

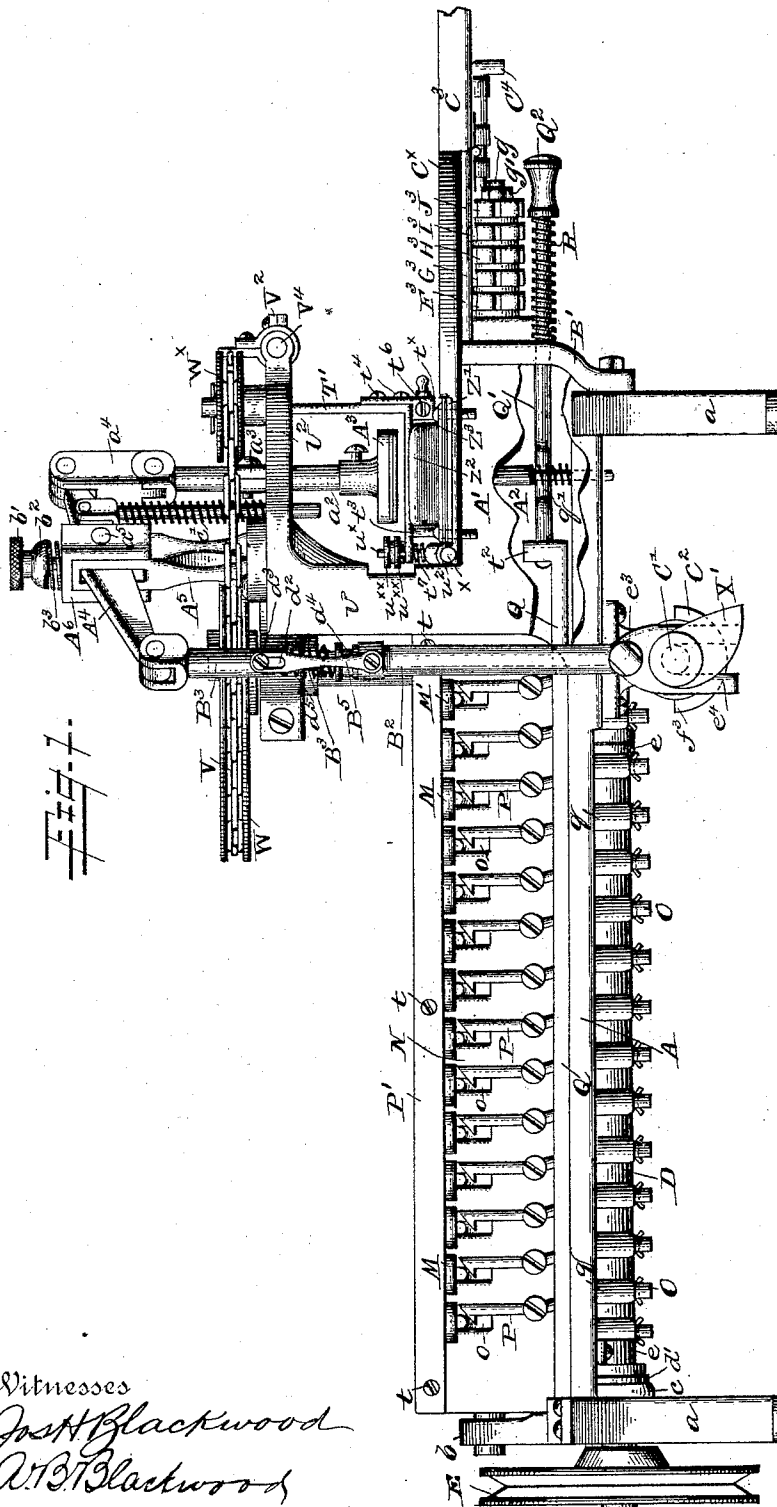
(No Model.)

6 Sheets—Sheet 1.

J. D. HUMPHREY..
NUMBERING AND MARKING MACHINE.

No. 475,688.

Patented May 24, 1892.



Witnesses

John H. Blackwood
A. B. Blackwood

Inventor
James D. Humphrey,
by
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Attorney

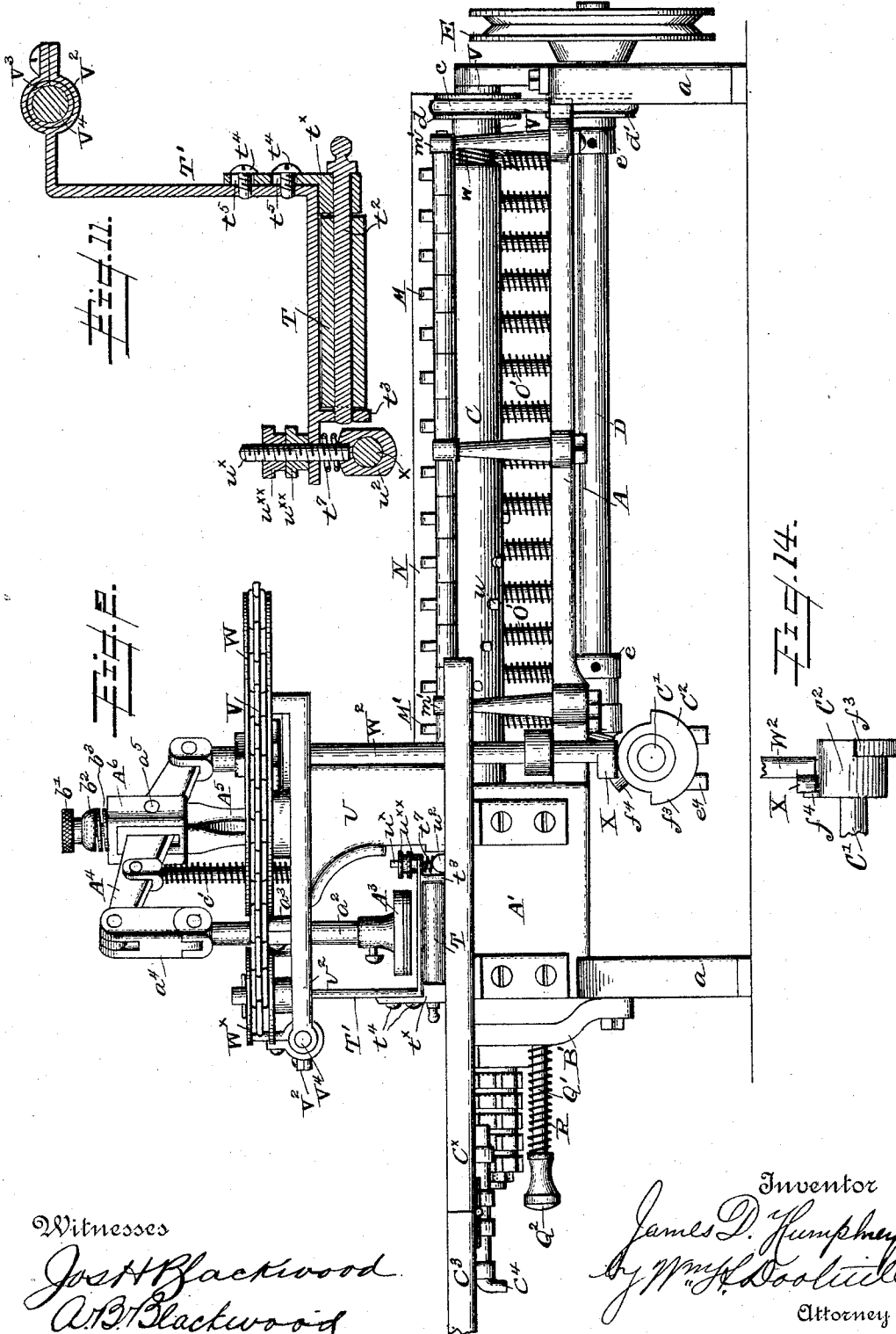
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6 Sheets—Sheet 3.

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~~Fig.~~ 8.

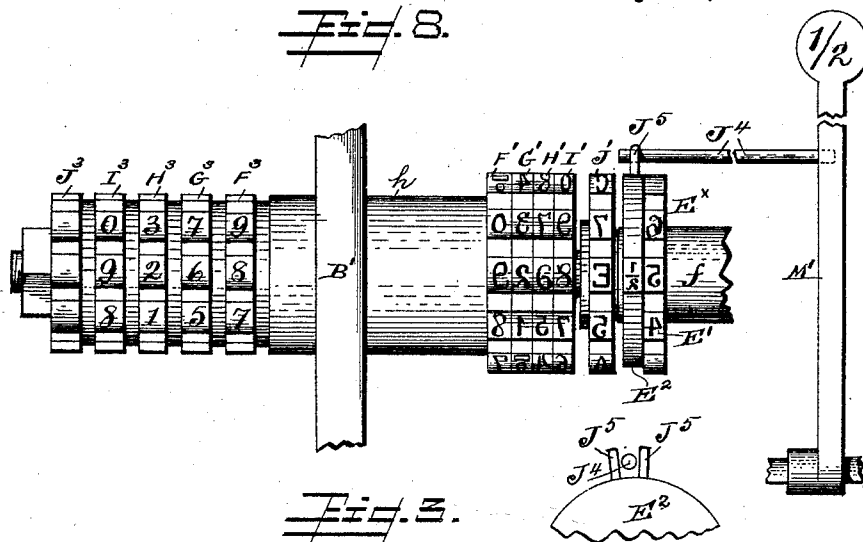
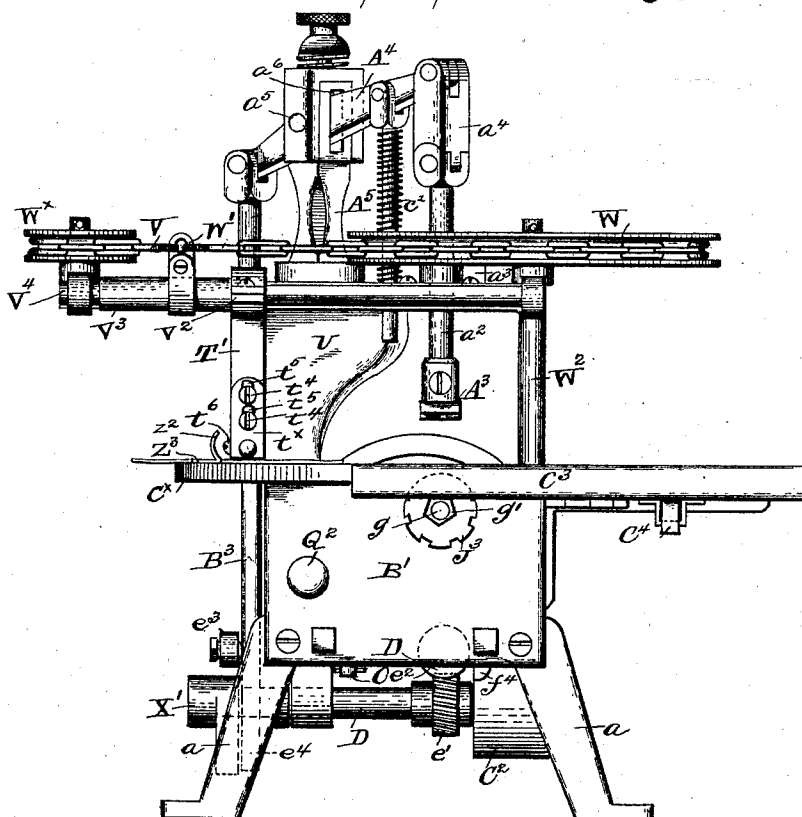


Fig. 3.



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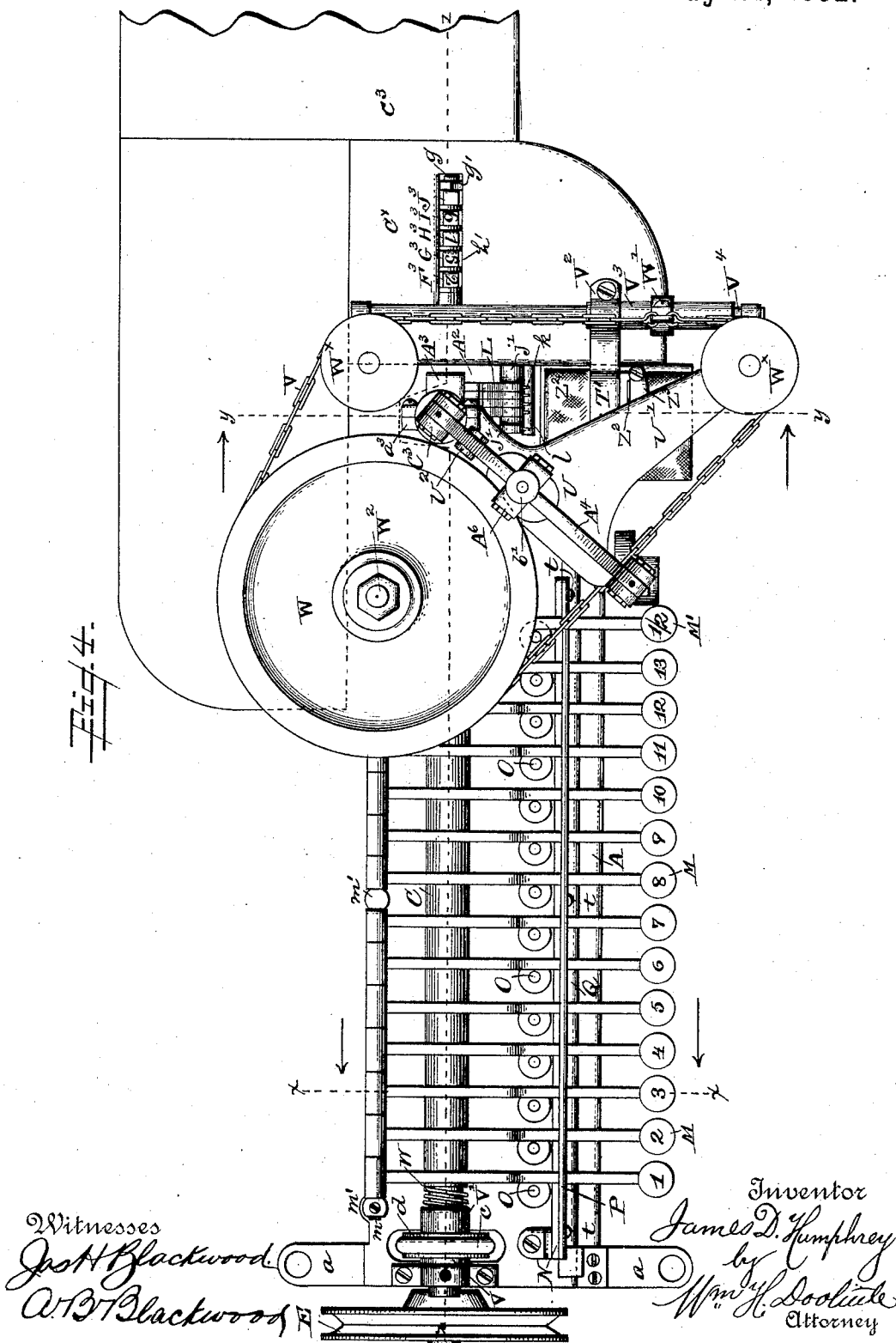
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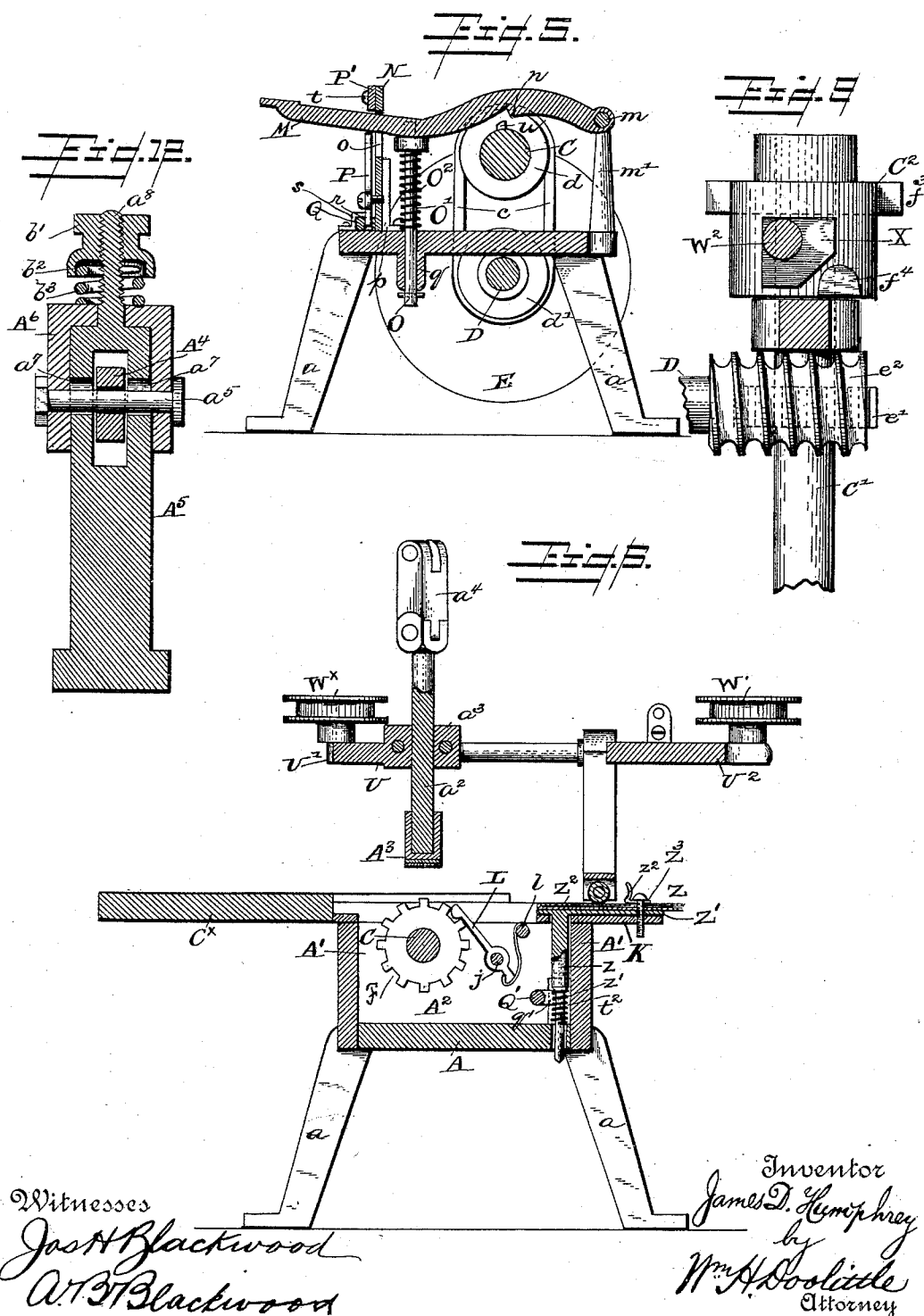
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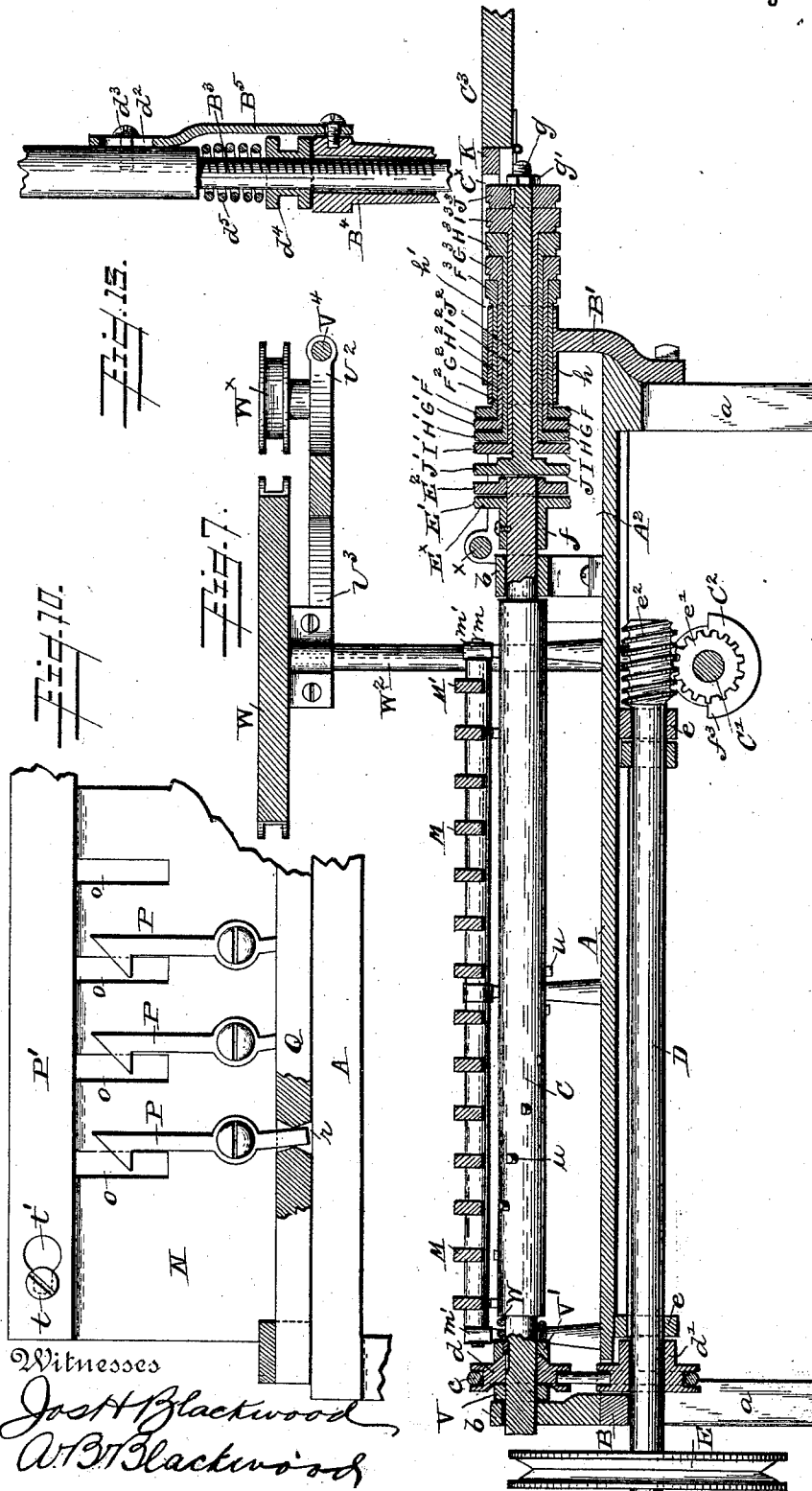
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UNITED STATES PATENT OFFICE.

JAMES D. HUMPHREY, OF TOWANDA, PENNSYLVANIA.

NUMBERING AND MARKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 475,688, dated May 24, 1892.

Application filed April 25, 1891. Serial No. 390,365. (No model.)

To all whom it may concern:

Be it known that I, JAMES D. HUMPHREY, a citizen of the United States, residing at Towanda, in the county of Bradford and State of Pennsylvania, have invented certain new and useful Improvements in Numbering and Marking Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention consists of a machine designed especially for stamping boots and shoes, &c., with numbers and letters to indicate their size and width and the number of their containing-case. Although particularly adapted to this purpose, the machine can be used whenever it is desired to stamp or print upon any suitable object numbers, letters, or other characters or signs and for which hand-stamps are now generally employed.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation; Fig. 2, an opposite side elevation; Fig. 3, a front elevation; Fig. 4, a plan view; Fig. 5, a cross-section on the line $x x$ of Fig. 4; Fig. 6, a similar section on the line $y y$ of Fig. 4; Fig. 7, a longitudinal section on the line $z z$ of Fig. 4; Fig. 8, enlarged detail views thereof, one view showing more fully the studs or pins of the fractional wheel or disk; and Figs. 9, 10, 11, 12, 13, and 14 are also detail views of the machine.

In the embodiment of my invention I provide a suitable support composed of a base or plate A and end pieces B B', mounted upon legs a a, all, except one end piece, being preferably a single casting. Upon this base or plate is journaled in suitable boxes b b a shaft C, driven, it may be, by a belt c, encompassing a pulley d thereon, and a pulley d' on the driving-shaft D, hung or journaled in suitable hangers e e, depending from the under side of said base or plate. The shaft D is provided with a drive-wheel E.

The plate or base A has secured or screwed to it at the front end of the machine side pieces A' A', abutting against the end pieces B', thus providing thereat a closure A². The end of the shaft C, projecting within this closure, has connected to it, preferably by a screw, the sleeve or hub f of a wheel or disk E^x, hav-

ing in relief upon its periphery a series of numbers E', ranging, say, from "1" to "13," especially for the purpose of stamping or marking the number or sizes of the boot or shoe in whole numbers. Within this closure and in alignment with and arranged so as to form a continuation of the series of numbers E' are several additional series of numbers F' G' H' I', from "1" to "9," including the "0," also a miscellaneous series of numbers and letters and other characters J', arranged upon the peripheries of separate marking wheels or disks F, G, H, I, and J, themselves carried by separate concentric tubular shafts F², G², H², I², and J². The innermost shaft J² has a screw-threaded end g, fitted with a nut g', while the several shafts pass through a tubular casting or sleeve h integral with the end piece B', one of said disks resting against the inner end of said sleeve.

Upon the outer ends of the several shafts F², G², H², I², and J² is a series of indicator disks or wheels F³, G³, H³, I³, and J³, having upon their peripheries numbers corresponding with the numbers on the disks or wheels F, G, H, I, and J and which are observable through a longitudinal slot h' in the plate K, secured over the closure A². These latter disks or wheels F³, G³, H³, I³, and J³ are, as intimated, designed to permit, by being properly turned or adjusted, the bringing of the desired number of the corresponding one of the series of aforesaid marking-wheels readily into position for use.

L L L are pawls having teeth beveled upon both their forward and rear edges to permit the rotation of the marking disks or wheels F, G, H, I, and J in either direction desired and engaging the interspaces in the peripheries of the said disks or wheels between the numbers thereon, as indicated in Fig. 6. These pawls are hung or pivoted upon a screw-rod j, screwed into the end piece B' and held so as to readily move thereon by the head of said rod, and a sleeve j', fitted upon said rod between said end piece and one of said pawls. They are subjected to the action or pressure of springs k k to hold them forcibly against the peripheries of the disks or wheels F, G, H, I, and J to prevent the accidental movement or rotation of said disks or wheels, said springs being attached to and reaching up-

ward from said pawls and bearing against a rod l , projecting from the end piece B' .

The arrangement or series of marking wheels or disks last described provides for stamping or marking the width or other variation in the size of the shoe or boot with numbers or letters, also for numbering or marking accordingly the number of the case or lot to which the goods belong, as well as stamping or marking other articles.

$M M$ are a series of thirteen keys accordingly numbered or marked for actuating the single marking disk or wheel E^x , carrying the series of numbers E' , and M' is a single key having the fraction " $\frac{1}{2}$ " or other character thereon for actuating a disk or wheel E^2 , arranged upon the shaft C immediately next and close to the wheel E^x and having in relief on its periphery the fraction " $\frac{1}{2}$ " or other character, so as to provide for stamping or marking the shoes or boots covering half-sizes or for other use.

The keys $M M'$, preferably straight about one-half their length and curved upward the rest thereof, are sleeved and pivoted at their rear ends upon a rod m , supported upon posts or standards m' , held in apertured lugs of the base or plate A by nuts screwed upon the lower screw-threaded ends of said posts and by flanges formed on the latter above said lugs.

The keys $M M$ are provided upon the lower edges of their curved portions with shoulders or stops n , the purpose of which will appear farther on, while the straight portions of said keys extend through vertical slots o in a plate N , bolted or secured to the base or plate A in any suitable way, preferably by right-angled brackets p , brazed to the inner side of the plate N and connected to the base or plate A by screws.

Arranged immediately under the keys $M M'$, inside of the plate N , are as many pistons $O O$, normally pressing against the lower edges of the keys and having their rods or stems O' encircled by springs O^2 , acting upon the pistons and bearing upon the plate or base A . The lower end portions of the piston-rods or stems O' pass through apertures in the plate A , and are partially inclosed and pass through bosses q , cast upon the lower side of said plate, said piston rods or stems being keyed in place below said bosses. The keys $M M'$, it will be seen, are thus put under pressure, being pressed upward to effect the automatic return movement thereof after the release of the same by the operator.

P' is a bar held upon the outer side of the plate N , directly above and against which the keys $M M'$ rest when not in use by means of set or adjusting screws t , working in said plates and engaging keyhole-shaped apertures t' in said bar, whereby it will be seen that with the screws engaging the slot portions of said apertures the bar will be held in position, accordingly affecting the keys $M M'$ and the pressure or tension of the springs O^2 . The

key M' actuates and is connected to the fractional marking wheel or disk E^2 by means of a fixed arm J^4 , projecting laterally from said key and engaging short parallel studs or pins J^5 , projecting from the periphery of said disk or wheel. Pivoted upon the outside of the plate N are holding beveled lever pawls or latches P , arranged so that their said beveled upper ends partially rest beneath the outer projecting straight portions of the keys $M M'$, whereby as the keys are depressed the latter will engage the beveled portions of said upper ends of the lever pawls or latches and spring or force them to one side, the lever pawls or latches instantly returning under the action of spring-pressure (presently described) and effecting engagement between their hooked portions and the keys, retaining the keys depressed.

The lower ends of the lever pawls or latches P enter notches r in a slide Q , resting upon the plate A outside of the plate N , and guided at one end by a keeper s , secured to said plate, the opposite end of said slide extending into the closure A^2 and being formed with an upwardly-projecting portion or arm t^2 . Rigidly secured to the arm t^2 is a rod Q' , having a crook or bend q' in it simply to avoid interference with a holding or securing screw of the plate K and projecting through an aperture in the end plate B' some distance therefrom, the extreme outer end of said rod having thereon a milled finger-piece or nut Q^2 .

The rod Q' is encircled or fitted upon its outer projecting portion with a spring R , pressing or bearing against the end plate B' and the finger-piece or nut Q^2 , thus, with the aid of the slide Q , holding the lever pawls or latches P under spring-pressure. The tension of the spring R is regulated by manipulating the finger-piece or nut Q^2 . By pressing inward upon the finger-piece or nut Q^2 of the rod Q' the shaft Q is actuated, and any lever pawl or latch P , holding a key M or M' depressed, is thereby disengaged from the key, allowing the key to automatically return to its original position, the slide and the series of pawls instantly being restored to their former position as the hand or pressure is removed from said nut or finger-piece under the action of the spring R .

The shaft C is provided with a series of spirally-arranged studs or pins u , so that each stud or pin will be in alignment with a number of the marking wheel or disk E^x , whereby as a key M is depressed and the shaft C is turned a pin or stud will be finally engaged by the shoulder or stop n of the key, and thus stop the rotation of the shaft and the wheel or disk E^x , presenting the required number of said disk upward ready for use, as called by the indicator-number on the depressed key to effect the stamping or marking of the number or size of the shoe or for other purpose.

In order to avoid interference with the motion of the drive-wheel and shaft during the

stamping operation, the pulley d is held on the shaft C by a frictional bearing formed by a collar V, held on the shaft C by a screw, and in a conical recess of the pulley at one side.

5 Upon the opposite side of the pulley is a beveled or conical hub around its bore, receiving or engaging a correspondingly-beveled or conical collar V', held in engagement with said shoulder of the pulley by the
10 action of a spring W, interposed between the end of an enlargement of the shaft C and said collar V', and having a spline or feather connection with the shaft C.

T is the inking-roll for applying ink to the
15 several series of marking wheels or disks carried by an L-shaped bracket or carriage T', a detachable bearing-plate t^x thereof directly supporting one end of the shaft t^2 of said roll, the opposite end of said shaft bearing in a
20 pendant t^3 , cast with the horizontal arm of said carriage or bracket. The bearing-plate t has two single screw connections with the bracket T', each screw t^4 passing through oblong apertures or slots t^5 in said plate to permit a greater or less vertical adjustment of
25 the inking-roll as may be required to adjust it with nicety to its work. The shaft t^2 itself is detachably held in the bearing-plate t^x by a set or holding screw t^6 , while the inking-roll
30 is removable from said shaft.

The carriage or bracket T' has one end of its horizontal arm cushioned upon a spring t^7 , and through said end of said arm passes a
35 screw u^x , whose lower end works in a sleeve or slide u^2 , traveling on a rod or rail z , held by screws in eyes of the plate K. The screw u^x is provided above the horizontal carriage or bracket-arm with milled jam-nuts u^{xx} ,
40 which, with the spring t^7 , afford a yielding or elastic connection between the bracket T' and the slide or sleeve u^2 , preventing binding of the latter upon its rail from any irregularity of movement of the bracket or carriage.

The carriage or bracket T' is provided at
45 the upper end of its vertical arm with a split collar V², clamped by a screw upon a sleeve or slide V³, traveling upon a rod or rail V⁴, held by screws in eyes at the ends of horizontal
50 arms U' U² of an upright crane-like casting U, integral with one of the side pieces A'.

V is a chain or cable connected to a split collar W', held by a screw upon the sleeve or
slide V³, carrying the inking-roll bracket or carriage T', said chain or cable passing around
55 pulleys or wheels, one the large driving-pulley W and two small ones W^x, the latter having their shafts or journals secured upon the arms U' U² of the upright or casting U. The pulley or wheel W is secured upon the upper
60 end of a vertical shaft W², journaled in a box on a third arm U³ of the casting or upright U and in a box held by screws upon the base or plate A, the extreme lower end of said shaft carrying a toe X for effecting, with the aid of
65 means hereinafter described, the movement of said shaft. The toe X has two sides or

faces at right angles to each other, the purpose of which will appear farther on.

Z is the yielding pad for the inking-roll, comprising a plate Z', seated in an opening
70 in the plate K and having depending from its under side a post z , whose lower reduced portion projects through an aperture in the plate or base A and has secured to it a spring
75 z' , pressing upon said plate or base, rendering the pad capable of the yielding action. Upon the plate Z' is secured the pad proper Z² at one end thereof, held down in place by a clamp-plate Z³, secured to the plate Z' by
80 screws and having an upwardly-curved flange z^2 presented next to the inking-roller.

A³ is the pressure-plate for applying the requisite pressure to the article being marked or operated on, having its suspending or carrying rod a^2 passing through a sectional guide
85 a^3 , one section of which is integral with the casting or upright U, the other section being held by screws to the aforesaid section. The rod a^2 is connected by a link a^4 to one end of a walking-beam lever A⁴, pivoted, as at a^5 ,
90 about at its center in an opening a^6 in the upper end of a standard A⁵, held by screws or bolted upon the casting or upright U. The pivot a^5 of said lever passes through slots a^7 in the side walls of said opening and is secured in the arms of a rectangular yoke A⁶,
95 fitted upon the correspondingly-shaped upper end of said standard. Fitted upon a screw a^8 , fixed to the upper end of the standard A⁵ and passing through an aperture in
100 the upper end or cross-piece of the yoke A⁶, is a milled thumb-nut b' , having a recessed flange b^2 at its lower end, receiving the upper end of and pressing upon a spring
105 b^3 , whereby a flexible or yielding connection is provided between the yoke A⁶, carrying the pivot a^5 of the lever A⁴, and the standard A⁵ to permit a limited play or flexure thereat, to accommodate the movement of the
110 said lever.

The end of the lever A⁴, to which is linked the suspending or carrying rod of the pressure-plate, is held normally elevated by a spring encircled or cushioned rod c' , pivoted to said lever and guided in an aperture in
115 the casting or upright U, its spring or cushion pressing upon said casting to accordingly effect the pressure-plate. The opposite end of the lever A⁴ has connected to it the upper end of a cam-actuated sectional rod B², the
120 upper section B³ of said rod being diametrically reduced and telescoping the lower section B⁴ a short distance. The upper section B³ is connected to the lower section B⁴ by an arm B⁵, secured at its lower end, preferably
125 by a screw, to said lower section and having in its upper end a slot d^2 , engaging a screw d^3 on said upper section. Upon a screw-threaded surface of the reduced portion of the upper section B³ of the rod B² is fitted a
130 double-flanged milled nut d^4 , and placed around said reduced portion of said upper

section is a spring d^5 , pressing upon said nut to hold the nut against accidental displacement from its point of adjustment. It will be seen that by properly adjusting the nut d^4 the lower section B^4 can be so adjusted with relation to the upper section B^3 of the rod B^2 as to provide for varying the descent of the pressure-plate A^3 , accordingly effecting the movement of the pressure-plate.

C' is a transverse shaft suitably hung or journaled in boxes depending from the under side of the plate A and geared to the driving-shaft D , preferably by means of a cog e' thereon meshing with a worm e^2 on the shaft D .

The shaft C' also has upon one end a cam C^2 , adapted to engage the toe X on the shaft W^2 and actuating the latter shaft. The cam C^2 , in addition to being formed of a cylindrical portion or collar secured by a screw or otherwise upon the shaft C' , has upon its periphery at one end a segmental or semicircular shoulder or projection f^3 , and at its other end is a stud or pin f^4 , so arranged with relation to the latter that a line drawn therefrom to the aforesaid end would pass about midway of the space left in consequence of the projection or shoulder f^3 not entirely encircling the cylindric portion of the cam. Therefore when one side or face of the toe X is in engagement with the pin or stud f^4 , which will turn the shaft W^2 so as to move the inking-roll over and cause it to ink the marking wheels or disks, the other face or side of the toe X will be turned toward the segmental projection f^3 and the latter be turned to meet it and be brought into engagement therewith a short interval after the stud f^4 has become disengaged from the aforesaid face of the toe X .

When the forward edge of the projection or shoulder f^3 effects engagement with the toe X at the angle it first presents thereto, during such engagement the shaft W^2 will be so turned as to cause the inking-roll to return to its former position at the opposite side of the machine and there remain during the rest of the engagement of the toe X and the projection f^3 . During the balance of the engagement of the projection f^3 with the toe X , or, in other words, when the opposite face or side of the latter is in contact with the side of the projection f^3 , the pressure-plate will be caused to descend and impart the required pressure to the interposed article to secure the desired impression or print from the marking-wheels. The pressure-plate will also be permitted to ascend or return to its original position before the disengagement of the toe X and the projection f^3 . This movement of the pressure-plate is effected by cam or arm X' , carried on the opposite end of the shaft C' and engaging a frictional roll or stud e^3 on the rod B^2 , actuating the walking-beam lever A^4 , carrying the suspending link and rod of the pressure-plate.

To prevent a displacement of the lower end of the rod B^2 and yet allow it to have the re-

quired movement as it is actuated by cam X' , said end of rod is bifurcated or forked, as shown at e^4 , enabling it to stand astride of the shaft C' .

A table C^x for conveniently placing the work preparatory to be stamped or marked is suitably fastened to the machine at its forward end, and it may be provided with a hinged leaf C^3 , upheld by a sliding bolt C^4 on its under side, engaging keepers upon said table.

It will be seen by the description of the parts and their operation above given that the article can be marked with a series of numbers or with any one number without the others or with any set or sets or combination of numbers, as well as with letters without or with numbers. It will be seen, also, that by the separable and independent arrangement of the parts any one part can be easily removed for the purpose of repairing or being replaced by another.

Having now described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a stamping or marking machine, the combination, with the spring-pressed indicator-keys adapted to directly engage the marking-wheel shaft and projecting through a slotted plate of the machine, of the adjustable horizontal bar applied to said slotted plate and against which rest said indicator-keys, substantially as specified.

2. In a stamping or marking machine, the combination, with a loose fractional marking wheel or disk and its shaft, of the fractional indicator-key having between its outer and its pivoted inner end a horizontal lateral arm, having its free end arranged between parallel studs or pins on said fractional indicator-key, whereby the marking wheel or disk is directly actuated by the indicator-key, substantially as set forth.

3. In a stamping or marking machine, the combination of the inking-roll, the right-angled bracket or carriage carrying said roll, the lower and upper rails or rods, upon the lower one of which travels a slide or sleeve having a flexible connection with the horizontal arm of said bracket, the upper end of the upright arm of said bracket being held to a sliding sleeve upon the other rail or rod, and means for actuating said inking-roll carrying bracket or carriage, substantially as specified.

4. In a stamping or marking machine, the combination of the pulleys or wheels, the inking-roll bracket or carriage mounted to travel upon rails or rods, the chain or cable encompassing said pulleys or wheels and connected to a sleeve sliding upon one of said rails and connected to said bracket or carriage, the shaft carrying one of said wheels or pulleys and having upon one end a two-faced toe, the pressure-plate and its actuating-lever having connected to it a forked flexible jointed rod,

and the transverse shaft meshing with the driving-shaft and provided at one end with a cam having a semicircular or segmental projection or shoulder and a stud or pin and
5 provided at its other end with a second cam, said cams being adapted to engage the toe of the pulley or wheel shaft, and a stud or roll on the forked flexible jointed rod, respectively, substantially as specified.

10 5. In a marking or stamping machine, the combination, with the pressure-plate lever, of the yielding bearing, comprising the standard having an opening through which said lever passes, the yoke fitting upon said stand-

ard and having secured to it the pivot of said 15 lever, and the spring-pressed nut engaging a fixed screw of said standard passing through an aperture in said yoke, said standard having slots in the side walls of its opening, through which passes said pivot, substantially 20 set forth.

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

JAMES D. HUMPHREY.

Witnesses:

G. S. LITTLE,

PAUL KING KENDALL.