

Jan. 20, 1925.

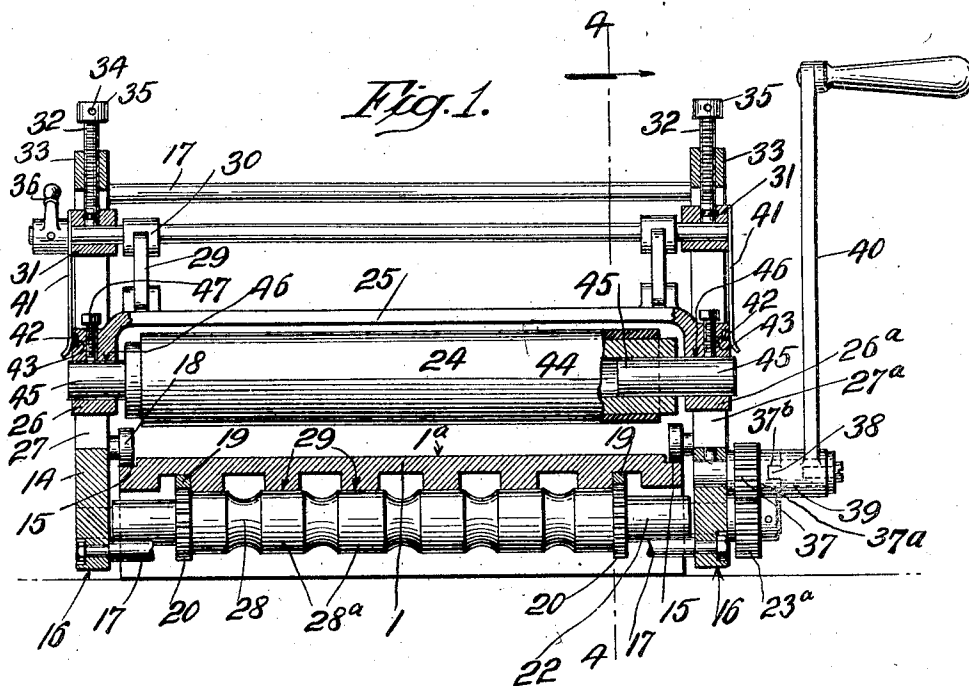
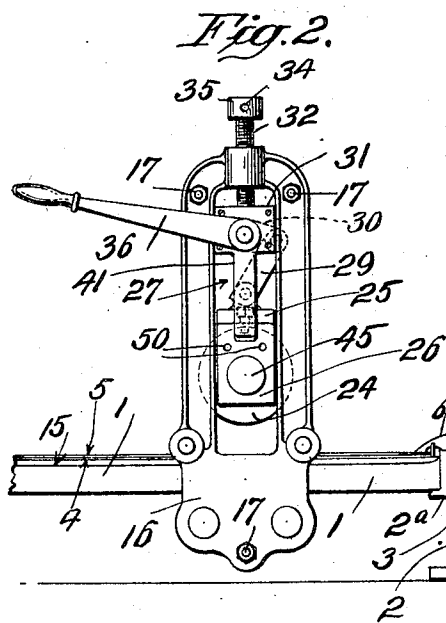
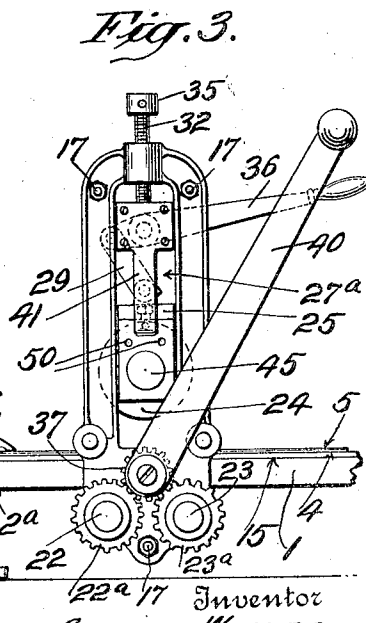
1,523,736

C. WAGNER

PRINTING PRESS

Filed July 26, 1921

2 Sheets-Sheet 1



Inventor
CHARLES WAGNER

By his Attorney

Julius F. Wagner

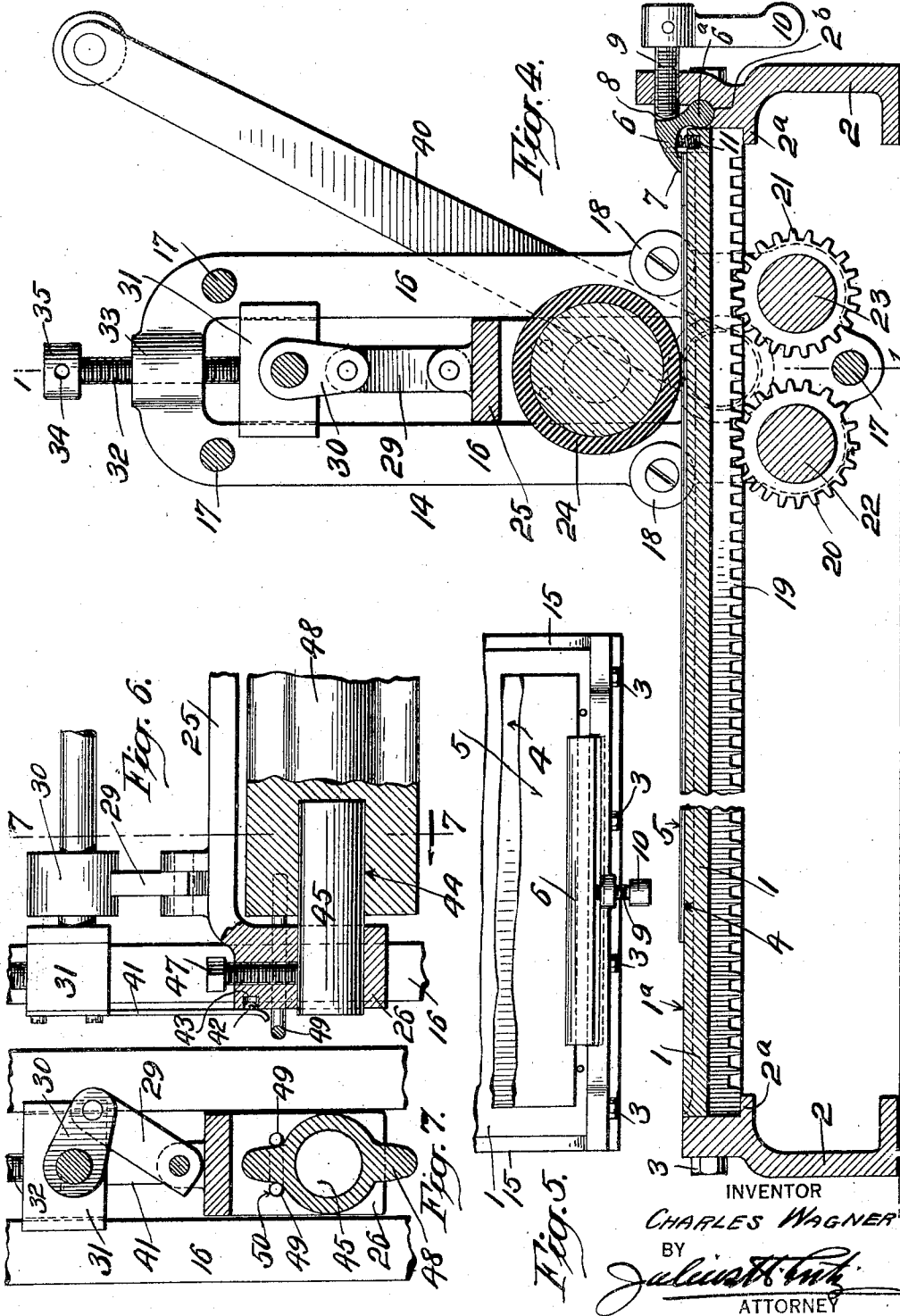
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2 Sheets-Sheet 2



UNITED STATES PATENT OFFICE.

CHARLES WAGNER, OF GRANTWOOD, NEW JERSEY.

PRINTING PRESS.

Application filed July 26, 1921. Serial No. 487,671.

To all whom it may concern:

Be it known that I, CHARLES WAGNER, a citizen of the United States, and a resident of Grantwood, in the county of Bergen and State of New Jersey, have invented certain new and useful Improvements in Printing Presses, of which the following is a specification.

This invention relates to improvements in printing presses.

One of the objects of this invention is to produce a press which will occupy a minimum amount of space and have a printing bed of maximum size.

Another object of my invention is to produce a printing press having a stationary table or bed over which the printing roller or wiper may travel and have sufficient pressure applied thereto to produce effective printing.

Another object of my invention is to produce a printing press of the type above described having the printing pressure applied by engagement of pressure devices on opposite sides of the printing table so as to produce counter acting pressures and provide efficient printing pressure between a printing roller or wiper and the printing surface.

Another object of my invention is to provide means for causing a clamping frame carrying a printing roller or wiper to travel over and maintain a squeezing or clamping pressure on opposite sides of the printing bed during such travel.

Another object of my invention is the provision in a press of the type specified of means for adjusting the degree of pressure of the roller or wiper.

Another object of my invention is the provision in a press of the type specified of lever means coacting with the adjusting means to force the roller into engagement with the bed of the press and for locking the roller or wiper in adjusted pressing engagement.

Another object of my invention is the provision, in a press of this character, of a relatively stationary bed with a printing bed on one surface and a track on the opposite surface, and means whereby a clamping frame may be caused to travel along said bed from end to end thereof and at the same time to exert a printing pressure on the said bed and on the printing plates and sheets superimposed thereon by means of a printing roller or wiper carried by said frame

and engaging the upper face of the bed and a clamping roller engaging a track or tracks on the under face thereof.

Another object of my invention is to produce a device of this character which will permit the ready interchangeability of a printing roller and wiper.

Another object of my invention is to produce a simple form of hand-operated gearing for causing the travel of the roller frame along the bed of the press.

With these and other objects in view, the invention comprises the combination of members and arrangement of parts so combined as to co-act and cooperate with each other in the performance of the functions and the accomplishment of the results herein contemplated, and comprises in one of its adaptations the species or preferred form illustrated in the accompanying drawings, in which:—

Fig. 1 is a vertical section on the line 1—1 of Fig. 4 of a printing press embodying my invention;

Fig. 2 is an elevation of one side of the traveling frame at the front of the bed of the press, a portion of the bed of the press being broken away;

Fig. 3 is a side elevation of the opposite side of the frame also mounted at the front with the rear of the bed being broken away;

Fig. 4 is a vertical section on the line 4—4 of Fig. 1;

Fig. 5 is a plan view of the front end of the press showing the means for clamping the printing plate and copy in place;

Fig. 6 is an enlarged section partly in elevation showing my preferred means for interchanging the roller and wiper; and

Fig. 7 is a section on the line 7—7 of Fig. 6.

Referring now to these drawings, 1 indicates the table of a press which, as illustrated, is supported at its opposite ends by brackets 2—2 and as illustrated is so supported on elbows 2^a—2^a of such brackets, and the table and brackets are securely fastened together by bolts 3 extending longitudinally through the table. A flat printing bed 1^a is provided on the upper surface of the table 1 and there is preferably provided at one end of this bed a clamp for retaining a printing plate 4 and printing sheet 5 in position on such bed. As illustrated, the bracket 2 at the front of the bed is provided with a half-round socket 2^b into which is

fitted the half-round end 6^a of a clamping cam 6 which has a contact nose 7 adapted to press against the top surface of the bed of the table and to clamp a printing plate with a superposed printing sheet against said table. Pressure on said cam is applied at the rear portion 8 thereof by means of a screw 9 mounted in said front bracket 2. Said screw is rotated to cause the cam to clamp the plate and release the same by means of a handle or the like 10. Said screw 9 as illustrated acts against a spring or springs 11 adapted to normally retain the clamping cam 6 out of clamping contact with the superposed plate 4 and copy sheet 5 and in position to permit the sliding or insertion thereunder of such plate and copy.

A clamping frame 14 adapted to apply pressure on opposite surfaces of the stationary bed or table is mounted at opposite side edges of the table to travel along the same longitudinally. As illustrated, the opposite edges of the top surface of the bed 1 are, as shown, preferably provided with depressed tracks 15 and the frame 14 which extends transversely across the bed of the press comprises yoke-shaped uprights, standards or brackets 16 suitably bolted together by cross bars 17, said frame preferably being mounted or supported to travel on four rollers 18 at the lower corners of the frame and which roll along the tracks 15.

Reciprocatory movement of the frame in relation to the bed of the press may be accomplished by any suitable mechanism, and as shown I provide the under surface of the bed of the press contiguous to opposite side edges with toothed racks 19, with which racks mesh a pair of pinions 20, 21 which are, as illustrated, mounted on a pair of shafts 22—23. Obviously when the pinions 20—21 are rotated in one direction the frame will travel along the bed of the press longitudinally in one direction and when said pinions are rotated in the opposite direction the frame will travel along the bed of the press longitudinally in the opposite direction and the frame will thus be caused to have reciprocatory movement to opposite ends of the bed of the press.

The clamping frame 14 carries at one side of the table a printing device adapted to contact with superposed printing plates and copy sheets on the bed of the press and means contacting with the opposite surface of the table for clamping the table and such superimposed printing plates and copy sheets between such means and the printing device.

I have, as shown, removably and slidably mounted in the standards 16 of the frame a printing roller or wiper, depending upon which of these instruments it is desired to use. In Figs. 1 to 4, I have shown a roller 24 mounted on a slide 25 which has sliding ends 26—26^a bearing in channels or slots

27—27^a between the arms of the standards 16.

In order to secure the most effective printing pressure between the roller 24 and the printing plate on the bed of the press, I preferably provide the traveling frame beneath the table of the press with one or more contact clamping rollers 28 which are journaled at opposite ends in said frame and having contact portions 28^a engaging a series of tracks 29 on the under surface of the bed of the press, and the printing roller 24 is provided with means for pressing downwardly against the upper side of the press so as to cause a clamping action between the rollers 28 and said printing roller or wiper as the case may be.

In the preferred form of my invention, the printing devices are moved upwardly or elevated and brought down into clamping relationship with the press by means of toggle mechanism which is preferably duplicated at opposite sides of the frame. As shown, the slide 25 which carries the roller is pivotally connected to one pair of arms 29 of toggle levers and another pair of arms 30 of such toggle mechanism is pivoted to two adjustable but relatively fixed slides 31 also mounted in said yoke brackets 16. The said slides 31 are adjustably movable by means of screws 32 meshing with screw-threaded bearing sockets 33 at the upper end of the standards or brackets 16, said screws being, as shown, rotated by passing an instrument through a hole 34 in the head 35 thereof. Obviously, the slide 31 may be adjustably lowered or depressed to any suitable degree of rotation of the screw 32 so as to vary the distance between said adjustable slide 31 and the roller 28 beneath the press, and that variation of this distance may be employed to procure any desirable clamping pressure between the rollers 24 and 28 on opposite sides of the printing table.

As illustrated, pressure is applied by the lever 36 through the links 29 and 30 to force the roller 24 downwardly against the printing plate and copy sheet on the printing bed and the printing table, printing plate and copy sheet will then be squeezed or clamped between the printing roller and the clamp rollers 28 and locked in clamped relationship during the travel of the clamping frame backwardly and forwardly along the table.

Movement along the press is, as aforesaid, accomplished by rotating the intermeshing pinions 20—21 on the tracks 19. These pinions are preferably rotated by extending the shafts 22 and 23 outwardly to the side of the press, mounting thereon pinions 22^a and 23^a respectively and rotating these shafts by a crank handle 40 fitted to an intermeshing pinion 37 which is provided with a hub 37^a having a kerf 37^b into which fits

a projection 38 of the hub 39 of the crank handle 40.

After the printing operation has been performed the roller may be elevated by simply pulling on the handle 36 to break the toggle joint, and the roller or wiper may be elevated and releasably held in elevated position by springs 41 which are provided with depressed catches 42 which fit into notches 43 in the sides of the slide ends 26—26^a of the slide 25.

I preferably provide means for enabling the ready removal of the roller and the replacing thereof with a wiper. For this purpose I provide the roller and wiper with sockets 44 at opposite ends into which are fitted stub shafts 45 which extend into bearing sockets 46 in the opposite ends 26—26^a of the slide 25. These stub shafts 45 are preferably held in fixed position by set screws 47 and the roller 24 or a wiper 48 (see Figs. 6 and 7) may be mounted on such stub shafts. When a wiper is employed I preferably fix the same against rotation by pins 49 which extend through holes 50 in the ends of the bearing slides 26.

Having described my invention, I claim:—

1. A printing press embodying, in combination, a stationary table having a printing bed on its upper surface, means for retaining a printing plate and copy sheet on said bed, a track on the opposite surface of said table, a clamping frame movable along said printing bed having slideways; a pressure printing device movable vertically in said slideways and adapted to contact with said bed; a clamping roller also carried by said frame and adapted to contact with the opposite surface of said table; lever mechanism for moving said printing device relatively to said clamping roller to exert a clamping pressure on the press table and to elevate the same and screw means for moving said printing device vertically to adjust the degree of such clamping pressure.

2. A printing press embodying, in combination, a stationary table having a printing bed on its upper surface, means for retaining a printing plate and copy sheet on said bed, a track on the opposite surface of said table, a clamping frame movable along said

printing bed having slideways; a pressure printing device movable vertically in said slideways and adapted to contact with said bed; a clamping roller also carried by said frame and adapted to contact with the opposite surface of said table; toggle-lever mechanism having an interlocking connection for moving said printing device relatively to said clamping roller to exert a clamping pressure on the press table, to lock the same in clamped relationship, and to elevate the same.

3. A printing press embodying, in combination, a stationary table having a printing bed on its upper surface, means for retaining a printing plate and copy sheet on said bed, a track on the opposite surface of said table, a clamping frame movable along said printing bed having slideways; a pressure printing device movable vertically in said slideways and adapted to contact with said bed; a clamping roller also carried by said frame and adapted to contact with the opposite surface of said table; toggle-lever mechanism having an interlocking connection for moving said printing device relatively to said clamping roller to exert a clamping pressure on the press table, to lock the same in clamped relationship, and to elevate the same and screws for adjusting the degree of clamping pressure between such rollers on the press table.

4. A printing press embodying, in combination, a stationary table having a printing bed, a clamping frame movable along said table and carrying a pressure printing device adapted to contact with the printing bed and means carried by the frame on the opposite side of the table for causing a clamping pressure on the table to be applied between the pressure printing device and said means and means for removably mounting the pressure printing devices comprising stub shafts at opposite sides adapted to fit within sockets in the printing devices.

In witness whereof, I have signed my name to the foregoing specification in the presence of two subscribing witnesses.

CHARLES WAGNER.

Witnesses:

JOSEPH F. O'BRIEN,
HELEN V. WHIDDEN.