F. MEISEL.

PRINTING PRESS.

APPLICATION FILED SEPT. 7, 1906.

958,268.

Patented May 17, 1910.

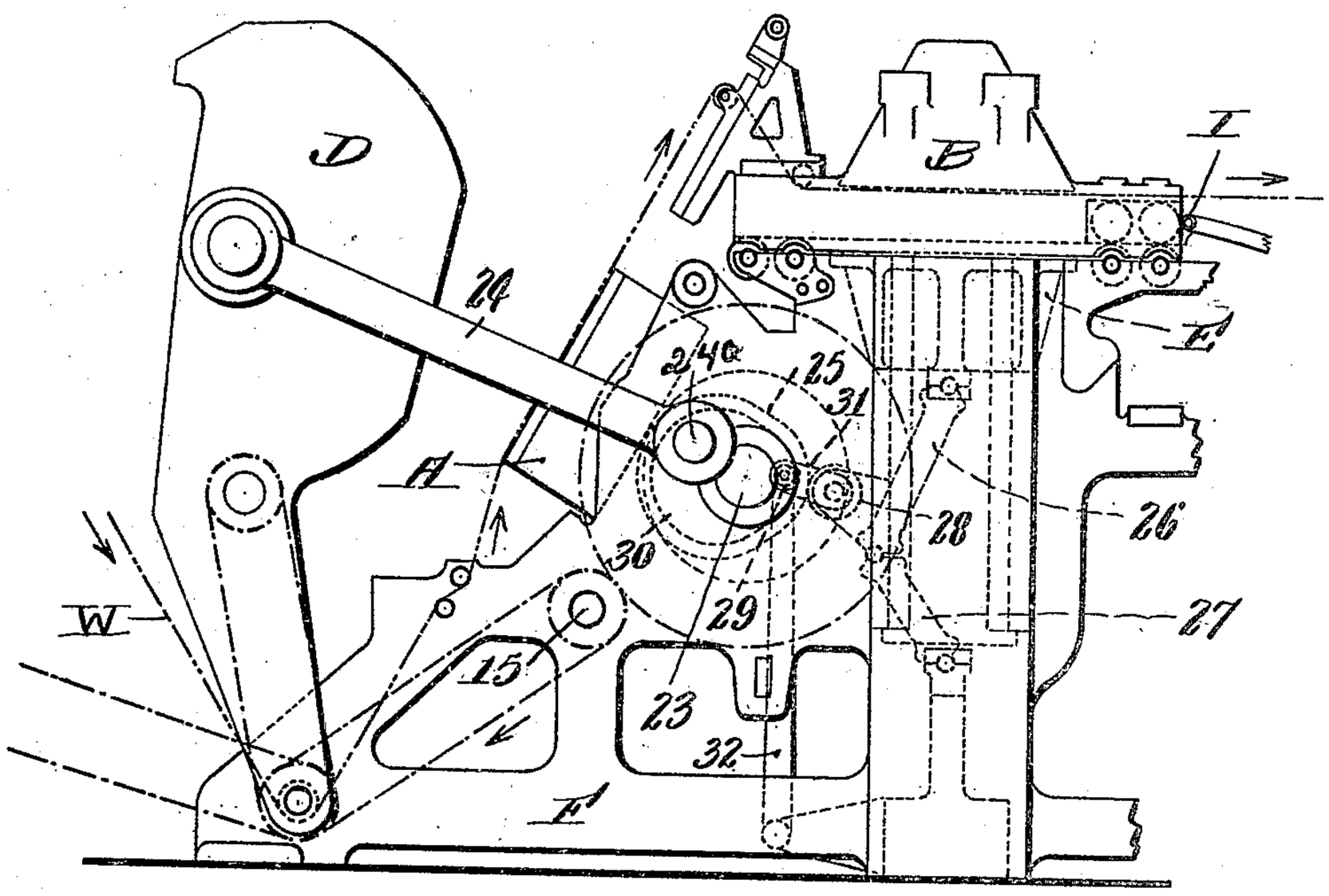

Fig. 1.

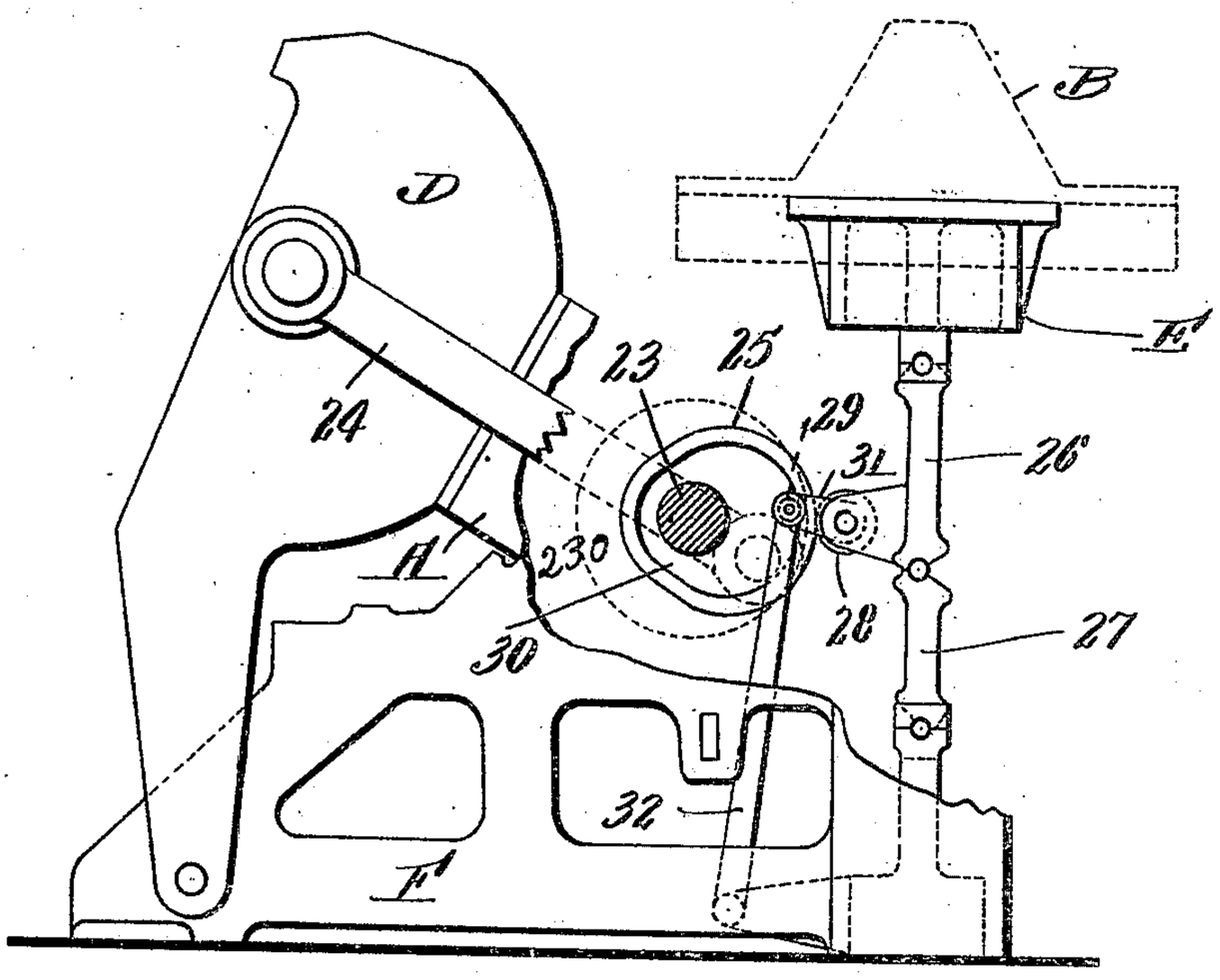

Fig. 2.

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UNITED STATES PATENT OFFICE.

FRANCIS MEISEL, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO MEISEL PRESS AND MANUFACTURING COMPANY, OF BOSTON, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

PRINTING-PRESS.

958,268. Specification of Letters Patent. Patented May 17, 1910.

Application filed September 7, 1906. Serial No. 333,593.

To all whom it may concern:

Be it known that I, FRANCIS MEISEL, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Printing-Press, of which the following is a specification.

This application contains matter divided out of my prior application for patent on a printing press filed July 13, 1904, Serial No. 216,343.

This invention relates especially to that class of bed and platen printing presses which are intended to print upon webs or strips of paper.

The especial objects of this invention are to provide an improved and simplified impression mechanism, and to provide means for counterbalancing the bending strains on the impression shaft.

In the accompanying drawings: Figure 1 is a side view partly broken away of sufficient parts of a printing press to illustrate the application of my invention thereto, and Fig. 2 is a fragmentary view illustrating the impression mechanism and showing the parts in a different relative position from that illustrated in Fig. 1.

In this application for patent I have illustrated my invention applied to a well-known type of bed and platen printing press, but it is to be understood that certain features of my invention may be used in other connections.

Referring to the accompanying drawings for a detail description of a printing press embodying my invention, F designates one of the side frames of the machine. The side frames F are connected together in the usual manner, and fastened between the side frames F at one end of the press is the inclined platen A upon which the web of paper W is printed upon the first side. Also fastened between the side frames F is the second downwardly facing platen B upon which the web is printed a second time. Pivoted in position to coöperate with the platen A is the swinging bed D which may carry a type form and the usual inking mechanism. Coöperating with the second platen B is the vertically movable bed E which is intended to carry a second type form, which type form may be inked by any of the usual inking mechanisms, as I. These parts, as illustrated, are arranged as in a well-known type of press and need not be herein described in detail.

The power for driving the press is applied to the driving shaft 15, in the ordinary manner. Fastened upon the driving shaft 15 is a pinion which meshes with and drives a large gear upon the impression shaft 23 which is journaled near its ends on the side frames.

In a printing press constructed according to my invention the impression shaft is intended to operate through simple and direct connections to control both the movable beds D and E. For this purpose the impression shaft 23 is provided outside the side frames with crank disks 230 having crank-pins 240 connected by links 24 to the swinging bed D. Also mounted upon the impression shaft 23 inside the side frames F as shown in Fig. 2, are cams 25 which have direct engagement with rollers 28, which rollers 28 are carried by the upper links 26 of the sets of toggle levers 26 and 27 which operate the second vertically movable bed E. The toggle may be returned from a vertical to an inclined position to take off the impression by means of return cam rollers 29 engaging a return cam 30 of a shape similar to that of the main cam 25. For this purpose the rollers 29 are preferably mounted on arms 31 pivoted concentrically with the rollers 28 the arms being held up by links 32 fulcrumed on a stud or the like located below on the frame. By means of this construction it will be seen that I have provided a simple and direct impression mechanism for a printing press, and that in a construction as thus arranged, the impression strains tending to bend the shaft 23 are practically counterbalanced. For example, when the parts are in the position illustrated in Fig. 2, the operating strain on the cams is exerted upon the center of the impression shaft 23 in one direction; while the operating strain on the links 24 is transmitted to the center of the impression shaft 23 in the opposite direction. This in practice has enabled me to provide a powerful impression without unduly straining the shaft.

The operation of the several parts has been so fully set forth in describing the construc-

tion that a description of the operation of the printing press as a whole is thought to be unnecessary.

I am aware that changes may be made in practicing my invention by those who are skilled in the art without departing from the scope thereof as expressed in the claims. I do not wish, therefore, to be limited to the constructions I have herein shown and described, but what I do claim and desire to secure by Letters Patent of the United States is:—

1. In a printing press, the combination of two platens, a movable bed coöperating with each of said platens, an impression shaft, means for operating one of the beds from the impression shaft, and toggle levers operated by the impression shaft for operating the second bed, said toggle levers and said means for operating the first named bed being on opposite sides of the impression shaft.

2. In a perfecting printing press, the combination of two stationary platens, a movable bed coöperating with each of said platens, an impression shaft, a crank pin and link connection for operating one of the beds from the impression shaft, and toggle levers having direct operative connection with a cam on the impression shaft for operating the second bed, said link connection and toggle levers being on opposite sides of the impression shaft.

3. In a perfecting printing press, the combination of two stationary platens, a movable bed coöperating with each of said platens, an impression shaft, a crank pin and link connection for operating one of the beds from the impression shaft, and toggle levers having direct operative connection with a cam on the impression shaft for operating the second bed.

4. In a perfecting printing press, the combination of two stationary platens, a movable bed coöperating with each of said platens, an impression shaft, a link connection for operating one of the beds from the impression shaft, toggle levers having direct connection with the impression shaft for operating the second bed, the weight of said beds being so positioned as to act on the impression shaft in opposite directions when they are approaching their respective platens.

5. In a bed and platen printing press, the combination of two stationary platens, two movable beds coöperating therewith, toggle levers for operating one of the movable beds, an impression shaft, means connected with the impression shaft for operating the other of said beds, and a cam upon the impression shaft having direct engagement with the toggle levers, whereby the weight of said beds will act toward the impression shaft from opposite sides thereof when they are approaching their respective platens.

6. In a bed and platen printing press, the combination of two movable beds, a shaft, means connected with the ends of the shaft for drawing one bed toward its platen, and means connected with the center of the shaft for forcing the other bed toward its platen, said last named means acting toward the center of the shaft from the side opposite that on which the first named means acts on the center of the shaft when the first named bed is moving toward its platen.

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

FRANCIS MEISEL.

Witnesses:
ANNA E. MEISEL,
DANIEL J. CROWLEY.