(No Model.) 2 Sheets—Sheet 1.

J. J. HESSELSCHWERDT.

NUMBERING MACHINE.

No. 304,931. Patented Sept. 9, 1884.

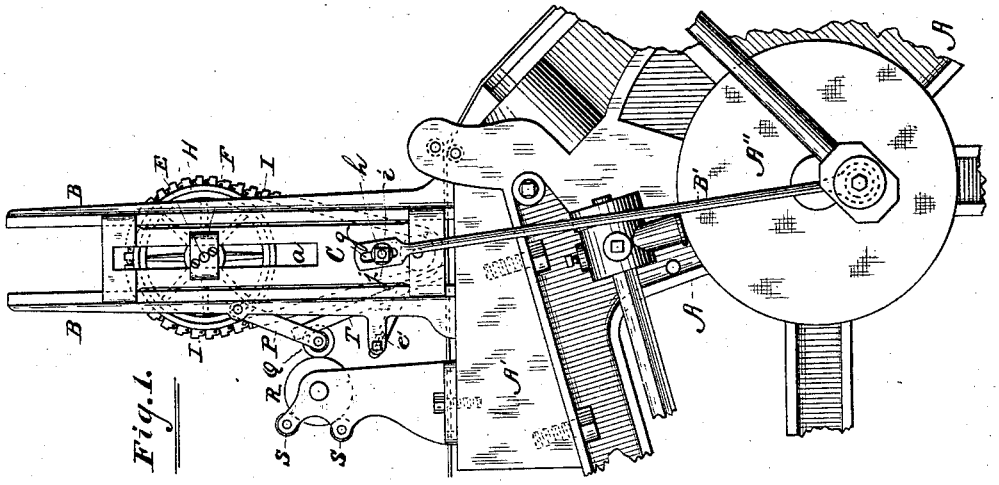

Fig. 1.

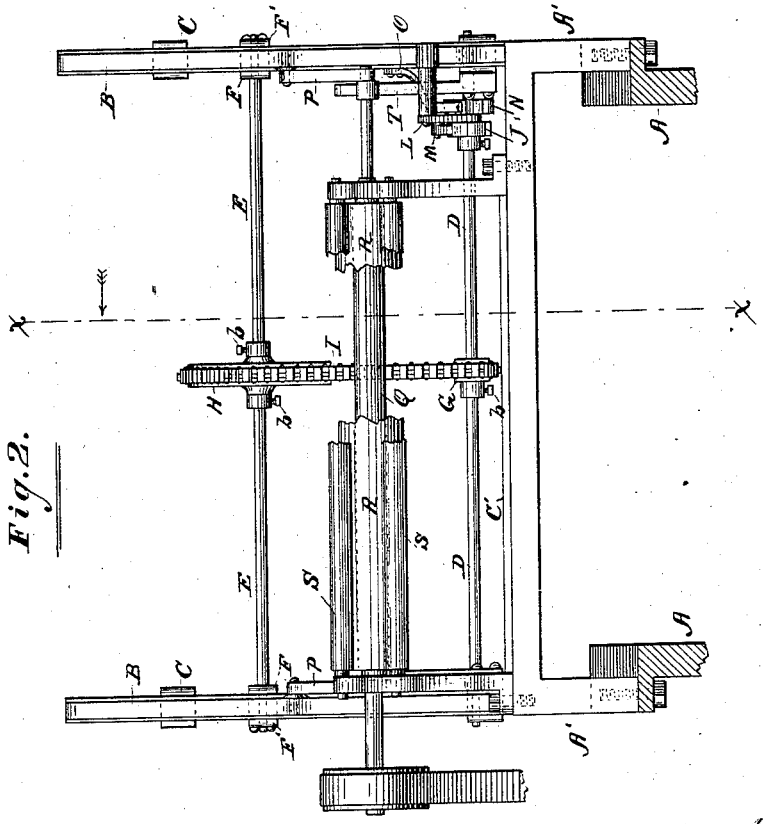

Fig. 2.

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(No Model.) 2 Sheets—Sheet 2.

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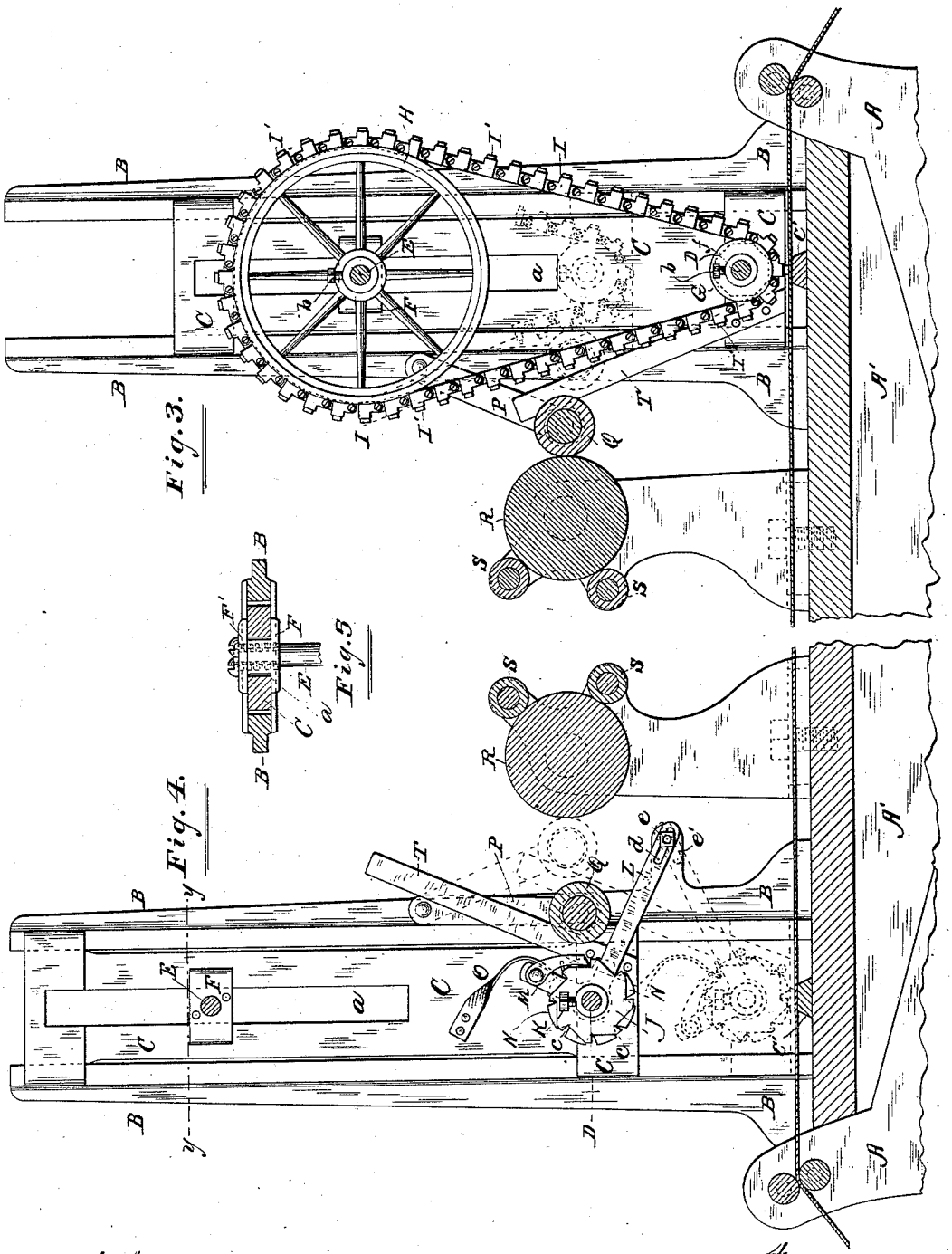

Fig. 3.

Fig. 5.

Fig. 4.

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UNITED STATES PATENT OFFICE.

JACOB J. HESSELSCHWERDT, OF CHICAGO, ILLINOIS.

NUMBERING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 304,931, dated September 9, 1884.

Application filed November 10, 1883. (No model.)

To all whom it may concern:

Be it known that I, JACOB J. HESSELSCHWERDT, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Numbering-Machines, of which the following, in connection with the accompanying drawings, is a specification.

In the drawings, Figure 1 is an end elevation of a numbering-machine, showing a mode of operating it in connection with a printing-press. Fig. 2 is a front or side elevation of the same. Fig. 3 is a section in the plane of the line *x x* of Fig. 2, viewed in the direction indicated by the arrow there shown. Fig. 4 is a section in the same line, viewed in the opposite direction; and Fig. 5 is a sectional detail in the plane of the line *y y* of Fig. 4.

Like letters of reference indicate like parts.

A represents a portion of a printing-press known as the "Kidder" press, and A′ is the base of the numbering attachment.

B B are uprights or standards on the base A′.

C C are blocks, plates, or slides sliding vertically on the standards B B.

D is a shaft turning in the lower part of the blocks or plates C C, and E is a shaft turning in blocks F F, which are vertically adjustable in slots *a a* in the plates C C. To render the blocks F F vertically adjustable in the slots *a a*, the said blocks are flanged to overlap the blocks or slides C C, and plates F′ F′, also overlapping the slides C C, are screwed to the blocks F F, as is clearly indicated in Fig. 5, thereby pinching the slides C C firmly between the blocks F F and plates F′ F′.

G is a pulley or small wheel on the shaft D, and H is a large wheel on the shaft E. These wheels are both laterally adjustable on their shafts, being clamped thereto by means of set-screws *b b* passing through the hubs of the said wheels, respectively.

I is an endless chain passing over the wheel H and under the wheel G.

J is a ratchet-wheel attached to the shaft D by means of a set-screw, K, passing through the hub of the said wheel.

L is a bent or angular lever turning on the shaft D, and M is a pawl pivoted to one arm of the said lever and engaging the said ratchet-wheel.

N is a wheel rigidly attached to the shaft D, and having notches *c c* in its periphery.

O is a spring attached to one of the slides C, and having its free end resting on the periphery of the wheel N.

The outer end of the lever L is slotted, as shown at *d*, and *e* is a bolt or pin passing through the said slot and into a fixed arm or projection, *e′*.

P P are depending arms pivoted at their upper ends to opposite uprights, B B, and Q is an inking-roller turning in the lower ends of the said arms.

R is an inking-cylinder, and S S are ink-distributing rollers.

T T are inclined arms rigidly attached to the slides C C.

On each side of the press are crank-wheels A″ A″, and to each slide C is connected a pitman, B′, reciprocated by the crank-arms of the wheels A″ A″, thus giving to both slides C C a simultaneous vertically-reciprocating movement. As the slides C C move upward the chain I is raised, together with the shafts D and E and the parts mounted thereon. As the inner end of the lever L is thus raised, while its outer end turns on the fixed pin *e*, the said lever will be rocked on the shaft D, and the pawl M is thus made to rotate the wheel J to the extent of one notch or tooth, and as the slides C C descend the pawl M will fall into the next succeeding notch, and the spring O, by resting yieldingly in the notches *c c*, prevents the rotation of the shaft D, excepting as it is turned by the pawl M in the manner described. This rising-and-falling movement of the slides C C causes the chain I to be advanced or turned to the extent of one link at each up movement of the said slides, and at each down movement the lowest link will be presented to the tympan C′, applied to the base A′, or arranged to receive or support the papers or sheets upon which the impressions are to be made. Also, as the slides C C move up, the arms T T release the roller Q, and it falls in contact with the outer faces of the links as the chain moves in the manner described, thus inking several of the said links, and then being carried back to the cylinder R by the arms T T as the slides C C move downward.

The dotted or broken lines in Fig. 3 represent the position of the chain and inking-roller when the slides C C are raised, and the dotted lines in Fig. 4 represent the relative position of the parts when the slides are lowered.

Upon the outer faces of the links of the chain I are type I′ I′, which may represent either figures or letters or other sign-characters, the said type being arranged either vertically or horizontally, or so as to make the impression in the manner desired, it being understood that the paper to be impressed is arranged to receive the impression of the lowest type as the slides C C descend. When employing for this purpose an endless chain of the character indicated, I deem it best to make the pulley G polygonal, as indicated by the dotted lines at *f* in Fig. 3, each of the said faces corresponding to the length of the links, so that each link in turn will be properly and firmly presented to the paper without liability of being rocked or tilted thereon. I desire to state, however, that a continuous flexible metallic band or ribbon having type thereon, or an endless band carrying type would be the equivalent of the typed chain shown. To permit the slides C C to be adjusted or set at the proper height, I slot the upper ends of the pitmen B′ B′, as shown at *g*, and on the outer end of a pin, *h*, projecting from each slide C and passing through the said slots, respectively, I place a washer, *i*, and a nut, *j*, thereby connecting the said slides and pitmen adjustably.

Chains of greater or less length, or containing a greater or less number of type, may be used interchangeably by removing the pintle connecting any two of the links, or by otherwise separating any two of the links, removing one chain, and applying another. A proper tension of the chain may be had by employing wheels H H of different sizes, and by also adjusting the shaft E to the proper height; or the latter adjustment alone may be sufficient under ordinary circumstances. The chains may be also adjusted laterally by adjusting their wheels laterally in the manner described. It will also be perceived that two or more endless chains may be employed at the same time, the said chains being set at suitable distances apart, according to the nature of the work to be done. In doing some kinds of work it may be necessary to print the last or highest number of the series first and the lowest number last. To adapt the type to this work I remove the chain, reverse it, and apply it in its reversed position. To reverse the chain for this purpose it should be turned around in such a way that the type before toward the front of the machine will be toward its back. It will also be perceived that after the last or highest number is printed the first or lowest number will immediately follow, and vice versa when the chain is reversed.

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

1. The combination, in a numbering-machine, of the shaft D, the pulley G, laterally adjustable on the shaft D, the shaft E, the pulley or wheel H, laterally adjustable on the shaft E, and an endless type-chain mounted on the said pulley and wheel, substantially as and for the purposes specified.

2. The combination, in a numbering-machine, of the slides C C, carrying inclined arms T T, the vibrating roller Q, the distributing-roller R, and the endless belt I, carrying type and mounted on wheels on shafts having bearings in the said slides, substantially as and for the purposes specified.

In testimony that I claim the foregoing as my own I hereto affix my signature in presence of two witnesses.

JACOB J. HESSELSCHWERDT.

Witnesses:

F. F. WARNER,

J. B. HALPENNY.