

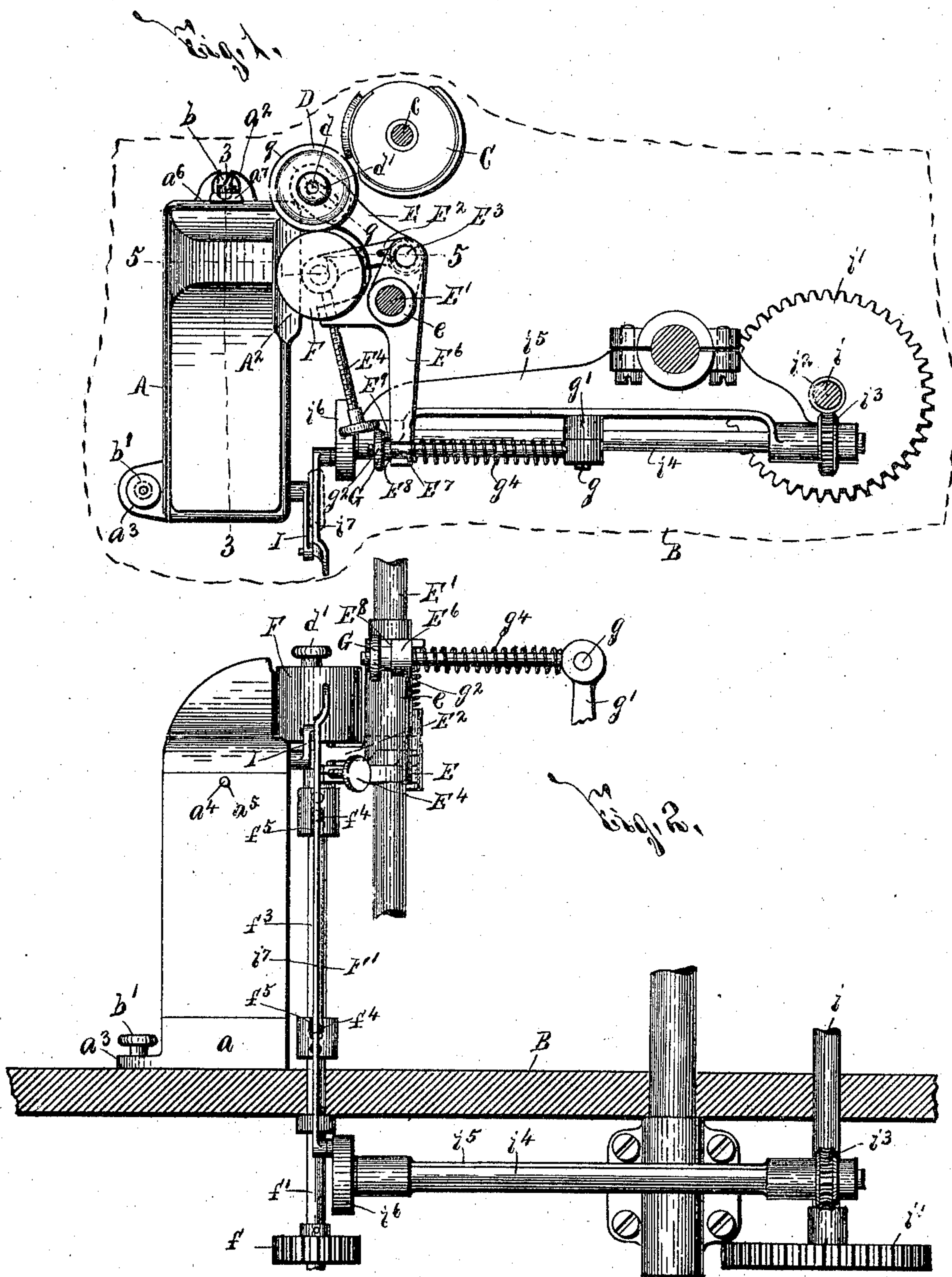
(No Model.)

3 Sheets—Sheet 1.

F. G. JAHN.
INKER.

No. 575,301.

Patented Jan. 12, 1897.



WITNESSES:

H. Chase,
C. Schenck,

INVENTOR

Frederick G. Jahn

BY

Kryff, Wilkinson & Parsons
ATTORNEYS.

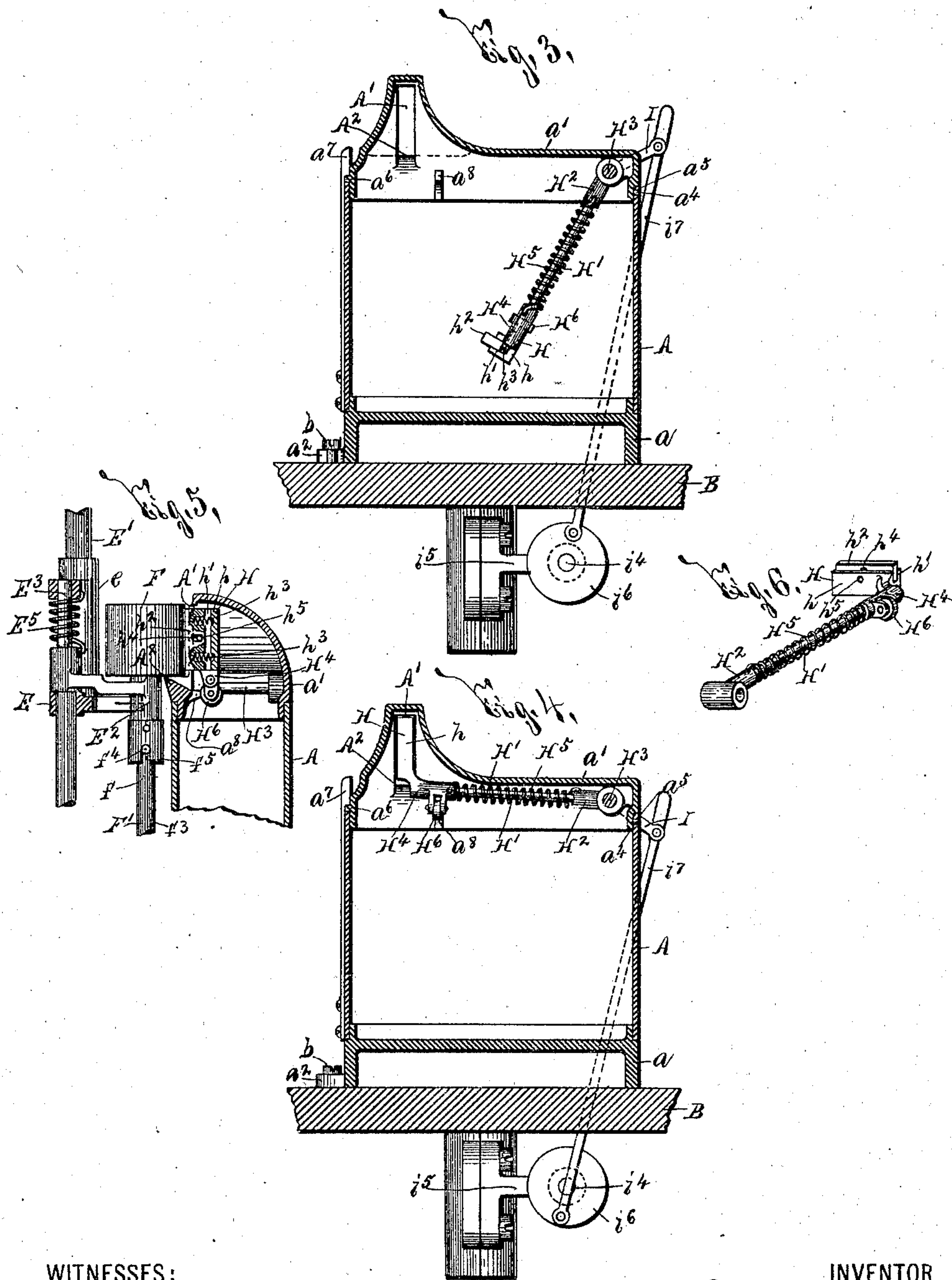
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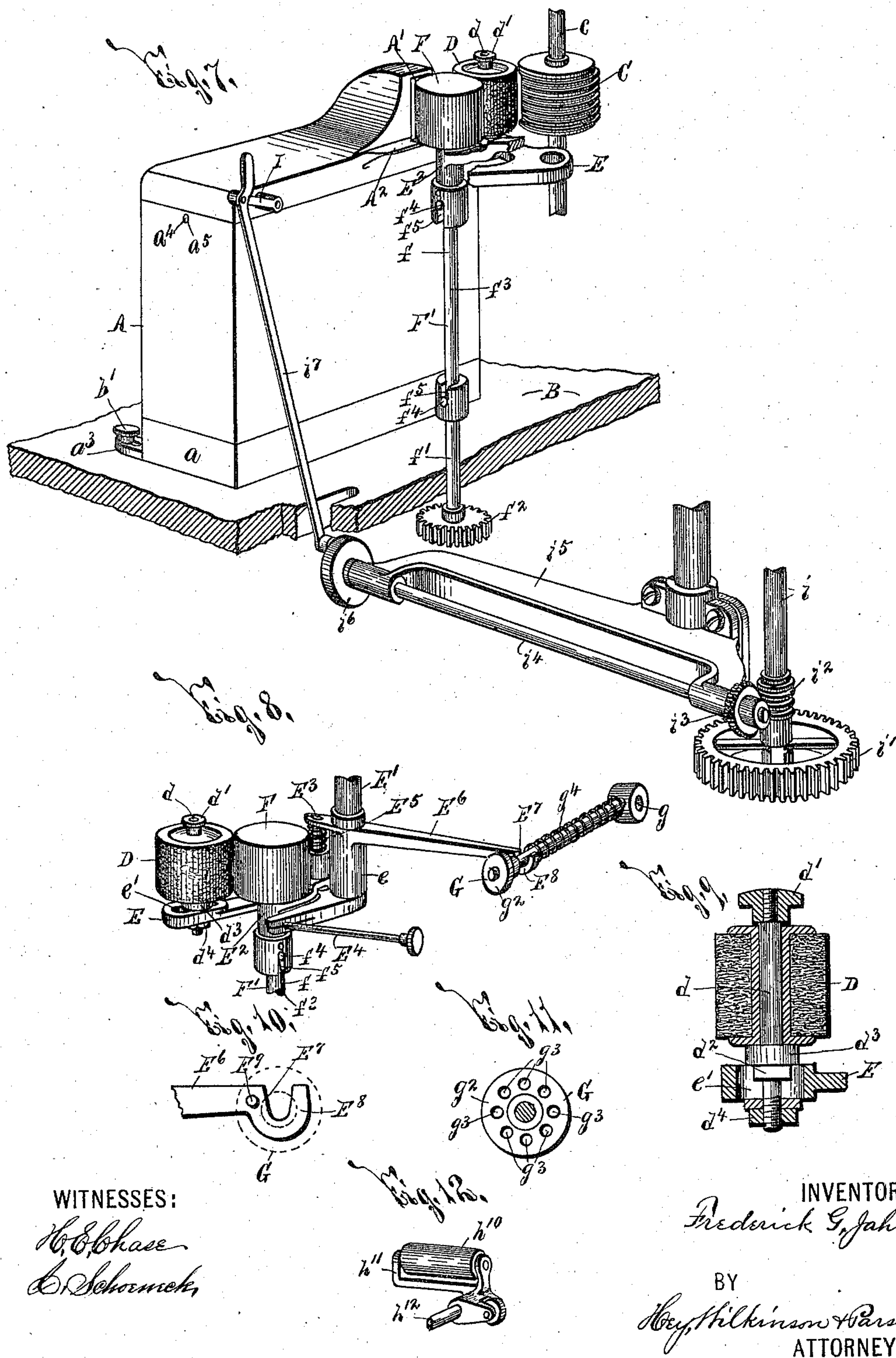
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3 Sheets—Sheet 3.

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UNITED STATES PATENT OFFICE.

FREDERICK G. JAHN, OF BROOKLYN, NEW YORK, ASSIGNOR TO MATTHEW J. DOLPHIN, OF SAME PLACE.

INKER.

SPECIFICATION forming part of Letters Patent No. 575,301, dated January 12, 1897.

Application filed February 20, 1894. Serial No. 500,837. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK G. JAHN, of Brooklyn, in the county of Kings, in the State of New York, have invented new and useful Improvements in Inkers, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to improvements in inkers particularly applicable for use with machines for stamp-canceling and post-marking mail-matter and with similar rapidly-operating mechanisms, and has for its object the production of a simple and practical device which is economically manufactured and operated, prevents separation and thickening of the coloring-matter of the ink and the entrance of dust, &c., thereto, supplies the requisite amount of ink of uniform consistency and color with a maximum degree of constancy and uniformity, is positive and effective in operation, and is durable in use; and to this end it consists, essentially, in a receptacle for the ink and an ink-applier movable within the receptacle from its normal to its operative position for agitating and feeding the ink.

The invention also consists in an ink feeding or distributing roller having a yielding face, an ink-feeding roller having a substantially rigid face for receiving the ink and engaging the face of the former roller, and in the general construction and arrangement of the parts, all as hereinafter more particularly described, and pointed out in the claims.

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

Figures 1 and 2 are respectively top plan and side elevation of my improved inker shown as operatively supported upon a portion of a supporting-frame and as connected to a rotary shaft for operating the ink-applier. Fig. 3 is a vertical sectional view taken on line 3 3, Fig. 1, the ink-receptacle, a portion of its supporting-frame, the ink-applier, the arm and the rotary disk for supporting and rocking the ink-applier, and the link between said arm and disk being the only parts illustrated,

and the ink-applier being shown in its normal or inoperative position. Fig. 4 is a similar vertical sectional view in which the ink-applier is shown in its operative position. Fig. 5 is a vertical sectional view taken on line 5 5, Fig. 1, the lower portions of the ink-receptacle and the adjacent parts being broken away. Fig. 6 is an isometric perspective of the detached ink-applier and the arm for supporting said ink-applier and agitating the ink within the receptacle. Fig. 7 is an isometric perspective of the ink-receptacle, a portion of the supporting-frame, the shaft for operating the ink-applier, the connecting mechanism between said shaft and the arm supporting the ink-applier, the ink-feeding rollers, portions of the supports for said rollers, the actuator for operating the positively-driven ink-feeding roller, and the marker to which the ink is transmitted by the rollers. Fig. 8 is an isometric perspective of the ink-feeding rollers, the supports for the rollers, and the adjusters for said supports. Fig. 9 is a detail vertical sectional view taken on line 9 9, Fig. 1. Figs. 10 and 11 are face views of a portion of one of the supports for the ink-feeding rollers and an adjustable shoulder upon the adjuster for said support, and Fig. 12 is an isometric perspective of a modified construction of the ink-applier.

The coloring-matter of ink, and particularly that used by machines for postmarking and stamp-canceling mail-matter, is more or less ununiformly ground and separates to a greater or less extent from the liquid of the ink and settles at the base of the receptacle containing the same. This undesirable result is augmented when the ink is supported within a rotary receptacle and is fed either through a series of minute perforations or by a series of rollers formed of felt or similar material having yielding or fibrous faces. Consequently the ink is of ununiform consistency, and it is practically impossible to feed the same uniformly and constantly. Moreover, the color and legibility of the impression produced by a marker supplied with ink of this character varies materially, and the impression is consequently more or less ununiform and uncertain.

My invention supports the ink in a substantially inclosed and stationary receptacle constantly stirs and mixes the ink for preventing separation and thickening of its coloring-matter, and feeds the ink positively and uniformly from the receptacle to the marker without permitting variation in the color or consistency of the ink or variation of the uniformity with which the ink is fed.

10 A represents the ink-receptacle, which is of any desirable form and construction suitable for use with the remaining parts of my invention and is preferably formed of sufficient size to contain a considerable quantity
15 of the ink. As illustrated, the receptacle consists of a stationary body or lower section *a*, removably secured in any desired manner to a suitable supporting-frame B, and a cover or top section *a'*, removably secured to the
20 body or lower section *a*. As best seen at Figs. 1, 2, 3, 4, and 7, one side of the body or lower section *a* is secured to the frame B by a screw *b*, provided upon said frame and engaged with a slotted lug *a*², projecting from
25 said side of the body or lower section *a*, and a second side of the body or lower section *a* is secured to the frame B by a thumb-screw *b'*, passed through a lug *a*³, projecting from the body or lower section *a* and having its
30 lower end engaged with the frame B. As also best seen in Figs. 1, 2, 3, 4, and 7, one side of the cover or top section *a'* is provided with a shoulder *a*⁴, which enters a corresponding perforation *a*⁵ in the body or lower section
35 *a*, and a second side of the cover is provided with a shoulder *a*⁶, removably engaged with a yielding shoulder *a*⁷, secured to the body or lower section *a*. The receptacle A is thus firmly held in operative position and
40 is readily detached at will for cleaning or other purposes, and its cover is also firmly held in position and may be easily removed for permitting entrance to the receptacle.

C represents any suitable construction of
45 marker to which the ink is fed from the receptacle A, the marker here illustrated being shown as rotary and as mounted upon a shaft *c*. The marker forms no part of my present invention, and consequently it is unnecessary
50 to further illustrate or describe the same.

D is a loosely-revoluble ink feeding or distributing roller having a flexible face engaging the face of the marker C for transmitting ink thereto. As preferably constructed the
55 roller D is provided with a face of felt and is adjustably secured to a movable support E, provided with a bearing or barrel *e*, movably supported or pivoted upon a rod or other support E', which, if desired, may be secured to
60 the frame B. A spindle *d* for the roller D is passed lengthwise therethrough and is provided at its upper end with a removable nut *d'*, arranged above the upper face of the roller D. The lower end of the spindle *d* is passed
65 through a slot *e'* in the support E and is provided with a shoulder *d*², movable in said slot, a shoulder *d*³, resting upon the top face

of the support E, and an adjustable shoulder *d*⁴, bearing against the lower face of said support.

F is an ink-feeding roller provided with a substantially rigid face, to which the ink is fed by the ink-applier presently described, and, as clearly seen in the drawings, the face of this roller bears against the face of the
75 loosely-revoluble roller D and revolves the same for feeding the ink from the roller F to the roller D and thence to the marker C.

The roller F is mounted upon a spindle *f*, journaled in a support E², pivoted to a rod E³,
80 carried by the support E, and said roller is alined with an opening A' in an upright wall of the cover or top section *a'* of the ink-receptacle, and a portion of its face projects beyond the upper end of a face A² of the cover
85 or top section *a'*, projecting downwardly within the receptacle A for conducting within the same any ink dripping from said portion of the roller F or the ink-applier presently described. A suitable adjuster or screw E⁴ is
90 movable in the support E and bears against the support E² for varying the position thereof and forcing the roller F against the roller D and varying its frictional engagement therewith. A spring E⁵ is secured to the support
95 E and bears against the support E² for forcing the support E² against the adjuster E³.

The roller F is revolved by an actuator of any suitable form, size, and construction, here illustrated as a shaft *f'*, provided with a
100 gear-wheel *f*², to which motion is communicated by any suitable form of power-transmitting mechanism, not necessary to herein illustrate or describe. This actuator or shaft
105 *f'* is revolved in fixed bearings, and as the roller F is necessarily adjustably supported I connect the shaft *f'* to the spindle *f* by a flexible connection F', consisting of a section
110 *f*³ of a shaft having its opposite ends provided with projecting pins *f*⁴, engaged with slots *f*⁵ in heads provided upon the adjacent ends of the spindle *f* and the shaft *f'*. It is evident, however, that other constructions of flexible connections may be interposed between the spindle *f* and the shaft *f'*.
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It is extremely desirable to adjust the support E, carrying the ink-feeding rollers D F, and consequently I provide said support with a projecting arm E⁶, formed with a groove E⁷, and an engaging face E⁸, provided with an
120 engaging shoulder E⁹. A suitable adjuster G is engaged with the arm E⁶ for varying its position, and consists, preferably, of a rod having one extremity mounted upon a pivot *g*, carried by any suitable support *g'*, only a portion of which is here illustrated, and its other
125 extremity movable within the groove E⁷ and provided with an adjustable shoulder *g*², movable lengthwise thereon and bearing against the face E⁸ and provided with sockets *g*³ for
130 receiving the shoulder E⁹. A spring *g*⁴ is mounted on the adjuster G for forcing the arm E⁶ of the support E against the shoulder *g*² of the adjuster G and engaging the shoul-

der E⁹ with the socket g³, registered therewith. This is a particularly simple, practical, and effective mechanism for feeding the ink from the ink-applier to the marker C, and as but a single roller having a flexible face is used the liability of straining and separating the coloring-matter of the ink when in transit to the marker is reduced to a minimum. Moreover, as the face of the positively-driven roller is comparatively rigid and frictionally engages the additional feeding or distributing roller, the speed with which the ink is fed by the distributing-roller is uniform, the wear upon the distributing-roller is reduced to a minimum, and the frictional engagement of the positively-driven roller with the loosely-revoluble distributing-roller prevents the same from losing its normal circular form, which result would take place were it engaged by a second roller having a yielding face. The ink-feeding rollers and their supports are also so constructed as to be readily adjustable toward each other and toward the marker, and this great capability of adjustment is an additional feature of advantage of the described construction of ink-feeding rollers and supports therefor.

H represents the ink-applier, which is of any suitable form, size, and construction for feeding the ink from the receptacle A to the roller F. The preferable construction of ink-applier consists of a frame h, formed with a groove or guideway h', and a feeding-strip h², yieldingly supported in the groove or guide h' and formed with a suitable feeding-face which, when in its operative position, is alined with and caused to project through the outlet-opening A' for feeding the ink to the roller F or any other suitable ink-feeding part. Suitable springs h³ are supported by the frame h and are operated to force the feeding-piece h² to its normal position relative to the frame h and permit the same to yield or move within the groove or guide h' when the feeding-strip is engaged with the roller F. The feeding-strip h² is provided with a slot h⁴ for receiving a pin h⁵, which is secured to the frame h and acts as a stop for said strip and as a guide therefor when the strip is forced backwardly against the action of the springs h³.

It will be evident to those skilled in the art that any other feeding part may be used instead of the roller F for receiving the ink fed from the receptacle A by the ink-applier H; that said ink-applier may, if desired, be formed with a comparatively rigid instead of a yielding feeding-face, and that, providing the roller F or other part to which the ink is fed projects within the cover or top section a' of the ink-receptacle A, it is unnecessary to project the feeding-face of the ink-applier through the opening A'. It will also be evident that the roller F, to which the ink is applied, may be supported within the upper extremity of the receptacle A instead of at the outside thereof and that the ink-applier may then

feed the ink to said roller and the roller feed the ink from the receptacle A.

The preferable form of ink-applier H is arranged normally, as best seen at Fig. 3, in the lower portion of the receptacle A and is movable upwardly into alinement with the opening A', and thereby continually agitates and mixes the ink within the receptacle, preventing separation and thickening of the coloring-matter of the ink. This ink-applier is supported by an arm H', which also acts as an agitator of the ink within the receptacle A. As preferably constructed the arm H' consists of a section H², secured to a rock-shaft A³, journaled in the cover or top section a', and a rocking section H⁴, movable in a plane extending at an angle with the plane of movement of the former section and having one end suitably supported by the section H³ and the other end secured to the ink-applier H. A spring H⁵ surrounds a portion of the rocking section H⁴, and as the arm H' is elevated an antifriction-roller H⁶ upon the frame of the ink-applier H engages a face a⁸, formed upon the interior of the cover or top section a', and the ink-applier H is caused to assume an upright position and its feeding-face is alined with and projected through the opening A'.

The rock-shaft H³ projects beyond one of the upright walls of the cover or top section a' and a crank-arm I is fixed thereto for actuating the arm H'. A rotary shaft i, suitably supported by the frame B, is connected to the crank-arm I for rocking the same, and when my improved inker is used in connection with a machine for postmarking and stamp-canceling mail-matter any of the shafts of said machine may be used as the shaft i, providing it runs at a suitable speed for effecting the desired number of oscillations of the crank-arm I and the arm H' for supporting and operating the ink-applier. As here illustrated, this shaft i is provided with a gear-wheel i', to which power is transmitted by any desired mechanism, not necessary to herein illustrate or describe, and is also formed with a worm i², meshing with a worm-wheel i³, secured to a shaft i⁴. A bracket i⁵ is suitably secured to the frame B or other desirable support and is formed with journaled bearings for the shaft i⁴, and said shaft is provided with a disk i⁶, eccentrically connected to one extremity of a link or pitman i⁷, having its other end provided with a hand-piece i⁸, removably engaged in any desired manner with the crank-arm I for transmitting motion thereto. As the shaft i rotates, the crank-arm I is rocked or oscillated, and each revolution of the disk i⁶ oscillates the ink-applier from its normal position in the lower portion of the receptacle A into its operative position in alinement with the opening A' for feeding the ink from the receptacle A to the roller E, and then returns said ink-applier to its normal position.

The shaft i is suitably connected to the actuator or shaft f' for the ink-feeding roller F by

any suitable construction of power-transmitting mechanism, not necessary to herein illustrate or describe, so that said shafts are revolved conjointly.

5 At Fig. 12 I have shown a slightly-modified form of my ink-applier, in which the ink-feeding piece consists of a roller h^{10} , journaled in a frame h^{11} , secured to a movable section h^{12} of a supporting-arm.

10 The operation of my invention, which will be readily understood upon reference to the description and the accompanying drawings, is as follows: The ink-applier is continually oscillated from its normal to its operative
15 position for feeding the ink, and the movement of said ink-applier and its supporting-arm continually agitates and stirs the ink, preventing separation and thickening of its coloring-matter and maintaining the same at
20 a uniform consistency, and the ink-feeding rollers feed the ink from the ink-applier to the marker constantly and effectively without straining or separating the coloring-matter thereof, and consequently the impression
25 produced by the marker is of uniform color and legibility.

The parts of my invention are economically manufactured and assembled and are evidently durable in use, and the entrance of
30 dust, &c., to the ink is practically prevented, as, with the exception of the small opening in its cover or top section, from which the ink is fed, the ink-containing receptacle is entirely closed. The ink-receptacle is also readily
35 cleaned and refilled. The inking-rollers and the supports therefor are readily and practically adjustable, and owing to the peculiar construction of the foregoing parts and the ink-applier my invention requires a minimum
40 amount of attention, as the same is entirely automatic in its operation and feeds the ink with great uniformity and constancy without liability of derangement of any of its parts. It is evident, however, that the detail construction and arrangement of the parts of my inker
45 may be considerably varied without departing from the spirit of my invention. Hence I do not herein specifically limit myself to such exact detail construction and arrangement.

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

1. In an inker, the combination of a receptacle for the ink provided with an outlet-opening, and an oscillating ink-applier normally inclosed within the receptacle and movable therein for feeding the ink from said receptacle, substantially as and for the purpose described.

60 2. In an inker, the combination of a receptacle for the ink provided with an outlet-opening, an oscillating ink-applier normally inclosed within the receptacle and movable therein for feeding the ink from said receptacle, said ink-applier having its feeding-face
65 disposed normally in a substantially horizontal plane and movable into a substantially

vertical plane, and means for actuating said ink-applier, substantially as and for the purpose set forth.

3. In an inker, the combination of a receptacle for the ink, the frame of an ink-applier having a groove therein, an ink-feeding piece movable in said groove, and springs supported by the frame for holding the feeding-piece
70 in operative position, substantially as and for the purpose described.

4. In an inker, the combination of a receptacle for the ink, an arm consisting of a pivoted section, and a rocking section movable
80 in a plane arranged at an angle with the pivot of the former section, an ink-applier carried by the rocking section of the arm, and means for oscillating the pivoted section and rocking the rocking section substantially as and
85 for the purpose described.

5. In an inker, the combination of a receptacle for the ink, an arm consisting of a pivoted section and a rocking section, a spring surrounding a portion of the rocking section
90 for forcing the same to its normal position, an ink-applier carried by the rocking section of the arm, and means for oscillating the pivoted section and rocking the rocking section substantially as and for the purpose specified.

6. In an inker, the combination of a receptacle for the ink having an engaging face, an arm consisting of a pivoted section, and a rocking section, a spring for forcing the rocking section to its normal position, an antifric-
100 tion-roller supported by the rocking section for engaging said face of the receptacle, an ink-applier carried by the rocking section of the arm and means for oscillating the pivoted section, substantially as and for the purpose described.

7. In an inker, the combination of an ink-feeding roller, a receptacle for the ink having an opening therein in proximity to the roller, and an oscillating ink-applier having its feeding-face normally inclosed within the receptacle and movable through the opening for feeding the ink to the roller, substantially as and
for the purpose specified.

8. In an inker, the combination of a pivoted support, a second support pivoted to the former support, ink-feeding rollers mounted on the respective supports, means for independently adjusting said supports, and an actuator flexibly connected to one of the ink-feeding rollers, substantially as described.

9. In an inker, the combination of an adjustable support, a second support movably mounted on the former support, ink-feeding rollers mounted on the respective supports, one of said rollers being adjustable on its support, adjusters for varying the position of the supports, and a spring for holding one of the supports in its adjusted position, substantially as specified.

10. In an inker, the combination of a movable support having an engaging face provided with an engaging shoulder, an ink-feeding roller mounted on the support, and a

hinged adjuster having one extremity provided with a movable shoulder formed with sockets for receiving the shoulder of said engaging face, substantially as set forth.

5 In testimony whereof I have hereunto signed my name, in the presence of two attesting witnesses, at Brooklyn, in the county of

Kings, in the State of New York, this 10th day of February, 1894.

FREDERICK G. JAHN.

Witnesses:

ARTHUR E. PARSENS,
I. J. THOMAS.