B. D. STEVENS.

PRINTING PRESS FRAME.

APPLICATION FILED FEB. 26, 1921.

1,413,067. Patented Apr. 18, 1922.

2 SHEETS—SHEET 1.

Fig. 1.

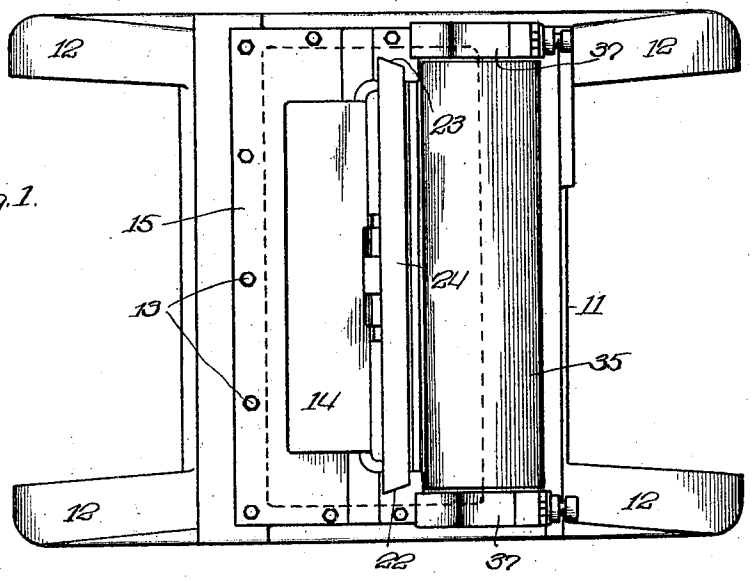
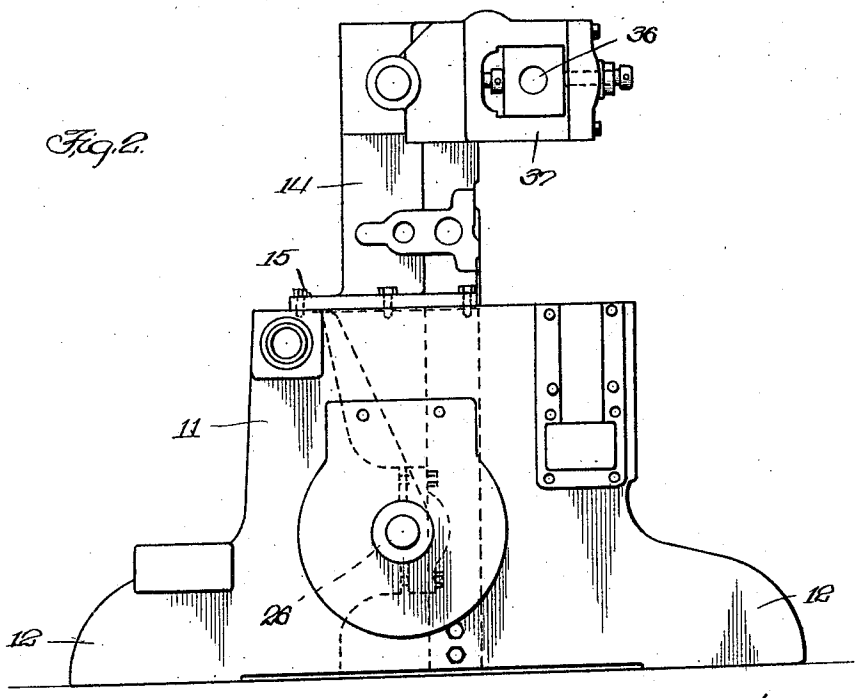


Fig. 2.



Witness:
E. T. Olson

Inventor:
Burt D. Stevens
By Walter M. Fuller
Atty.

B. D. STEVENS.

PRINTING PRESS FRAME.

APPLICATION FILED FEB. 26, 1921.

1,413,067. Patented Apr. 18, 1922.

2 SHEETS—SHEET 2.

Fig. 3.

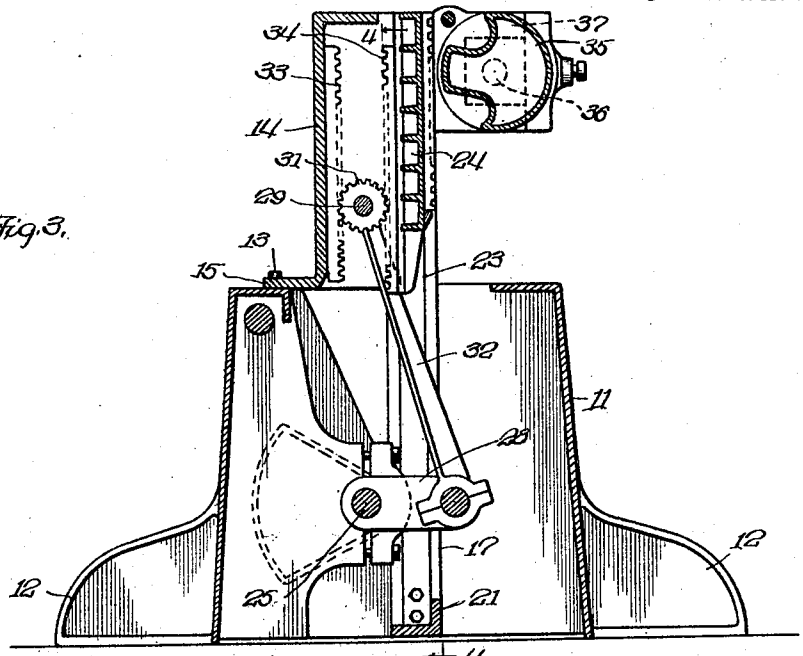
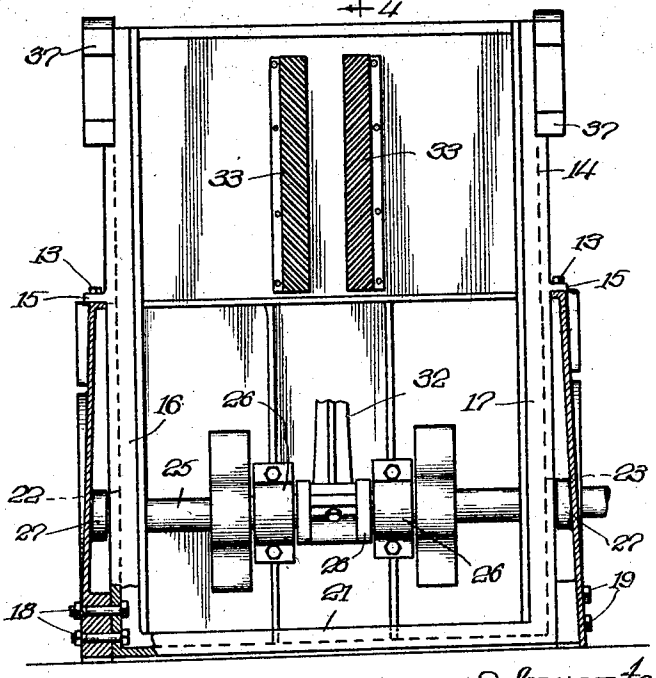


Fig. 4.



Witness:

Inventor:
Burt D. Stevens
By Walter M. Fuller
Atty.

UNITED STATES PATENT OFFICE.

BURT D. STEVENS, OF EVANSTON, ILLINOIS, ASSIGNOR TO MIEHLE PRINTING PRESS AND MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

PRINTING-PRESS FRAME.

1,413,067. Specification of Letters Patent. Patented Apr. 18, 1922.

Application filed February 26, 1921. Serial No. 448,113.

To all whom it may concern:

Be it known that I, BURT D. STEVENS, a citizen of the United States, residing at Evanston, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Printing-Press Frames, of which the following is a specification.

The chief purpose and design of this invention resides in a novel construction and improved assembly of the parts of a printing-press, particularly one of the sliding bed type, the invention pertaining more especially to the frame of the structure.

One aim of the invention is the provision of a suitable frame for the cooperating printing-form bed and its companion impression-cylinder and their operating mechanisms, whereby the frame will present great rigidity, wherein the parts will properly maintain permanent alignment and not be subjected to undue or excessive strains or stresses, and wherein the ease of machine finishing and simplicity in structure results in a relatively low cost of production.

To the accomplishment of these and other desirable ends, the machine comprises a main or underlying base-frame adapted to rest on the floor and conveniently supplied with outstanding supporting feet.

Resting on top of such base-frame and secured thereto is a supplemental or auxiliary frame having spaced legs or extensions projecting down into the base-frame with their lower ends fastened to the latter and connected together by an integral cross-base.

The opposed faces of these legs are provided with registering guideways accommodating the edge or marginal portions of the reciprocatory bed which is operated by appropriate mechanism including a crank-shaft having suitable bearings in the base-frame.

To insure the permanent desired relation between the impression-cylinder and such reciprocatory bed, the cylinder is provided with bearings on such supplemental-frame.

A structure of this character, by reason of the bolting of the two frames together at several points, possesses marked rigidity, resulting in assured correct alignment of the several coacting elements, and because the frame is made in separable parts the machine finishing of the guideways may be accomplished with facility and economy.

In the accompanying drawings, forming a part of this specification, and to which reference should be had in connection with the following detailed description of the machine illustrated therein, a preferred or desirable embodiment of the invention in practical form has been shown, like reference characters being employed for the same parts throughout the several views.

In these drawings; Figure 1 is a plan view of the machine; Figure 2 is an end elevation of the same; Figure 3 is a lengthwise vertical section; and Figure 4 is a vertical cross-section on line 4—4 of Figure 3, the parts being viewed in the direction indicated by the arrows.

Referring to such drawings, it will be observed that the appliance includes a hollow, open-top, main or base frame 11 adapted to rest on the floor, being provided at its four corners with a corresponding number of outstanding supporting feet 12, 12, whereby the frame has a comparatively wide reach or spread on its sustaining floor.

Bolted at 13 to the top of such main-frame is a supplemental, upstanding frame 14 having an outwardly-extended, horizontal flange 15 resting on and fastened by the bolts or otherwise to the main-frame, and having also a pair of depending, widely-separated legs 16 and 17 extending down in the interior of frame 11 just inside of its side-walls and nearly to the floor, being bolted or otherwise secured at 18, 19 near their lower ends against the inner faces of thickened portions of the bottom part of the main or base frame, such lower ends of the legs being connected together, in this particular embodiment of the invention, by an integral bar 21 of angle shape in cross-section forming a part of such supplementary or counterpart frame casting.

The inner faces of such depending legs 16 and 17 and the corresponding upper or registering portions of the top casting 14, of which the legs form integral extensions, are provided with vertical grooves or guideways 22 and 23 for the accommodation of the marginal portions of an upright reciprocatory bed 24 adapted to carry the printing-form.

The operating means for such bed comprise a counterbalanced crank-shaft 25 revoluble, by means not illustrated, in main bearings 26, 26 and secondary bearings 27, 27 on the interior of the base-frame 11, the central crank-portion 28 of such shaft being operatively associated with a shaft 29 of a pair of bodily traveling gears 31 by a connecting-rod 32 having its opposite ends rockingly connected to the elements 28 and 29, one only of such gears being shown.

These gears mesh with two, upright, spaced, stationary racks 33, 33 on the upper frame 14 and with a pair of registering vertical racks 34, 34 on the back of the bed, whereby the stroke of the latter is twice the throw of the crank.

The impression-cylinder 35 has its shaft 36 revolubly mounted in bearings in arms 37, 37 projecting from the upper frame 14 and is actuated through a rack and gear connection with the sliding bed in the customary manner.

Obviously, therefore, the reciprocating bed and the cylinder are directly mounted on the same casting, hence preserving their proper relation to one another at all times.

It will be perceived, also, that the entire length of the guideways for the sliding bed are on one casting or frame, hence facilitating the machine work necessary for their production, and assuring their proper alignment under all conditions, such casting being separable from its supporting base.

The operating mechanism for such bed, however, is partly in and mounted on the underlying casting or frame, whereas the remainder of such actuating mechanism is on the supplemental frame.

Thus it will be understood that the machine comprises two interfitting frames faciliating the casting and machining operations and insuring the permanent alignment, register, and proper position of the several parts which is essential to the production of printing work of high grade and first-class quality.

Those skilled in this art will readily understand that the invention is not restricted to the precise and exact details of structure presented but that these may be modified within comparatively wide limits without departure from the substance and essence of the invention as defined by the appended claims.

I claim:

1. In an upright reciprocatory bed printing-press, the combination of a base-frame, a supplemental-frame mounted on, secured to, and having extensions projecting down into said base-frame, said supplemental-frame and extensions being provided with upright guideways, a bed slidable in said guideways, and means to reciprocate said bed, substantially as described.

2. In an upright reciprocatory bed printing-press, the combination of a base-frame, a supplemental-frame mounted on, secured to, and having extensions projecting down into said base-frame, said supplemental-frame and extensions being provided with upright guideways, a bed slidable in said guideways, and means partly on said supplemental-frame to reciprocate said bed, substantially as described.

3. In an upright reciprocatory bed printing-press, the combination of a base-frame, a supplemental-frame mounted on, secured to, and having extensions projecting down into said base-frame, a bar connecting said extensions together, means fastening said extensions to said base-frame, said supplemental frame and extensions having upright guideways, a bed slidable in said guideways, and means to reciprocate said bed, substantially as described.

4. In an upright reciprocatory bed printing press, the combination of a base-frame having a plurality of outstanding feet adapted to rest on the floor, a supplemental-frame mounted on, secured to, and having extensions projecting down into said base-frame, a bar connecting said extensions together near their lower ends, means fastening said extensions to said base-frame, said supplemental-frame and extensions having upright guideways, a bed slidable in said guideways, and means partly on said base-frame and partly on said supplemental-frame to reciprocate said bed, substantially as described.

5. In a printing-press, the combination of a hollow base-frame adapted to rest on the floor, a supplemental-frame fastened to said main-frame and having opposite vertical extensions projecting down into said main-frame and equipped with registering guideways on their inner faces, a reciprocating printing-form bed slidable in said guideways, means to operate said bed, and an impression-cylinder cooperating with said bed and mounted to revolve in bearings on said supplemental-frame, substantially as described.

6. In a printing-press, the combination of a hollow base-frame adapted to rest on the floor, a supplemental-frame mounted on top of said main-frame and having spaced depending extensions projecting down into said main-frame, a bar in said main-frame connecting said extensions together, the latter having registering guideways in their inner faces, a reciprocating printing-form bed slidable in said guideways, means to operate said bed, and an impression-cylinder cooperating with said bed and mounted to revolve in bearings on said supplemental frame, substantially as described.

7. In a printing-press, the combination of a hollow base-frame adapted to rest on the

floor, a supplemental-frame resting on and secured to the top of said base-frame and having spaced depending extensions projecting down into the base-frame and connected together near their lower ends, such extensions having registering guideways in their inner faces, a reciprocating printing-form bed slidable in said guideways, an impression-cylinder cooperating with said bed and mounted to revolve in bearings on said supplemental-frame, and means to reciprocate said bed, including a crank-shaft revoluble in bearings on said base-frame, substantially as described.

BURT D. STEVENS.