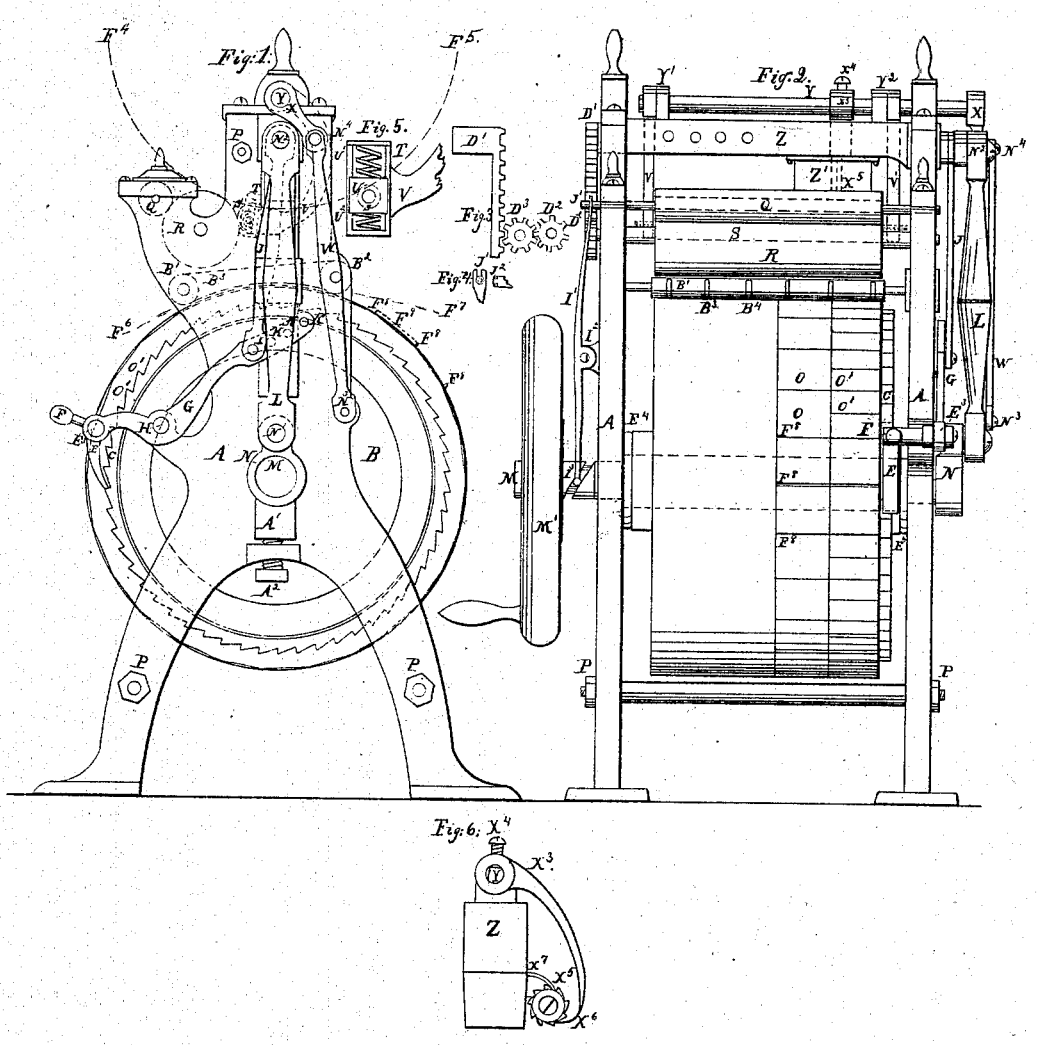
J. SANGSTER.

PRINTING PRESS.

No. 48,493. Patented June 27, 1865.



WITNESSES.

Thos. Howry.

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JAMES SANGSTER, OF BUFFALO, NEW YORK, ASSIGNOR TO HIMSELF, ROCKWELL, BAKER & HILL, AND E. B. SANGSTER, ALL OF SAME PLACE.

IMPROVEMENT IN PRINTING-PRESSES.

Specification forming part of Letters Patent No. **48,493**, dated June 27, 1865.

To all whom it may concern:

Be it known that I, JAMES SANGSTER, of Buffalo, in Erie county, and State of New York, have invented certain new and useful Improvements in Printing-Presses; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and the letters of reference marked thereon.

The nature of my invention relates to improvements in card or ticket printing presses; and it consists in, first, a movable or revolving bed with flat plain surface, upon which the tickets are printed and numbered; second, a revolving bed with a smooth circular surface surrounding it, upon which the tickets may be numbered; third, in suspending the inking-roller between two spring, one above and the other below.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

I construct my press of the usual materials—wrought and cast iron.

In the drawings, Figure 1 represents a side elevation of the press, showing the revolving bed with the device for giving motion to the same, also the crank which raises and lowers the type-bed, and the arrangement for giving the necessary motion to the inking-roller, the device for holding the card-board or paper in place while printing, and the screw for adjusting the revolving bed. Fig. 2 is a back view of the press, showing the parts similar to Fig. 1, with the mechanism for giving the lateral or swinging motion to the distributing-roller, also for giving the revolving motion to the inking-rollers and the driving-shaft; also the shaft on which the inking-roller swings while inking the type.

The same letters in the several figures represent similar parts in each.

A A is the frame, and P P P are rods which bolt it together.

B is the revolving bed. G is the arm or lever that moves it.

E is a pawl, which swings on a center at the point E^3 on the lower end of the lever G. Its lower point is pressed by the weight F into the teeth of the ring C, which ring or wheel is fastened to the side of the revolving bed by means of bolts or screws.

J is a connecting-rod, fastened at the joint I of the lever G and at the joint N^2 of the type-beam Z.

M is the main or driving shaft; N, a crank upon the same.

L is a connecting-rod, fastened at the joint N′ and connected with the beam, which holds the type and type-bed Z′ at the point N^2.

W is a connecting-rod, which gives motion to the inking-roller. It is fastened to the side of machine by a joint at N^3, and at the opposite end to the crank X by the joint N^4. The crank X is fastened to the shaft Y. The shaft Y works in boxes Y′ and Y^2. It holds the frame V V′, which carries the inking-roller while inking the type and while receiving the ink from the roller R.

B′ and B^2 are tape-rollers. They are surrounded by belts or tapes, such as are shown by the dotted lines and marked B^3. The lower sides of these belts press on the surface of the revolving bed for the purpose of confining the paper or card-board to the surface of the revolving bed while being numbered or printed from a continuous sheet or roll.

A′ is a box into which the shaft M works. This box is made adjustable by the screw A^2, which, of course, raises or lowers the revolving bed.

O O and O′ O′ represent the plain or flat surfaces on the revolving bed. I have shown but two rows of those plain surfaces. There may be one row, or as many more as there are different-sized cards to be printed.

M′ in Fig. 2 shows the driving-wheel. I′ is a lever which gives the lateral or swinging motion to the ink-distributing roller. It is connected to the shaft of the inking-roller at J in the manner more clearly shown in Fig. 4. At J′ and J^2 it swings or vibrates on a joint at I^2, and is moved by the cam on the driving-shaft marked I^3.

E^4 and E^5 are friction-springs, which may be made either of rubber or metal, for preventing

a backward movement of the revolving bed.

When the pawl E is drawn over the teeth in the ring C a friction-belt drawn around the revolving bed and fastened to the lower rods, P P, would perhaps answer a better purpose.

The inking-rollers have a reciprocating motion, and are moved by two pinion-wheels and a rack, a side view of which is shown in Fig. 2 at D′ and D². A front view is shown in Fig. 3 at D′, D², and D³. The inking-roller is suspended between two springs, as shown in Fig. 5, the lower spring acting when the roller passes under the type, the other when it passes over the roller R.

The dotted lines X⁵ represent a ratchet-wheel. It is placed alongside of the numbering-wheels and revolves with them.

X³ represents an arm which is fast to the shaft Y and moves with it. It is fastened with a set-screw, X⁴, and is made adjustable, so that it can be made fast at the proper point for working the numbering-wheels, or thrown back and made fast when it is desired to work the machine without using the numbering-wheels. This arm or lever X³, as it works on the shaft Y, is shown in Fig. 6. It acts as a pawl at the point X⁶ and moves the wheel X⁵ by the vibrating movement of the shaft Y. The wheel is kept from turning backward by the pawl X′.

The machine is operated as follows: Of course it is intended to run it by steam. By turning the wheel M′ until the crank-pin N′ is carried downward the inking-rollers R, S, and Q are made to revolve, and the inking-roller S is carried in the line of a circle, as shown in Fig. 1, in the direction of the arrow F⁵, and in doing so passes over and inks the type, the springs U² keeping it up against the type while passing over. By continuing the motion the inking-roller is carried still farther toward the arrow F⁵, and the type are brought down upon the paper F⁶ and F⁷ and give an impression. In the meantime the arm G, at the point I, is brought downward and the end raised up, bringing with it the pawl E, the end of which passes over the teeth in the ring C, the weight F keeping it down against the face or teeth of the ring C. This measures the distance of the feed, which feed is adjusted by moving and fastening the lower end of the arm J into either of the apertures marked K K K. If desired, by still turning the driving-wheel in the same direction the type are raised from the bed, the pawl E is forced forward, carrying the revolving bed the length of one ticket or the width of one ahead, and the paper is drawn from the point F⁷ to F⁶ and the numbering-wheel is moved one number ahead. In case the tickets are cut first before going into the machine, which I prefer, the paper or card-board is laid, between the slats or raised ledges F⁸ and F⁸, upon the flat surface on the bed, as at F⁹. These ledges or raised slats are placed all around the revolving bed. I have shown but three, which is enough to explain the proper construction of a large working machine.

I do not claim as my invention a revolving cylinder or roller having plain surfaces or forms upon its circumference, into which the type are set and fastened for printing. Neither do I claim a moving surface upon which the paper is placed and then carried to the proper place to receive an impression, as that is done by means of a belt or endless apron running upon two rollers, as in the ruling-machine, or by means of a platform running upon rollers, as in the steel or copper plate printing-machines; but

What I do claim as my invention, and desire to secure by Letters Patent, is—

1. A revolving cylinder having a number of plain surfaces upon its periphery or circumference for the purpose of receiving the paper or card-board to be printed, and resisting the pressure of the type when brought down against it, when said cylinder is so constructed as to move and present its plain surfaces, one at a time, at the proper angle to receive an impression.

2. The springs U′ and U², between which the inking-roller S is suspended, for the purposes specified.

3. In combination with the revolving cylinder or roller B, three or more slats, such as are shown at F⁸, F⁸, and F⁸, for the purpose of holding the card-board or paper in place while being carried under the belts B³ and B⁴, and in the position to be printed when found necessary to feed or lay the cards or tickets in by hand.

4. In combination with numbering-wheels, a revolving roller or cylinder, upon the periphery or circumference of which the tickets or cards are numbered.

JAMES SANGSTER.

Witnesses:

THOMAS J. CONRY,

STEPHEN J. MULHALL.