

June 11, 1935.

E. J. YOUNG

2,004,148

PLATEN PRINTING PRESS

Filed Oct. 15, 1931

2 Sheets-Sheet 1

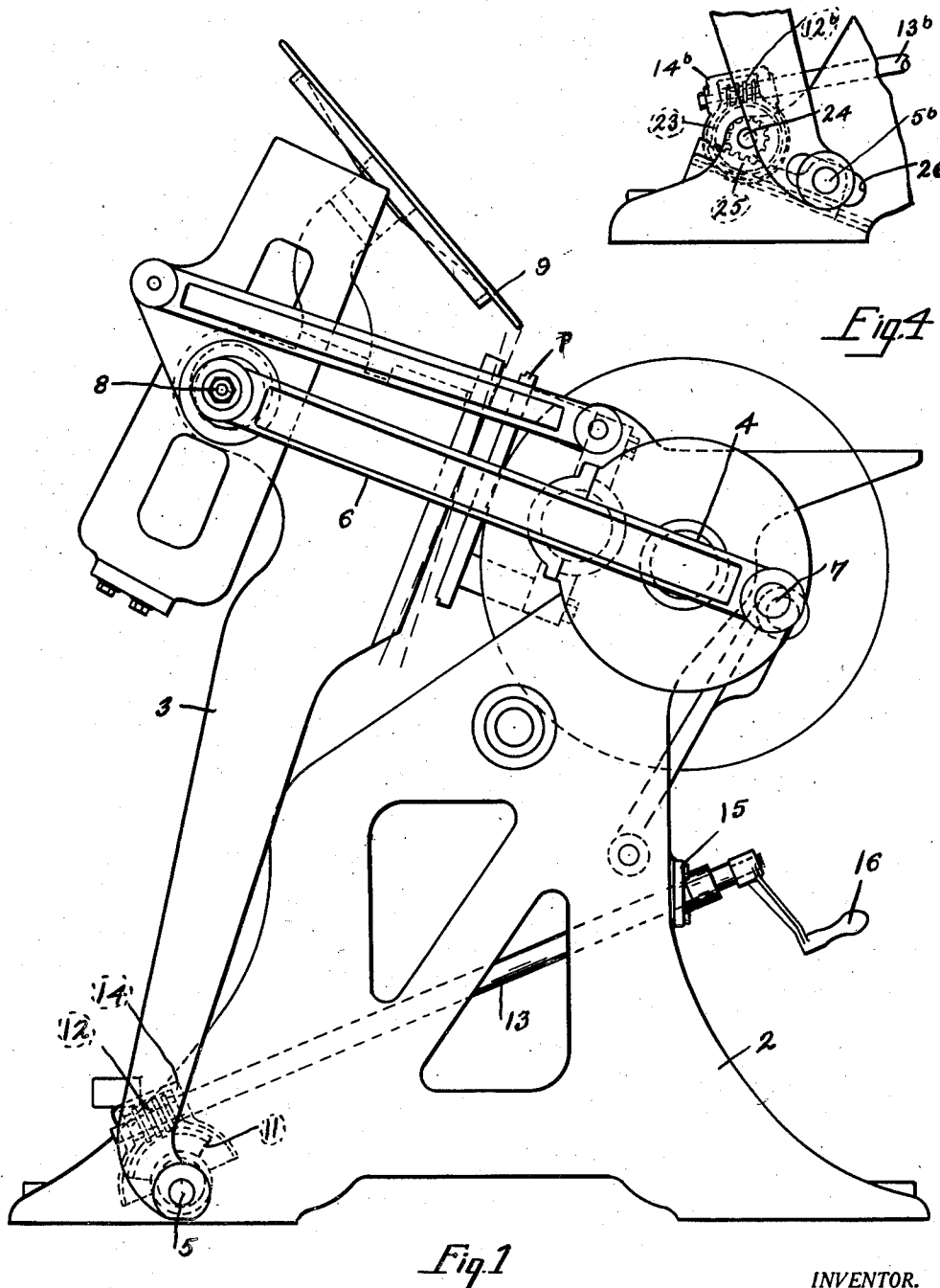


Fig. 1

Fig. 4

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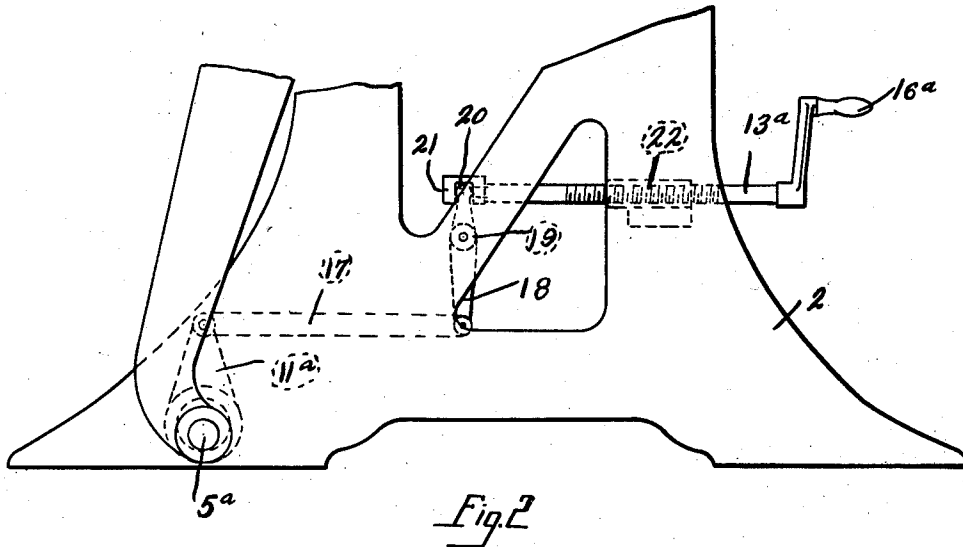


Fig. 2

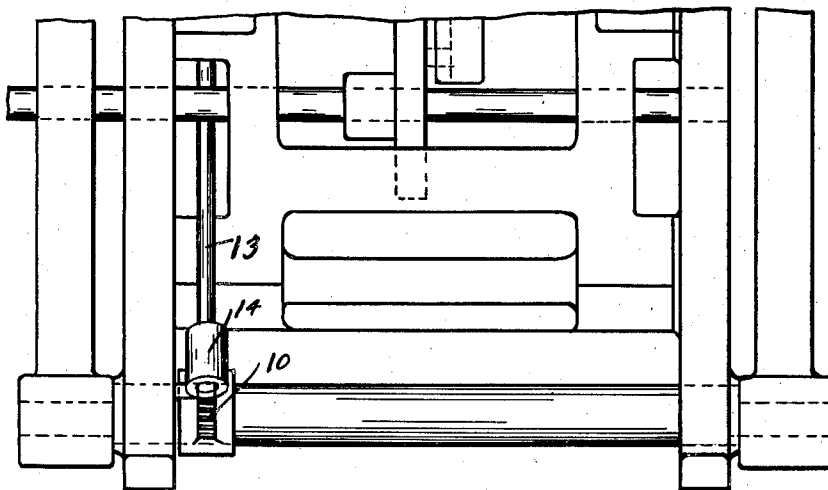


Fig. 3

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PLATEN PRINTING PRESS

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3 Claims. (Cl. 101—293)

In the use of platen or Gordon printing presses it has been a custom to attain such adjustment to parallelism or "levelling up" for uniform impression as might be required between the bed and platen, by changing the screw-settings in the platen. Such method, in the nature of fit and try, is time-consuming, besides requiring some skill and good judgment. Means for securing regulation to parallelism without interfering with the platen anchorage, and such as to be available for quick action, even in unskilled hands, is accordingly an important desideratum in the art and highly desirable.

To the accomplishment of the foregoing and related ends, the invention, then, comprises the features hereinafter fully described and particularly pointed out in the claims, the following description and the annexed drawings setting forth in detail certain illustrative embodiments of the invention, these being indicative however, of but a few of the various ways in which the principle of the invention may be employed.

In said annexed drawings:—

Fig. 1 is a side elevational view of an embodiment of the invention; Fig. 2 is a similar view of a modification, the upper portion of the structure being broken away; Fig. 3 is a plan view of a portion of the structure shown in Fig. 1; and Fig. 4 is a side elevational view of a portion of a modified construction.

Referring more particularly to the drawings, there is shown in Figs. 1 and 3, a printing press of the Gordon or platen character, comprising a supporting frame 2, and a bed 3, the former carrying a platen *p* and a driving shaft 4 with a pitman actuation for the bed 3, whereby the latter with its type-form may be oscillated back and forth for the printing of sheets successively placed in position to be impressed by such printing form. The bed is carried by a shaft 5 at the lower part of the frame, and with such arrangement the pitman rod or crank rod 6 connecting between the crank 7, as revolved by the drive shaft 4, and a suitable point of connection, for instance back-shaft 8, allows oscillatory movement of the bed 3, as indicated. The usual inking mechanism 9, of any desired detail, is provided; and further description as to this is unnecessary.

In connection with the operation of the press, where on account of a change in thickness of the tympan or stock, or for other reason, the face of the bed plate may become somewhat out of parallelism with the co-acting sheet-carrying surface, uneven impressions may result. To cor-

rect this, regulating means, on the order of a micrometer adjustment preferably, is applied to the mounting of the bed shaft 5. In the form shown in Figs. 1 and 3, this involves a screw-threaded adjustment, comprising gear teeth 10 on a segment 11 secured to the shaft 5. Co-acting with such gear teeth is a screw or worm-member 12 on a shaft 13 mounted in a housing 14 in relation with the tooth-segment, and at the upper or forward end being mounted in a bearing 15 on the frame. A hand-crank 16 allows turning of the shaft 13, and regulation of the position of the variably-positionable carrier mounting of the bed 3, by virtue of the shaft 5 being eccentric as between its central portion and its end portions. In other words, movement of the segment 11 correspondingly partially rotates the shaft 5 with the bed carried thereby, and because of the eccentricity the support-point of the bed is carried in alignment forward or back, thereby changing the face-angle of the bed and the type-form carried thereon, as will be plain by referring to the dotted line positions available for the face of the bed, as shown in Fig. 1.

In the form set forth in Fig. 2, the bed is again carried by a shaft 5a which presents an eccentricity as between its central portion and end portions, and an arm 11a projecting from the shaft is pivotally connected to a link 17, which in turn is pivoted to a lever 18 fulcrumed at a point 19 to the frame. At its upper end the lever 18 is connected with the end of a shaft 13a by a head 20 somewhat in the nature of a universal-joint connection in a housing 21 swiveled on the end of the shaft 13a. Turning of the hand-crank 16a, again regulates the position of the shaft-center support for the bed, through the intermediary of the lever 18, link 17 and arm 11a, the shaft 13a moving fore or aft by reason of its screw-threaded engagement in the fixed threaded-bearing 22.

In operation, when it is desired to regulate the position of the bed, the hand-crank 16 or 16a is turned in the appropriate direction, depending upon whether the setting requires movement of the point of bed support forwardly or rearwardly, in order to bring the faces into parallelism at the plane of printing. By reason of the micrometer type of adjustment, the proper positioning can be arrived at with a high degree of accuracy, and without loss of time.

In the form of construction shown in Fig. 4, the bed 3 is mounted on a bed shaft 5b, which is carried by a slide 25 reciprocable in a suitable guideway, and having an extreme range of move-

ment determined by the slot 26. The slide 25 is engaged in turn by a pinion 24, the slide having corresponding rack teeth. The pinion 24 is secured to a stub shaft which also carries a worm gear 23 which is actuated by a worm 12b mounted in a housing 14b and constituting the end of the hand-crank operating shaft 13b. Adjustment by means of this construction is analogous to that shown in Fig. 1, a cylinder hand crank being employed to turn the shaft 13b in one direction or the other, in accordance with requirements, and the worm gear drive 12b, 23 then actuates the pinion and rack 24, 25, thereby adjusting the slide with its shaft 5b and bed carried thereon.

Other modes of applying the principle of the invention may be employed, change being made as regards the details described, provided the means stated in any of the following claims or the equivalent of such be employed.

I therefore particularly point out and distinctly claim as my invention:

1. In a printing press, a platen, a movable form-carrying bed, a shaft below supporting said bed, and means in association with said shaft for regulating the parallelism of the bed with respect

to the platen, said means including a variably-positionable carrier for said shaft and means for setting and retaining said carrier at any desired point in its range of positions.

2. In a printing press, a platen, a form-carrying bed, means mounting said bed for oscillation to and from the platen, said means including a bed-shaft, slide means in which said bed-shaft is mounted, rack teeth on said slide-means, a gear pinion meshing with said teeth, a worm gear secured to said gear pinion, a worm coacting with said worm gear, and a hand-crank for operating said worm.

3. In a printing press, a platen, an oscillatory form-carrying bed adapted to contact therewith, and means controllable during the oscillation of the bed for adjusting the face of the form to parallelism with respect to the platen, said means including an eccentric bed shaft, an arm outstanding on said eccentric shaft, and a screw-threaded adjusting shaft operatively connected to said arm and adapted to shift horizontally the axis of oscillation of said bed and maintain said axis in shifted position.

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