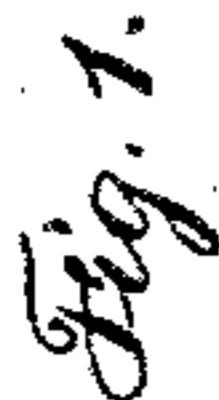


4 Sheets—Sheet 1.

CUTTING AND FEEDING MECHANISM FOR PRINTING PRESSES.

Patented Nov. 5, 1889.



Inventor:
Walter Scott
per Lemuel W. Serrell *att'y.*

(No Model.)

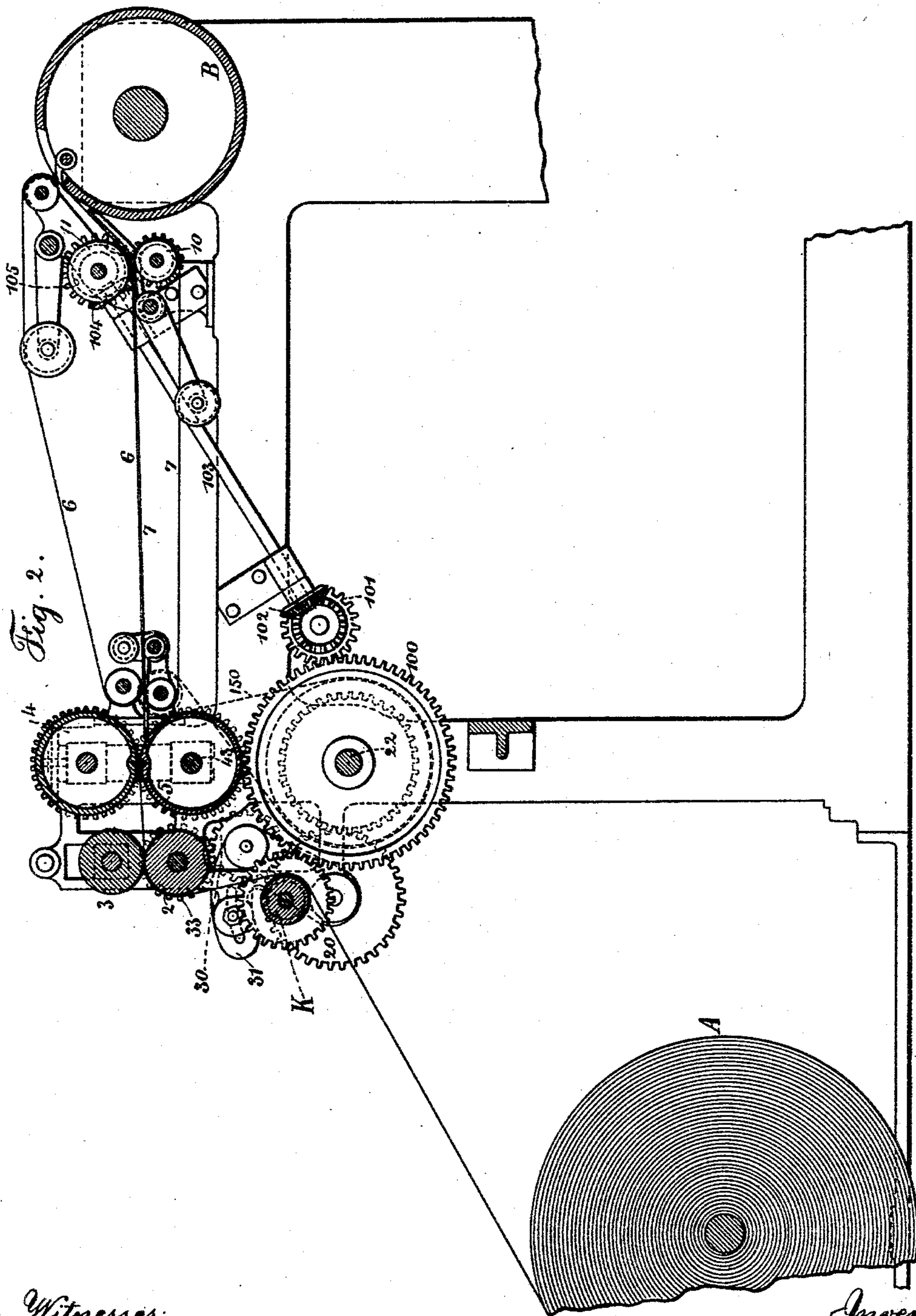
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W. SCOTT.

CUTTING AND FEEDING MECHANISM FOR PRINTING PRESSES.

No. 414,593.

Patented Nov. 5, 1889.



Witnesses:
J. Stair
Chas. H. Smith

Inventor:
Walter Scott
per Lemuel W. Ferrell
Att'y

(No Model.)

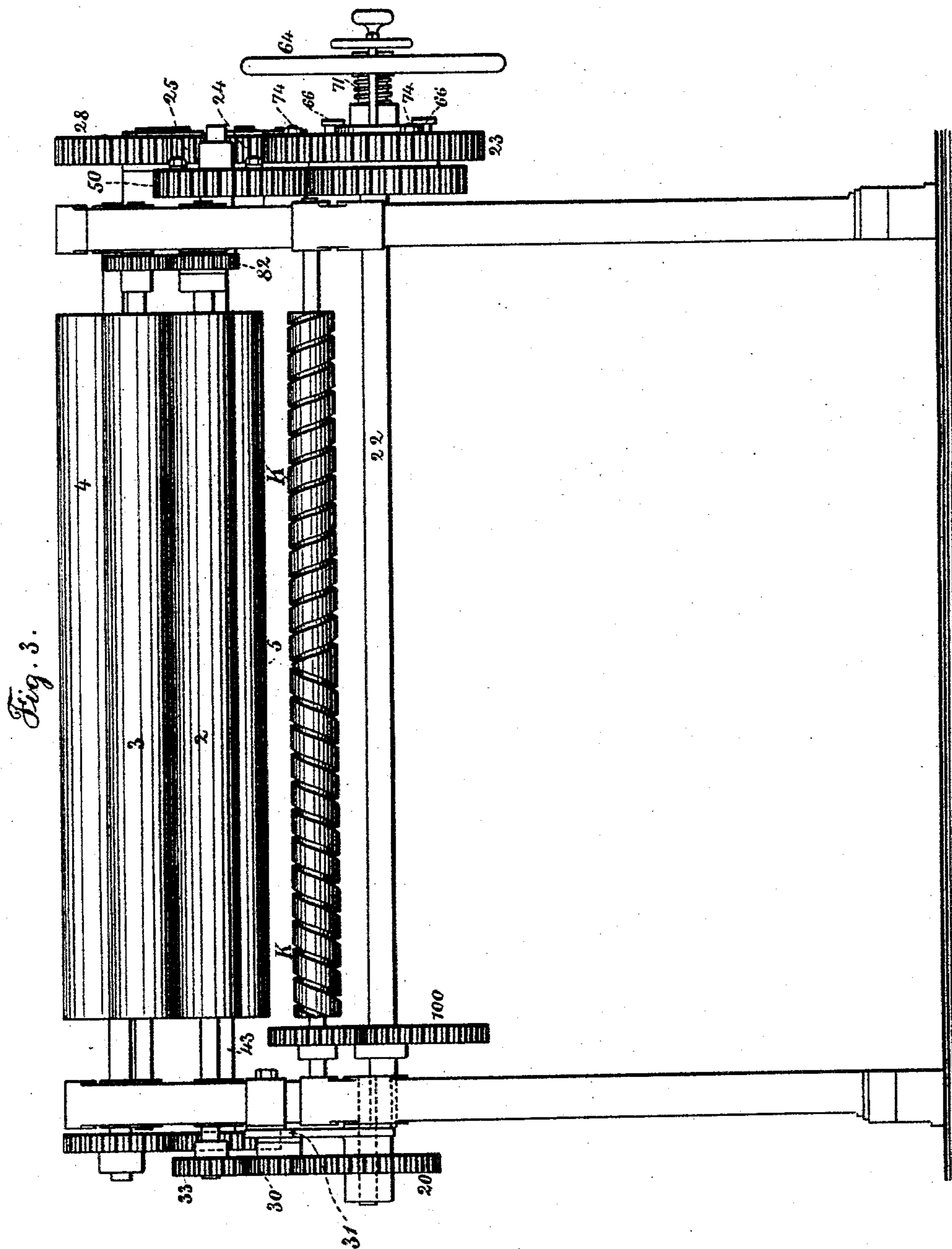
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W. SCOTT.

CUTTING AND FEEDING MECHANISM FOR PRINTING PRESSES.

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Patented Nov. 5, 1889.



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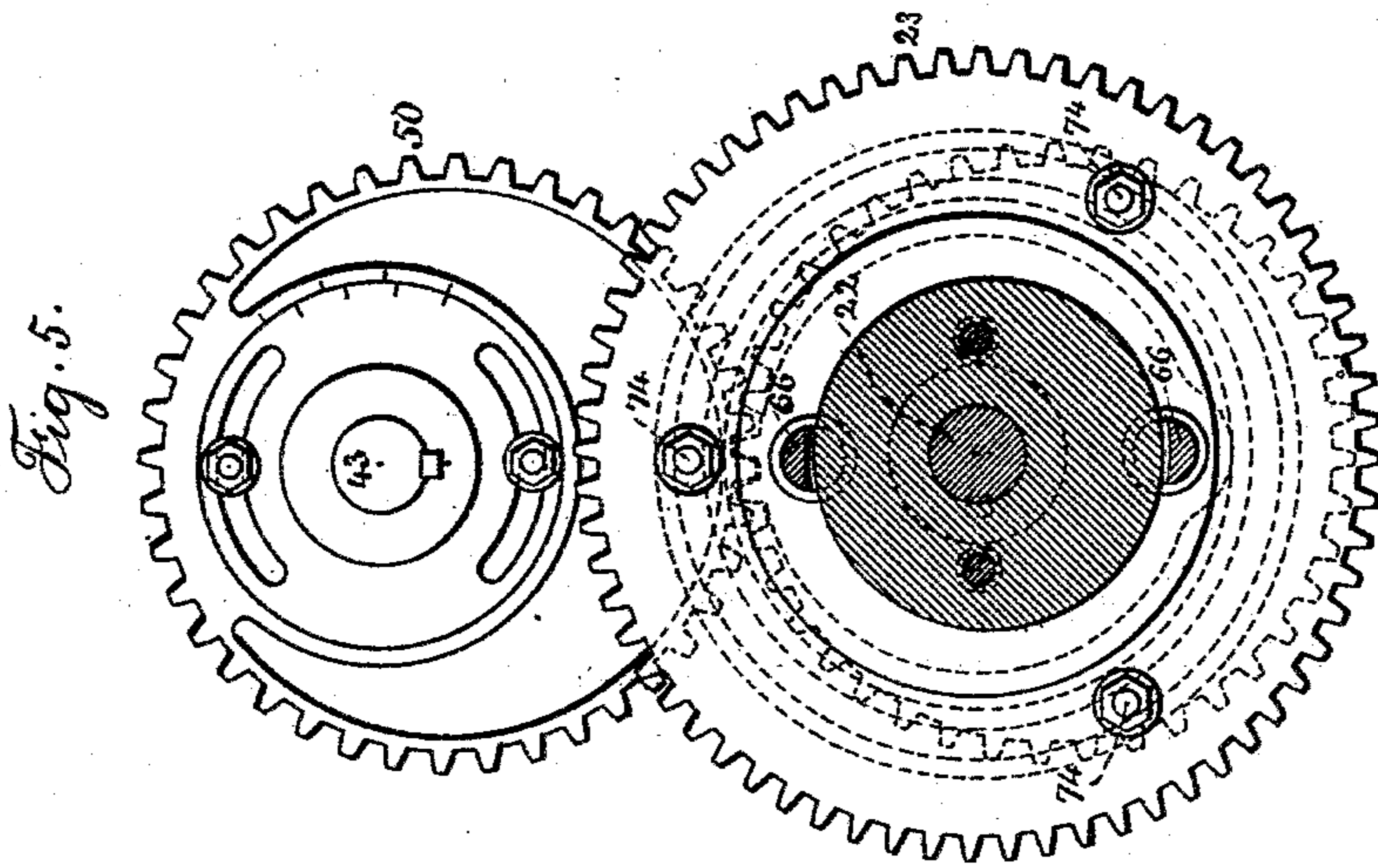
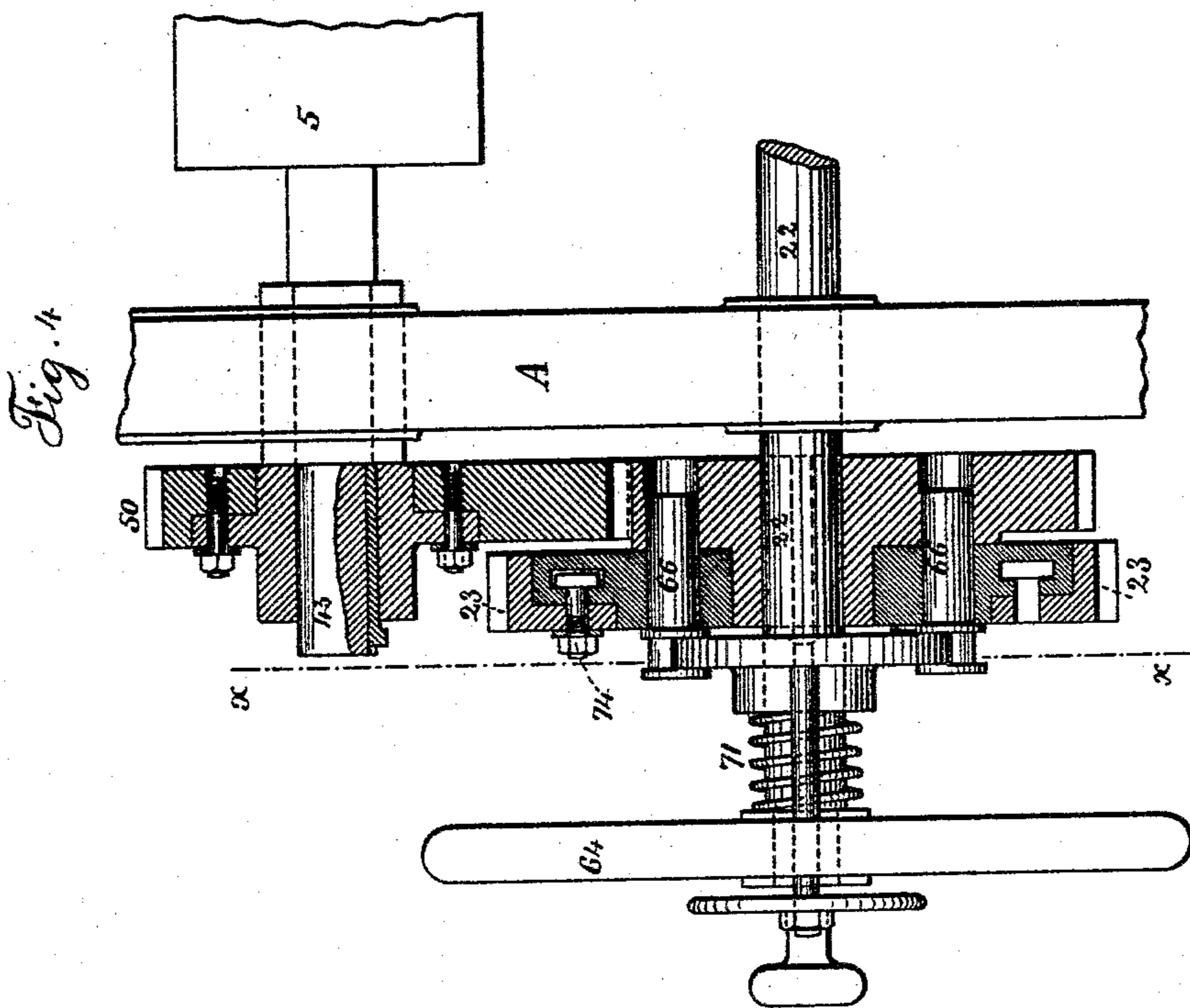
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W. SCOTT.

CUTTING AND FEEDING MECHANISM FOR PRINTING PRESSES.

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Witnesses

J Stair
Chas H. Smith

Inventor:

Walter Scott
per Lemuel W. Serrell Atty

UNITED STATES PATENT OFFICE.

WALTER SCOTT, OF PLAINFIELD, NEW JERSEY.

CUTTING AND FEEDING MECHANISM FOR PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 414,593, dated November 5, 1889.

Application filed February 23, 1889. Serial No. 300,939. (No model.)

To all whom it may concern:

Be it known that I, WALTER SCOTT, of Plainfield, in the county of Union and State of New Jersey, have invented an Improvement in Cutting and Feeding Mechanism for Printing-Presses, of which the following is a specification.

In my application, Serial No. 205,693, filed June 19, 1886, I have represented feeding-rollers that supply the paper to the cutting mechanism, and these rollers may be driven at a greater or less proportionate speed, so as to supply a longer or shorter sheet of paper into the printing-press; and I have also shown a cutter and gearing for driving that cutter, so that the knife may be moving at the same rate as the sheet of paper, or nearly so, at the time the separation of the sheet from the web takes place.

In printing presses it is usual to connect the cutting-cylinder by gearing with the printing-cylinder; hence when the end of the web of paper is being entered the whole press has had to be turned, usually by hand, to move the paper along to the gripper-fingers that receive the sheet, and this involves considerable labor, and, in addition, the tympan-sheet, receives an impression from the types and makes an offset. The same difficulty arises if the press has to be stopped for removing a defective portion of the web of paper.

My improvement relates to the combination, with the printing mechanism and the feeding-rollers, of a clutch or similar means for disconnecting such feeding-rollers from the printing mechanism and for connecting the tapes or belts for conveying in the paper with the feeding-rolls, whereby the parts that feed the paper and carry the same into the press can be moved together without moving the other parts of the press, and then when the press is started all the motions will be in time with each other, and this will be the case when the cutting-rolls also act as feeding-rolls and also when the feeding-rolls are employed in addition to or separate from the cutting devices, and by combining the feeding-rolls and the cutting-rolls with gearing that varies the feed of paper and the speed of the cutter, when cutting off the pa-

per, the length of sheet can be varied without injury to the paper in cutting.

In the drawings, Figure 1 is an elevation of the gearing made use of at one side of the press. Fig. 2 is a vertical section longitudinally of the press, showing also the gearing at the far side of the press. Fig. 3 is an end elevation of the press, the paper roll being removed. Fig. 4 is an elevation, partially in section, of the coupling devices for the cutting-cylinder; and Fig. 5 is an elevation of the driving and eccentric gears, the coupling being in section at the line $x x$, Fig. 4.

I hereby refer to my application Serial No. 205,693 for a more detailed description of the construction and mode of operation of the peculiar feeding and cutting mechanism shown, and I have made use of the same letters of reference upon the corresponding parts.

The feeding-rollers 2 and 3 receive their motion from the gear-wheel 20 and changeable gear-wheel 33, that gears into the gear 30, that is mounted upon the sector 31, so that a larger or smaller gear-wheel 33 can be introduced, if desired, to vary the speed of the rollers 2 and 3 to feed in the length of paper required for the sheet at each revolution of the press.

Mechanism may be made use of for varying the speed of the cutting-knife, so that it may correspond to the speed of the web of paper at the moment the same is cut; but this does not require to be described herein, as my present improvements are available with any suitable cutter, and I remark that the connections from the impression-cylinder B, through the gears 28 27 26 25 24 23 to the shaft 22, and gear 20, and the eccentric gears and adjustment of the gear 23 by the bolts 74 may be similar to those in my aforesaid application to vary the speed of the cutter; but instead of driving the belts 6 and 7 by gearing that receives its motion from the impression-cylinder I give to the said belts 6 and 7 their movement from the shaft 22; and for this purpose I place on said shaft 22 a gear-wheel 100, that gives motion to a pinion 101 and adjacent bevel-gear, and bevel-gear 102, which latter is at the end of the shaft 103, and upon the other end of such shaft 103 is a

bevel-gear 104, that drives the similar gear 105 on the axis of the roller 11, and the rollers 10 and 11 are geared together, so that the tapes 6 and 7 move at the same speed.

5 It will now be understood that when the press is to be adjusted so as to vary the length of paper fed in it is necessary first to change the wheel 33 for causing the rolls 2 and 3 to feed in the proper length of paper at
10 each revolution of the press. Then the adjustment is made between the shaft 43 of the cutting-cylinder 5 and the eccentric gear 50, so that the cutting-cylinders 4 5 will be moving at the proper speed when the sheet of
15 paper is cut off. During these adjustments the hand-wheel 64 is made use of in turning the shaft 22, and in so doing the belts 6 and 7 will be in motion through the gear 100, pinion 101, bevel-gears and shaft 103, acting upon
20 the shaft of the roller 11, so as to convey the sheet, after it has been fed through and cut off, up to the impression-cylinder B, and these motions are easily communicated by the hand-wheel 64, because at this time the gear-
25 wheel 23, connecting to the other parts of the press, is disconnected by loosening the bolts 74, as in my aforesaid application. I am thus enabled to move the sheet along progressively and regularly until it arrives at the
30 proper position to be received by the grippers of the impression-cylinder B. This impression-cylinder B may have been stopped at the right point, or the press may be turned around until such grippers are in the proper
35 position, after which the bolts 74 are to be tightened to screw the loose gear 23 firmly in place, and the press is ready to be started, either by hand or by power. The web of paper passes in contact with the roll K, that
40 is grooved with right and left hand helical grooves from the center toward the respective ends, and this roll may be loose and turn by the contact therewith of the paper, or it may be revolved at a slightly faster or slower
45 speed than the paper. In any case the movement of the paper is either greater or less than that of the roll, and the diverging grooves are in such a direction as to act to smooth out the paper by spreading it widthwise for
50 the removal of any wrinkles or creases in the paper.

In Fig. 2 I have shown by dotted lines at 150 a belt to connect the shaft 22 with one of the rollers of the belts 6 and 7 as a means
55 for moving such belts as the equivalent of the gearing. The aforesaid means for moving the belts 6 and 7 are available in passing in the advancing end of the web of paper and cutting off the irregular end thereof,
60 which is to be removed by hand, so that the advancing end of the first sheet may be brought up to position before the press is started.

It will now be understood that although I
65 have shown my present invention as used with feed-rolls that can be varied in their

relative speed and cutting-cylinders that are driven by eccentric gears my invention is not limited in these particulars, and it is not even necessary to employ the feed-rolls 2 3, 70 as the cutting-cylinders 4 5 may also act to feed in the paper, and that any suitable coupling or clutch—such as the pins 66, actuated by the spring 71—may be used to connect the shaft 22 to the gear 23, so that the shaft 75 22 and paper-feed may be driven by the press in time with the printing mechanism when the press is started by power; but when the coupling-pins 66 are withdrawn the shaft 22 is uncoupled from the gear 23, and such shaft 80 22 and parts receiving motion from it can be turned by the hand-wheel 64 without moving the gearing 23 24, &c., to the impression-cylinder B.

I claim as my invention—

1. The combination, with the cutting-cylinders and the feeding-rolls and the variable gearing for driving the feeding-rolls at different speeds and for rendering the speed of the cutter similar to that of the paper when 90 the cutting takes place, of the belts 6 and 7, for conveying away the sheet of paper, and the rolls for driving such belts, the hand-wheel for moving the feeding-rolls and cutting-rolls, and gearing intervening between 95 the shaft of the hand-wheel and the driving-roll of the belts, whereby the belts that convey away the sheet are moved at the same time as the feeding-rolls and cutting-rolls in adjusting or starting the press, substantially 100 as set forth.

2. The combination, with the cutting-cylinders, of the sheet-forwarding tapes or belts and their rollers for conveying the sheet to the printing mechanism, and gearing or 105 equivalent for connecting the cutting-cylinders to the belt-rollers independent of the other gearing of the printing-press, whereby the advancing end of a web of paper can be fed in and cut off by hand while the other parts 110 of the press are at rest, substantially as set forth.

3. The combination, in a printing-press, of feeding and cutting mechanism, sheet-forwarding tapes or belts and rollers for the 115 same, and gearing or its equivalent connecting the belt-rollers with the cutting mechanism, a train of gearing, and clutch for connecting the printing and cutting mechanism, whereby the cutting and sheet-forwarding 120 mechanism can be disconnected from the printing mechanism and actuated by hand while the printing mechanism is stationary, and then the parts can be connected by the clutch, substantially as set forth. 125

Signed by me this 13th day of February, 1889.

WALTER SCOTT.

Witnesses:

GEO. T. PINCKNEY,
CHAS. H. SMITH.