

Printing-Press.

Patented May 28, 1872.



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UNITED STATES PATENT OFFICE.

FREDERICK OTTO DEGENER, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN PRINTING-PRESSES.

Specification forming part of Letters Patent No. 127,316, dated May 28, 1872.

To all whom it may concern:

Be it known that I, FREDERICK OTTO DEGENER, of Brooklyn, Kings county, New York, have invented, made, and applied to use certain Improvements in the Construction of Printing-Presses; and that the following is a full, clear, and correct description of my invention, reference being had to the accompanying drawing making part of this specification and to the letters of reference marked thereon, in which—

Figure 1 is a side elevation of my improved printing-press, the fly-wheel being removed and the platen being in the position to receive the sheet to be printed. Fig. 2 is a cut section of the same, the bed and platen being shown in the act of giving an impression.

In the drawing like parts of the invention are pointed out by the same letters of reference.

To enable those skilled in the arts to make and use my invention, I will describe the same.

A shows a frame for supporting the operative parts of the machine, composed of the side pieces connected together by means of the front and back stretchers B. C shows the driving-shaft of the press, having secured upon one end of it a fly-wheel, and upon its opposite end a pinion, (neither shown,) gearing into the cog-wheel D, keyed upon one end of a shaft, E, upon the opposite end of which is secured the blank-wheel or collar F. In the cog-wheel D and blank-wheel F are inserted studs, over which, and studs inserted in the cams described fully hereinafter, are passed the ends of the connections G. Upon this shaft E is keyed a grooved wheel, H, by which motion is imparted to an ink-cylinder, I, through a chain or belt, J, passing over a grooved wheel held upon the shaft supporting the cylinder I and the grooved wheel H. In the rear portion of the frame A, back of the bed of the press, is inserted a shaft, K, upon which are secured the lower or bottom ends of the roller-arms L. To the upper ends of these arms L are swiveled and attached the roller-carriers M, which hold and carry the rollers N, employed to pass over the ink-cylinder I, from which they receive their ink, and to properly ink the form secured upon the bed. In the present instance two roller-carriers are employed, although three of such carriers may be used in many cases and be swiveled upon the same center. A projecting plate of metal is inserted in the arms L, to which (when em-

ployed) the ends of the spiral springs a may be attached, the opposite ends of the same being attached to the forward under side of the carriers M. One of the arms L may be made longer than the other, and to the lower end of the same is attached one end of the connection O, its opposite end being attached to the lower portion of one of the cams P. P shows two cams, one provided with an extension piece, P², hung upon a shaft inserted in the front of the frame A, in which cams play rollers secured upon the end of a platen-shaft, and which cams have inserted in them studs (as already stated) to receive the forward ends of the connections G. Q shows the platen to receive the sheet to be printed hung upon a shaft inserted in the frame A, and provided with a back shaft, upon the ends of which are secured the rollers S, playing in the cams P. T is the type-bed, which, at its lower end, is hinged to the lower end of the platen Q, and acts as a counter-balance thereto in the operation of the press. To the back girt of the bed T are attached the side lugs or pieces U, which have a bearing upon the frame A and guide and hold the bed in position as it moves up and down to give an impression. An ink-slab, V, is placed directly behind the ink-cylinder I, and may be used to break up the ink prior to its being supplied to the cylinder I.

Such being the construction, the operation is as follows: We will suppose the platen to be in the position, Fig. 1, to receive the sheet to be printed, the rollers N having reached the extent of their throw downward. The form having been secured upon the bed, the sheet to be printed is received upon the platen, and motion is imparted to the press through the driving-shaft C. As the same revolves it communicates motion through the pinion to the cog-wheel D, secured upon one end of the shaft E, upon the opposite end of which is the blank-wheel F. As this shaft revolves the connections G cause a vibrating or alternating movement to be imparted to the cams P, which are carried forward over the rollers S secured upon the ends of the platen-back shaft until the rollers engage with the rear or raised portions of the cams, when, through such engagement the platen Q is carried from the inclined position it occupied in receiving the sheet into the vertical position, Fig. 1, necessary to produce

an impression. During this movement of the platen the bed T, hinged to the platen, as described, has been drawn down by the upward movement of the platen Q and the roller-arms L through the connection O, attached to one of the cam-levers P and to one of the roller-arms L, have been carried up and over the form so that the rollers are bearing upon the ink-cylinder I at the moment of impression. An impression having been given, the cams, through the connections, vibrate or alternate back to their former position, and as the rollers secured in the ends of the back platen-shaft engage with the raised portions of the cams the platen returns to its former position. By this movement of the platen the bed, which, from its being hinged to the platen, was drawn down through the forward movement of the same, is now, by the return movement of the same, thrown up, and, through the movement of the cams P, connected to the roller-arms L by the connection O, the ink-rollers N are carried off of the ink-cylinder I, from which they have received a supply of ink, over the form, properly inking the same.

The principal points of my invention may be thus set forth: By the use of the cams P, constructed as shown, I cause my platen to advance and allow the sheet to be printed, and on the return movement of the same I am enabled to give a "period of rest" to the platen, thus af-

fording the operator time to remove the printed sheet, and to lay or place upon the platen the succeeding sheet to be printed. By connecting the roller-arms to the cams, as shown, I am enabled to operate these roller-arms and carry the rollers over the form to ink it, and up to and upon the ink-cylinder to receive the ink. By swiveling upon a common center (the stud in the roller arms) the roller-carriers I allow a separate motion to be given to each roller, and cause it to assume a separate position from the other or others employed, so that the rollers are free to move from the cylinder upon the type, and from the type upon the cylinder.

Having set forth my invention, what I claim as new is—

1. The vibrating or alternating cams P, giving the requisite motion and period of rest to the platen Q, substantially as set forth.

2. Operating the roller-arms by or through the motion of the vibrating or alternating cams P, substantially as described.

3. Two or more roller-carriers swiveled on one common center to the roller arm or arms, so that each roller-carrier can have a separate vibratory motion, and assume a separate position independent of the other, as set forth.

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Witnesses:

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