

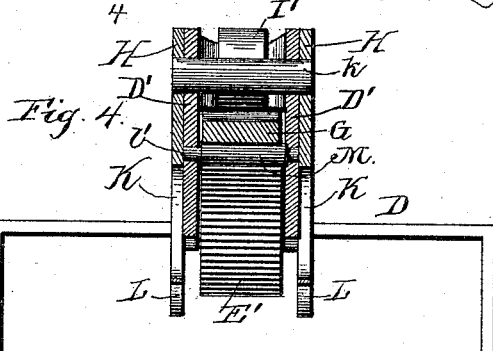
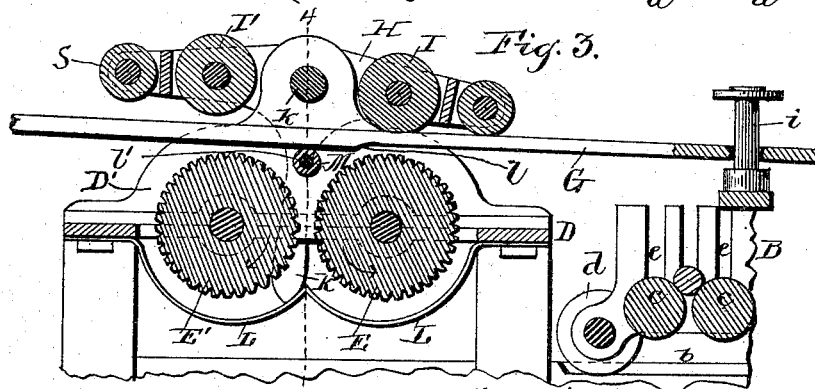
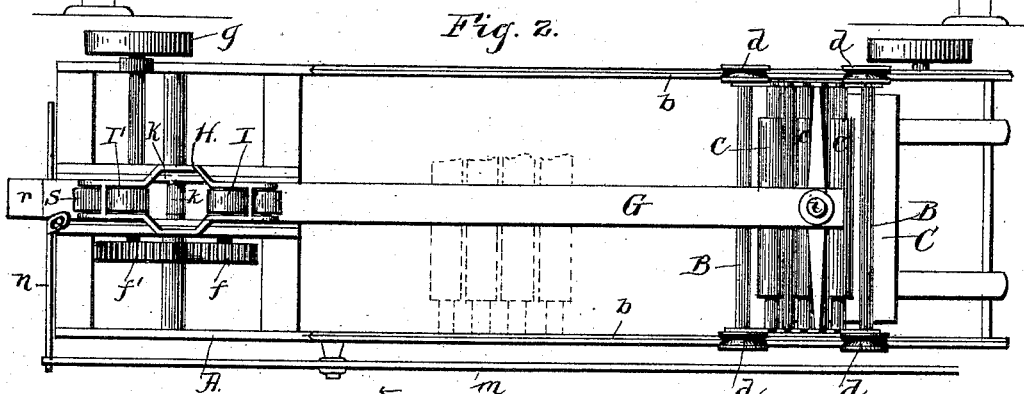
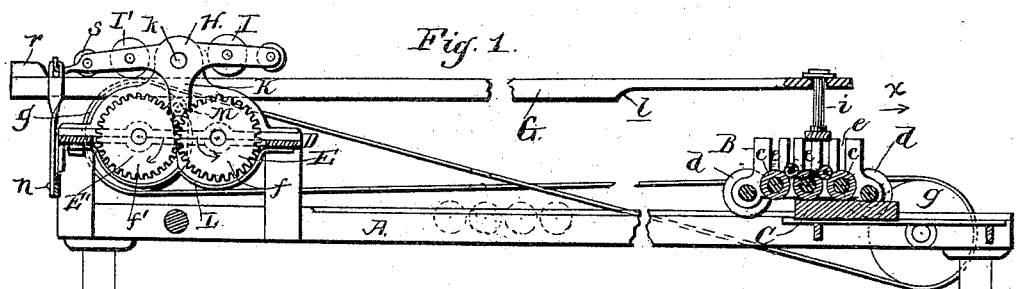
(No Model.)

G. E. MARTIN.

INKING APPARATUS FOR PRINTING PRESSES.

No. 493,892.

Patented Mar. 21, 1893.



Witnesses:-

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UNITED STATES PATENT OFFICE.

GEORGE E. MARTIN, OF BROOKLYN, NEW YORK.

INKING APPARATUS FOR PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 493,892, dated March 21, 1893.

Application filed September 2, 1892. Serial No. 444,919. (No model.)

To all whom it may concern:

Be it known that I, GEORGE E. MARTIN, of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Inking Apparatuses for Printing-Presses; and I do hereby declare that the following is a full, clear, and exact description of the same.

This invention relates to the inking mechanism of lithographic and other printing presses, and comprises certain improvements upon the apparatus shown and described in the Letters Patent No. 188,386, dated March 13, 1877, and issued to Franklin Macdonald, of New York city, New York.

The said apparatus set forth and shown in said Letters Patent has a system of inking rollers which supported, upon a suitable carriage receive a reciprocating motion over the face of the lithographic stone or other printing surface from a push-and-draw bar or pole which in its turn is actuated at proper intervals in each direction from oppositely rotating and reversing rollers and other mechanical devices suitably arranged in connection therewith. The said inking rollers are stationary during the time required for placing upon the stone or printing surface the paper or material to be printed upon and for removing the same when the impression thereon is completed while the oppositely rotating reversing rollers continue in motion.

Prior to my present invention the push-and-draw bar has been allowed to rest while stationary upon the moving surface of one or the other of said oppositely rotating reversing rollers. This has resulted in undue wear upon and consequent weakening of the push-and-draw bar and has detracted to a substantial degree from the durability and efficiency of the apparatus.

My invention is designed to remedy this defect in the said apparatus and it comprises certain new and useful combinations of parts which are hereinafter described and particularized in the claims.

Figure 1 represents a partly sectional side view of a lithographic printing press, made according to the aforesaid Letters Patent of Macdonald; but with my invention hereinafter set forth and claimed also embodied in said apparatus with the carriage of inking-

rollers in position for running said rollers over the stone, and as in the act of their passing over the latter in a forward direction, as indicated by the arrow, *x*, Fig. 1. Fig. 2 is a plan of the same under a like condition of parts; Fig. 3. a vertical central longitudinal section, in part, on a larger scale, showing the means for operating said carriage of inking rollers as reversed and as fully run back, and Fig. 4 is a vertical sectional view on line 4-4 of Fig. 3.

A, is the frame of the press formed with rails *b b*, on which the carriage B of inking-rollers *c c* reciprocates, and on which said carriage is supported by wheels *d d*. This carriage B is pushed in the direction indicated by the arrow *x* over the full length of the stone, C, to be inked after said stone has been suitably dampened, which dampening may either be done by hand or by suitable dampening appliances attached to the carriage B, and arranged in front of the inking-rollers. The carriage B of inking-rollers is then returned or drawn back by the pole G, the sheet to be printed laid upon the stone C, and the latter run under the printing or impression bar, roller, or other impression device, after which the stone is returned to its normal position to be again dampened and inked after the printed sheet has been removed. The inking-rollers *c c* are supported in slotted bearings, *e e*, whereby they are free to rise on to the stone when inking the latter, and are caused in the backward portion of the travel of the carriage to drop and come in contact with suitable ink-distributing rollers, the rails *b b* being extended far enough back to allow the carriage of inking-rollers to completely clear the stone.

The carriage B, is intermittently reciprocated to operate, as hereinbefore described, as follows: Mounted on the main frame A, at or near the back of the machine is a supplementary frame, D, which carries the tripping and reversing devices of the inking-roller carriage B. These devices consist in part of fluted or roughened reversing rollers E, E', geared together by spur wheels *f f* which, although here shown of the same diameter, may be of different diameters, to give the inking roller carriage a quicker back than forward movement. Placed above the space between

the reversing rollers, E, E', that is to say, in the relation thereto indicated in Fig. 3, is a cross-bar or stop, M. Above this stop M, runs the hereinbefore mentioned pole, G, which actuates the carriage, B. This bar or stop M, is so placed that when the free or rear end of the pole G is depressed to subject the said pole to the operative action of the roller, E', and also when, in the reversed position with the forward end, at *i*, of said pole is depressed while subject to the operative action of the other roller E, said pole will not rest upon the said bar or stop, M; but at that stage in the operation of the machine at which as herein elsewhere explained, the said pole is stationary, it rests upon said stop being thereby kept out of contact with either and both of the rollers and by being thus held aloof from the moving surfaces of the rollers is freed from the abrading action which in the Macdonald machine prior to my invention, has rapidly destroyed the integrity of the pole, G, and materially detracted from the utility of the apparatus. It will of course be observed that the change in the angle of the pole permitted by the rising and falling of the forward end of the pole upon the pivotal connection at *i*, hereinafter described of the pole with the carriage, B, permits the pole at the proper intervals to assume the positions in which it is acted upon alternately by the rollers E' and E, and also at the proper time, when the pole is not subjected to the operative action of either of said rollers, to support the pole clear of, or out of contact with, the moving surface of said rollers which latter continue their rotation even when the pole G is stationary. Preferably this bar or stop M consists of a roller working on a short pin *l'*, which is supported by uprights D' of the supplementary frame D, as shown in Figs. 3 and 4. The rod *k* on which the rocking yoke H is pivoted, is also supported by the uprights D',—and when the yoke H is in an intermediate position, it holds the pole G out of contact with either of the rollers E, E'. These rollers are geared together by pinions *f* and one of which is driven by a belt running over pulley *g*. Pivoted to the frame D, at *k*, is a rocking yoke or frame, H, which carries pressure-rollers I, I'. These rollers may either be plain or roughened, and are arranged at a greater distance apart on either side of a common center than the rollers E, E', and are disposed on the upper side of the bar or pole G, which is arranged loosely between the rollers E, E', and I, I'. Attached to or forming part of the rocking yoke or frame H are one or more downwardly projectly arms or toes, K, the lower ends of which, accordingly as the rocking yoke H is tipped on its fulcrum *k*, are thrown to one side or other of a retaining-spring, L, which serves to hold either pressure-roller I or I' in contact with the bar or pole G, that may be plain, toothed, or roughened to engage with the rollers E I or E' I'. Said bar or pole G, is

cut away at *l*, so that when run back to its extreme limit, as shown in Fig. 3, the operating roller E ceases to act upon said bar or pole, and causes the action of the latter to be suspended till it is required to run the carriage B of inking-rollers forward and backward again over the stone C. To move said carriage B in a forward direction over the stone, the yoke H is tipped,—as, for instance, by levers *m n*, operated by hand—to cause the pressure roller I' to bear down on the pole G back of the fulcrum *k*, to relieve the pole from contact with the rollers E I, and to put it in contact with the rollers E' I'. After the carriage B of inking-rollers has been thus run forward over the stone, a tripping-button, *r*, on the back end of the bar, or pole G, strikes a stop or roller, *s*, on the rear end of the yoke H, and tips or tilts it in a reverse direction, to bring the bar or pole G down on the reversing rotating feed-roller, E, and the pressure-roller I down on the top of said pole. The carriage B of inking-rollers is then run back till the reduction *l*, in the bar comes over the reversing-roller E. The rocking yoke H, with its attached pressure-rollers I, I', forms a tripping device of the bar or pole G. In this way, or by these means, the carriage of inking-rollers is automatically operated, tripped, and reversed to ink the stone or other printing surface as required.

What I claim as my invention is—

1. The combination of the bar or stop, M with the oppositely rotating and reversing rollers E, E', the pressure rollers I I', controlled by a tripping device to operate alternately and in proper relation respectively with the reversing-rollers E E', and push-and-draw bar or pole G, and the inking roller carriage B, essentially as described.

2. The combination of the bar or stop M, push-and-draw-bar or pole G, constructed with a recess *l*, reversing rollers E, E', means for tilting the bar G on the stop M, and an inking roller carriage connected with one end of the bar, substantially as and for the purpose specified.

3. The combination of the bar or stop, M, with the push-and-draw bar or pole, G, provided with a tripping-button, *r*, in combination with the stop or roller, *s*, on the rocking tripping device H, which carries the pressure rollers I, I', substantially as specified.

4. The combination with the rocking tripping device H, constructed of a yoke arranged to work on a pivot, *k*, and having pressure-rollers I I', on opposite sides of said pivot, also provided with one or more locking arms or toes, K, and one or more retaining-springs, L, for operation in relation with the reversing-rollers E E', and push bar or pole G, of the bar or stop, M, essentially as described.

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