

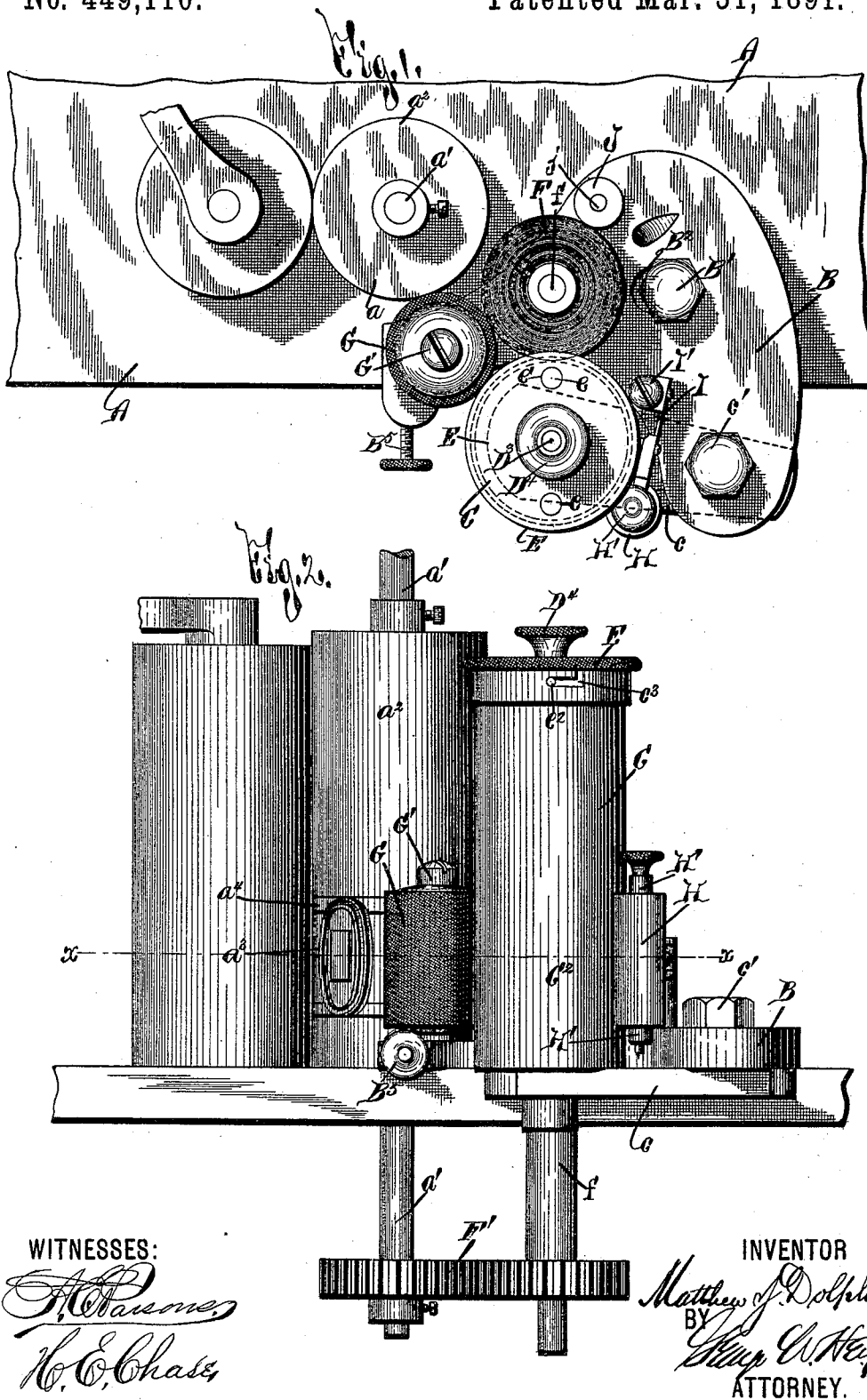
(No Model.)

2 Sheets—Sheet 1.

M. J. DOLPHIN.
INKING DEVICE.

No. 449,110.

Patented Mar. 31, 1891.



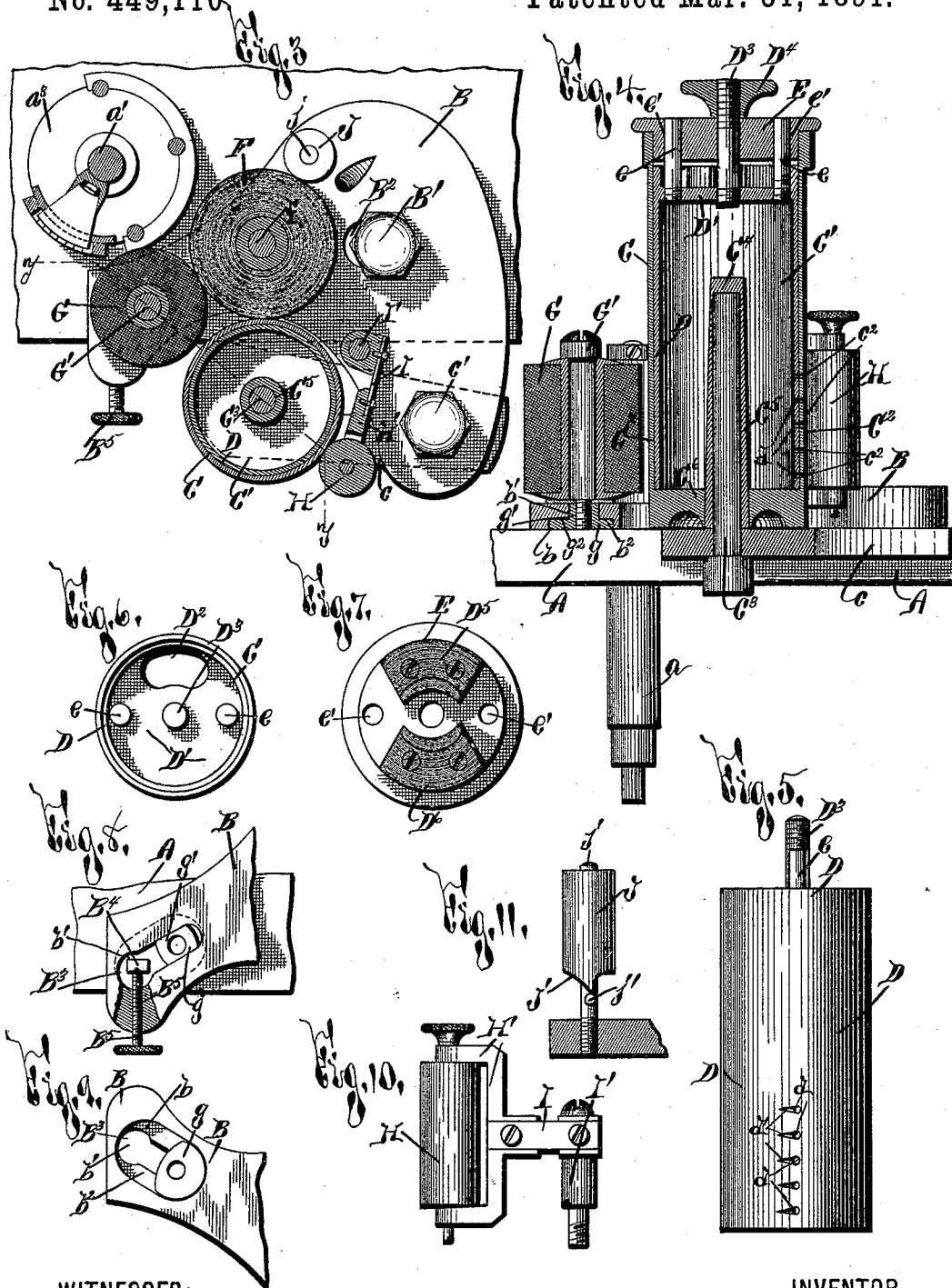
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WITNESSES:

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UNITED STATES PATENT OFFICE.

MATTHEW J. DOLPHIN, OF BROOKLYN, NEW YORK.

INKING DEVICE.

SPECIFICATION forming part of Letters Patent No. 449,110, dated March 31, 1891.

Application filed November 9, 1889. Serial No. 329,721. (No model.)

To all whom it may concern:

Be it known that I, MATTHEW J. DOLPHIN, of Brooklyn, in the county of Kings and State of New York, have invented new and useful
5 Improvements in Inking Devices, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to an improved inker,
10 and has for its object the production of a simple and effective device which rapidly, continuously, and evenly feeds ink to the marker of a marking-machine; and to this end it consists, essentially, in a suitable ink reservoir
15 or holder, a feeding-surface connected to said reservoir or holder, a regulator for governing the flow of the ink from the holder or reservoir, an inking-roller, and an intermediate roller for feeding the ink from the feeding-
20 surface of the inking reservoir or holder to said inking-roller.

It also consists in auxiliary spreading-rollers for aiding the even distribution of the ink upon the inking-roller; and it furthermore
25 consists in the detail, construction, and arrangement of the parts, all as hereinafter more particularly described, and pointed out in the claims.

In specifying this invention reference is
30 had to the accompanying drawings, forming a part of this specification, in which like letters indicate corresponding parts in all the views.

Figure 1 is a top plan view of my improved inker. Fig. 2 is an elevation of the parts as
35 illustrated in Fig. 1. Fig. 3 is a horizontal sectional view taken on line *x x*, Fig. 2, particularly illustrating the relative arrangement of the rollers of my improved inker. Fig. 4 is a sectional view taken on line *y y*, Fig. 3.
40 Fig. 5 is an elevation of the detached ink-feeding regulator. Fig. 6 is a top plan view of the regulator illustrated in Fig. 5. Fig. 7 is an inverted plan view of the filling-piece or cover of the ink-containing reservoir. Figs.
45 8 and 9 are respectively top and inverted plan views of the detached extremity of a support for my inker, illustrating particularly the fine adjusting device therefor. Fig. 10 is an elevation of an evening-roller for effecting
50 the even distribution of the ink, and Fig. 11 is a detail elevation illustrating an additional evening-roller.

The table or other support A for the inking device may consist of the supporting-table for a marking-machine of the usual or any special
55 construction. Mounted upon this table is the bracket B, which preferably carries the several parts of my invention—namely, the feeding or ink-containing roller C, the inking or spreading roller G, the intermediary roller F,
60 and the eveners H and J.

Supported in suitable proximity to my inker is the marker *a*, which may be of any suitable form, size, or construction, but is here illustrated as the one described and claimed in
65 the patent of August Bertram, No. 408,401, issued August 6, 1889. This marking-roller is mounted upon the shaft *a'*, and consists of the continuously-revolving portion or drum *a*² and the printing portion or marker *a*³, normally at rest until a clutch *a*⁴ is operated by
70 the advancing letter to connect said marker to drum *a*². The marker then makes a complete revolution, whereupon the clutch disengages the same from the drum, and the rotation of the marker ceases until the clutch is
75 again operated by another letter.

The ink-containing roller C is of substantially the same construction as that illustrated and described in my pending application, Serial No. 323,946, filed September 14, 1889, and
80 possesses the additional features of advantage—namely, that the same may be readily removed from the remaining portion of the inker without stopping the operation of the
85 marking-machine or soiling the hands of the operator, and that the feed of the ink is more readily and positively controlled. This roller C, as best illustrated in Fig. 4, is mounted on a bracket *c*, hinged at *c'* to the bracket B,
90 and is provided with an ink-containing reservoir or receptacle, which preferably consists of a cavity or recess *C'*, formed within said roller by constructing the same of tubular shape. Passing from the interior to the out-
95 side of said roller C are a suitable number of openings or passages *c*², through which the ink is fed to an outside feeding-surface *C*². The preferable manner of rendering this roller C readily removable from the remaining por-
100 tion of the inker consists in rotating the same frictionally and mounting it upon a spindle *C*³, formed or provided on the bracket B. This spindle is engaged by a socket *C*⁴, formed

in an upwardly-extending hub C^5 , rigidly secured to the base C^6 of the inking-roller. As will be presently described, the ink is fed to the cavity C^7 and the flow thereof is governed by a regulator D of suitable form and construction. The preferable form of regulator consists of a sleeve provided with openings d , registering with the openings c^2 of the roller C . As best illustrated, these openings are formed at one side thereof with the grooves d' leading therefrom.

When the sleeve D is inserted to its normal position within the roller C , no flow of the ink is allowed, since these parts are so formed that the openings c^2 and d are out of alignment with each other. However, by turning the sleeve D within the roller C , as will be presently set forth, the grooves d' , and finally the openings d , may be registered with the openings c^2 . These grooves are a feature of great advantage, since when in operation the ink-containing roller is revolved with considerable rapidity, and the centrifugal force generated causes the ink to flow with a greater force than desired when the openings c^2 and d are registered with each other, even though, as illustrated, these openings are few in number and of comparatively small size. However, by adjusting or partially rotating the sleeve D the flow may be regulated to a nicety, as desired, since as the sleeve is adjusted the grooves d' are registered with the openings c^2 , and as these grooves grow gradually larger in area a consequent increasing flow of the ink is produced until the desired feed is produced. This feature is of particular advantage, since it enables my inker to be used with different kinds of ink, as must necessarily be the case when the same is desired for use upon different printing or marking machines.

Provided at the upper part of the sleeve D is the disk or plate D' , preferably formed integral therewith and provided with the opening D^2 , into which the ink is readily inserted without withdrawing said sleeve from the roller C . Above said disk is the filling-piece or cover E , which is secured to said disk by means of suitable lugs or pins e , secured to said disk and engaging openings e' in the cover E . As best seen in Fig. 2, the said filling-piece is provided with the outwardly-projecting pin e^2 , which engages a right-angular slot or cut-out c^3 in the said roller C , securely retaining the parts together and allowing the adjusting movement of the sleeve D within the roller C to be readily determined by the position of said pin within the slot. It will be noted that one extremity of the slot or guide c^3 extends horizontally and the other extremity extends vertically to the edge of the sleeve C to admit the entrance of the pin e^2 .

Rigidly secured to the disk D' is a projecting pin D^3 , passing through an opening in the filling-piece E , and provided at the top with a nut D^4 , screwing thereupon and firmly

securing said filling-piece in its desired position upon the pin e' .

In order to best cover the opening D^2 , I provide on the under side of the filling-piece E the rubber packing D^5 , which fits over the opening D^2 . Diametrically opposite to said piece D^5 is a like piece D^6 , which brings about the even bearing of the filling-piece E and prevents cramping of the parts.

Contacting with the feeding-surface of the roller C is the intermediary roller F , which is preferably provided with a face of gelatine or other suitable yielding substance, and is revolved continuously by means of suitable gearing or other power-transmitting mechanism F' , connecting the shaft f of said roller to the shaft a' of the marking-roller a .

The ink-containing roller C is preferably revolved by friction with the roller F , and this can be increased at will by loosening the screw c' , forcing together said rollers, and then tightening the screw. Contacting with the roller F , and also with the marker a at each revolution thereof, is the ink-distributing roller G , which thus feeds the ink to the marker. This roller is provided with a face of felt or other suitable yielding material, and is movable toward the auxiliary roller F in order to increase the friction between said rollers and render positive the driving of the roller G by the roller F .

As best seen in Fig. 4, the pivotal pin G' of the roller G is provided with its lower extremity screw-threaded and engaging a sliding piece g , working in a slot b in the under side of the bracket B . This block g is provided with the upwardly-extending portion g' , of less width than the base of the sliding piece g , and guided in the slot b' . When the pivotal pin G' is screwed downward, the face g^2 , formed upon said block, is drawn against the face b^2 of the bracket B , and the friction of the parts holds said block and pin in their adjusted position. In order to facilitate the revolution of the roller G , it is advisable to interpose a washer between the same and the bracket B , as, while it is necessary that the said roller should be held in its adjusted position, it is also necessary that it should revolve with great ease, so that but little wear will be occasioned. This arrangement of the ink-containing roller, inking or distributing roller, and auxiliary roller brings about a very even distribution of the ink, which is an essential point, and has heretofore been but imperfectly produced. This even distribution is further aided by an evener H , which preferably consists of a roller journaled in a bracket H' , mounted upon the spring I , which is secured to a post I' , provided upon the bracket B . The evening-roller H thus bears against the distributing-surface of the ink-containing roller with a constant pressure and evenly spreads the ink thereupon before it is taken or wiped off by the roller F .

In some cases it frequently becomes advisable to use an additional evening-roller, and this I prefer to mount so as to operate upon the intermediary roller F. This second evening-roller J is preferably movable up and down the periphery of the roller F, and this desirable result I obtain by loosely mounting the said roller upon its pivotal pin *j*, forming a cam-face *J'* upon the lower extremity thereof, and engaging the same with a pin or lug *j'*, provided upon its supporting-post.

The ink-distributing roller is preferably revolved by friction, and it will be seen that upon its operation the said evening-roller J is moved up and down, according to the engagement of the elevation or depression of its uneven surface with the pin *j'*.

In order to render my inker effective, it is necessary that the same be adjustable toward and away from the marker D, and this is preferably produced by pivoting said bracket by a pin *B'*, which engages a slot *B²* in the bracket. In order to produce the best results, it is necessary, however, to effect a fine adjustment of the bracket, and accordingly, as in my previous application, I provide therein a slot *B³*, which engages a pin *B⁴*, projecting from the frame A. Guided in the bracket B and entering the slot *B³* is a screw *B⁵*, the extremity of which bears against the upwardly-projecting lug or pin *B⁴*. When desired to adjust the bracket B upon the table A, the screw or bolt *B⁵* is loosened and the screw *B⁵* is then operated to adjust the same to the desired position, whereupon the bolt *B⁵* is screwed downward, retaining the bracket in its desired adjusted position.

The operation of my invention will be readily perceived from the foregoing, and it will be readily understood that the feeding of the ink is positive, and that the same is distributed very evenly upon the die or marker D, thus rendering the impression or stamp thereof clear and effective. It will, however, be understood that considerable change may be made in the relative construction and arrangement of the parts of my invention without departing from the spirit thereof. Hence I do not limit myself to its precise described form and construction.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of a marker, a loosely-mounted ink-feeding roller, a bearing for said roller adjustable toward said marker, one or more intermediary rollers mounted on said bearing for conveying motion to the ink-feeding roller and for conveying the ink from the feeding-roller to the marker, power-transmitting mechanism between said marker and one or more of the intermediary rollers for positively driving the same, and means, substantially as described, for adjusting one or more of said intermediary rollers toward said ink-feeding roller, substantially as and for the purpose set forth.

2. The combination of a marker, a supporting-spindle, a loosely-mounted ink-feeding roller detachably mounted on said spindle, one or more intermediary rollers for conveying motion to the ink-feeding roller and for conveying the ink from the feeding-roller to the marker, power-transmitting mechanism between said marker and one or more of the intermediary rollers for positively driving the same, and means, substantially as described, for adjusting said ink-feeding roller toward one of said rollers, substantially as and for the purpose described.

3. The combination of a rotating marker, a loosely-mounted ink-feeding roller, two or more intermediary rollers, one of said rollers being driven positively and the other or others by frictional contact, and means, substantially as described, for adjusting the ink-feeding roller toward said positively-driven intermediary roller and for adjusting the frictionally-driven roller toward the marker, substantially as and for the purpose specified.

4. The combination of a marker, a loosely-mounted ink-feeding roller, one or more intermediary rollers for conveying the ink from the ink-feeding roller to the marker, means, substantially as described, for adjusting one of said intermediary rollers toward the marker, and a yielding evening-roller for effecting a uniform feeding of the ink, substantially as described.

5. The combination of a marker, a loosely-mounted ink-feeding roller, one or more intermediary rollers for conveying the ink from the feeding-roller to the marker, power-transmitting mechanism, substantially as described, between said marker and one of the intermediary rollers for positively driving the same, an evening-roller bearing against the ink-feeding roller and revolved by frictional contact therewith, and means, substantially as described, for adjusting the ink-feeding roller toward said positively-driven intermediary roller and for adjusting the frictionally-driven roller toward the marker, substantially as specified.

6. The combination of a marker, a bracket movable toward said marker, adjusting means, substantially as described, for adjusting the bracket toward the marker, a loosely-mounted ink-feeding roller supported on said bracket, one or more intermediary rollers supported on said bracket for conveying the ink from the ink-feeding roller to the marker, and power-transmitting mechanism, substantially as described, between said marker and one of said intermediary rollers, substantially as and for the purpose set forth.

7. The combination of a marker, a supporting-bracket movable toward said marker, means, substantially as described, for adjusting the supporting-bracket toward the marker, a loosely-mounted ink-feeding roller supported on said bracket, two or more intermediary rollers supported on said bracket with one of said rollers driven positively and the other

by frictional contact, and a movable support guided in said bracket and forming a journal for said frictionally-driven intermediary roller, substantially as and for the purpose described.

8. In an inking-roller, the combination of the two-part frame, one within the other, openings through the wall of one of said parts for forming a feeding-surface, openings through the wall of the other of said parts adapted to register with said former openings, said latter openings being of less combined area than the former openings, and grooves leading from one of the latter openings for conveying the feed of the ink, substantially as and for the purpose specified.

9. In an inking-roller, the combination of the two-part frame, one within the other, openings in said separate parts adapted to register with each other, and grooves leading from one or more of the openings in one of said parts, said grooves gradually decreasing in area as they recede from the opening from which they extend for varying the feed of the ink, substantially as and for the purpose set forth.

10. In an inking-roller, the combination of two sleeves movable one within the other, a guideway e^3 in one of said sleeves having its extremity extending to the edge of said sleeve, a pin in the other sleeve movably mounted within said guide, and openings through the wall of said sleeves adapted to register with each other for feeding the ink, substantially as and for the purpose described.

11. In an inking-roller, the combination of two sleeves movable one within the other, a guide in one of said sleeves, a pin in the other sleeve movably mounted within said guide, openings through the wall of said sleeves adapted to register with each other for feeding the ink, and grooves leading from one or

more of the openings in one of said sleeves, said grooves gradually decreasing in area, substantially as and for the purpose specified.

12. In an inking-roller, the combination of a pair of sleeves movable within each other and having openings in their wall for feeding the ink, a partition in one of said sleeves for closing the inking-roller and formed with an opening for allowing the inlet of the ink, and a cap removably secured over said opening for closing the same, substantially as and for the purpose described.

13. The combination of a marker, a bracket, a spindle mounted on said bracket, an ink-feeding sleeve detachably connected to said spindle, and a second sleeve movable within the former sleeve, separate openings in the wall of the separate sleeves for feeding the ink, substantially as and for the purpose specified.

14. In an inking-roller, the combination of an outer shell or sleeve having openings in its periphery for feeding the ink to the outside thereof, an inner shell or sleeve having an interior ink-containing cavity and openings in its wall for feeding the ink from said cavity to said former openings, and grooves leading from one or more of the latter openings, said grooves gradually decreasing in depth and in width for varying the feed of the ink, and means, substantially as described, for adjusting the separate shells or sleeves, substantially as and for the purpose set forth.

In testimony whereof I have hereunto signed my name, in the presence of two attesting witnesses, at the city of New York, in the county of New York, in the State of New York, this 25th day of October, 1889.

MATTHEW J. DOLPHIN.

Witnesses:

HARRY WOLFE,
FREDERICK C. DEXTER.