

J. BRYSON.

Inking Apparatus for Printing-Presses.

No. 152,548.

Patented June 30, 1874.

Fig. 1.

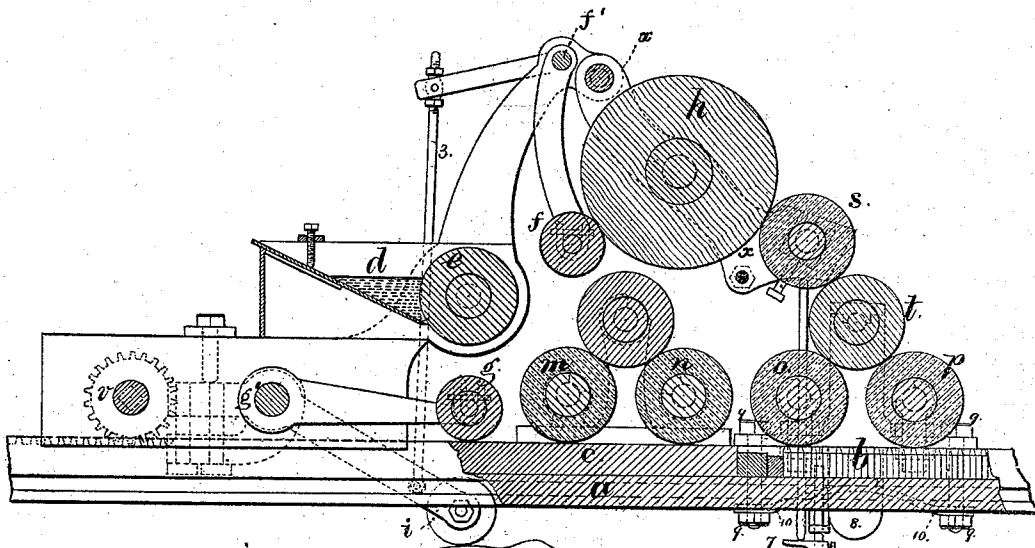
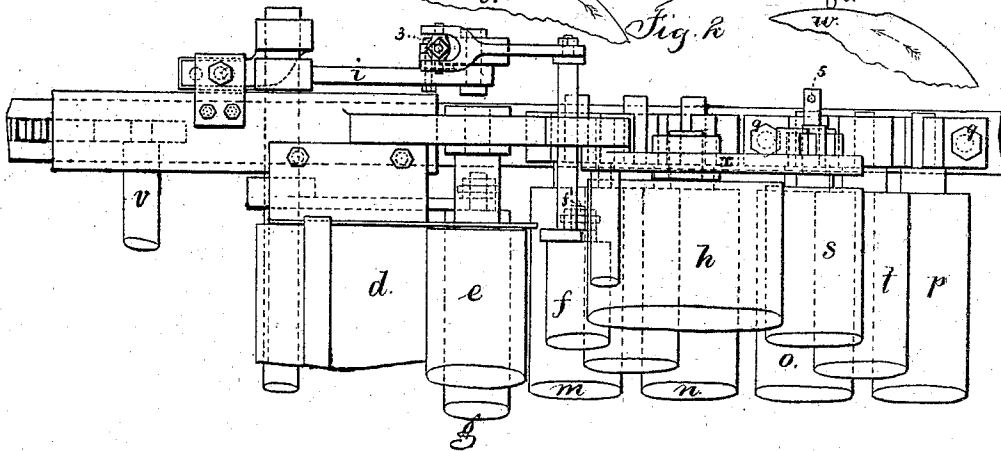


Fig. 2.



Witnesses,

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UNITED STATES PATENT OFFICE

JOHN BRYSON, OF JERSEY CITY, NEW JERSEY, ASSIGNOR TO HIMSELF,
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IMPROVEMENT IN INKING APPARATUS FOR PRINTING-PRESSES.

Specification forming part of Letters Patent No. **152,548**, dated June 30, 1874; application filed
November 25, 1873.

To all whom it may concern:

Be it known that I, JOHN BRYSON, of Jersey City, in the county of Hudson and State of New Jersey, have invented an Improvement in Inking Apparatus for Printing-Presses, of which the following is a description:

My invention is made for equalizing the inking operation in printing-presses having a reciprocating bed carrying the form. In rotary printing-presses the ink is supplied continuously, and passes to the revolving form of types in the same manner; but in many presses where the form is reciprocated beneath the inking-rollers, those rollers having upon their surfaces a definite amount of printing-ink, as they come into contact with the types the ink is transferred, so that there is less ink upon the roller after the types have passed beneath it than there was before contact, and the quantity of ink on the surface of the form is less toward one side than the other, and this is not prevented by multiplying the inking-rollers, as each one acts in a similar manner, and if there is enough ink upon the advance edge of the form there is too much at the rear edge of the form. This difficulty is especially noticeable with fine cuts and works of art, where the impression or picture requires more ink than the letter-press, and one portion or the other receives too much or too little ink. My invention relates to a means for inking the types from one fountain in opposite directions, so that there is an equalization, one set of form-rollers commencing when charged at the front edge of the form and inking toward the back, and the other commencing at the back and inking toward the front of the form, so that there will be great equality in the distribution of the ink, and but few rollers are required; hence risk of clogging the form with too much ink is avoided.

In the drawing, Figure 1 is a vertical section; and Fig. 2 is a partial plan, showing one end of the ink-trough and portions of the rollers.

The bed *a* is reciprocated as usual, and *b* represents a portion of the types, and *c* a portion of the inking-table. The paper is fed in any desired manner, and the impression given preferably by a cylinder. These parts, how-

ever, are not shown, as my invention is not limited to any peculiarity of press, so long as the type-form is reciprocated beneath the inking-rollers. The ink-fountain *d* is provided with the supply-roller *e*, that is turned around progressively by means of ratchet-wheels at the ends, or other suitable connections. The transfer-rollers *f* and *g* are set to swing with their arms upon the respective shafts *f'* and *g'*, and they carry ink to the cylinder *h* and to the ink-table *c*. To give motion to these shafts *f'* and *g'* I use a cam, *l*, that is shaped to act at the proper time upon the arm *i* and connecting-rod 3, to swing the said transfer-rollers *f* and *g* toward the cylinder *h* and inking-table *c* at the proper time, for depositing the ink upon the table as it passes along under the said roller *g*. The composition form-rollers *m*, *n*, *o*, and *p* are mounted in adjustable bearings of the usual character above the types, and revolved as the form and ink-table pass below them. As the bed *a*, ink-table, and form move back from the impression-cylinder, the ink is deposited by the rollers *f* and *g*, and the types pass in contact with the form-rollers *p o n m*, but the rear edge of the form receives the most ink, because the rollers *m n* have been inked by the ink-table *c* running beneath them in advance of the types. During this movement the ink has been distributed from the cylinder *h*, composition roller *s*, and steel roller *t* to the composition rollers *o* and *p*; hence, as the form is moved with the bed toward the impression-cylinder, the front portion of the form receives the most ink from the rollers *o* and *p*, and the ink, hence, is equalized in amount upon the types.

It is to be understood that the extent of surface over which the ink has to be spread in passing from *f* over *h*, *s*, and *t* to the form-rollers *o p* is such that the form of types will have passed back below *p o m n* before the ink is spread upon *o p*; hence, as the form goes forward toward the impression-cylinder, the rollers *o* and *p* are the most heavily charged with ink, thereby equalizing the inking operation on the form; and it will be evident that if the amount of ink upon the rollers *o p* becomes less than that upon the form, so that said rollers *o p* tend to abstract ink from the

form in the last portion of their operation, the same will be beneficial as removing the accumulation that is likely to exist at this portion of the form from the action of the rollers *n m*, and the rollers *h s t o p* running together, and having a greater extent of surface than the rollers *m n*, the ink will continue to be supplied more uniformly to the form during its entire forward movement than is possible with the rollers *m n*.

The cylinder *h* and steel rollers *t* should be vibrated endwise to equalize the ink more thoroughly. This may be done by any suitable means, such as are well known in printing-presses. The rollers themselves are to be revolved by pinions and racks on the bed, as usual.

It is preferable to mount the ink-trough, roller *e*, and frame carrying the rollers *f* and *g* in slides upon the main frame, and to provide a shaft, *v*, with pinions taking into racks upon the frame, so as to move the parts back away from above the form-rollers *m n o p*, to give facility in changing such form-rollers and the forms.

When desired to raise the roller *s* from contact with the steel roller *t*, the same may be effected by cams *w*, revolved by suitable connections and acting upon slide-bars 5, that raise the swinging frame *x*, rollers *s*, and cylinder *h* and separate the rollers *s* and *t*, and the cams *w* are shaped and positioned so as to lower such roller *s* into contact with the roller *t*, so that the ink-supply shall reach the form-rollers at the time required for applying the ink to such form; and, if desired, the

proper inking will be effected if the form-rollers and their boxes are raised out of contact with the types and lowered into contact when the ink is to be applied, either at the front portion of the form, or at any other point thereon that may be required, according to the work that is being printed. This may be effected by turning the foot 7 around beneath the downward projection 8 of the journal-box frame. In this case the said frame is to be attached by bolts 9 with a spring, 10, or springs between the nuts of the bolts and the frame of the machine, so that the entire box can be slightly raised by the cam *w* and returned to position by the springs for inking the types.

I am aware that ink has been distributed from one fountain to two sets of form-rollers by two rollers in the fountain; this, however, requires a larger quantity of ink in the fountain, and this is disadvantageous with colored and high-priced inks.

I claim as my invention—

The rollers *g* and *f*, that transfer ink from the fountain-roller *e* to the inking-table *c* and cylinder *h*, respectively, in combination with rollers *s* and *t* and the separate form-rollers *m n o p*, receiving their supply of ink from the inking-table *c* and cylinder *h*, substantially as set forth.

Signed by me this 21st day of November,
A. D. 1873.

JOHN BRYSON.

Witnesses:

GEO. T. PINCKNEY,
CHAS. H. SMITH.