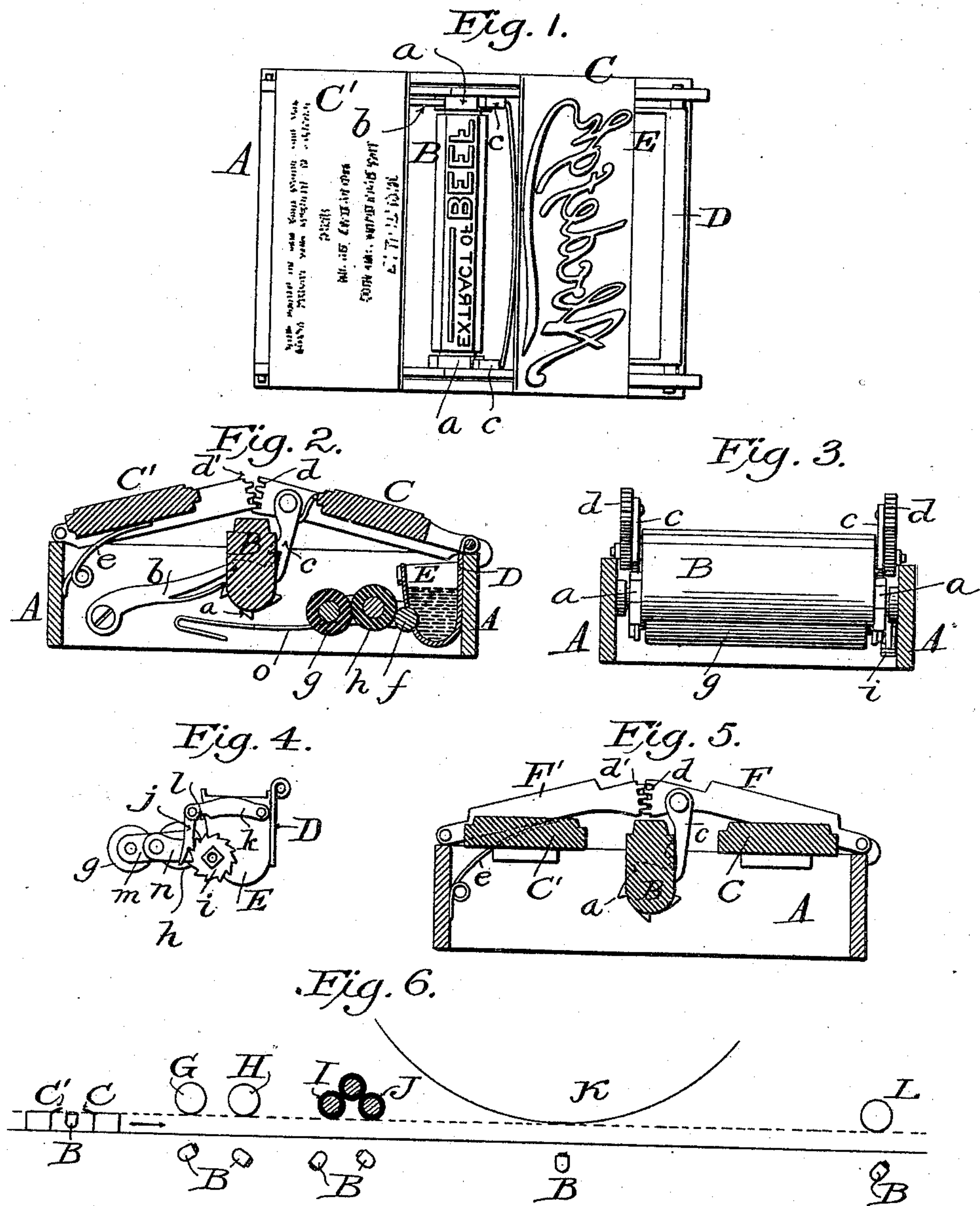


(No Model.)

T. J. TURLEY.
CHROMATIC PRINTING DEVICE.

No. 500,785.

Patented July 4, 1893.



Witnesses:

James F. Duhamel
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UNITED STATES PATENT OFFICE.

THEODORE J. TURLEY, OF NASHVILLE, TENNESSEE.

CHROMATIC-PRINTING DEVICE.

SPECIFICATION forming part of Letters Patent No. 500,785, dated July 4, 1893.

Application filed December 12, 1892. Serial No. 454,874. (No model.)

To all whom it may concern:

Be it known that I, THEODORE J. TURLEY, a citizen of the United States, residing at Nashville, in the county of Davidson and State of Tennessee, have invented certain new and useful Improvements in Chromatic-Printing Devices, of which the following is a specification.

My invention relates to multicolor printing, and consists in a novel construction of the form, its holder, and its actuating mechanism, as hereinafter set forth and claimed.

In the drawings,—Figure 1 is a top plan view of my improved form and its holder; Fig. 2, a longitudinal sectional view; Fig. 3, a transverse sectional view; Fig. 4, a view illustrating in detail portions of the inking mechanism; Fig. 5, a view illustrating a slight modification, and Fig. 6, a diagrammatic view of the press in which the form may be used.

A indicates an open rectangular frame or form-holder, and B the form or form block journaled therein and adapted to rotate always in one and the same direction. This form or form block B is designed to be inked and to print in a color contrasting with the main body of the form in which the frame or holder is locked. Block B is provided at each end inside the frame with ratchet wheels *a a* with one of which engages a dog *b* to prevent backward rotation of the block B. These ratchet wheels *a* are designed to be engaged by pawls *c c* carried at the inner end of a plate C which latter, as clearly shown in Fig. 2, is hinged or pivoted at its outer end to a supplemental plate or support D which is detachably secured to the end bar of frame or holder A; the construction and arrangement being such that when the inner end of the plate C is depressed, its pawls will cause a partial rotation of the form or form block B. Plate C has its side bars extended forward somewhat and provided with teeth *d* to engage similar teeth *d'* on the end of a plate C', pivoted at its outer end to the frame A, as shown in Figs. 1 and 2. From this it will be seen that the depression of either of these plates C or C' will cause an equal or corresponding depression of the other, and a consequent partial rotation of form B. A spring *e* (Fig. 2) beneath the plate C' raises said plate,

and the plate C in gear therewith, after each depression.

E indicates an ink well or fountain carried by the support D, (see Fig. 2,) and provided with a feed roller *f* and distributing rollers *g* and *h*. On the axle of the feed roll is a ratchet wheel *i* with which a pawl *j* is designed to engage,—said pawl being carried at the inner end of an arm *k* pivoted to the side of the ink fountain, as shown in Fig. 4. This arm *k* projects upward or is arranged in such position as to be depressed by the plate C each time said plate is depressed, and thus keep the distributing rollers supplied with ink. A spring *l* raises the pawl *j* and its arm *k* upon the upward movement of plate C preparatory to another depression of the latter.

The distributing rollers *g* and *h* are carried in a frame *m* hinged or pivoted in arms *n* projecting from the ink well E, as shown in Fig. 4. The inner roller *g* has its periphery in the path of the printing face of form-block B, while the roller *h* is normally in contact with the roller *f*. Now when the form B strikes against the roller *g*, the latter will be depressed slightly,—the frame *m* in which the rollers are hung, rocking on its pivots or journals, and carrying the roller *h* out of contact with the feed roller. As soon as the form B leaves the roller *g*, a spring *o* (Fig. 2), secured at one end to the frame, returns the roller frame *m* and its rollers *g* and *h* to their normal positions.

In the drawings I have shown the ratchet wheels *a a* as provided with five teeth, but I do not wish to be understood as limiting myself to this number. Obviously, the number of teeth required will depend upon the number of times the plates C C' come into contact with or are depressed by the main inking rollers or other parts of the press.

While I have shown the depressing plates C C' as provided with printing characters on their upper faces designed to be inked by the main rollers of the press, I do not limit myself to this construction; for, as shown in Fig. 5, these printing surfaces may be made fast to the frame, and the intermediate form or form-block B actuated by one or more frames F, pivoted to the frame or holder A, and pro-

vided with pawls to engage the ratchet wheels *a*. So too, instead of employing two pivoted depressing plates *C C'* or their equivalents the frames *F*, only one plate or frame need
 5 be used. This modification would, however, require a decrease in the number of teeth or ratchet wheels *a a* in order that the single depression of one plate or frame would give the same degree of partial rotation to the form-
 10 block, as the successive depression of two plates or frames.

By making the support *D*, which carries the inking mechanism, removable from the frame *A*, the whole form, in which the said
 15 frame is locked, may be washed or cleansed with lye.

The operation of the device is as follows, assuming the parts to be in the position shown in Fig. 2, and the frame *A* locked up in the
 20 main form, as in Fig. 6: As the frame moves beneath a roller or stop *G* on the press, the plate *C* is struck and depressed, and the form or form-block given a fifth of a rotation, and as the plates *C C'* are geared together, they
 25 will both remain depressed while passing beneath this stop or roller *G*. By this same depression, the feed roll of the inking apparatus (which is supplied, say, with red ink) is also turned or rotated and caused to furnish the
 30 distributing rollers with ink. As the frame *A* continues its travel, the plate *C* is struck and depressed by the next stop or roller *H*, thereby causing a repetition of the action just described. At about this time the form
 35 or form-block *B* comes into contact with inking roller *g*, receives its supply of red ink therefrom, and tips or rocks the roller-frame *m* slightly, the spring *o* returning the frame and rollers to their normal position as soon
 40 as the form *B* passes out of contact with the roller. Continuing in its travel, the frame *A* has its plates *C C'* acted upon by other rollers or stops in this instance the main ink rollers *I, J* of the press, and these plates are de-
 45 pressed until the form or form-block is brought to that position which it occupies prior to assuming printing position. In passing beneath the inking rollers of the press, the main body of the form (in which frame *A* is locked) and
 50 the printing characters on plates *C* and *C'*, will be inked black by said inking rollers. When this form begins to pass beneath the impression cylinder *K* the plates are depressed and the form block *B* brought into
 55 printing position; and as the form continues its travel beneath the cylinder, an impression is made,—the form-block *B* will print in one color while the rest of the form, including the plates *C C'*, will print in a contrasting
 60 color. When the form passes from beneath the impression cylinder, the plate *C* is acted upon by a stop or roller *L* which causes the form-block *B* to assume a position below the printing line. In presses of this character
 65 the impression cylinder is raised above the form, and hence in the backward movement

of the form, the cylinder will not act upon the plates *C C'*, but the rollers *G, H, I* and *J* will in such backward movement of the form actuate the plates and bring the form-block
 70 to printing position.

By means of this device I can have certain parts, or indeed, the whole, of any number of advertisements printed in a variety of con-
 75 trasting colors without complicating the press itself and without throwing any appreciable extra work upon the press.

I am aware that it has been proposed to mount in a frame (adapted to be locked into a form) a rotatable form-block and to sup-
 80 ply ink to such block from a pad such as is used in hand stamps, and to such construction I make no claim. Ordinary printer's ink, such as is used for printing newspapers and the like, cannot successfully be used
 85 upon a pad; and it is also a fact that the inks which are used on a pad are wholly unsuited for ordinary printing. By my construction I am enabled to supply each form-
 90 holder with means for supplying to the form-block ordinary printer's ink of a color contrasting with that employed on the remainder of the form; and this result has never before been accomplished, so far as I am
 95 aware.

Having thus described my invention, what I claim is—

1. As an improved article of manufacture, a form-holder comprising a frame adapted to be locked up in an ordinary form or printer's
 100 chase, a rotatable form or form-block, means for rotating the latter, and an inking mechanism carried by the frame to ink the rotatable form with ordinary printer's ink and independent of the main form-inking rollers,
 105 all combined and arranged substantially as shown and described, whereby the said rotatable form is adapted to be inked and to print in a color contrasting to the impression of the main form.

2. As an improved article of manufacture, a form-holder comprising a frame adapted to be locked up in an ordinary form or printer's
 110 chase, a rotatable form or form-block, means for rotating the latter, and a removable ink-
 115 ing mechanism carried by the frame to ink the rotatable form with ordinary printer's ink, and independent of the main form-inking rollers, all combined and arranged substantially as shown and described, whereby
 120 the said rotatable form is adapted to be inked and to print in a color contrasting to the impression of the main form.

3. In combination with the frame and the rotatable form, the ink fountain, the pivoted
 125 distributing rollers, and means for rotating the form to bring it into contact with one of the distributing rollers.

4. In combination with the frame, the rotatable form, the pivoted plate *C*, an ink res-
 130 ervoir, a feed roll therefor provided with a ratchet wheel, and a pivoted arm adapted to

be struck by the plate and carrying a pawl to engage the ratchet wheel.

5. In combination with the frame, the form B journaled therein and provided with a ratchet wheel; and the pivoted plate provided with a pawl to engage the ratchet wheel.

6. In combination with the frame, the form B journaled therein and provided with a ratchet wheel, the plates C C' pivoted to the

frame and geared together as shown, and a pawl carried by one of said plates to engage the ratchet wheel.

In witness whereof I hereunto set my hand in the presence of two witnesses.

THEODORE J. TURLEY.

Witnesses:

JESSE CAGE,
SAM ORR, Jr.