L. G. BEDEL, J. MASSE & W. WEBSTER.

Machine for Numbering, Embossing, and Inking Bonds, &c.

No. 161,473. Patented March 30, 1875.

Fig. 1.

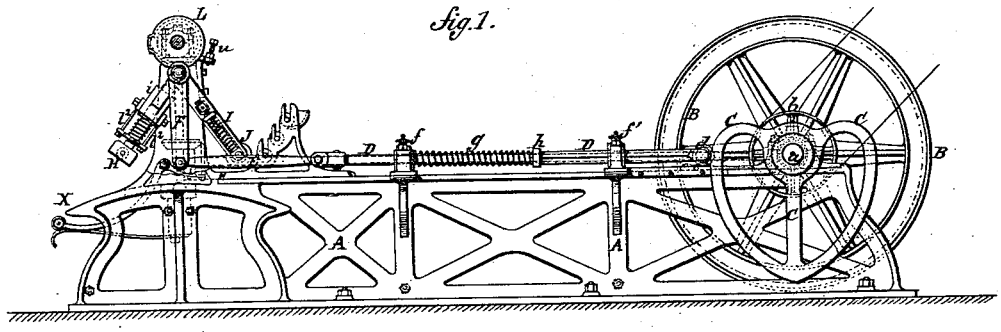


Fig. 2.

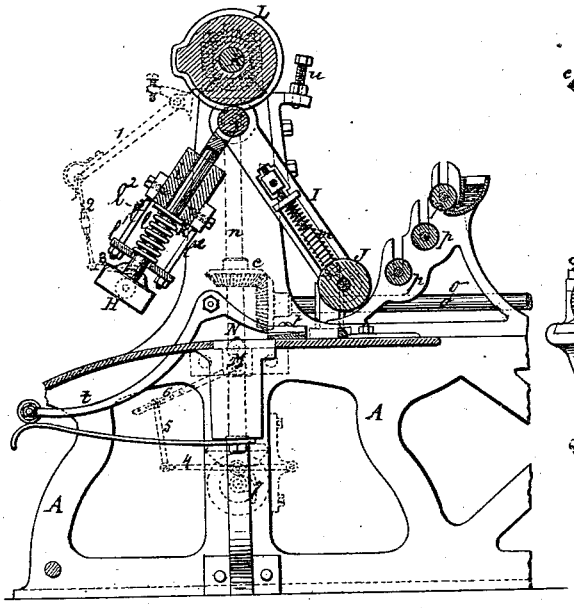
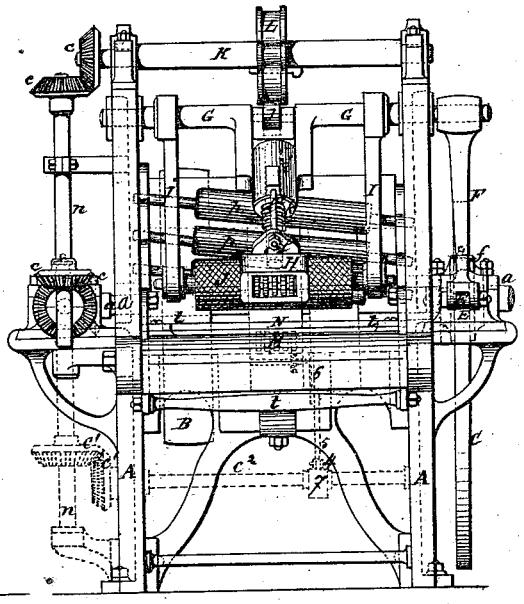


Fig. 3.



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LOUIS GUSTAVE BODEL, JACQUES MASSE, AND WILLIAM WEBSTER, OF PARIS, FRANCE.

IMPROVEMENT IN MACHINES FOR NUMBERING, EMBOSSING, AND INKING BONDS, &c.

Specification forming part of Letters Patent No. **161,473**, dated March 30, 1875; application filed December 31, 1874.

To all whom it may concern:

Be it known that we, LOUIS GUSTAVE BODEL, JACQUES MASSE, and WILLIAM WEBSTER, of Paris, France, have invented an Improved Machine for Numbering, Embossing, and Inking Bonds, Shares, Bills, and other documents, of which the following is a specification:

The apparatus which forms the object of our invention is intended, with numbers and other marks, to stamp and ink bonds, coupons, shares, checks, and financial or other documents generally, in a special manner, so as to prevent fraud, and afford almost absolute safety in negotiation.

The principle of our apparatus, which also constitutes the fundamental characteristic of our invention, consists in, first, producing upon the document a number or other description in relief, and in then inking the projecting surfaces of the characters thus stamped. We effect this double action by means of oscillating levers, one of which, while swinging, also carries a force for a die-stamp, while the others support an inking-roller. By the combination of the driving mechanism, which we will presently describe, we give to these levers an oscillatory movement, with a pause between each stroke, so that the die-stamp first impresses the number in relief, and then the printing-roller comes to deposit ink upon the upper surface of the figures thus stamped.

We obtain upon documents a double means of control, assuring greatly-increased security. It becomes, indeed, impossible to change the number of the document without injuring it in a manner which cannot fail to be discovered, and frauds are therefore rendered additionally difficult.

The figures or characters stamped and inked by our machine can be combined with framed vignettes, produced either by a previous stamping, or by bordering. The upper part of the figure can be guilloded or striated by successive hollows and reliefs.

Our system can be applied indifferently to securities on all kinds of paper, tinted, colored, white, figured, or of any chemical composition, and the ink upon the inking-rollers may be of itself of any color and of any suitable chemical composition, preferably indelible, in order to prevent all alteration.

We proceed to describe, with reference to the annexed drawings, the combination and action of our apparatus for stamping and inking documents.

Figure 1 is a longitudinal elevation of the apparatus; and Fig. 2 is a partial sectional elevation, showing the principal mechanism; and Fig. 3, a corresponding end view of the machine.

The apparatus is mounted within a frame, A A, in wood or iron, composed of twin cheeks of metal connected by convenient cross-pieces. At the back portion of the apparatus a transverse shaft, *a*, is arranged, adjusted in support. This shaft *a* carries on the one side the fixed and loose pulleys *b*, a bevel-pinion, *c*, and a fly-wheel, B, and on the other side a specially-formed cam, C. The cam C acts upon a small roller, *d*, carried at the end of a horizontal rod, D, which thus receives a movement alternately with the pause at the end of each stroke, and determined by the form given to the cam C, as shown in the drawing. The shaft D slides horizontally in its bearings *f f*, affixed to the frame A, and its constant recall to the cam C is effected by means of a strong spiral spring, *g*, compressed between the guide *f* and a collar, *k*, upon the shaft.

The cam C can be constructed with a groove, in order to itself effect the recall of the rod D. The spiral spring *g* would then be dispensed with, and the length of the frame might be sensibly diminished.

At its other end the rod D is connected to a link, E, which is itself jointed to a strong lever, F, rigidly attached to a transverse shaft, G, upon which the two chief organs of the machine are mounted—that is to say, viz., the blank stamp or die H, and the arms I, carrying the printing-roller J. The spindle of the blank stamp or die H slides in a socket, *i*, formed in the middle of the shaft G. It is terminated at the top in a cap in which is mounted a roller, *j*, and is provided with a collar, *k*, against which a spiral spring, *l*, presses, resting at its other end upon a ring, l^1, held upon the socket *i* by two little rods, l^2

l^2. The arms I I, which carry the printing-roller J, are provided with slots in which the bearings of the roller J are held. Spiral springs *m*, held in the slots of the arms I I, force the roller J downward, while at the same time allowing it a certain elasticity. The extent of oscillation of the levers D can be also regulated by means of the projecting screws *u u*.

Above the shaft G is arranged another shaft, K, in the middle of which is keyed the cam L, to act upon the roller J in the head of the die-spindle, and to give the latter the pressure necessary at the time of stamping.

The shaft K receives its rotating movement through conical pinions *c c c*, keyed, respectively, the first upon the shaft K, and the other upon the shafts *n*, *o*, and *a*.

In the lower part of its travel the printing-roller J comes in contact with several small inking-rollers, *p p*, which give the necessary ink for each impression. Beneath the stamping-die and the printing or inking roller is adjusted the other part M, bearing in relief the same figures or devices as those engraved in the die. This other part M and the die are, of course, provided with counting mechanism, which causes the number to change by a unit at each stroke of the roller—that is to say, for each document numbered.

In the annexed drawings we have shown, for example, only one of the arrangements which may be employed in order to effect the movement of the little rollers in the die H and the corresponding relief part M simultaneously as each sheet or document comes to be numbered. This arrangement (shown in dotted lines in Figs. 2 and 3) consists, for the die H, in a system of jointed levers, 1, 2, and 3, which, at each oscillation, cause the roller bearing the figures of unity of the die to turn one tooth; and for the other or relief part, by another system of jointed levers, 4, 5, and 6, actuated by a cam, 7, which describes a revolution, at each turn of the shaft K, by means of a prolongation of the vertical shaft *n*, and of two conical pinions, c^1 c^1, one of which is keyed upon the annexed shaft c^2, which carries the cam 7.

The typographic workman takes his place in front of the machine at X. He places each document below the spring paper-clip *t* between the bench-marks upon the lathe N above the relief part M. The die comes down first, and stamps the figures in relief. The printing-roller then comes and deposits its ink upon the upper surface of the figures already stamped. The relief part M then falls in the same manner as in existing machines, and the workman withdraws the document to replace it with another. The cam C is arranged so as to give the workman time to effect this.

The actuating mechanism can be sensibly modified. Thus, the cam can be reduced, and combined with the transmission-levers. The motive shaft can be placed below instead of above, and we do not limit ourselves in this respect. Or we can annex to the apparatus an ordinary mechanism for the introduction and the removal of the documents to be stamped and inked. In short, the essential characteristic of our invention consists in an altogether novel arrangement—that is to say, in the successive action of stamping and inking in order to prevent fraud—and the consecutive double action is capable of variation in the details of its execution; and

Having now described the nature of our said invention, and in what manner the same is to be performed, we declare that we claim—

The combination of the relief-die M, the die H, and an inking-roller, J, mounted upon a common axis, and a like oscillating movement imparted to both for the purpose of alternately presenting said die H and roller J to the paper on the die M, substantially as described.

In testimony whereof we have signed our names to this specification before two subscribing witnesses.

L. G. BODEL.
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Witnesses:
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