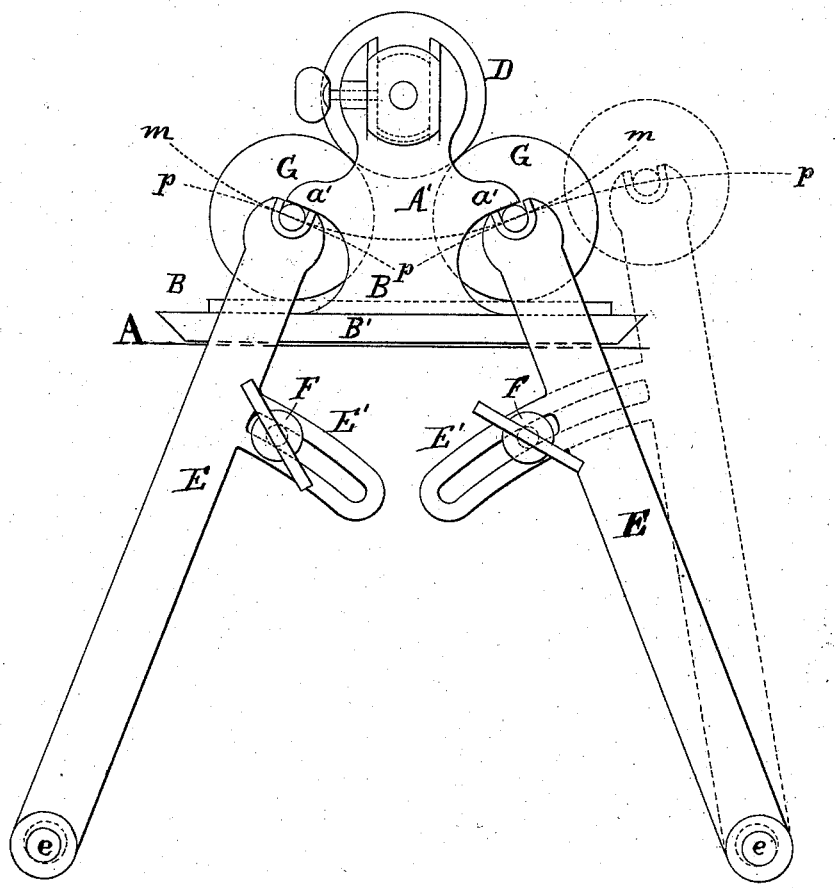
J. F. HUBBARD.

Inking Apparatus for Printing-Machine.

No. 205,189. Patented June 25, 1878.



Witnesses:

A. Henry Gontner

M. F. Stetson

Inventor:

James F. Hubbard

by his attorney

Thomas D. Stetson

New York

UNITED STATES PATENT OFFICE.

JAMES F. HUBBARD, OF PLAINFIELD, NEW JERSEY, ASSIGNOR TO HIMSELF AND CHARLES POTTER, JR., OF SAME PLACE.

IMPROVEMENT IN INKING APPARATUS FOR PRINTING-MACHINES.

Specification forming part of Letters Patent No. **205,189**, dated June 25, 1878; application filed December 4, 1877.

To all whom it may concern:

Be it known that I, JAMES F. HUBBARD, of Plainfield, county of Union, in the State of New Jersey, have invented certain new and useful Improvements in Inking Apparatus for Printing-Machines, of which the following is a specification:

The improvement relates to the mounting of the inking-rollers. It is a simple and strong construction, and avoids some of the difficulties incident to the ordinary modes of mounting.

The following is a description of what I consider the best means of carrying out the invention.

The accompanying drawing forms a part of this specification, and is a side elevation, showing the novel parts, with so much of the ordinary parts as is necessary to indicate their relations thereto.

A is a portion of the fixed frame-work. B is a form of type carried on the reciprocating table or bed B′, which, it will be understood, is traversed backward and forward horizontally at each impression. A′ is a standard, which forms one of the bearings, in the ordinary manner, for a distributing-roller, D. It is also formed with shoulders *a′*, the functions of which will presently appear.

E E are levers, turning on fixed centers *e*, and formed with forks at their upper extremities, which receive the bearings of inking-rollers G. It will be understood that there is a stand, A′, with shoulders *a′*, on each side of the bed, and that there are two such levers E E, corresponding, on each side of the bed, to support the ends, respectively, of the single distributing-roller D and of the two inking-rollers G G. Each lever E is formed with a slotted arm, E′, which receives the pinching-screw F, by which it can be set firmly at the required angle.

The shoulders *a′* are inclined to a degree corresponding to the sweep of the upper end of the corresponding lever E when in that part of its path. The height of the shoulders *a′ a′* is just sufficient to cause them to press gently on the adjacent bearing of the roller G.

The location of the centers *e* and the lengths of the levers E, and, consequently, the inclination of the shoulders *a′*, are carefully determined, so that on slacking the pinching-screw F and swinging the levers E a little on their centers *e* the rollers G will, as they are moved apart, equally relax their pressure, on the one hand against the distributing-roller D, and on the other hand against the form of type B. When the inking-rollers G are moved toward each other by the swinging of their respective levers E in the proper directions, they cause the inking-rollers to increase their pressure equally against the form and against the distributing-roller.

Such an adjustment is necessary. It is useful not only to increase and relax the pressure at will in obtaining a proper pressure at any given time, but it is necessary afterward to change the position to compensate for the inevitable shrinking of the inking-rollers.

Inking-rollers are formed with a thick surface of elastic composition, which will endure the oil of the ink and will be sufficiently soft to apply it well to the types. This composition shrinks with time, and the centers of the rollers must be shifted to compensate for such shrinkage.

The construction which I have adopted will allow the adjustment of the rollers outward and inward to a sufficient extent to compensate for all ordinary inequalities in the diameters of the several rollers when they are first constructed, and for all the variations due to subsequent shrinkage. The motion of the centers of the rolls G is almost exactly coincident in that part of its motion with the dotted line *m m*, indicating theoretically places of centers which would exactly fulfill that condition through a still larger range of sizes.

The centers *e* are formed eccentrically on bolts, which may be turned and adjusted, when required, to raise and lower the centers a very little. This aids in the adjustment.

It will be observed that the dotted lines *p p*, which represent arcs from the centers *e*, so nearly coincide for a considerable distance with the dotted line *m m*, which represents the line of equidistance from the form B and roller D, that they are practically the same.

The shoulder *a'* corresponds to the sweep from the center *e*. It allows the roller G to be moved inward as far as is ever required.

To remove the rollers G, the screws F being slackened, the levers E are swung into a nearly upright position, carrying with them the rollers G. A turn of each pinching-screw F holds the levers in that position, and allows the rollers G to be removed and washed or exchanged. To return the rollers again, or to introduce new ones, it is only necessary to place each roller with its bearings in the forked ends of the proper levers E E, and to slacken the screws F and move the levers E to the more inclined position represented. The hand being applied to induce the desired forcible contact with the distributing-roller and the form, the screw F is again tightened, and the roller G is held in exactly the right position. If the roller shrinks, the screw F must be slackened and the lever E pushed farther inward, and again secured. All the shrinkage which will ever occur can be readily compensated for by these means.

The motion is communicated in the ordinary manner to the several rollers to give them a surface-velocity exactly corresponding to that of the form.

I claim as my invention—

1. In a printing-press, the levers E E, eccentrically pivoted at their lower ends, recessed at their upper ends, and provided with the slotted arms E' E', in combination with the inking-rollers G, distributing-roller D, and bed B', as herein specified.

2. In a printing-press, the shoulder *a'* on the standards A', in combination with the rollers G, and with the levers E, having forks or open-topped recesses, as and for the purposes herein specified.

In testimony whereof I have hereunto set my name in the presence of two subscribing witnesses.

JAMES F. HUBBARD.

Witnesses:
ANSON JUDSON,
J. M. FITZWORTH.