertically disposed and the cross portion horizontally disposed, which slot forms the entrance to the chute 37 for the deposit of the printed sheets therein.

The printed sheets are delivered to the chute through the medium of the following-described mechanism: Journaled in the bearing 30 is a rock-shaft 41, to one end of which is fixed a crank-arm 42 and to the other end a swinging delivery-arm 43. The crank-arm 42 is jointed to a short arm 44 on the standard 8 by a connecting-rod 45, while the free end of the swinging arm 43 is provided with a slotted bracket-plate 44^a, carrying an adjustable gripper 45^a. This gripper 45^a consists of two jaws 46 47, united by a pivot pin or bolt 48, the jaw 46 being movable with relation to the jaw 47 and normally held closed by a spring 48^a. The jaw 47 is fixed with relation to the jaw 46, being provided with an arm or extension 49, adjustably secured to the slotted bracket-plate 44^a by nuts 50. The movable jaw 46 carries a trip-lug 51, which is adapted to be engaged by contact-pieces 52 53, arranged, respectively, upon the press adjacent to the platen 2 and upon the chute 37 or its bracket-plate 36 to open said movable jaw to engage and release the printed sheets. A fixed part of the press-frame may, however, be utilized to perform the function of the contact 52.

The operation of the delivery device is as follows: The crank-arm 42 is so disposed at an angle to the shaft 41 and arm 43 that when the standard 8 and printing-block 24 swing in one direction the said arm 43 will swing in the reverse direction, so that the block 24 reaches the limit of its downward movement just previous to the time when the platen 2 moves toward the bed 1, while the swinging arm 43 reaches the limit of its downward movement at or just prior to the time when the platen moves away from the bed. Hence when the printing-block moves toward the platen the delivery-arm 43 moves away therefrom, and vice versa. The operation of the printing-block 24 will be readily understood from the foregoing description. When said block is retracted by the upward movement of the roller-carrying arms 4 and the bracket or standard 8, attached thereto, the said standard 8 draws upon the rod 45, causing the crank-arm 42 to rock the shaft 41 in a forward direction, thereby causing the swinging arm 43 to be projected forwardly and downwardly at the time when the platen 2, having forced the sheet of paper resting thereon against the type-form on the bed 1, is about to move away from said bed. As the arm 43 nears the limit of its downward movement the trip-lug 51 comes into engagement with the contact-piece 52, whereupon the movable jaw 46 of the gripper 45^a is opened and allowed to grip between

it and the fixed jaw 47 the upper projecting edge of the printed sheet 54. As the platen continues to move away from the bed 1 and the roller-carrying arms 4 swing downwardly again, together with the standard or bracket 8 and coöperating parts of the tinting or coloring devices, the crank-arm 42 is moved in the reverse direction to that previously described and the arm 43 swung upwardly, while at the same time the printing-block 24 is moved downwardly to make an impression upon the new sheet of paper just placed upon the platen 2. As the arm 43 nears the limit of its upward movement the gripper 45ª passes upward through the vertical main portion of the T-shaped slot 40 in the bracket-plate 36 and draws the printed sheet upwardly through the cross portion of said slot, as shown in Fig. 6, whereby the printed sheet is brought into the chute 27 and when the trip-lug 51 comes into engagement with the contact-piece 53 is released and drops down into said chute and thence passes through the spout or conductor 38 to a suitable receptacle at one side of the machine, whereby the operations of tinting or initially printing the sheets one color and removing and delivering them to a suitable receptacle after the second impression has been made from the press-form are alternately and automatically performed, thus increasing the capacity of the press and obviating the necessity of running the sheets to be printed two or more times through the press when the printing is to be done in two or more colors.

From the foregoing description, taken in connection with the accompanying drawings, the construction, mode of operation, and advantages of the invention will be readily understood without a further extended description, and it will be seen that the invention provides an attachment capable of use in connection with any ordinary form of job-press and useful and labor-saving in printing all kinds of work in two or more colors.

Various changes in the form, proportion, and minor details of construction may be made within the scope of the invention without departing from the spirit or sacrificing any of the advantages thereof.

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

1. The combination with a bed-and-platen printing-press wherein the bed is adapted to carry a form for printing a color; of a printing device adapted to come in contact with a sheet upon the platen for printing a different color, and means for bringing said printing device into position for printing the sheet upon the platen when said platen is away from the bed, substantially as described.

2. The combination with a bed-and-platen press wherein the bed is adapted to carry a form for printing a color; of a printing device adapted to come in contact with a sheet upon the platen for printing a different color, and means actuated by the running-gear of the press for moving the printing device toward and from the platen and bringing said device into contact with the sheet when the platen is away from the bed, substantially as set forth.

3. The combination with a bed-and-platen printing-press wherein the bed is adapted to carry a form for printing a color; of a printing device movable toward and from the platen for printing the sheet upon the platen a different color when said platen is away from the bed, a delivery device for removing the printed sheet from between the bed and platen, and means for automatically and alternately operating said printing and delivery devices, substantially in the manner specified.

4. The combination with a bed-and-platen printing-press wherein the bed is adapted to carry a form for printing a color; of a printing device movable toward and from the platen for printing the sheet upon the platen a different color when said platen is away from the bed, a delivery device for removing the printed sheet from between the bed and platen, and means controlled by the running-gear of the press for automatically and alternately operating said printing and delivery devices, substantially as described.

5. The combination, with a printing-press, of a printing device for printing a primary color on a sheet resting on the platen, and means connecting between said printing device and the roller-carrying arms of the press for automatically moving said printing device toward and from the platen, substantially as described.

6. The combination, with a printing-press, of a support movable with the roller-carrying arms of the press, a printing device for printing a primary color on a sheet resting on the platen, operating means between said printing device and the support whereby the former is operated, a delivery device for removing the printed sheets from the platen, and connections between the two devices for alternately and automatically operating the same, substantially as described.

7. The combination with a bed-and-platen printing-press wherein the bed is adapted to carry a form for printing a color; of a printing device movable toward and from the platen for printing the sheet thereon a different color when the platen is at rest and prior to the movement of the platen toward the bed to print a second color, and means for operating said printing device, substantially as specified.

8. The combination with a bed-and-platen printing-press wherein the bed is adapted to carry a form for printing one color; of a printing device movable toward and from the platen for printing the sheet thereon a different color, a delivery device for removing the printed sheets from the platen, and means for automatically and alternately operating said printing and delivery devices from the

inking-roller carriers of the press, substantially as and for the purpose set forth.

9. The combination, with a printing-press, of a support movable with the roller-carrying arms of the press, a support fixed to the bed of the press, an oscillating link connected to said supports, and an oscillating printing-block carried by said link for printing a primary color upon a sheet resting upon the press-platen, substantially as described.

10. The combination with a bed-and-platen printing-press wherein the bed is adapted to carry a form for printing one color; of a printing device movable toward and from the platen for printing the sheet thereon a different color, said printing device being brought into operative position while the platen is away from the bed, a delivery device for removing the printed sheets from the platen at its time of separation from the bed, means for operating one of the above-named devices from the running-gear of the press, and a connection between the two devices for alternately bringing the same into operation, substantially as described.

11. The combination, with a printing-press, a support movable with the roller-carrying arms of the press, a second support fixed to the bed of the press, an oscillating link connected with said support, an oscillating printing-block carried by the link, a delivery device for removing the printed sheets from the platen, and connections between one of the aforesaid supports and the delivery device for operating said delivery device automatically and alternately with the printing-block, substantially as described.

12. The combination, with a printing-press, of a support movable with the roller-carrying arms of the press, a second support fixed to the bed of the press, an oscillating link carried by said support, a printing-block carried by the link, a rock-shaft operated by the first-named support, and a delivery device operated by said rock-shaft alternately with the printing-block for removing the printed sheets from the platen, substantially as described.

13. The combination with a printing-press of the bed-and-platen type and wherein the bed is adapted to carry a form for printing one color; of a delivery-chute, a printing device movable toward and from the platen for printing a sheet thereon a different color while said platen is away from the bed, a delivery device for removing the printed sheets from the platen and transferring them to the chute, a gripper carried by said delivery device, means for automatically opening and closing the gripper to grasp and release the printed sheets, and means for automatically and alternately operating the said printing and delivery devices, substantially as set forth.

14. The combination with a bed-and-platen printing-press wherein the bed is adapted to carry a form for printing one color; of an oscillating printing device, means for oscillating said printing device and moving it toward and from the platen for printing a sheet thereon a different color, a delivery device for removing the printed sheets from the platen, and connections between said devices and the running-gear of the press for automatically and alternately operating said devices, substantially as specified.

15. The combination with a bed-and-platen printing-press wherein the bed is adapted to carry a form for printing a color; of a printing device adapted to print a sheet resting upon the platen a different color while the platen is at rest and before it moves toward the form to print the second color, a carrier for said printing device movable in an arcuate path over the bed and toward and from said platen, and mechanism operated by the running-gear of the press for throwing the printing device into and out of operation, substantially as set forth.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ALEXANDER J. HOOD.

Witnesses:
A. C. V. ELSTON,
JOHN A. LAURENCE.