

No. 689,436.

Patented Dec. 24, 1901.

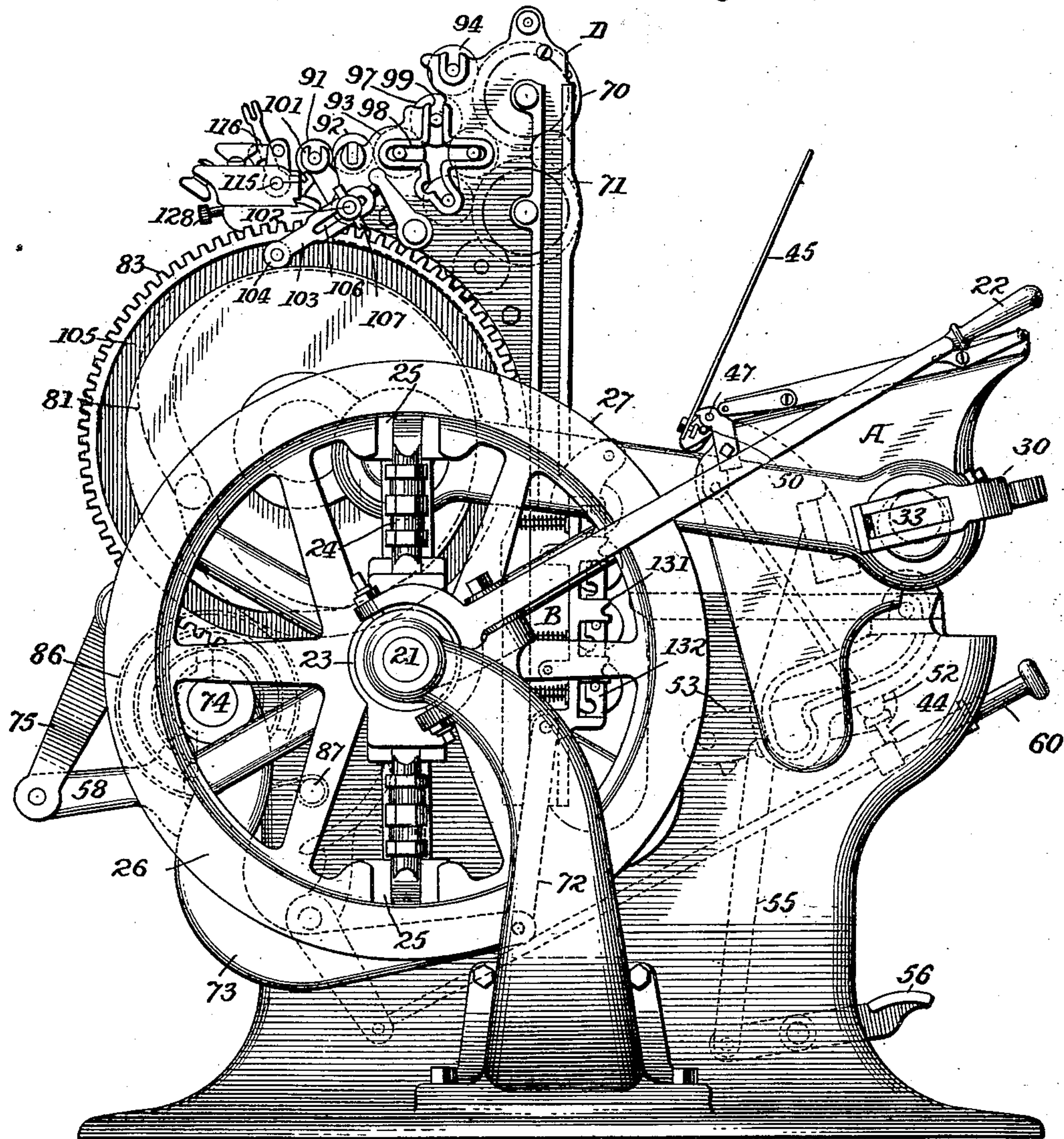
J. THOMSON.
PLATEN PRINTING PRESS.

(Application filed June 25, 1901.)

(No Model.)

7 Sheets—Sheet 1.

Fig. 1.



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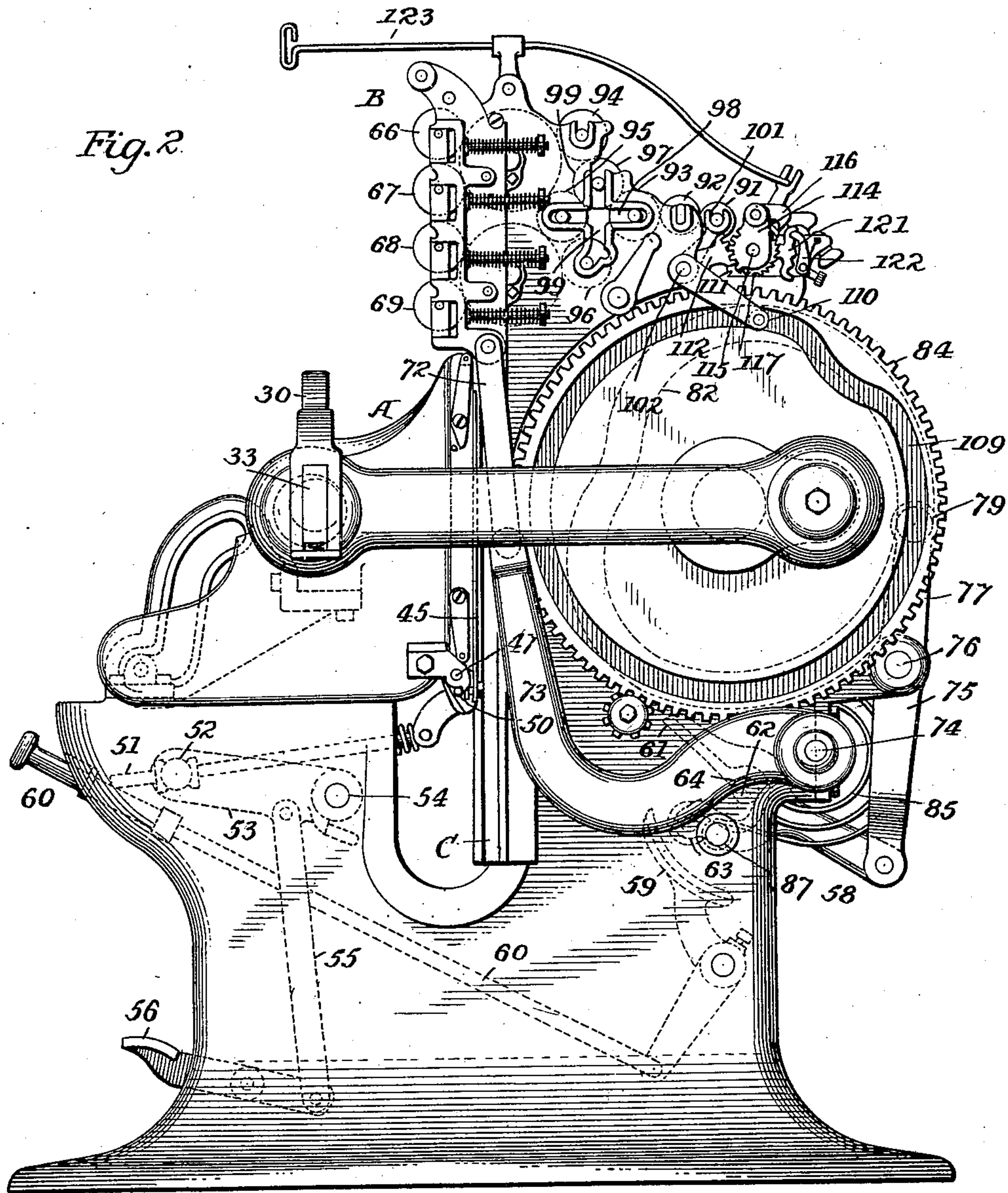
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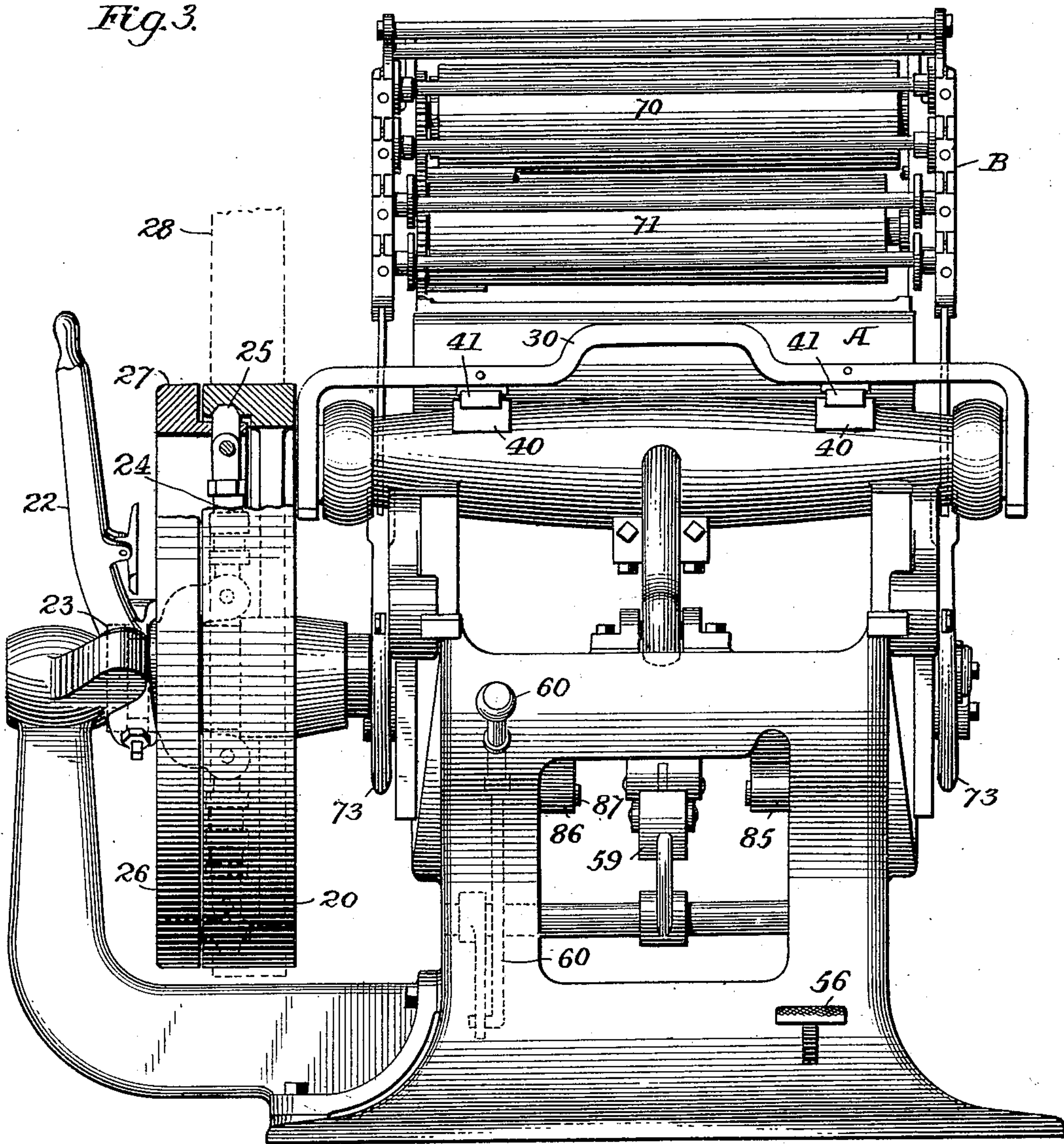
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Fig. 3.



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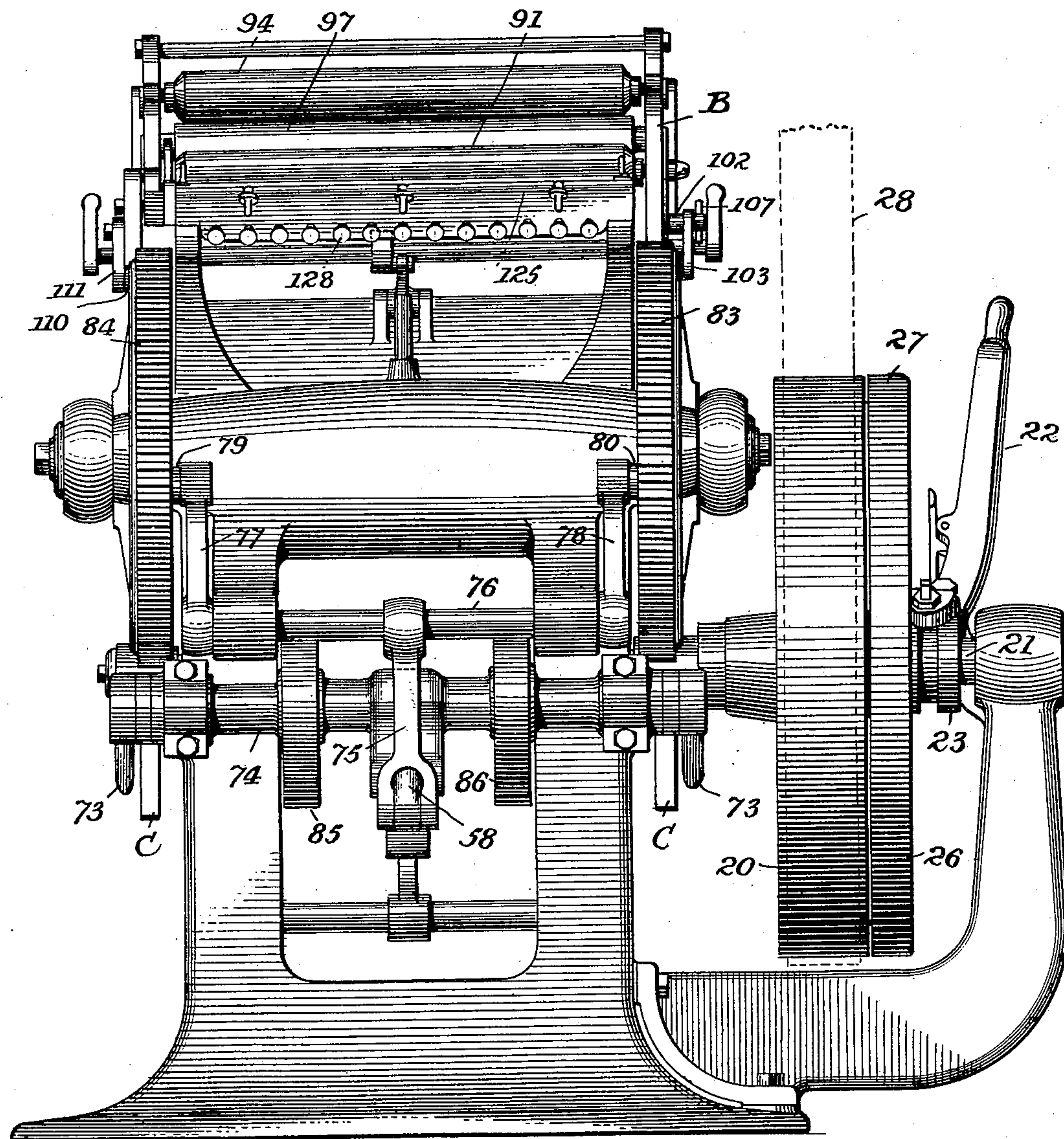
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Fig. 4.



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Fig. 6.

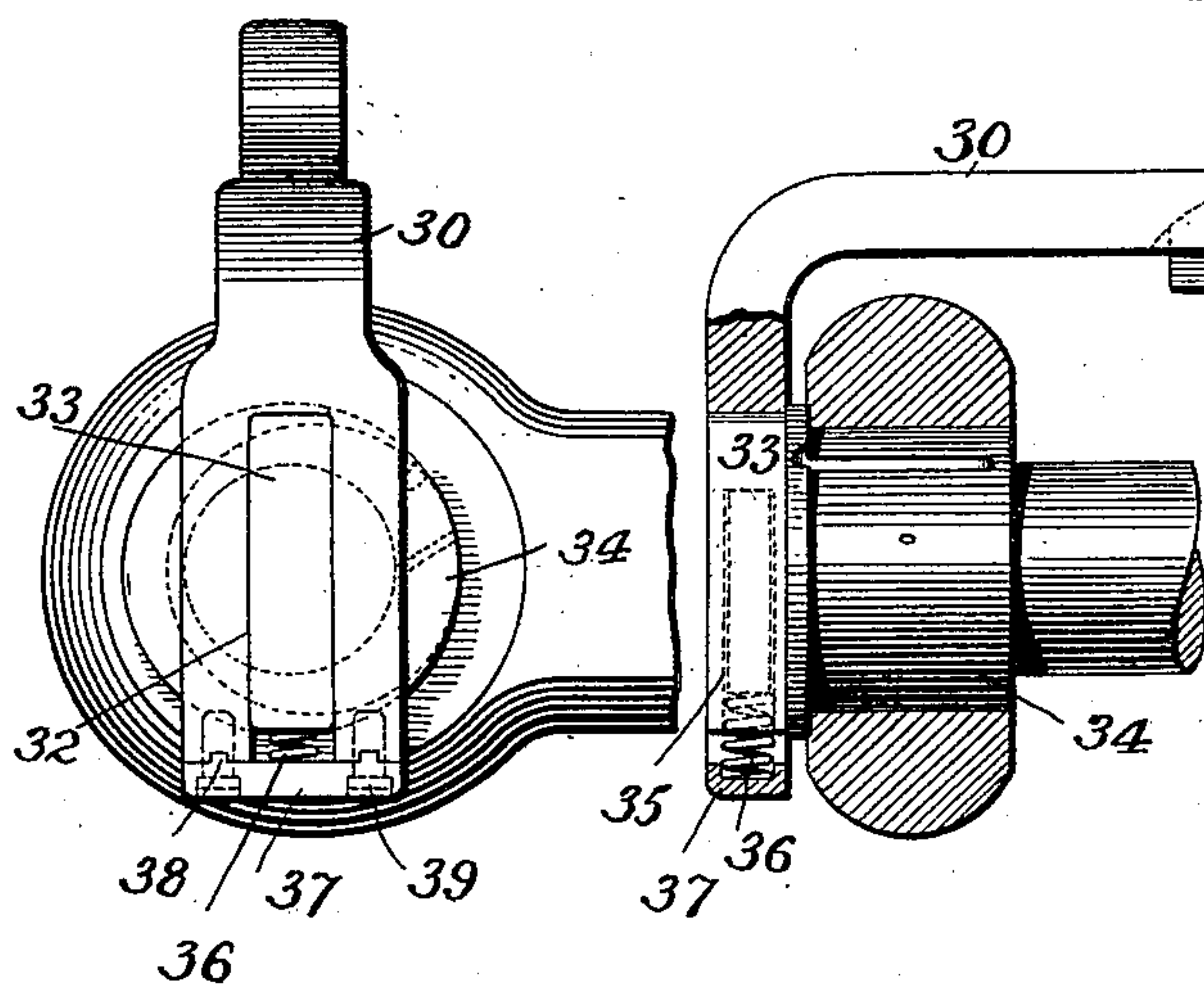


Fig. 5.

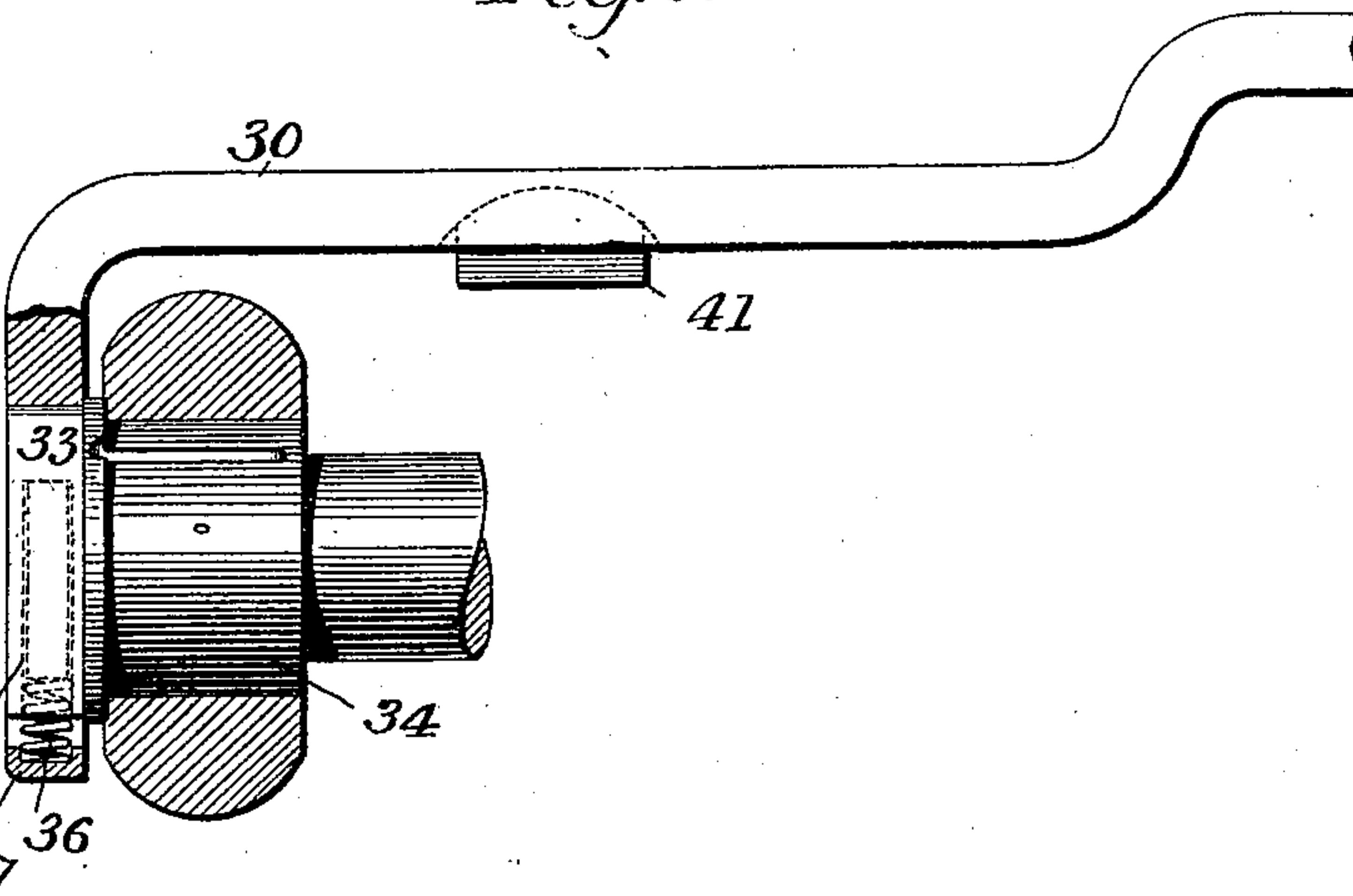
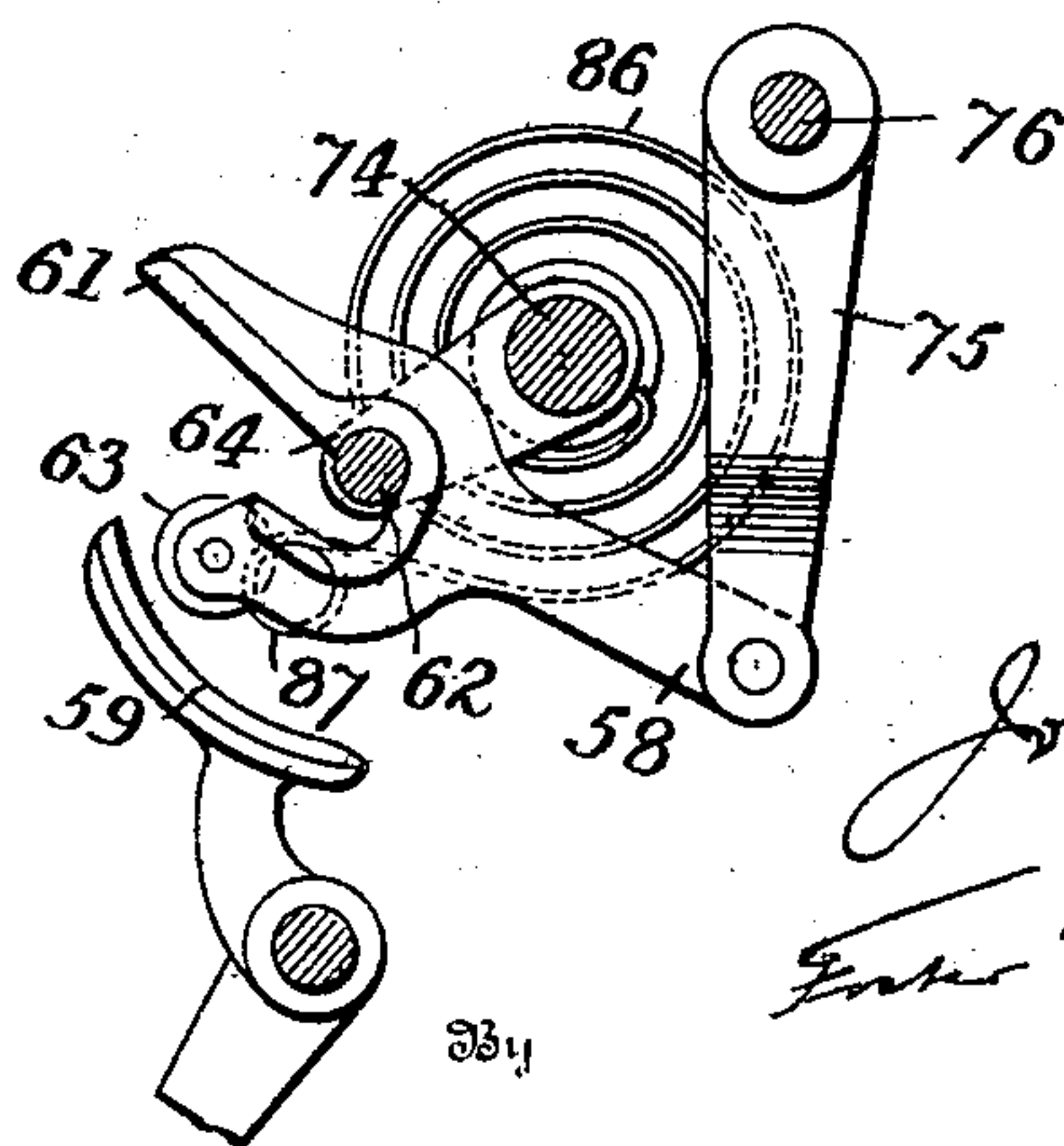


Fig. 11



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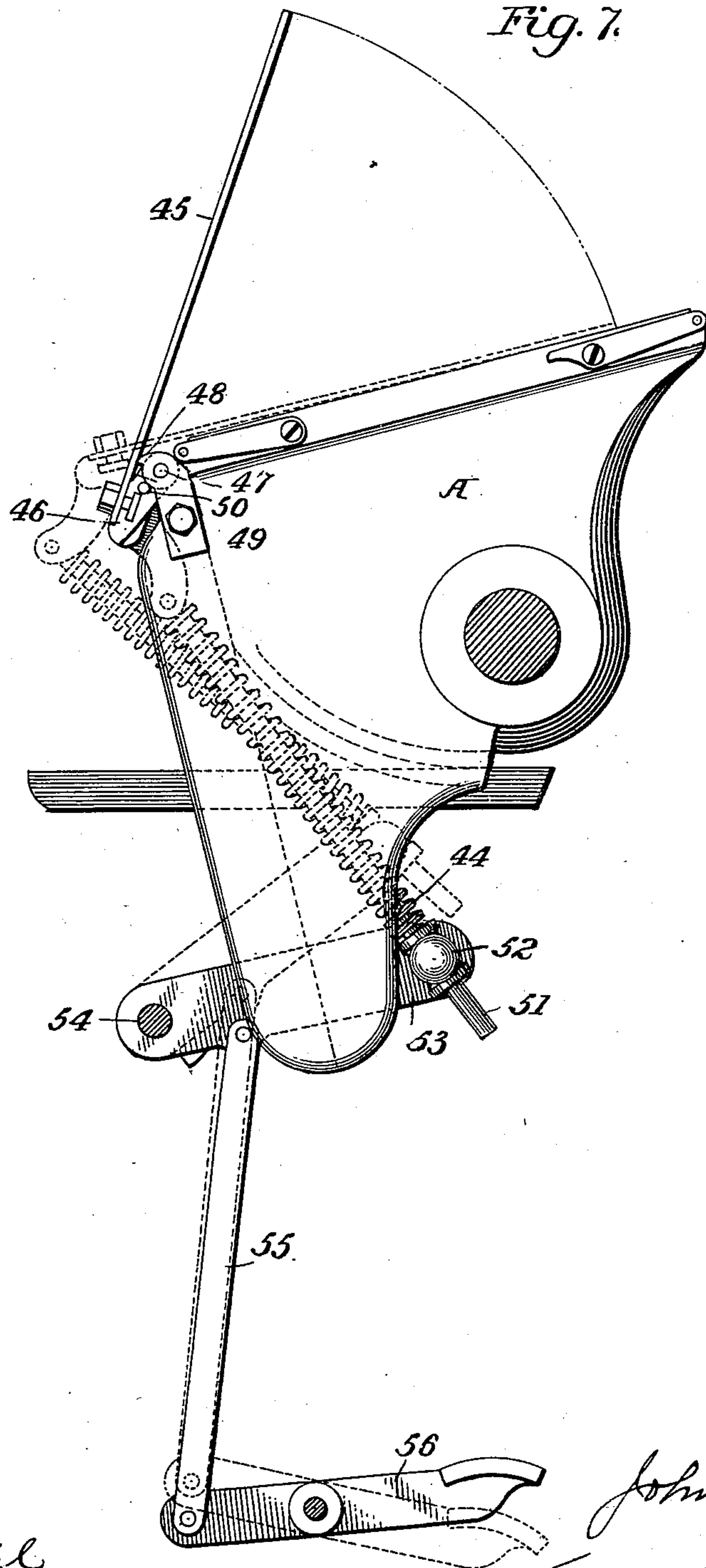
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7 Sheets—Sheet 6.

Fig. 7.



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7 Sheets—Sheet 7.

Fig. 8.

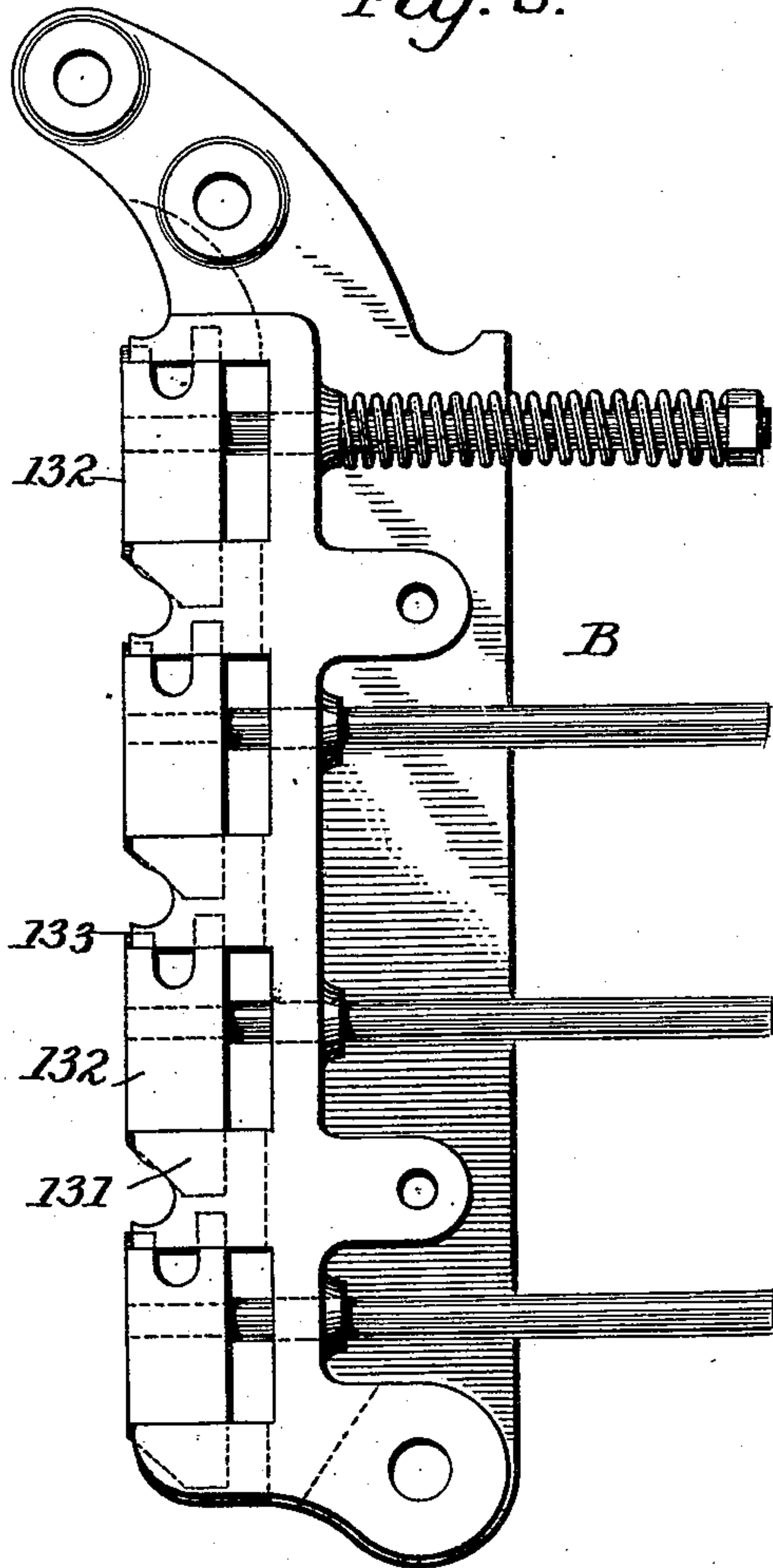


Fig. 9.

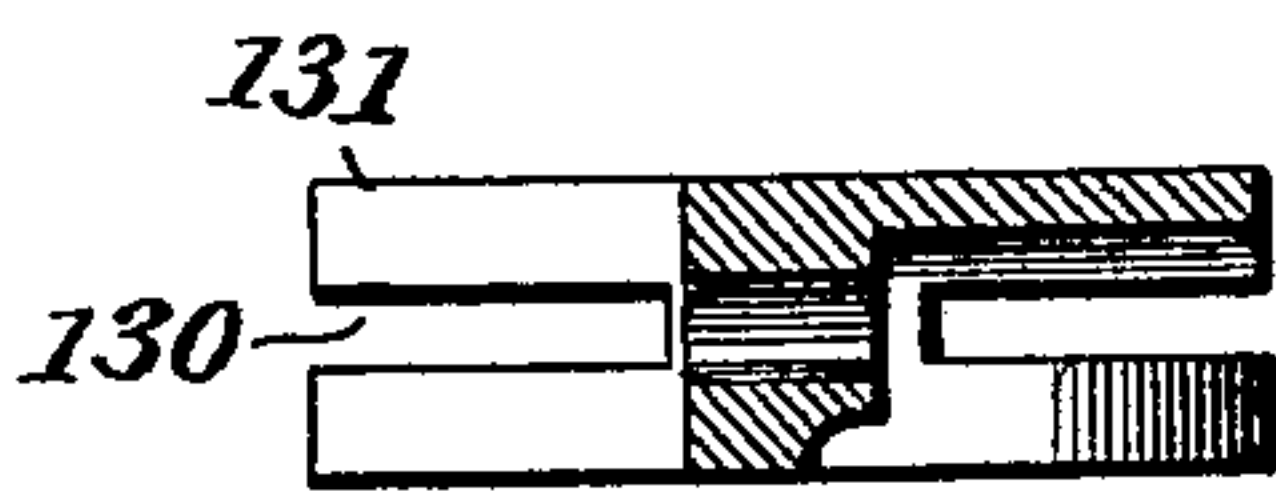
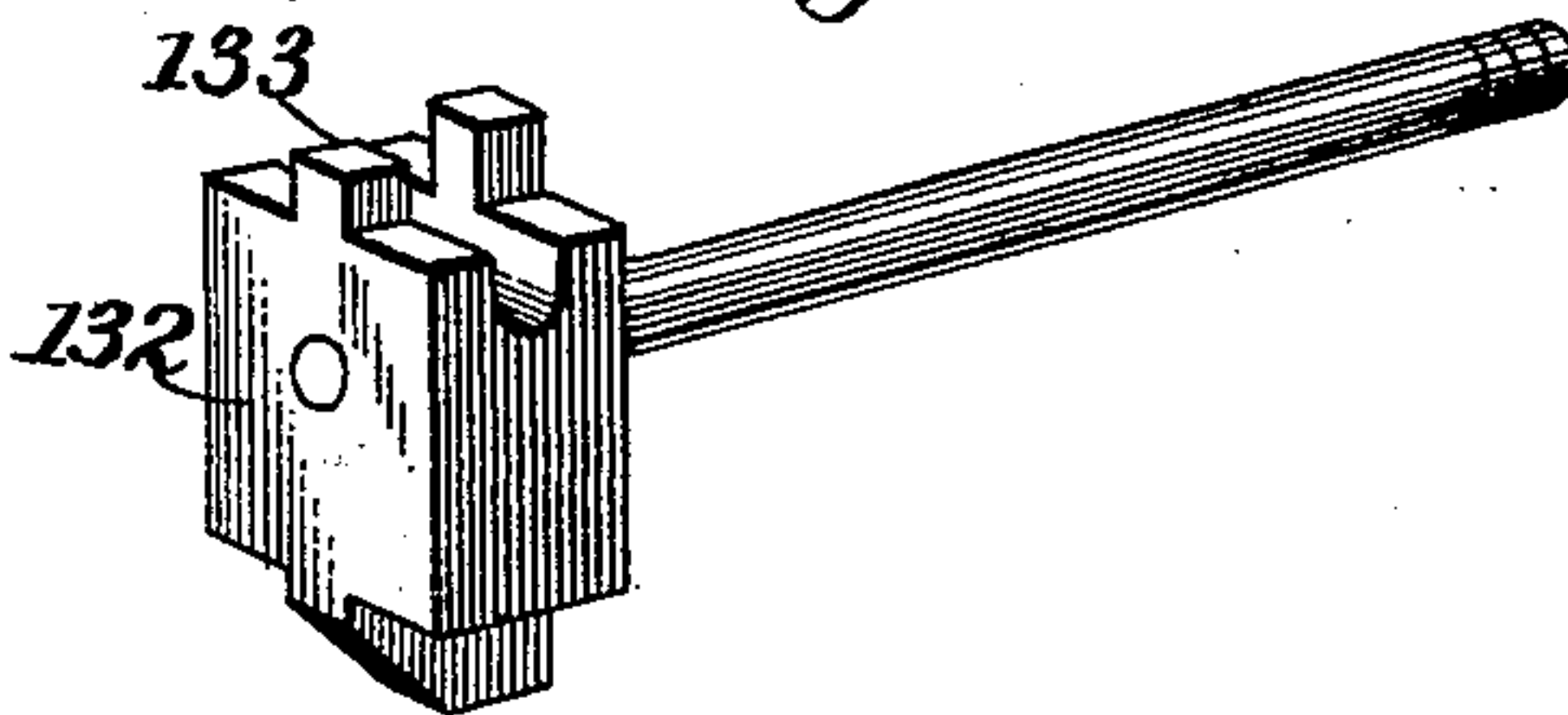


Fig. 10.



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UNITED STATES PATENT OFFICE.

JOHN THOMSON, OF BROOKLYN, NEW YORK, ASSIGNOR TO JOHN THOMSON PRESS COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

PLATEN PRINTING-PRESS.

SPECIFICATION forming part of Letters Patent No. 689,436, dated December 24, 1901.

Application filed June 25, 1901. Serial No. 65,969. (No model.)

To all whom it may concern:

Be it known that I, JOHN THOMSON, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Platen Printing-Presses, of which the following is a specification.

This invention relates to platen printing-presses; and the object of the invention is to increase the durability, speed, capacity, effectiveness, and scope of such printing-presses; and to this end the invention consists in the various features of construction and arrangement of parts, combined and operating substantially as hereinafter more particularly set forth.

Referring to the accompanying drawings, forming part of this specification, Figure 1 is a left-hand side elevation of a press embodying the invention. Fig. 2 is a right-hand side elevation of the same. Fig. 3 is a front elevation. Fig. 4 is a rear elevation. Figs. 5 and 6 are enlarged end and side views, partly in section, of the adjuster-bar and eccentric sleeves. Fig. 7 is an enlarged detail view of a portion of the frisket-frame and platen and attachments. Figs. 8, 9, and 10 are detail views of the carriage-frames and journal-boxes, and Fig. 11 is a detail view of the hook connection.

The general characteristics of the style of press to which my improvements are applicable are well exemplified in my prior patents, No. 372,993, granted November 8, 1887; No. 427,450, granted May 6, 1890, and No. 428,182, granted May 20, 1890, and in the machine commercially known as the "Colts Armory Press," and it is deemed unnecessary herein to describe in detail the old and common features of the press illustrated herein and shown in my prior patents only so far as is necessary to point out the improvements constituting the present invention.

In the practical operation of these presses as supplied to the market it is usual to arrange a clutch in connection with the fly-wheel, and heretofore the driving-pulley connected with and operating the press has generally been contained within the perimeter of the fly-wheel. It often occurs that it is de-

sirable to operate the press manually, so, for instance, as to permit the pressman to test the impression of the platen, especially in manipulating a difficult "make-ready," and in these prior constructions the manual operation is more or less dangerous and has involved the use of inconvenient means, such as detachable cranks applied to the outer end of the pinion-shaft, and one of the objects of my present invention is to so construct and arrange the driving-pulley and fly-wheel that the operator can readily manipulate the same without danger or inconvenience. Thus, referring to the drawings, there is a fly-wheel 20, which is freely mounted on a pinion-shaft 21 and is adapted to be connected to or disconnected from the shaft by a friction-clutch, and in the present instance this clutch is operated by means of a hand-lever 22, acting upon a sleeve 23, which in turn moves the toggles 24, carrying the friction-shoes 25, into and out of engagement with the inner surface of the driving-pulley 26, which is keyed or otherwise securely fastened to the pinion-shaft 21. In the usual construction the perimeter of the driving-pulley is contained within the fly-wheel or driven pulley, making it dangerous for the operator to manipulate the driving-pulley by hand; but in the present construction I form it so that a portion of its perimeter shall be extended outwardly and radially, so as to form a circular hand-rim 27, whose outside diameter may be approximately equal to that of the fly-wheel 20. With this arrangement it will be understood that the belt 28 operates only upon the face of the fly-wheel 20, and when the driving-pulley is clutched to the fly-wheel the press is operated; but when it is unclutched the operator by manipulating the extended circular rim 27 can operate the press manually without danger or discomfort or the application of extraneous tools or appliances.

It is usual in these presses to provide means for tripping the impression, so that although the press is operating an impression will not be made upon the sheet on the platen or the platen itself, and one of the features of my present invention resides in the improved

construction of the adjuster-bar and eccentric-sleeves, being shown more particularly in detail in Figs. 5 and 6. The adjuster-bar 30 is formed of a single piece of metal, such as steel, each end being bent over to a right angle with the main body and slotted, as at 32, to engage with the projection 33 of the adjusting-sleeve 34. This projection is bored, as at 35, to receive the spring 36, the thrust of which is taken by a cross-piece 37, attached in any suitable way, as by the mortises 38 and screws 39, to the ends of the adjuster-bar 30, straddling the slots, thus tying the sides thereof together.

The platen, generally designated as A, is provided with the usual adjuster-slides 40, Fig. 3, which are engaged by latches 41, formed upon or attached to the adjuster-bar 30. The central portion of the adjuster-bar between the latches may be bent outwardly, as shown in the drawings, to afford a more convenient grasp to the operator. With this construction in order to trip the impression or adjust the slides it is simply necessary to pull the adjuster-bar 30 upwardly against the tension of the springs 36 sufficiently to disengage the latches 41 from the slides 40, when the bar and the eccentric-sleeves are free to be swung up or down, adjusting the eccentrics accordingly and controlling the impression. It is to be observed that the projections 33 of the sleeves 34, which are engaged by the slotted ends of the adjuster-bar 30, extend across the outer faces of the sleeves and are inclosed by the adjuster-bar, thereby obtaining great strength and rigidity. When the platen A is drawn toward the bed to make the impression, the thrust of the frisket-spring 44 (see Fig. 7) is borne by two or three frisket-fingers 45; but it is not infrequent that the fingers are dispensed with or that but a single finger of light section need be used. In either of such instances the face of the frisket-frame 46, swung on its centers 47 on the platen A, would as heretofore constructed be thrust farther forward beyond the face of the platen until stopped by the chase or the bed. To obviate this objectionable action, definite lugs or stops, as 48, are formed upon or applied to the platen, as the portion 49 thereof, against which the projections or pins 50 of the frisket-frame make contact whenever the proper degree of tension upon the frisket-fingers is exceeded. In this way the frisket-frame cannot be unduly swung forward, nor can a destructive strain be imposed upon any or all of the frisket-fingers, as any such excessive strain is borne by the stops 48 and pins 50.

It is desirable that the frisket-fingers may be depressed upon the platen when the latter is open in order that they may be accurately and conveniently set to the desired positions to properly impinge upon and secure the sheet to be printed. The general apparatus for permitting this—that is, the spring 44 on its rod 51, passing through the vibrating stud

52 in the lever 53, which is pivoted at 54 to the press—is old; but by the redisposal of this apparatus substantially in the manner indicated more particularly in Fig. 7, involving an equation of the several working centers and relative lengths of the connecting parts, it becomes feasible to add the pitman 55, connecting lever 53 with the treadle 56 or, if preferred, with a hand-lever, so that when the platen is open, as in Figs. 1 and 7, or partially so, this treadle or hand-lever may be depressed by the operator, as indicated by dotted lines, causing the connecting apparatus to swing and depress the frisket-fingers 45 upon the platen, thus leaving both hands of the operator free.

The hook connection 58 (see Figs. 1, 2, and 11) has heretofore been disengaged by a shoe, as 59, which shoe is drawn upwardly, as by a rod 60, to cause the point 61 of the hook connection 58 to impinge and ride upon the face of the shoe 59, thereby causing the disengagement of the hook from the rocker-shaft pin 62 and permitting the form-roller carriage B to remain up upon the ink-cylinders, as 70 71. This construction, while effecting the desired result, engenders considerable friction and wear, due to the gouging action of the point 61 of the hook connection 58 upon the shoe 59, and hence requiring frequent adjustment and being the cause of many breakages. This defect I obviate by finding a position in the hook connection 58 and an arbitrary curved contour in the face of the shoe 59, which will permit the application of a rolling action. Thus the friction-roller 63 is mounted upon the lower portion of the hook connection 58, directly under the hook 64, so that the roller travels along the curved surface of the shoe 59. In this wise the disconnection is effected very gradually and smoothly by roller friction, and the apparatus when once properly assembled seldom requires adjustment.

The carriage, (generally designated by B,) in which are mounted the form-inking rollers 66 67 68 69, is carried up and down the carriage-ways, as C D, across the form and is caused to dwell upon the main inking-cylinders 70 71 by the connections 72 and arms 73, attached to the rocker-shaft 74, (see Fig. 2,) the latter being actuated by the hook connection 58 and the arm 75 on the shaft 76, which latter is rocked by the cam-arms 77 78, fixedly attached to the shaft 76 and which are driven by the friction-rollers 79 80, acting in the cams 81 82, formed on the inner sides of the main gear-wheels 83 84. As best seen in Fig. 4, it is to be particularly noticed that by this employment of two cams 81 82 and two cam-arms 77 78, mounted right and left upon a single shaft 76, it becomes feasible to dispose all of the actuating parts so as to receive and transmit a perfectly-balanced strain. Moreover, this permits the employment of twice the extent of bearing-surface in the cams, the rollers, and the shaft-bearings.

While the extra cost of material and construction is but trifling, the endurance of the action is in consequence easily doubled.

By the construction and arrangement just described it becomes feasible to dispense with heavy weights, as heretofore employed, for counterbalancing the carriage and its connections and to apply for the purpose of counteraction two volute springs 85 86, the inner end of each spring being attached to the rocker-shaft 74 and the outer end being made fast to the main body of the frame of the press, as by the studs 87. It is to be noted that these springs are spaced an equal distance right and left of the hook connection 58 and of the bearings of the rocker-shaft in the frame. The operation of these springs is analogous to that of the mainspring of a watch, except that being required to act through but a fourth of a revolution of the rocker-shaft they may and preferably are coiled open. Hence the surfaces are not in contact and their action is practically frictionless.

Referring more particularly to Figs. 8, 9, and 10, there is illustrated an improved carriage journal-box for the form-inking rollers, and the particular object of this improvement upon the previous practice is to obtain greater area of bearing-surface against the displacement sidewise of the form-roller carriage journal-boxes, thereby increasing the period of effective durability. This is accomplished by milling a vertical central slot, as 130, in all of the projections 131 of the form-roller carriage B and providing the journal-boxes, as 132, with tongues 133 on the top and bottom sides adapted to operate within said slots. In this manner a very effective bearing is provided, and as the sides of the journal-boxes 132 may thus be made flush with the carriage-frame the appearance is much better and the structure is more easily kept clean.

Having thus described my invention and pointed out the preferred embodiment thereof without limiting myself to the precise details of construction and arrangement, what I claim is—

1. The combination with a platen and its connected members, of eccentric-sleeves hav-

ing projections formed across their outer faces, an adjuster-bar having its ends slotted to engage said projections, and springs interposed between the bar and projections, substantially as described. 55

2. The combination with a platen having adjuster-barlatches, of eccentric-sleeves having projections formed across their outer faces, an adjuster-bar having elongated slots to engage said projections, a cross-piece uniting the ends of the adjuster-bar, and a spring interposed between the cross-piece and the projections whereby the adjuster-bar is held in its normal position against the adjuster-bar latch but may be moved to disengage the latch and rotate the sleeve, substantially as described. 60 65

3. The combination with a platen having lugs, of a frisket-frame pivoted to the platen and carrying a frisket-finger, and pins on the frisket-frame to engage said lugs and limit the forward swing of the frisket-frame and thereby avoid excessive pressure of the frisket-finger upon the platen, substantially as described. 70 75

4. The combination with a platen, of a frisket-frame provided with fingers and pivoted to the platen, a lever, a vibrating stud mounted thereon, a rod connected to the frisket-frame and to the vibrating stud, a spring surrounding the rod, a pitman connected to the lever, and means as a treadle for operating the lever, substantially as described. 80 85

5. In a platen printing-press, the combination with the frame, of a form-roller carriage, two main gears having duplicate cams formed on their inner faces, cam-arms arranged to be actuated by said cams, a shaft mounted on the frame and having said cam-arms secured upon its outer ends, and an intermediate arm connected to operate the form-roller carriage, substantially as described. 90

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses. 95

JOHN THOMSON.

Witnesses:

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WM. THOMSON.