H. R. MOORE.

PRINTING PRESS.

APPLICATION FILED JUNE 14, 1909.

954,683.

Patented Apr. 12, 1910.

2 SHEETS—SHEET 1.

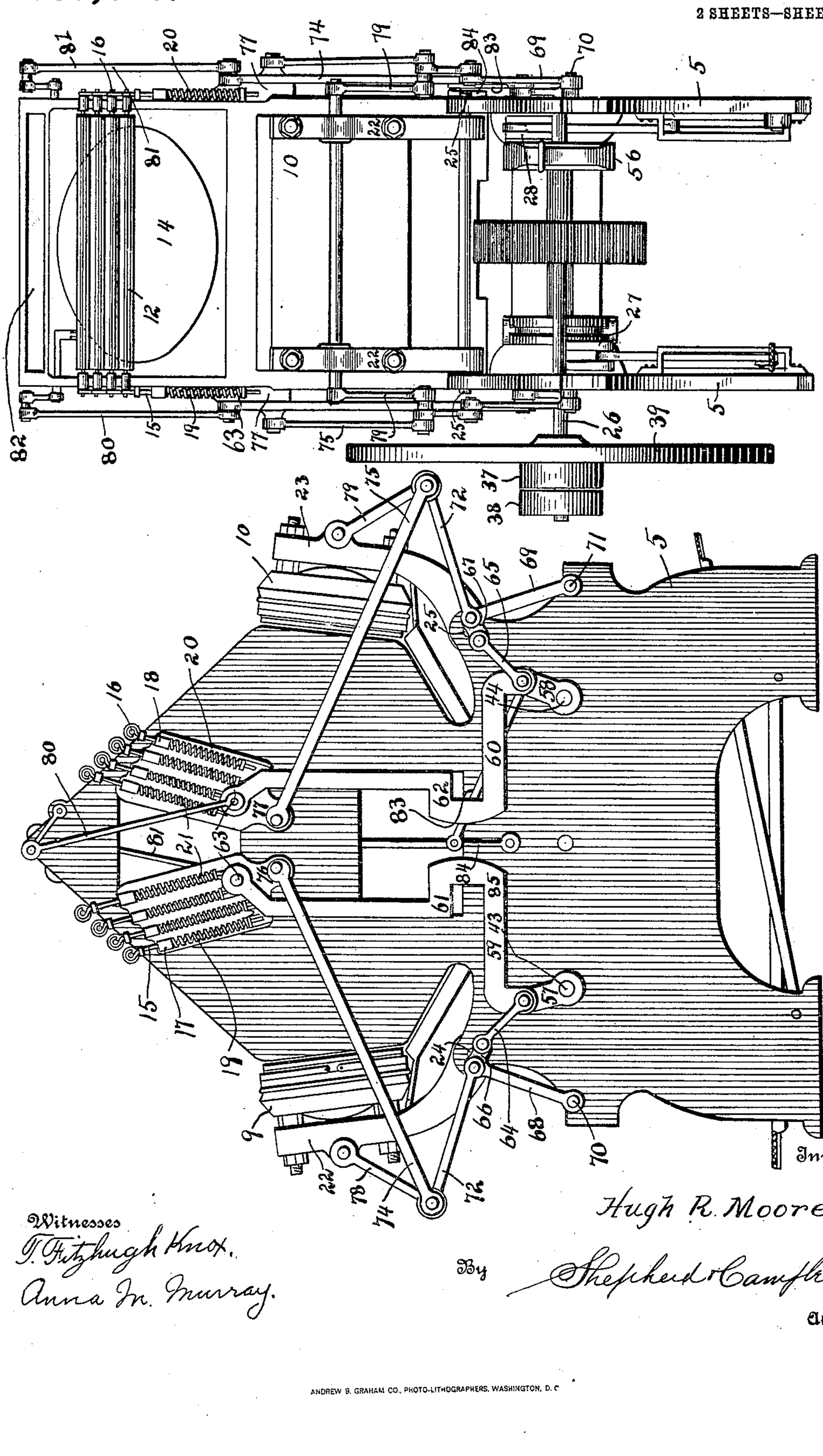

Fig. 2.

Fig. 1.

Witnesses

T. Fitzhugh Knox.

Anna M. Murray.

Inventor

Hugh R. Moore

By Shepherd & Campbell

Attorneys

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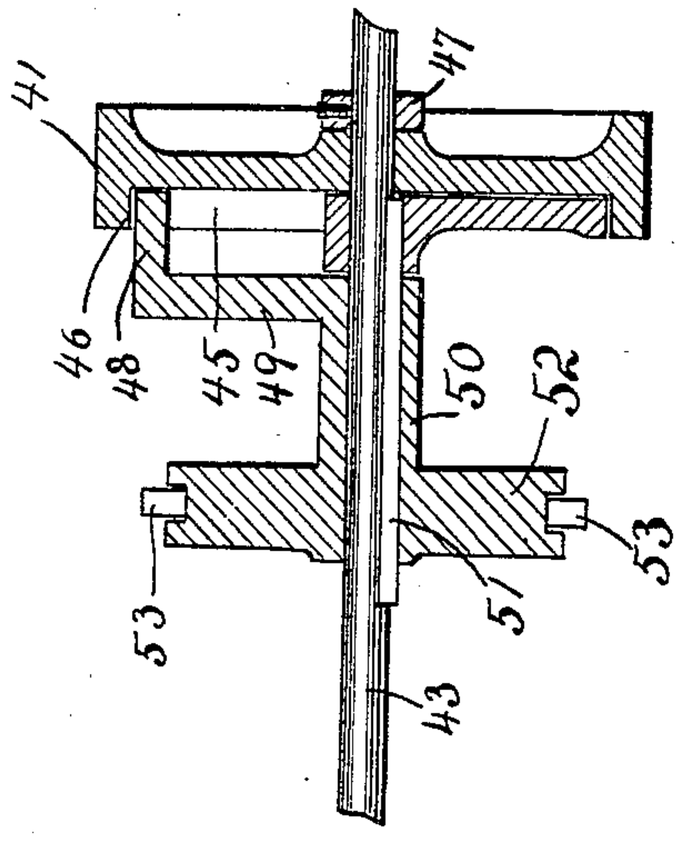

Fig. 4.

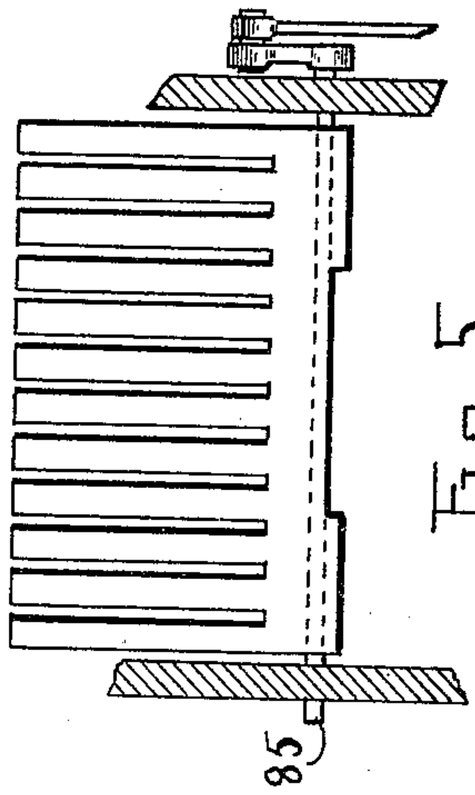

Fig. 5.

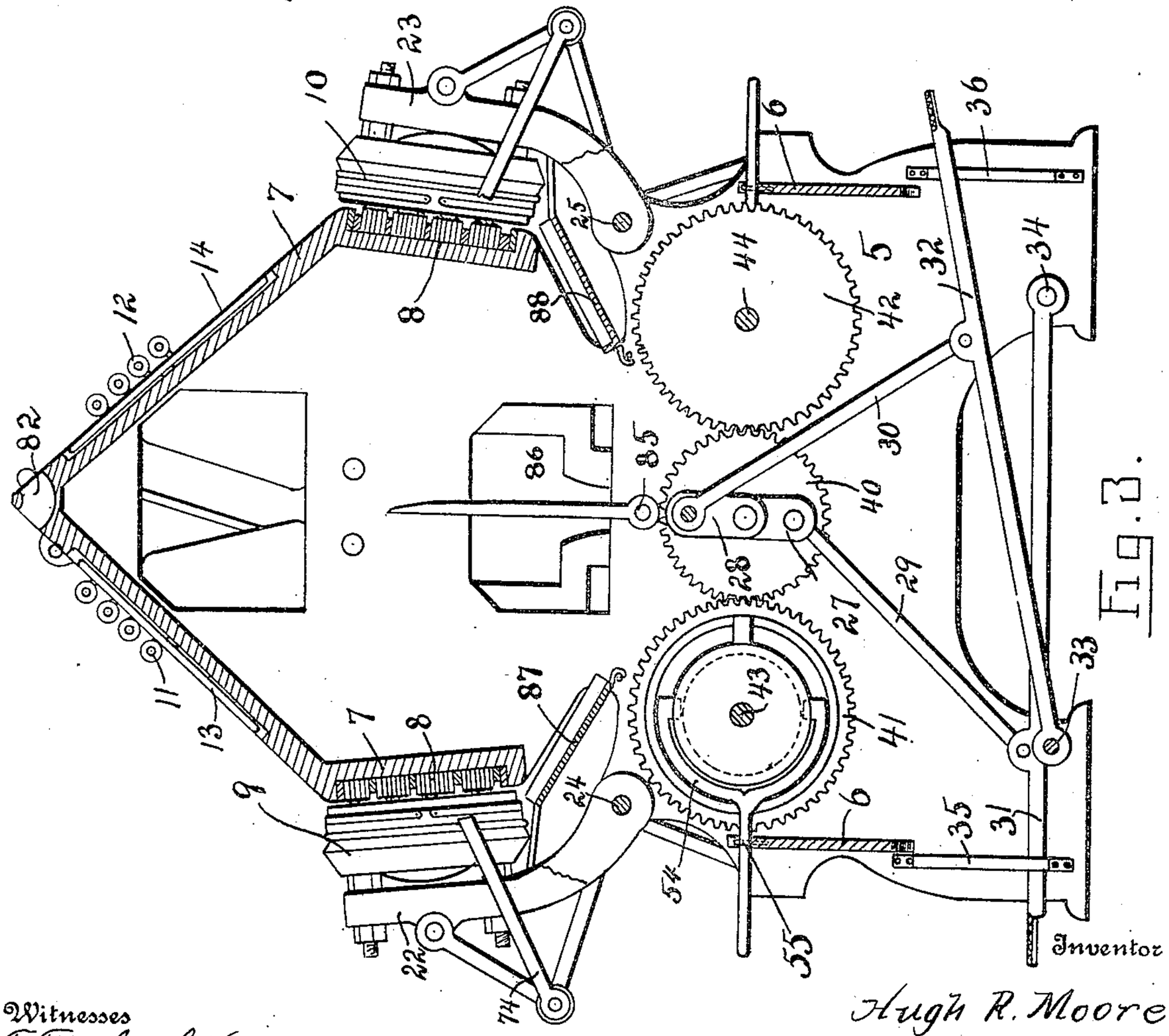

Fig. 3.

Witnesses

T. Fitzhugh Knox.

Anna M. Murray.

Inventor

Hugh R. Moore

By Shepherd & Campbell

Attorneys

UNITED STATES PATENT OFFICE.

HUGH REDINTON MOORE, OF WEST LYNN, MASSACHUSETTS.

PRINTING-PRESS.

954,683. Specification of Letters Patent. **Patented Apr. 12, 1910.**

Application filed June 14, 1909. Serial No. 502,096.

To all whom it may concern:

Be it known that I, HUGH R. MOORE, a citizen of the United States of America, residing at West Lynn, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Printing-Presses, of which the following is a specification.

This invention relates to printing presses, the object of the invention being to provide a double ended press of the kind commonly known as job presses, said press having two complete printing portions and movable platens together with means for delivering the paper printed at one of said platens to a point adjacent the other of said platens.

A further object of the invention is the provision of a press of the character described so constructed and arranged that one of the printing portions may be cut out of action independently of the other.

Further objects and advantages of the invention will be set forth in the detailed description which now follows.

In the accompanying drawings, Figure 1 is a side elevation of a press constructed in accordance with the invention; Fig. 2 is an end elevation thereof; Fig. 3 is a view partly in section with one of the side plates of the frame removed; Fig. 4 is a detail sectional view of a friction clutch employed, and Fig. 5 is a detail view of a fly.

Like numerals designate corresponding parts in all of the figures of the drawing.

Referring to the drawing, it will be seen that the machine comprises the side frames 5, transverse connecting plates 6, and the transversely disposed chase receiving portions 7. These chase receiving portions are adapted to receive type forms 8. The paper to be printed is pressed against these type forms by platens 9 and 10 in the usual and well known manner, the type being inked by ink rollers 11 and 12 which pass over the usual rotative inking disks 13 and 14. The rollers 11 and 12 are mounted in the usual manner in the upper ends of rods 15 and 16, these rods in turn being bodily carried in bearings 17 and 18 of swinging blocks 19 and 20. Springs 21 provide means for adjusting the tension of these rollers. The platens 9 and 10 are carried by the swinging rods 22 and 23, these swinging rods being mounted upon rock shafts 24 and 25.

The main shaft 26 of the machine carries two cranks 27 and 28, these two cranks being connected by links 29 and 30 with treadles 31 and 32. These treadles are pivotally connected to the frame at 33 and 34. Guides 35 and 36 maintain the treadles in proper transverse alinement while permitting vertical movement of said treadles. It will be apparent therefore, that these treadles provide means for imparting movement to the main shaft of the machine by foot power. Power from an engine or motor may be applied to the machine by means of a belt (not shown) through the medium of the fast and loose pulleys 37 and 38, (see Fig. 2.) The main shaft also carries a balance wheel 39 and a gear wheel 40. This gear wheel in turn meshes with the gear wheels 41 and 42. These gear wheels are loosely mounted upon counter-shafts 43 and 44. Friction clutches provide means for locking either the gear 41 or gear 42 to their respective shafts when desired. These friction clutches form no part of the present invention as far as their detail structure is concerned, for any form of clutch may be used. However, as showing an operative structure, I have illustrated a clutch comprising a split ring 45 which is fast upon the shaft (see Fig. 4) and which lies within and is adapted to engage the inner periphery of an overhanging flange 46 of the gear wheel 41. A collar 47 prevents endwise movement of gear wheel 41 upon shaft 43. The nose 48 of an extension 49 of sleeve 50 enters between the ends of the split ring when said extension is forced toward the gear wheel and spreads the split ring sufficiently to cause it to frictionally engage the flange 46 of gear wheel 41. The sleeve 50 is splined at 51 upon the shaft 43 so that it is forced to rotate with shaft 43 while being capable of endwise movement thereon. A grooved disk 52 receives the inturned ends 53 of an operating lever 54, said operating lever being pivotally mounted at 55 in such manner that the swinging of said operating lever upon its pivot will cause endwise movement of the grooved disk 52 to force the nose 48 of the clutch into engagement with the split ring and to consequently force said split ring into frictional engagement with gear wheel 41. This structure is duplicated between gear wheel 42 and shaft 44, this last named structure being indicated in a general way at 56.

From the foregoing description, it will there-

fore be apparent that by imparting rotation to the main shaft either through the medium of the treadles or by means of a belt, rotation may be imparted to either of the countershafts by throwing the clutches into such position as to lock the gear wheels 41 and 42 to the shafts 43 and 44. Upon their outer ends these shafts carry cranks 57 and 58, these cranks being in turn pivotally connected to the extensions 59 and 60 of levers 61 and 62. The upper ends of these levers are pivotally connected at 63 with the swinging heads 19 and 20. Links 64 and 65 are pivotally connected at one end to the extensions 59 and 60 and at their other ends to extensions 66 and 67 of rocking levers 68 and 69, these rocking levers being pivotally connected at 70 and 71 to frame 5. The rocking levers 68 and 69 are connected by links 72 and 73 with the outer ends of links 74 and 75, the inner ends of these links being in turn pivotally connected to the downward extensions 76 and 77 of heads 19 and 20. Additional links 78 and 79 connect the outer ends of the links 72 and 74, and 73 and 75 to the swinging levers 22 and 23. Links 80 and 81 (see Figs. 1 and 2) provide, with the parts to which they are connected, means for imparting step-by-step rotation to the disks 13 and 14. These parts however, are all of the usual and well known construction, the invention more particularly residing in the provision of duplicate printing means upon a common frame together with means for cutting either of said printing means out of action.

A fountain 82, common to both of the disks 13 and 14, is preferably located at the top of the machine frame. A lever 83 is connected to the crank 58 and engages a crank 84 mounted upon a rock shaft 85. (See Figs. 1 and 3.) This rock shaft carries a fly 86 that moves alternately from a plate 87 to a tray 88 and delivers the sheet printed at the left hand printing element to said tray, it being apparent that this sheet is delivered bottom side up or in position for its opposite side to be printed by the printing element at the right hand side of Fig. 3.

It has been hereinbefore stated that this invention resides more particularly in the arrangement of the printing elements than in the specific arrangement of levers for actuating said elements. Important advantages are attained by providing a double ended job press of this character for such a structure economizes space in the press room because it does not occupy as much space as two ordinary job presses would. Furthermore, the same castings serve as mountings for the duplicate parts rendering the cost of a double machine much less than that of two single machines. One of the most important features however, lies in the fact that there is less handling of the stock when printed on both sides for the fly delivers the printed stock from one of the printing elements to the other automatically. Furthermore, such a structure as this saves belting and power, for the energy stored by the single balance wheel serves to operate either, or both of the presses or printing elements.

From the foregoing description, it will be seen that simple and efficient means are herein provided for accomplishing the objects of the invention, but while the elements shown and described are well adapted to serve the purposes for which they are intended, it is to be understood that the invention is not limited to the precise construction set forth, but includes within its purview such changes as may be made within the scope of the appended claims.

Having described my invention, what I claim is:

1. A double ended job printing press comprising a pair of platens located upon opposite sides of said press, means for actuating said platens, a fly adapted to deliver the material printed at one platen to a point adjacent the other platen, a receiving element adapted to receive the printed sheet, and means for actuating the platens comprising a main shaft, a pair of countershafts, and clutch connection between said countershafts and said platens.

2. A double ended job printing press comprising a pair of platens located upon the opposite outer sides of said press, means for actuating said platens, a tray located below and inwardly of one of said platens and a fly adapted to deliver the material printed at the other of said platens into said tray, said fly being located beneath and between said platens.

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

HUGH REDINTON MOORE.

Witnesses:
ETHEL M. FOSTER,
M. BERTHA CRAM.