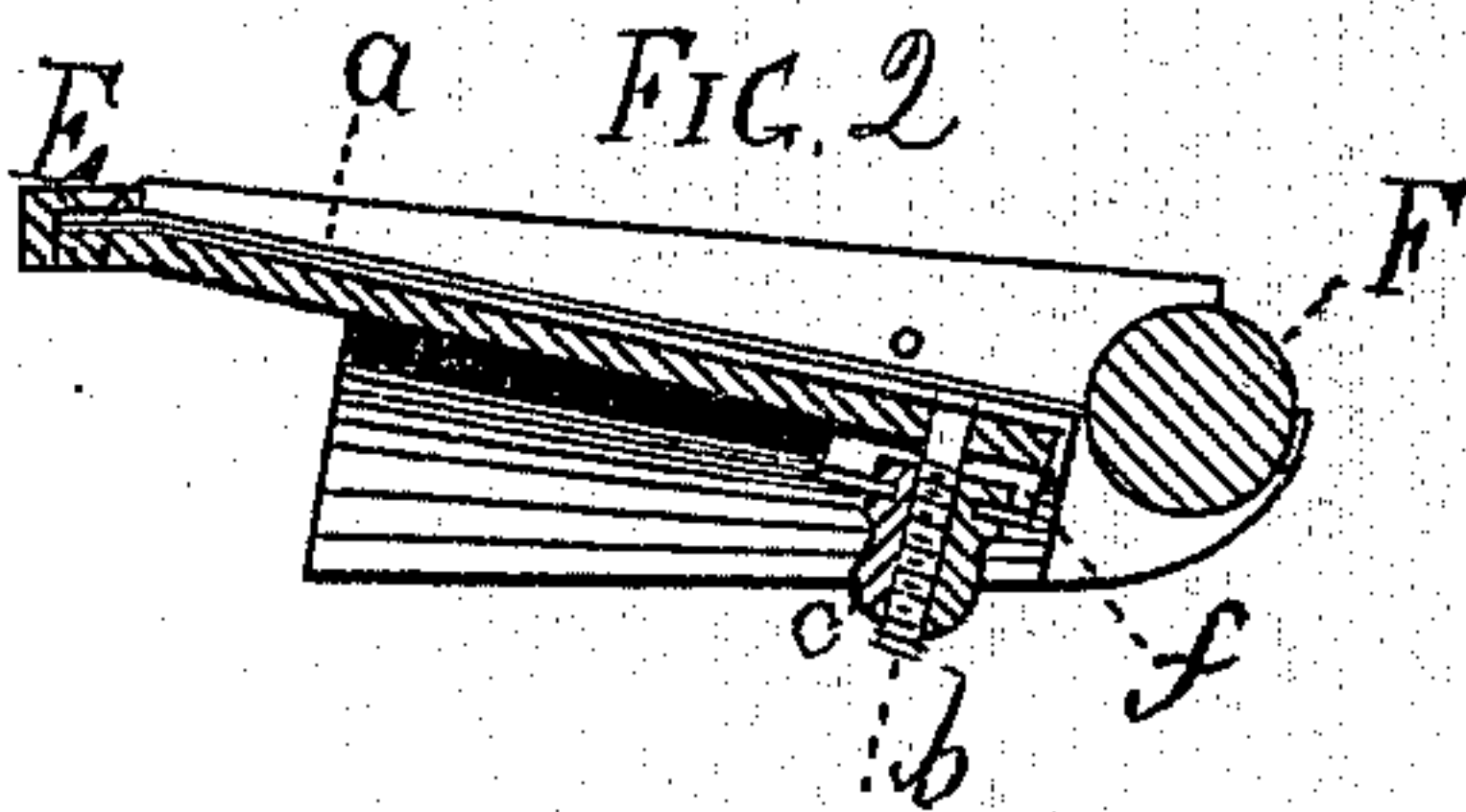
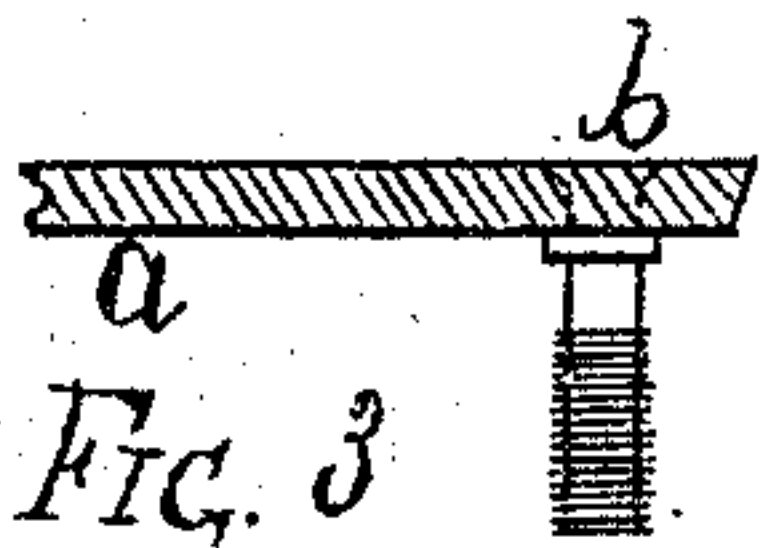
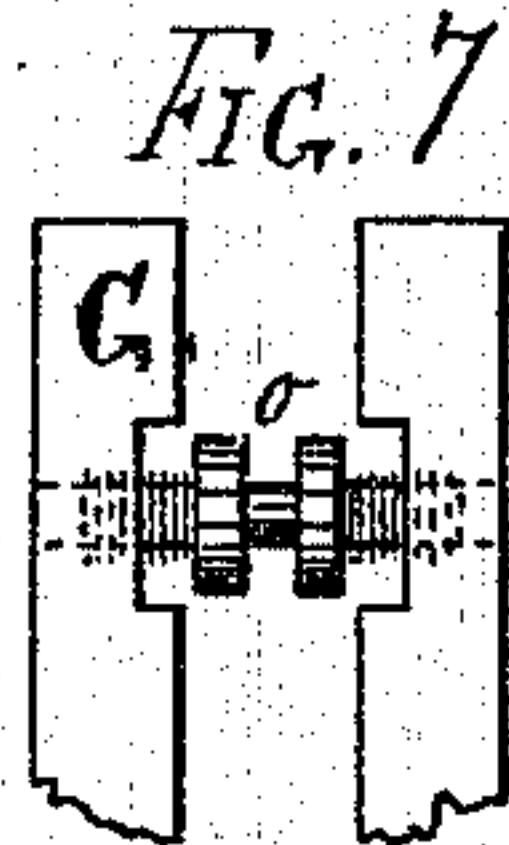
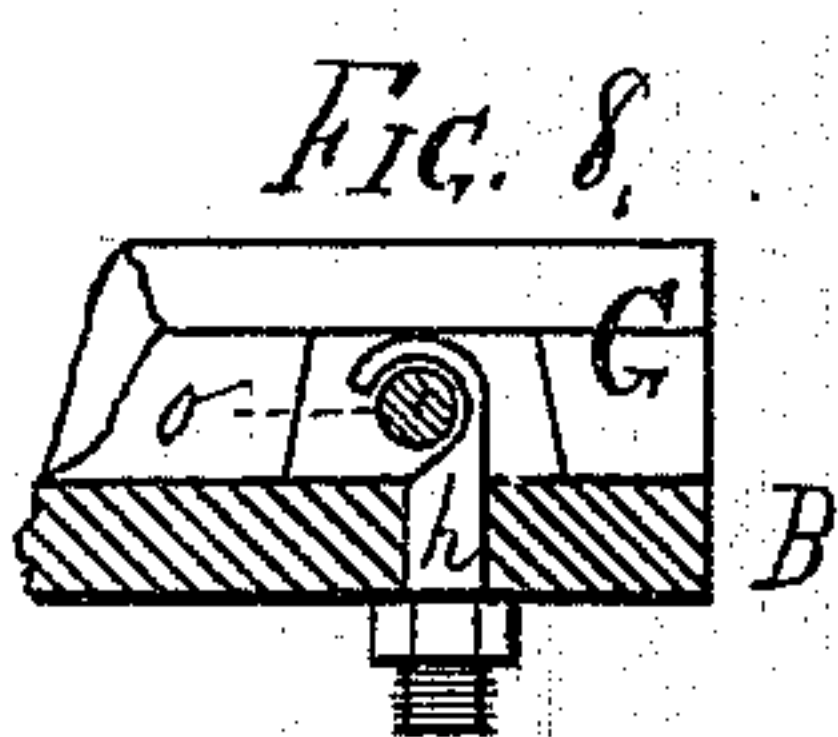
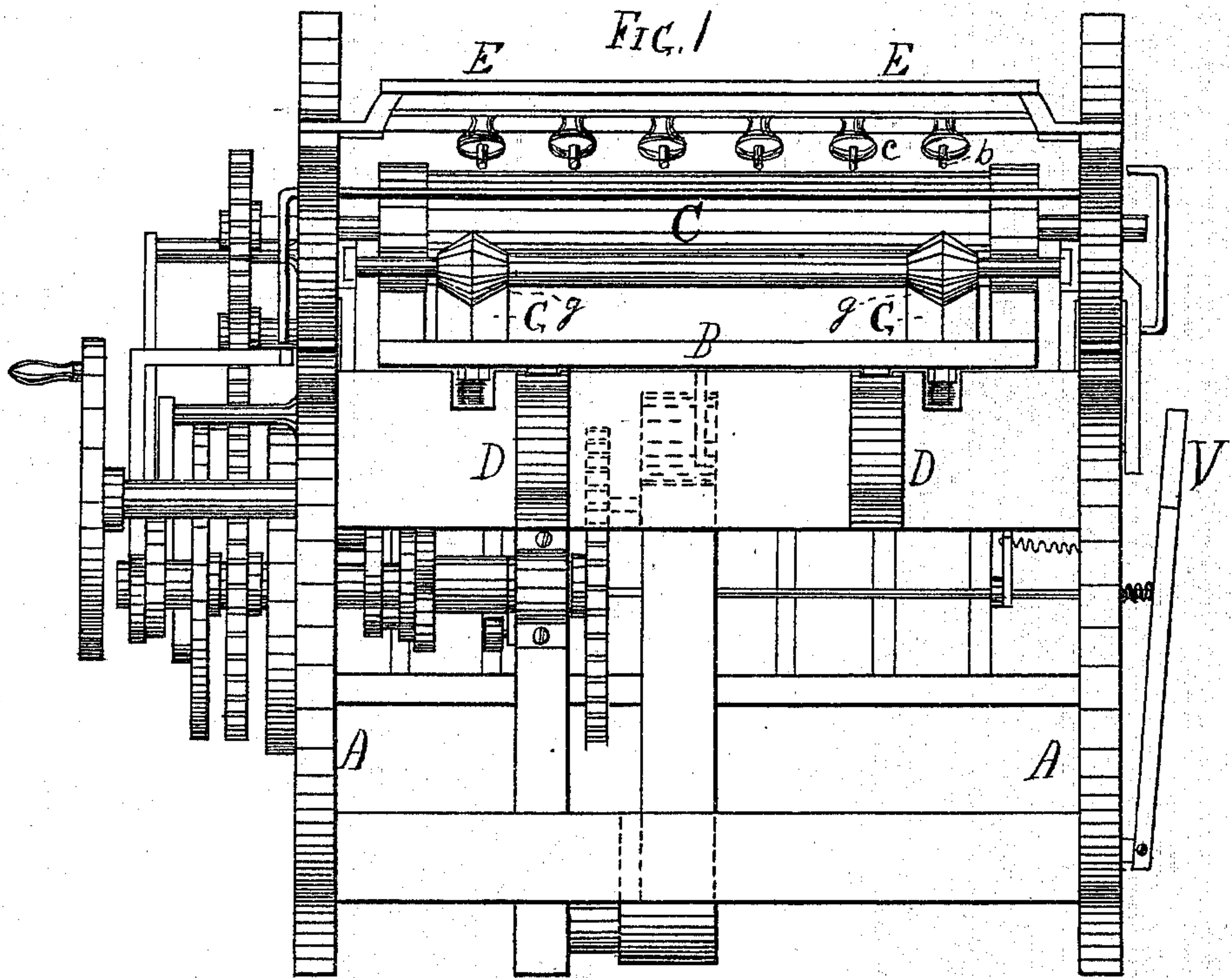


C. C. CHILD.
Rotary Printing-Presses.

No. 144,742.

Patented Nov. 18, 1873.



WITNESSES
Watts L. Montague
F. D. Withnell.

INVENTOR
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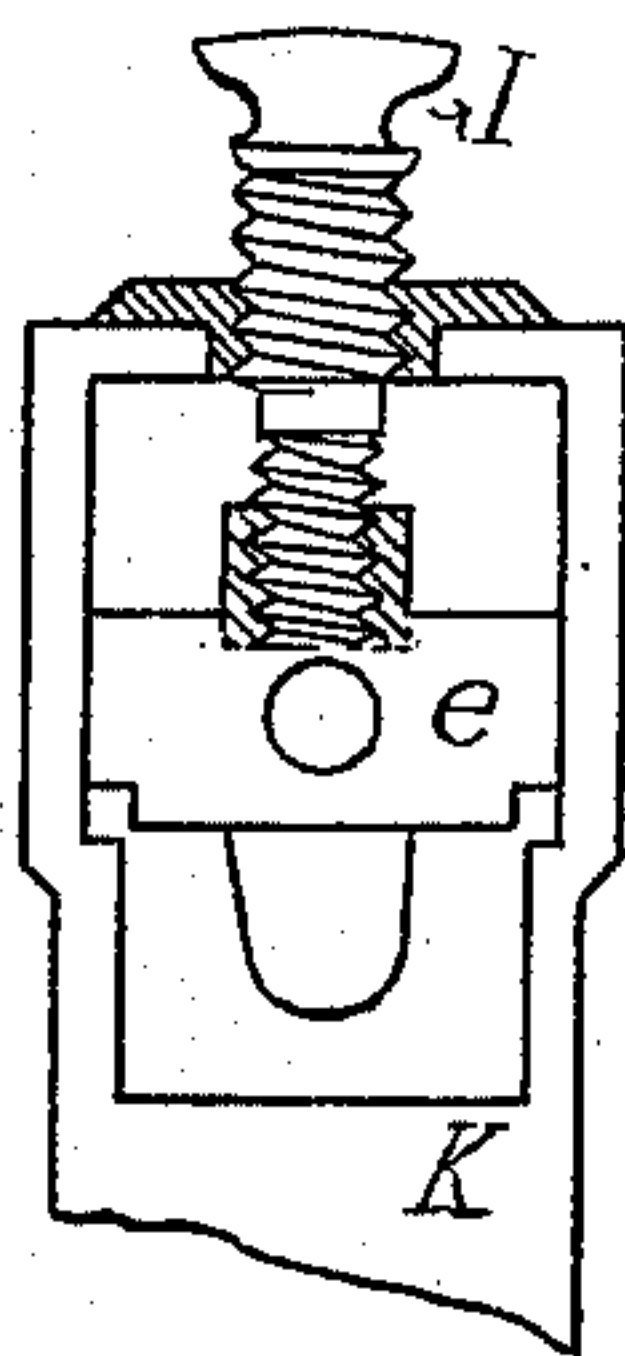
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Fig. 6.



WITNESSES

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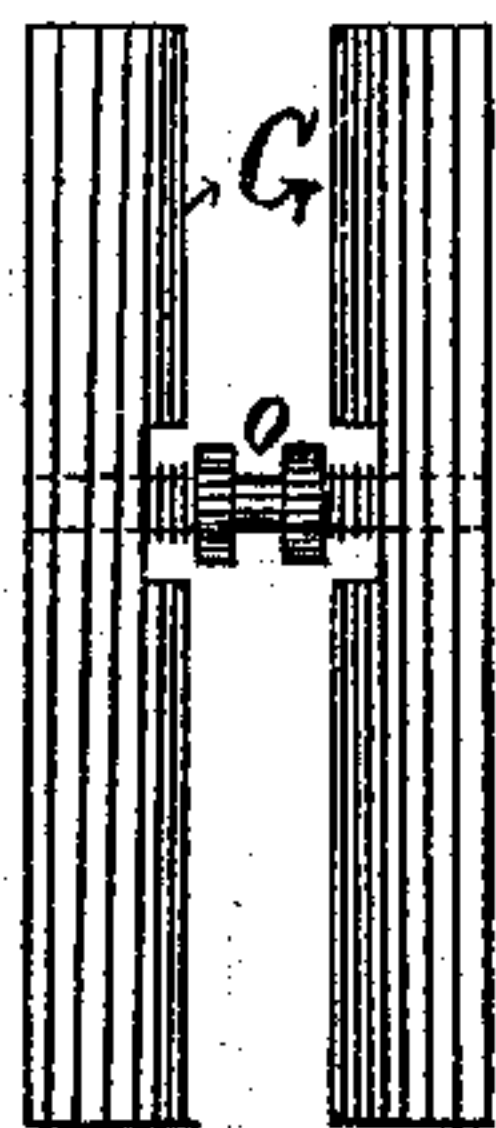


Fig. 9.

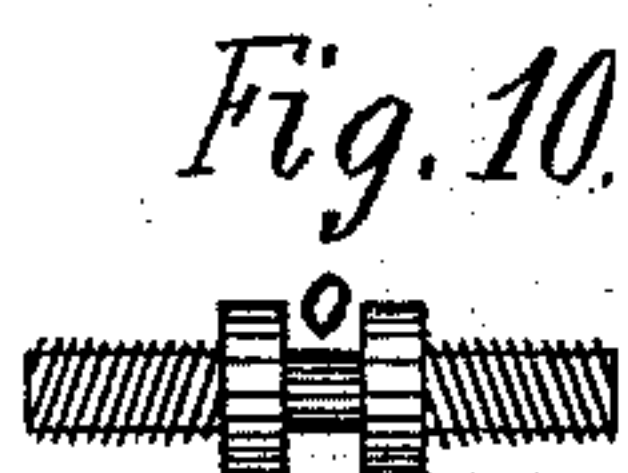


Fig. 10.

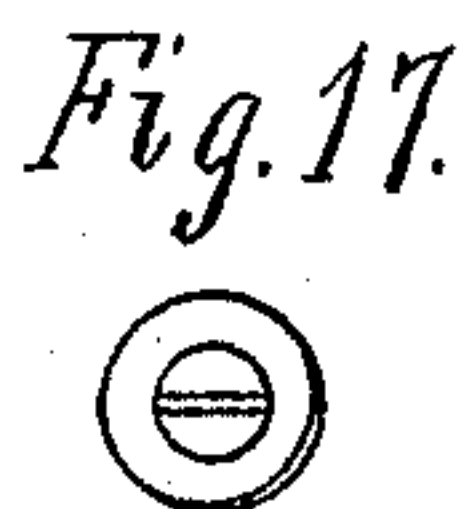


Fig. 17.

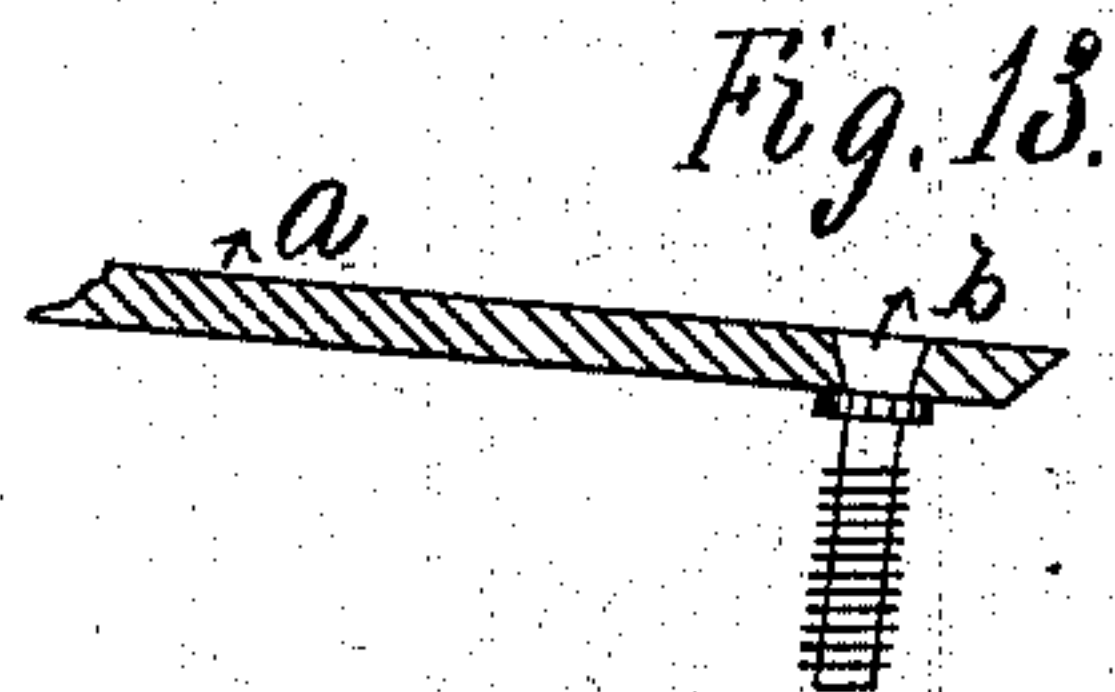


Fig. 13.



Fig. 11.



Fig. 12.

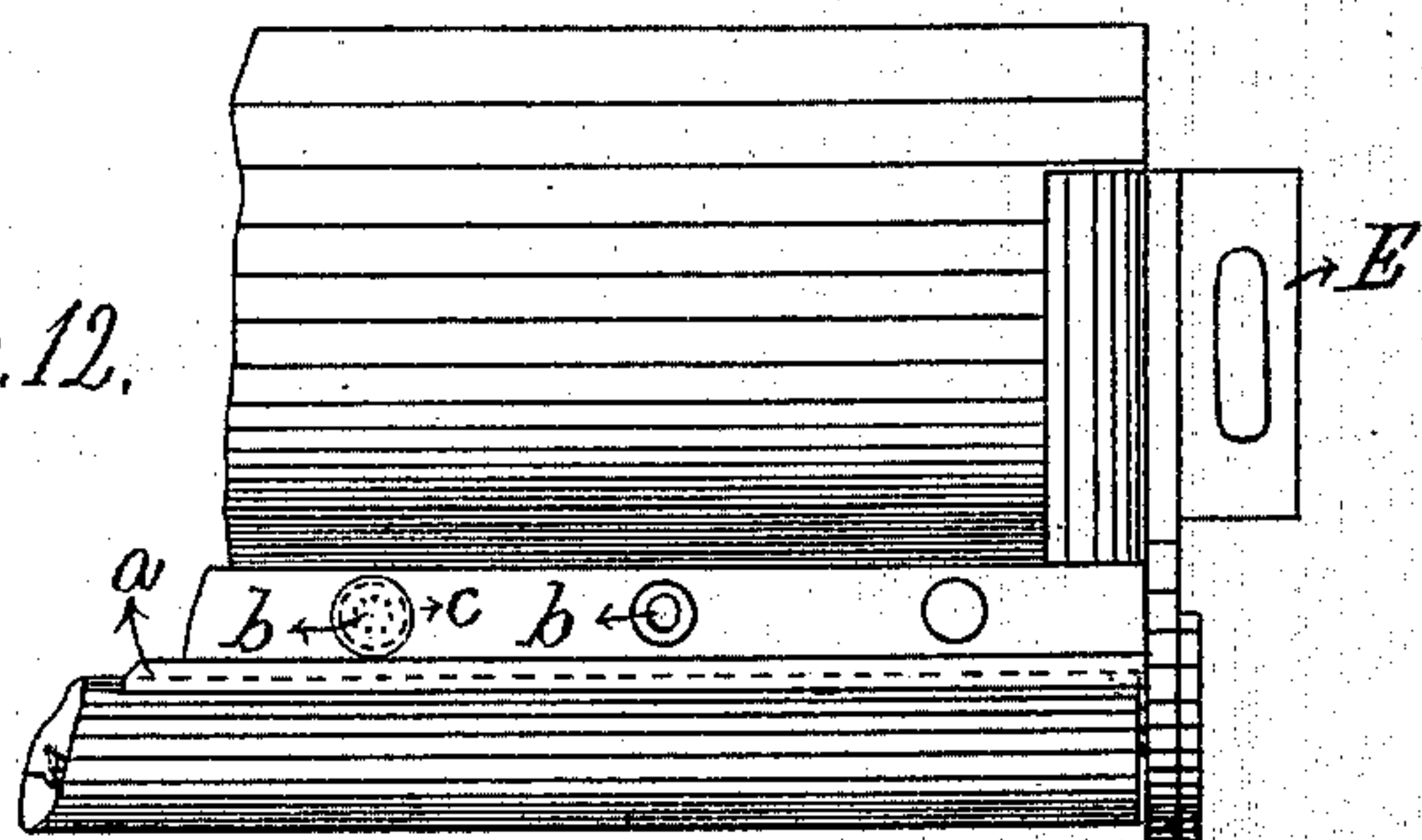
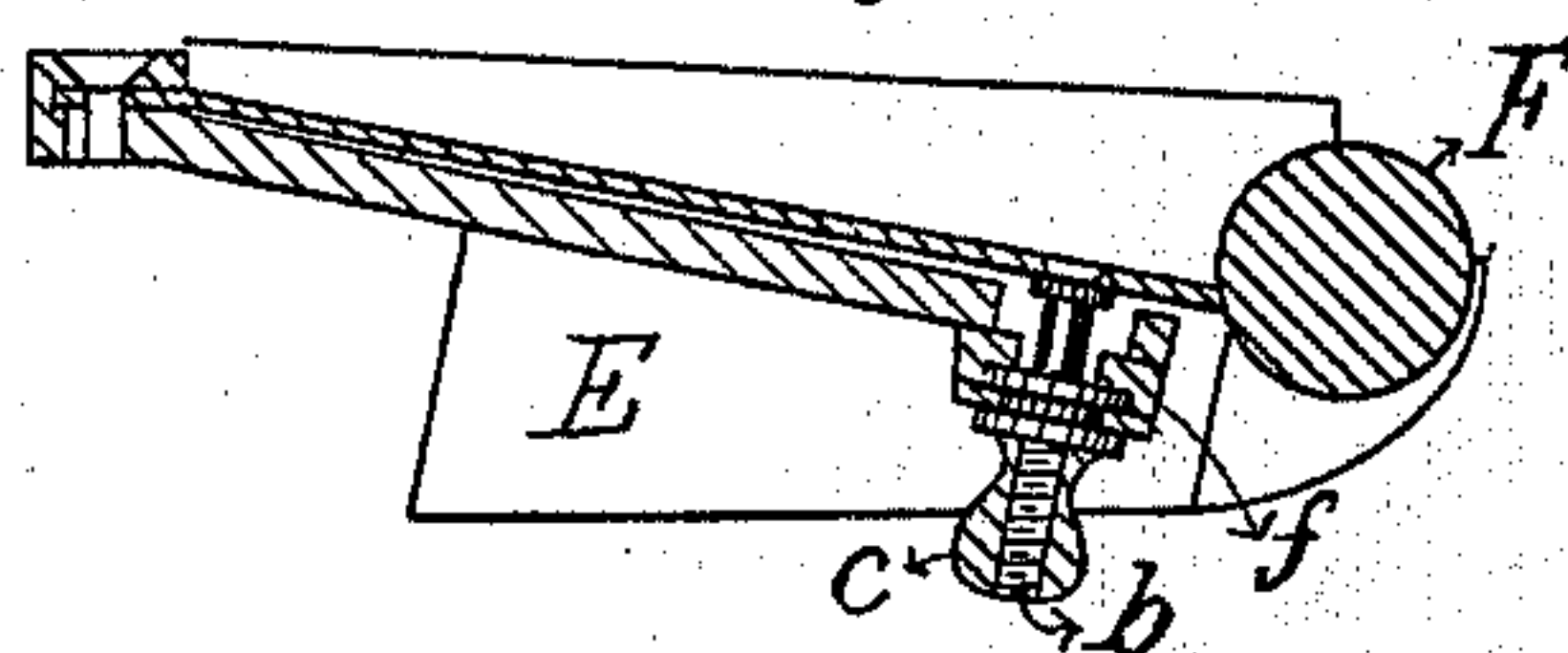


Fig. 15.

Fig. 14.



Fig. 16.



WITNESSES
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UNITED STATES PATENT OFFICE.

CYRIL C. CHILD, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN ROTARY PRINTING-PRESSES.

Specification forming part of Letters Patent No. **144,742**, dated November 18, 1873; application filed March 19, 1873.

To all whom it may concern:

Be it known that I, CYRIL C. CHILD, of Boston, Massachusetts, have invented certain Improvements in Printing-Presses, of which the following is a specification:

The nature of my invention consists in an improved mode of constructing the ink-fountain and other devices connected with printing-presses. The first part of my invention relates to an improved fountain, whereby the flow of ink is more effectively controlled. The second part of my invention relates to the adjustment of the form-rollers to the form. The third part of my invention relates to the means of adjusting the impression.

Figure I is an end elevation of a printing-press showing my improvements. Fig. II is a cross-section of the fountain. Fig. III is a cross-section of the steel knife for cutting off the ink, with one of the screws as attached. Fig. IV is a longitudinal section of a nut for adjusting the knife. Fig. V is an impression-screw. Fig. VI is an elevation of screw and arm for adjusting the impression. Fig. VII is a bottom view of bearer, showing the cut-away portion for pin. Fig. VIII is an inside view of bearer. Fig. IX is a plan view of bearers. Fig. X is a view of pin *o*, with a right-and-left-hand thread; Figs. XI and XII, views of hook *h*; Fig. XIII, sectional view of knife-plate and screw *b*. Fig. XIV is a plan view of a section of plate *a*, showing radial notches in holes. Fig. XV is a section of the fountain from the bottom, showing frame with holes for screws. Fig. XVI is a cross-section of fountain. Fig. XVII is an end view of pin *o*.

A is the frame; D, the way or track, on which bed B is reciprocated back and forth under the cylinder C by any of the well-known methods, as also may be rotated the cylinder. E is the fountain. F is the fountain-roll, held in the frame of fountain by its journals, and is intermittently revolved at the proper time by any of the well-known means. *a* is the steel knife-plate of ink-fountain, which is securely fastened to the outside edge of the frame of the fountain, the ends of the knife having a tight working fit to prevent the escape of ink, except under the feeding-roll, against which the remaining edge of the knife-plate is adjusted. *b* is one of a series of screws, with a

shoulder on one end, where the screw passes through a countersunk hole in the knife-plate, very near the point of contact with the roll, and is riveted to the knife-plate. The countersunk holes are provided with radial notches, which, in the process of riveting the screws, secure them from turning. After riveting the screws, the surface of the plate is carefully dressed or filed, so as to secure an unbroken surface and prevent any possibility of leakage. The screws project downward from the plate, and extend through holes larger than their diameter, located in the frame of the fountain to correspond in position with the said screws. *c* is a thumb-nut, on the outside of which is cut a groove, *d*. When the nut has been properly entered upon screw *b*, it is secured by an iron stay, *f*, which is attached to the frame of the fountain, and operates in the groove of the nut, so that the further operation of the nut shall act upon the screw *b*, and by it force the knife-plate against the roller, or draw it away. The fountain-roller is intermittently revolved, at the proper time, by any well-known means.

The advantages of this device consist in the increased effectiveness with which the flow of ink can be regulated.

In the ordinary mode of constructing fountains for printing-presses, the knife is secured to the frame, as described; but the screws operate merely to push the knife against the roller to cut off the ink, the flexibility and spring of the knife itself being relied on to secure the proper regulation.

In practical experience, this method is open to the objection that the operation of one of the screws affects the adjustment of the knife at other points than that which is intended to be adjusted. Where very unequal quantities of ink are desired at different places on the fountain-roll, this kind of ink-fountain is quite deficient, not allowing sufficient delivery of ink above one screw, or too much above the adjoining screws. The device here described entirely overcomes the objections named, as the knife is controlled both against and away from the fountain-roll, and the adjustment of one screw cannot affect any part of the knife except its own.

I am aware of the construction of an ink-fountain in which a rigid cast-iron knife is used,

and in which screws secured in the fountain-frame enter and operate in the knife itself, the screws advancing and receding through the knife-blade. The rigidity of the knife-blade and the necessarily loose fits required in the construction of this kind of fountain deprive it of the advantages which I claim, while the holes in the knife-blade afford liabilities of leakage. I am also aware of the description of an ink-fountain in which a flexible knife is used, where the screw passes through the knife-plate, and is headed down on the surface of the knife, the screw also entering the frame of the fountain, which is tapped. This method presents disadvantages in cleansing the fountain, and in the free flow of the ink upon the fountain-roll, and also requires a loose fit and leakage as the screw revolves in the knife-blade, which deficiencies greatly impair its practical value.

G is a V-shaped bearer for the support of the form-rollers, and consisting of two longitudinal angular-sided strips, adjusted to and from each other by pin *o*, Fig. VII, on which is cut a right-and-left-hand thread, and in the center of which is a groove or open space. The bearers are cut away on their under side, where the pin passes through them, to admit of a hook, *h*, on which is cut a screw-thread, which passes through bed of press, and fastens them securely to the bed by a nut. On one end of pins *o* is a screw-headed slot, by which it can be rotated to vary the distance between the two halves of the bearers. The trucks *g*, which carry the composition-rollers, are made of V shape to fit into the bearers; or they and the bearers may be reverse, thus regulating the pressure of the rollers upon the form of type; or the truck may be made in halves, and adjustable, while the bearers are in one piece, with a V-groove,

light open forms requiring a light pressure to obtain the best results. I is an impression-screw, on which is cut two different-sized threads. One portion of the screw can be made smaller, so as to pass through the larger nut or bearings; or one nut or bearing may be made in halves. The large part of the screw I passes through the arm K, that holds the box for the journal of impression-cylinder C, while the small portion enters the box *e*, which has a motion within the arms. The larger nut or largest female thread acts as the resistant while the pressure is exerted on the smaller nut or female thread, the work done being the difference between the sizes of the two threads.

This device combines in one screw what has required heretofore two or more, and does the work to much better advantage, the one screw having full control on the pressure exerted both to increase and decrease it, and, by the variation of the threads, varying the power and speed, and, by exerting the pressure slower, enables it to be adjusted more accurately.

I claim—

1. The inking device, consisting of the trough E, flexible plate *a*, screw *b*, slotted sustaining-plate *f*, and grooved nut *c*, as set forth.
2. The V-shaped bearings, each consisting of two longitudinal angular-sided strips, adjusted to and from each other by right-and-left-hand screw-bolts *o*, which are held to the type-bed by hooks *h*, in combination with V-shaped roller *g*.
3. Differential screw I, box *e*, arm or standard K, in combination with the cylinder of a printing-press, substantially as described.

CYRIL C. CHILD.

Witnesses:

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FRANK D. WITHERELL.