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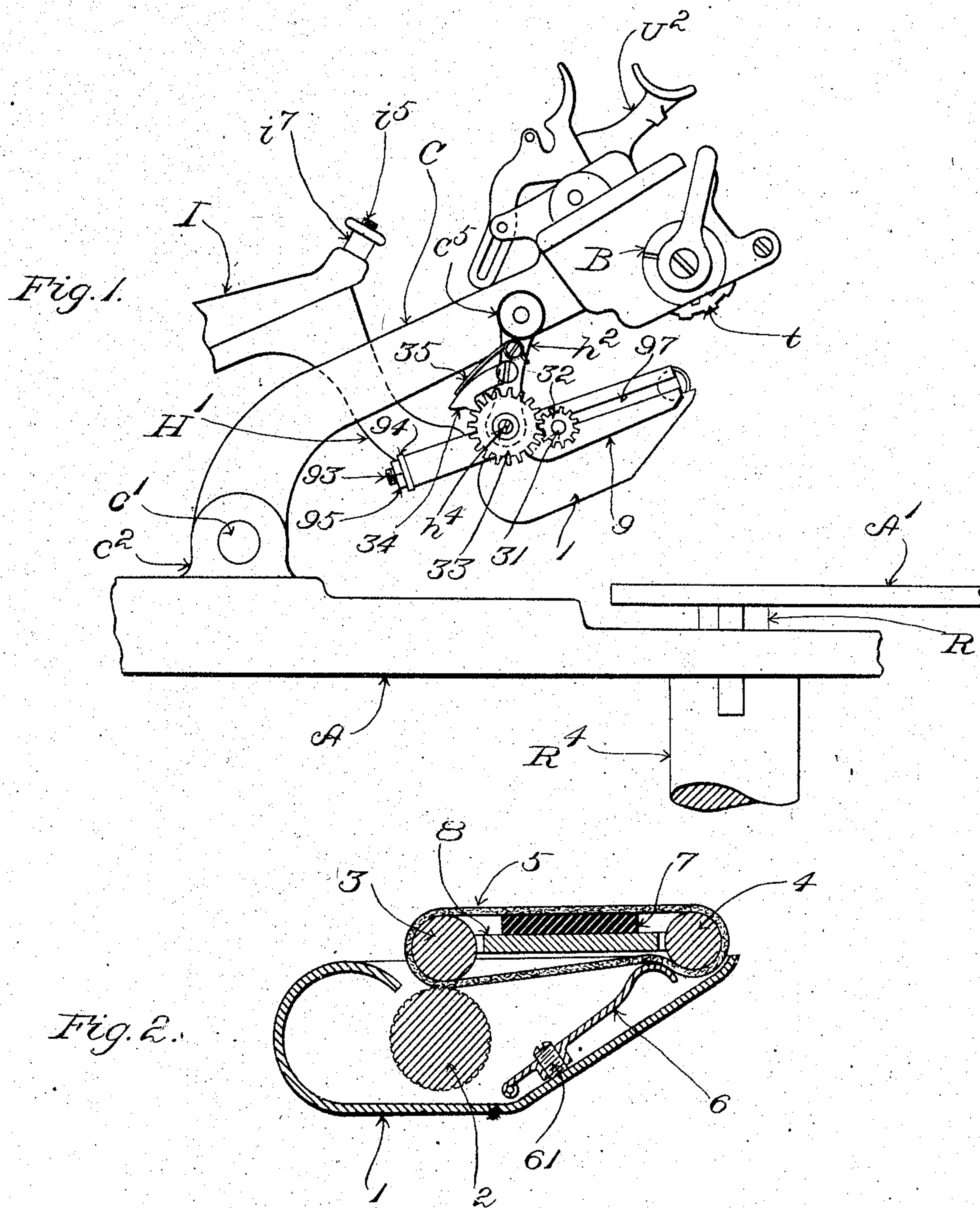
PATENTED APR. 11, 1905.

F. W. MERRICK.

INKING DEVICE FOR NUMBERING OR MARKING MACHINES OR THE LIKE.

APPLICATION FILED JULY 12, 1904.

2 SHEETS—SHEET 1.



Witnesses:
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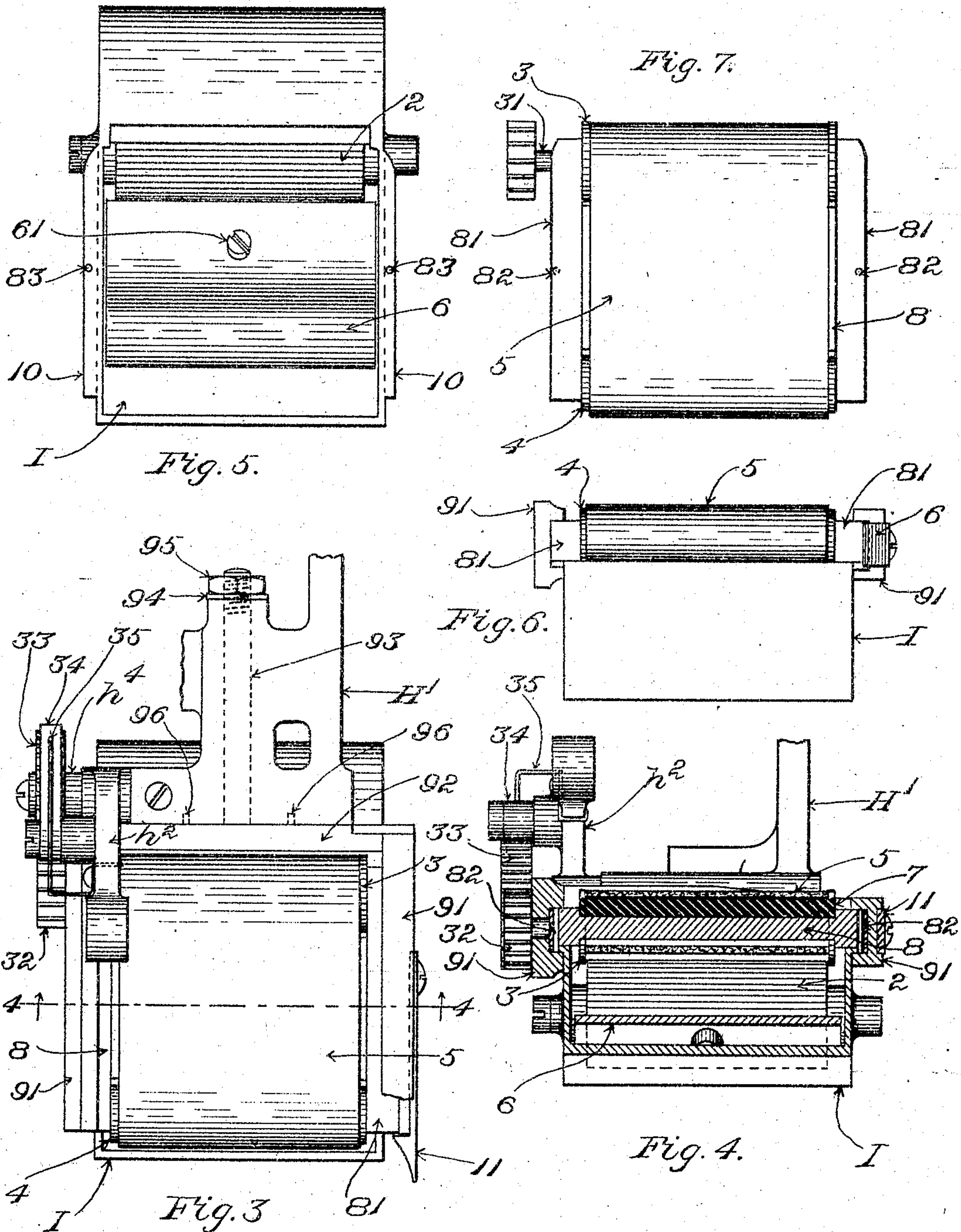
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UNITED STATES PATENT OFFICE.

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INKING DEVICE FOR NUMBERING OR MARKING MACHINES OR THE LIKE.

SPECIFICATION forming part of Letters Patent No. 786,910, dated April 11, 1905.

Application filed July 12, 1904. Serial No. 216,215.

To all whom it may concern:

Be it known that I, FRANK W. MERRICK, a citizen of the United States, residing at Boston, in the county of Suffolk, State of Massachusetts, have invented a certain new and useful Improvement in Inking Devices for Numbering or Marking Machines or the Like, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention consists in improved devices for supplying ink to the faces of the type or other printing surfaces used in numbering or marking machines and the like.

The invention is capable of being utilized in machines in general, such as have just been referred to, but in particular has been designed as an improvement upon the inking devices of machines of the type of that of United States Letters Patent to J. D. Humphrey and J. French, No. 660,512, granted October 23, 1900.

Heretofore it has been found very difficult with certain kinds of ink carrying a considerable proportion of coloring-matter or pigment in suspension to properly ink the faces of the type or the like without filling up the depressed spaces or cavities in and around the said faces with accumulations of thickened coloring-matter or pigment. It has been customary to saturate a pad of felt or other absorbent material with the ink, as in the Letters Patent aforesaid, and by making contact of the saturated pad and the faces of the type with each other ink the type for the desired impression. The thick and sticky ink tends to dry in and upon the pad, and thereby become thicker and pasty. The type on making contact with the pad indent the latter, so that the ink is forced up around the edges of the faces of the type and into the cavities or depressions in and around the same. It follows that the said cavities soon fill up, and from this cause the distinctness of the imprint or impression made by the type on the surface which the machine is employed to number or mark speedily becomes lost.

The objects of the invention are to provide inking devices which shall remedy the fore-

going difficulties and drawbacks and more especially to provide improved inking devices for use in machines on the order of that of the Letters Patent aforesaid.

The invention consists, therefore, in the improvements in inking devices which I will now proceed to present with the aid of the accompanying drawings, in which—

Figure 1 shows in side elevation portion of a power numbering and marking machine like that of the said Letters Patent with an embodiment of the invention applied thereto. Fig. 2 is a sectional view of the inking devices detached. Fig. 3 is a plan of the inking devices and their carrier. Fig. 4 is a view in vertical transverse section on line 4-4, Fig. 3. Fig. 5 shows the cup or receptacle and transfer-roll or wallower in plan. Fig. 6 is a front end elevation of the same. Fig. 7 is a plan of the apron and its supports.

In Fig. 1, A is a portion of the fixed framework of the machine; A', the vertically-movable work-support or platen; B, the type-head; *t*, the type-disks with which the type-head is provided, and C the vibrating arm on which the said type-head is mounted, the arm C being mounted pivotally at *c'* upon the lug *c''*, forming part of the said fixed framework. H' is the forward portion or member of the double arm which carries the inking-surface presently to be described. I is the rear portion or member of said double arm, and *h''* is the link which joins the forward extremity of the said portion or member H' to the arm C, the said link being pivotally connected at its upper extremity to the pin or stud *c''*, projecting from the arm *c*, and at its lower extremity to the pin or stud *h''*, projecting from one side of the portion or member H'.

The parts thus far described are or may be constructed and arranged to operate as in the Letters Patent aforesaid, in which the corresponding parts are designated by similar characters of reference.

Briefly stated, in the general operation of the machine the stock or material to be numbered or marked is applied to the platen or work support A'. The latter is raised by

means of its operating-treadle shown and described in the patent. The actuating mechanism in connection with the double arm I H' operates the said arm to cause the inking device to move forward and upward, so as to make contact with the printing-surfaces of type-disks *t* in order to apply ink thereto, and then downwardly and rearwardly, so as to withdraw from between the type-head and the work support or platen A', thus providing for the descent of the type-head to number or mark the stock or material. The actuating mechanism in connection with arm C next moves said arm to press the said surfaces of the type-disks against the said stock or material and then raises the arm C and type-head.

In Letters Patent No. 660,512 an inking-pad (designated H) is carried by the double arm I H'. In conformity with my invention I provide a cup or receptacle 1 for ink and with the same combine a traveling ink-conveying surface by means of which to apply the ink to the type or other printing surface and means to regulate the amount of ink which is carried by the said surface. I mount the said cup or receptacle upon the member H' of the said double arm I H'. In the present instance the said traveling surface consists of an endless apron 5 of suitable flexible ink-carrying material. In the illustrated embodiment of the invention within the cup or receptacle 1 I mount a wallower or transfer-roll 2, and at the top of the cup or receptacle I mount in bearings a pair of rolls 3 4, around which is passed the apron 5. The face of the wallower or transfer-roll 2 is pitted, indented, or corrugated, as shown in Fig. 2, the hollows or indentations serving to hold ink in order to carry the latter to the apron 5 as the roll 2 rotates. The roll 3 is closely adjacent the wallower or transfer-roll 2, and the apron 5 in passing between the two rolls makes contact with roll 2, thereby receiving the ink from the latter. The apron is subjected to compression between rolls 2 and 3, whereby a certain proportion of the ink is discharged from the apron. Within the cup or receptacle 1 is mounted a presser-plate or doctor 6, which is hinged or otherwise attached at its lower portion to the shell of the cup or receptacle. The free upper marginal portion of the said presser-plate or doctor approaches somewhat closely to the roll 4, as shown in Fig. 2, and compresses the apron upwardly against the periphery of the latter. The said upper marginal portion is bent into rounded form to facilitate the passage of the apron between the same and roll 4 and also in order to produce a satisfactory pressing-surface. The plate or doctor 6 serves to distribute uniformly over the surface of the apron the ink, which is received by the latter from the wallower or transfer-roll 2. Also by compressing the apron between its rounded upper portion and the roll 4 the presser plate or doctor prevents too much ink from being

carried around with the apron. For the purpose of enabling the pressure of the presser-plate or doctor against the apron to be varied, as may be required, an adjusting-screw 61 is applied to a threaded hole that is tapped through the presser-plate or doctor, the outer end of the said adjusting-screw engaging with the outer wall of the cup or receptacle 1. A cushion and backing for the upper length of the apron 5 is constituted by a sheet or pad of elastic material, as rubber, over which such length extends, the said sheet or pad resting upon a plate 8, extending across the cup or receptacle 1 between the rolls 3 and 4. By the movement of the arms I H', which carries the inking device forward and upward toward the type-head, the upper length of the apron 5 is pressed, by means of the said cushion or backing 7, against those portions of the surfaces of the type-disks *t* which are in position for printing. The plate 8 forms portion of an apron-supporting frame or carrier. The latter is furnished with side bars 81 81 at the opposite ends of the plate 8. The said side bars are provided with bearings in which the carrier-rolls 3 4 for the apron are journaled. For the support of the ink cup or receptacle and apron-supporting frame and apron upon the portion or member H' of the carrying-arm of the inking device the said portion or member has applied thereto a yoke consisting of opposite side arms 91 91 and a cross-bar 92, the said cross-bar fitting against the forward end of portion or member H' and being provided with a screw-threaded stem or pin 93, extending through a socket in the said portion or member, the projecting extremity of the said stem or pin having a washer 94 and nut 95 applied thereto for the purpose of securing the yoke in place. By means of dowel-pins 96 96, projecting from one of the contacting faces of the cross-bar 92 and portion or member H', the yoke is prevented from turning about the axis of stem or pin 93. The side arms 91 91 of the yoke are grooved longitudinally, as shown in Figs. 4 and 6, and within the said grooves are received the side bars 81 81 of the apron-supporting frame or carrier and also the outwardly-projecting lips or flanges 10 10, Fig. 5, of the cup or receptacle 1. In order to facilitate the application and removal of the said frame or carrier and cup or receptacle, the grooves of the side arms 91 91 are open at their front ends, so as to permit the said parts to be introduced or withdrawn at such ends by a movement in the direction of the length of the said side arms.

A latching device is shown at 11, Figs. 3, 4, and 6, it comprising a leaf-spring that is attached by one extremity thereof to one side arm 91, the free extremity of said leaf-spring being furnished with a nib or shoulder to take against the outer end of a side bar 81 of the apron-supporting frame and the outer end of

the corresponding lip or flange 10 of the cup or receptacle. The latch is beveled off adjacent the nib or shoulder to enable the latch to be deflected readily by the leading ends of the said lip or flange and side bar as the cup or receptacle and apron-supporting frame are slipped into place.

For the purpose of insuring proper register of the cup or receptacle and apron-supporting frame with each other dowel-pins 82 82 are applied to one thereof, herein to the side bars of the said frame, and holes are formed in the other, herein in the lips or flanges of the cup or receptacle, to receive the said dowel-pins.

Capacity for ready application of the inking device to the carrying-arm and removal therefrom and for separation of the apron-supporting frame from the ink cup or receptacle is important, inasmuch as thereby the inking device is enabled to be washed and cleaned conveniently. The cleaning operation requires to be performed frequently and is facilitated by enabling the parts to be removed and separated.

For the purpose of causing the apron 5 to travel, so as to present successive portions of its length in position to act against the type-disks *t*, a pinion 32, Fig. 1, is fixed upon one of the journals 31, Fig. 7, of the roll 3, and a gear 33 is mounted upon the stud or pin *h*⁴, projecting from the member *H'*, with capacity to turn freely upon the said stud or pin. The corresponding side arm 91 is formed with a longitudinal slot 97 to receive the journal 31, and as the cup or receptacle is slipped into place the pinion 32 passes into engagement with the gear 33. For the purpose of rotating the gearing 32 and 33 a pawl 34 is pivotally mounted upon the adjacent link *h*², connecting the member *H'* with the arm *C*, the said pawl being yieldingly pressed against the teeth of the gear-wheel 33 by means of a spring 35, which is applied to the said link. The swinging movements of the link *h*², which are occasioned by the advance and retraction of the double arm *I H'*, cause the pawl 34 to engage and actuate the gear 33, and the latter thus drives the pinion 32 and the rolls and apron of the inking device. In order to prevent the ink within the cup or receptacle 1 from being thrown from the latter at the rear side thereof by the movements of the arm *I H'*, the rear wall of the shell of the cup or receptacle is curved over and forwardly at the top, so as to retain the ink when the latter tends to pass rearwardly within the cup or receptacle and deflect it forward against the wallower or transfer-roll 2. The cup or receptacle is closed at front and top, respectively, by means of the presser-plate or doctor 6 and the apron 7, respectively.

Among the advantages of my invention are the fact that the exposed portion of the apron is charged with only sufficient ink to properly supply the type or other printing surfaces for

an impression. By causing each portion of the length of the apron to travel at intervals in contact with the wallower or transfer-roll 2 fresh additions of ink are made to the apron from time to time, and thereby the ink contained in the latter is prevented from quickly drying out and becoming thick and pasty. The progressive travel of the apron presents a different portion of its length to the type or other printing surfaces for every impression, and thus the apron is prevented from becoming deeply indented by the type, &c., as in the case of a pad. The tendency of the depressed spaces and cavities in and around the faces of the type to fill up with accumulations of thickened coloring-matter is practically obviated.

I claim as my invention—

1. In a numbering or marking machine, and the like, in combination, a type-head movable to press the printing-surface against the article to be numbered or marked, and inking devices therefor comprising, essentially, a cup or receptacle for ink, a traveling ink-conveying surface charged with the contents of the latter, means to advance said traveling surface intermittingly to present fresh portions thereof to the said printing-surface, and a moving carrier for the cup or receptacle and traveling surface by which these latter are operated in unison, the movement of the said carrier operating to press the said traveling surface against the printing-surface and then retract the inking devices.

2. In a numbering or marking machine, and the like, in combination, a type-head movable to press the printing-surface against the article to be numbered or marked, and inking devices therefor comprising, essentially, a cup or receptacle for ink, a traveling ink-conveying surface charged with the contents of the latter, means to advance said surface intermittingly to present fresh portions thereof to the said printing-surface, means to distribute the ink uniformly upon the said surface and prevent an excess from being carried forward thereby, and a moving carrier for the cup or receptacle and traveling surface by which these latter are operated in unison, the movement of the said carrier operating to press the said traveling surface against the printing-surface and then retracting the inking devices.

3. In a numbering or marking machine, and the like, in combination, a type-head movable to press the printing-surface against the article to be numbered or marked, and inking devices therefor comprising, essentially, a cup or receptacle for ink, an endless apron charged with the ink contained in the cup or receptacle, rolls around which said apron extends, means to feed the said apron, and a moving carrier for the said cup or receptacle and the rolls and apron cooperating therewith, the movement of the said carrier operating to

press the said apron against the printing-surface and then retract the inking devices.

4. In a numbering or marking machine, and the like, in combination, a type-head movable
5 to press the printing-surface against the article to be numbered or marked, and inking devices therefor comprising, essentially, a cup or receptacle for ink, an endless apron charged
10 with the ink contained in the cup or receptacle, rolls around which the said apron extends, means to feed the said apron, means to distribute the ink uniformly upon the said apron and regulate the amount carried forward thereby, and a moving carrier for the said
15 cup or receptacle and the devices coöperating therewith, the movement of the said carrier operating to press the said apron against the printing-surface and then retract the inking devices.

20 5. In a numbering or marking machine, and the like, in combination, a type-head, and inking devices therefor comprising, essentially, a cup or receptacle for ink, a transfer-roll in said cup or receptacle, an endless apron in
25 contact with said transfer-roll, supporting-rolls for the said apron, a backing for said apron intermediate said supporting-rolls to bear the corresponding portion of the apron against the printing-surface, a presser or
30 doctor coöperating with said apron, and means to feed said apron.

6. In a numbering or marking machine, and the like, in combination, a type-head, and ink-

ing devices therefor comprising, essentially, a cup or receptacle for ink, a transfer-roll in 35 said cup or receptacle, an endless apron in contact with said transfer-roll, a presser or doctor coöperating with said apron, means to feed said apron, and a moving carrier on which the said inking devices are mounted. 40

7. In a numbering or marking machine, and the like, in combination, a type-head, and inking devices therefor comprising a cup or receptacle for ink, an endless traveling apron receiving ink from the said cup or receptacle, 45 an apron-supporting frame separable from said cup or receptacle, and a movable carrier to which the said frame and cup or receptacle are detachably applied.

8. In a numbering or marking machine, and 50 the like, in combination, a type-head, and inking devices therefor comprising an ink cup or receptacle, an endless apron receiving ink from the said cup or receptacle, an apron-supporting frame separable from said cup or receptacle, and a moving carrier having side 55 arms receiving and supporting between them the said cup or receptacle and apron-supporting frame.

In testimony whereof I affix my signature in 60 presence of two witnesses.

FRANK W. MERRICK.

Witnesses:

CHAS. F. RANDALL,

EDITH J. ANDERSON.