

(No Model.)

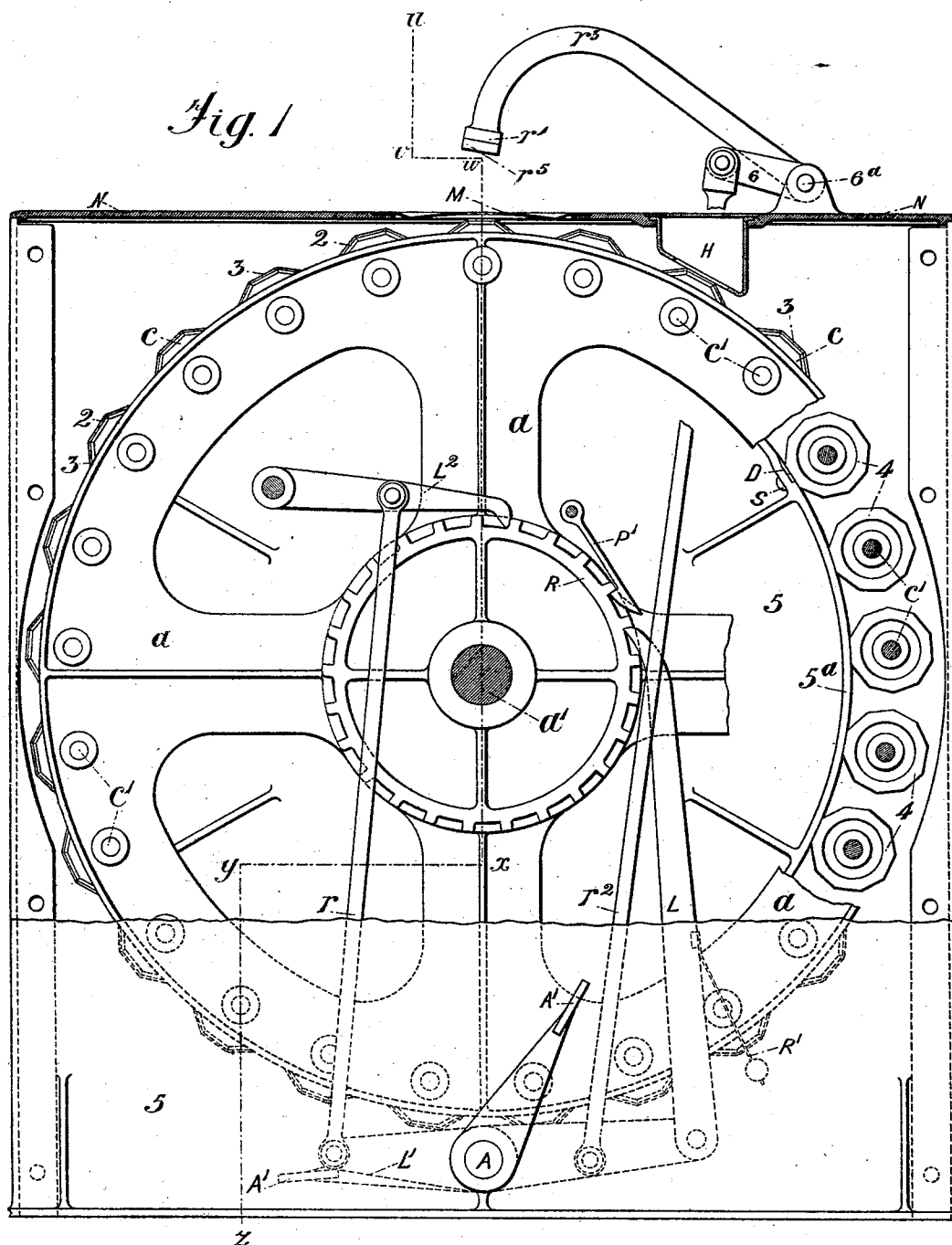
3 Sheets—Sheet 1.

G. CLARK.

MACHINERY FOR ADDRESSING ENVELOPES, &c.

No. 531,021.

Patented Dec. 18, 1894.



Witnesses

J. A. Harvey.

E. W. Patterson.

Inventor,

George Clark
by his attorney
Alfred Hall Chapman.

(No Model.)

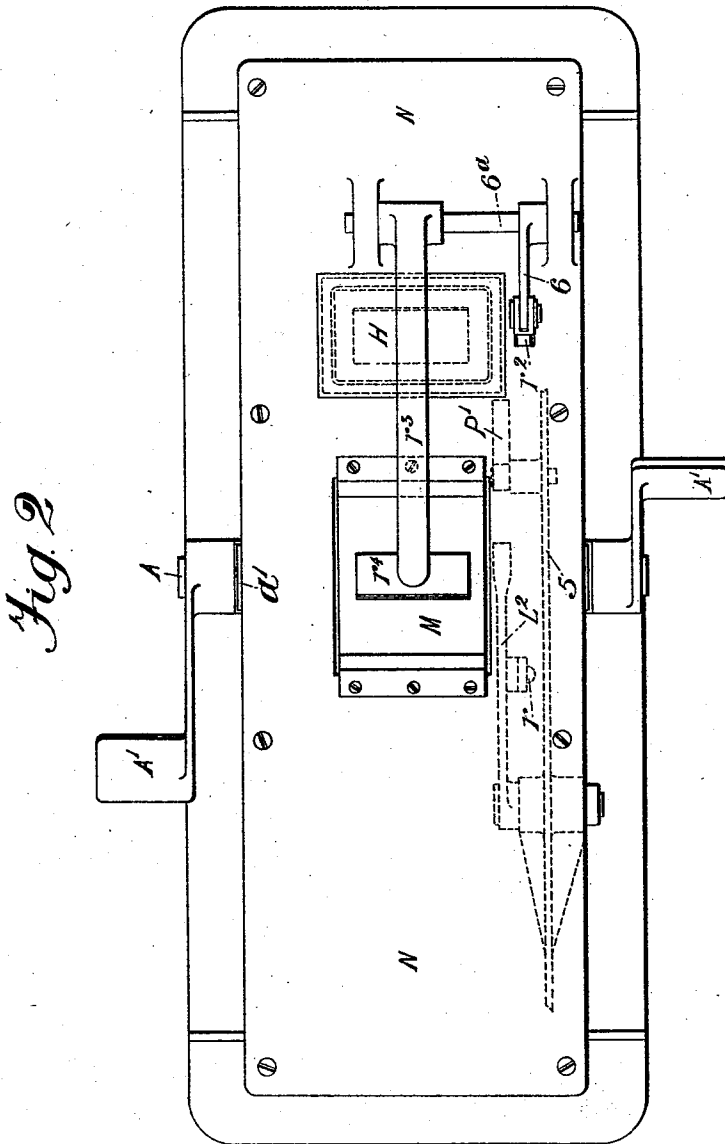
3 Sheets—Sheet 2.

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C. W. Pattison

Inventor,
George Clark
by his attorney
Abner Hall Chapman

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3 Sheets—Sheet 3.

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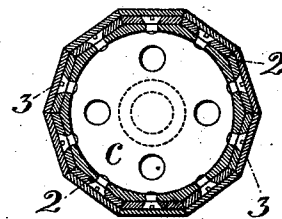
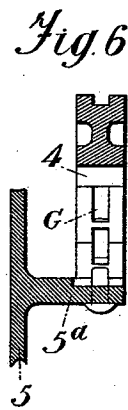
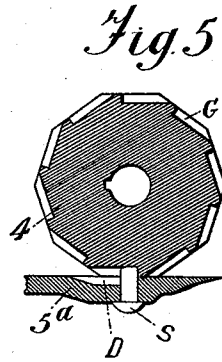
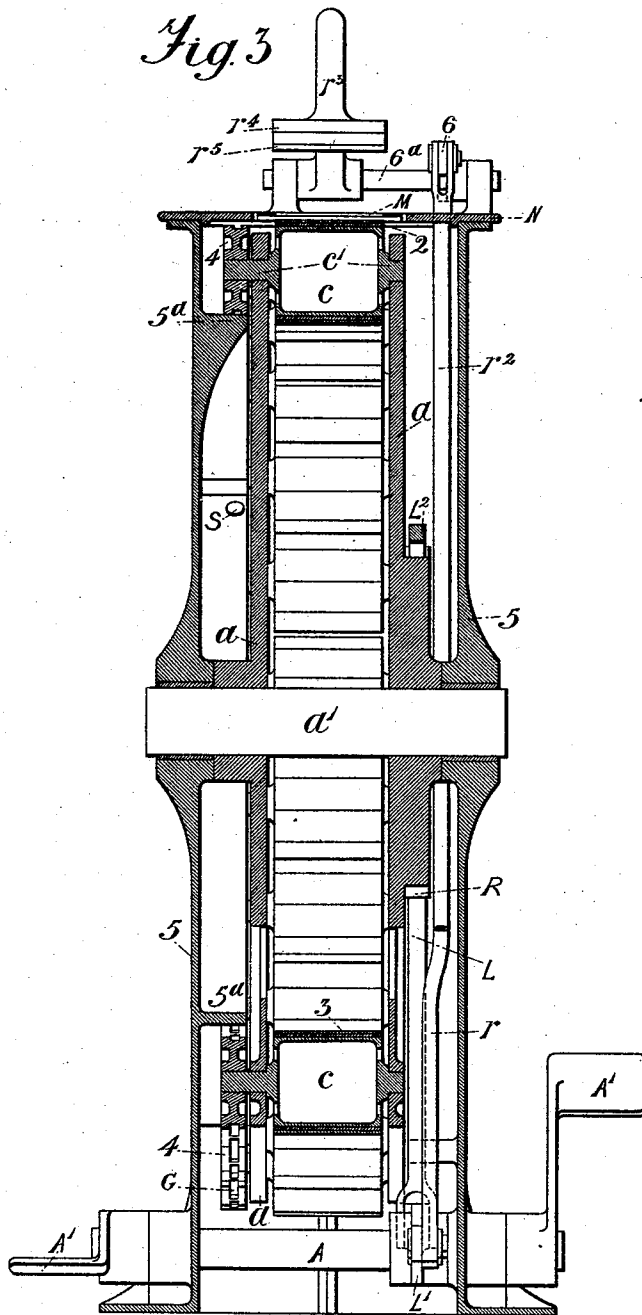


Fig 4

Witnesses
J. J. Harvey.
C. W. Pattison.

Inventor
George Clark
by his attorney
A. J. Hall (Hapman)

UNITED STATES PATENT OFFICE.

GEORGE CLARK, OF CARLISLE, ENGLAND.

MACHINERY FOR ADDRESSING ENVELOPES, &c.

SPECIFICATION forming part of Letters Patent No. 531,021, dated December 18, 1894.

Application filed February 17, 1894. Serial No. 500,592. (No model.)

To all whom it may concern:

Be it known that I, GEORGE CLARK, a subject of the Queen of Great Britain and Ireland, and a resident of Carlisle, county of Cumberland, England, have invented certain Improved Machinery for Addressing Envelopes, Circulars, and Similar Papers, of which the following is a specification.

This invention relates to new or improved machinery for addressing envelopes, circulars and papers applicable also to other and similar purposes and is designed for use in cases where numbers of letters, circulars, &c., are frequently sent to the same addresses and in analogous cases, to facilitate such work by the substitution of machinery specially adapted for the purpose in lieu of ordinary clerks' work.

I will proceed at once to fully describe my invention with reference to the accompanying drawings, in which—

Figure 1 shows a general side view of the machine partly in elevational view and partly in sectional elevational view, Fig. 2 being a plan view of the same. Fig. 3 shows a vertical transverse section of the machine on line *u, v, w, x, y, z*. Fig. 4 is a cross section of a type-plate-carrying-cylinder. Fig. 5 is a cross section of a tumbler, Fig. 6 being an end view of the same shown partly in section and partly in elevation, and in the following description like letters and numerals of reference designate like parts.

Referring to the drawings *a a* are a pair of cheek disks or wheels mounted on an axle *a'*. Near the peripheries of these disks and in suitable bearings therein provided is mounted a series of type-plate-carrying-cylinders *c* each of which cylinders is shown as having ten cants thereon. Each cylinder *c* may be formed with gudgeon axles *c'* thereon which rest in the peripheral bearings of the disks *a* aforesaid. Each cant of each cylinder may have a brass plate 2 screwed to it to which plate the rubber type plate or electro 3 is secured by cement of a suitable nature or by screws or otherwise or the type plate may be secured direct to the cylinder without the intervening plate 2. Each type plate 3 will have on it a name and address. It will be observed that one gudgeon axle *c'* of each cylinder *c* is extended past the cheek-wheel *a*

to carry a tumbler wheel 4. It will also be observed that the axle carrying the wheels *a* is mounted on an external frame casting 5 and that a circular flange 5^a is provided on this casting on or against which flange the tumblers 4 in their revolutions are designed to work or slide. At a point in the circumference of this flange there is formed a slight dip or depression D into which a stud S is screwed so that the head of the stud shall project somewhat above the ordinary level of the flange surface. This stud-head has to perform the operation of turning each type-plate-carrying-cylinder one tenth of a revolution as each cylinder in its revolution with the wheel *a* passes the stud. This motion is effected by the ends of the grooves G in the tumblers 4 coming successively into contact with the stud-head aforesaid as the wheel *a* is revolved and the depression D aforesaid is made of sufficient length to allow clearance for the cants on the tumblers to turn the required tenth of a revolution. The cants on the tumblers 4 simply slide on the flange 5^a while the wheel *a* is revolving thus preventing the cylinders *c* from turning, but as soon as a groove G in a tumbler comes against the stud head that tumbler is then turned to the extent of one cant or one tenth of a revolution and as the tumblers are fixed on the extended axles of the cylinders *c* it follows that as each cylinder passes the stud S it must be also turned one tenth of a revolution.

The mechanism for turning the disk wheels *a* consists of a wheel-rack R cast on one of the cheeks of the wheel. A pawl L (worked from a rocking bar L' mounted on an axle A which is operated or rocked by treadle levers A') gears with the teeth of the wheel-rack R to push round the wheels *a a* and from the opposite end of the rocking bar L' a rod *r* leads up to a pawl L² which acting synchronously with lever L insures the wheel-rack R being turned at each stroke of the treadle exactly the required twenty-fifth of a revolution and no more.

R' is a spring for keeping pawl L in gear with the teeth of the wheel-rack and P' is a catch-pawl to prevent any back motion of the wheels or disks *a a*.

Pivoted at an intermediate point on the lever L' is a rod *r*² which leads thence to one

end of a short lever 6 mounted on an axle 6^a working in a bearing secured to the lid N of the main framing or casing of the apparatus. On the same axle 6^a is also mounted a curved rod r³ terminating in a flange r⁴ to which an india rubber or other equivalent pressure pad r⁵ is secured in any convenient manner.

In the lid N and at its central point a light steel resilient plate M is secured of a convex form, the convexity being opposed to the pad r⁵ and a slit is cut in the plate M corresponding in size to the dimensions of the pad r⁵ and the area of the plate or stereo containing the name and address.

H is a receptacle for containing an inking sponge or pad and its lower surface is arranged so that as each type-plate-carrying cylinder in its revolution with the wheels a passes the inking pad, the type on the cant exposed to the pad become smeared with ink preparatory to passing under the pressure pad r⁵.

The treadle levers A' need not necessarily be arranged on both sides of the machine as a double treadle to be worked by both the heel and toe might be arranged on one side only, and if necessary or desirable the pressure of the foot may be used to effect only one motion or direction of the treadle the return motion or stroke of the treadle being effected by the reaction of a spring which may have been compressed or extended as the case may be during a former motion of the treadle.

The whole machine may be constructed in very thin metal and the type cylinders may be cast hollow to preserve lightness.

The capability of the machine above described with twenty-five type cylinders each cylinder having ten cants and each cant carrying a separate name and address is obviously to address two hundred and fifty separate envelopes with separate addresses at ten revolutions of the disk-wheels and the operation of the machine is as follows:

The operator sits at one end of the machine with his feet on the treadles, where two of these are employed, as shown in the drawings. Both his hands are then free to manipulate the envelopes at the addressing point. Having placed an envelope over the slit in the plate M he operates one treadle with his foot. Then through the medium of axle A, rocking bar L' and pawl L, wheel rack R is turned one twenty-fifth of a revolution, pawls L² and P' checking the exact extent of this motion. At the same time a type-cylinder is of course brought round so as to come under the slit in plate M with its type freshly ink-smeared by having been recently rubbed against the inking pad at H while it was passing this point. The same motion of the treadle will have also simultaneously lifted rod r³ through its connection by lever 6 and rod r² to rocking bar L'. The machine will now be in position for mechanically addressing an envelope. The operator may then depress the treadle in the reverse direction which has

the effect of bringing down the pressure pad r⁵ on the envelope and by slightly depressing the resilient plate M the envelope is pressed against the ink-besmeared type on the cant presented at the opening in the plate M. The envelope thus receives its address. The same motion of the treadle will have synchronously drawn back pawl L into a position ready to again push round the wheel-rack and disk-wheels when the treadle is again operated as at first. It will be observed that while pawl L is thus making its backstroke, pawl L² has entered the rack teeth to prevent any further forward motion of the rack while pawl P' is acting in like manner to prevent any retrograde motion. Immediately after the envelope has been addressed the operator will again depress his treadle which will cause the parts to re-assume the positions hereinbefore described but it will be seen that immediately the pressure pad r⁵ is raised from the envelope, the resilience of the convex plate M lifts the envelope just clear of the cant on the type-plate-carrying cylinder and this is very necessary or otherwise the revolution of the disk wheels would cause the address to be smudged or spoiled. For this purpose the relative motions of the pawl L and rod r² operating rod r³ are timed as to their actions to insure that the pad r⁵ shall rise from the envelope before pawl L acts on the wheel-rack to turn the disks and type-plate-carrying-cylinders. In this manner therefore is each addressing performed and after one revolution of the disk-wheels twenty-five envelopes will have been addressed but before any one cylinder returns to the addressing point it is clear that it must be turned in order to present a new cant and address to the pressure pad. This is effected as above described by the contact of the groove G in each tumbler of each cylinder coming successively against the stud head S projecting from the depression D in the circular flange 5^a. Each cylinder is thus turned one tenth of a revolution just prior to being inked at the pad H which operation is just prior to that inked surface being used for addressing.

In the machine described after ten complete revolutions of the disk-wheels two hundred and fifty envelopes will have been addressed and in like manner the machine could be enlarged or reduced in size to operate on a larger or smaller number of envelopes or other papers.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The improved machinery for addressing envelopes circulars and papers consisting in the combination with a pair of mounted cheek-disks or wheels having canted type-plate-carrying-cylinders arranged in peripheral bearings therein-between of a wheel rack and treadle-actuated pawl L and lever r and check pawls L² and P' for revolving the cheek-disks in equal circumferential units, treadle-actuated stamping lever r² for actuating through

a crank 6 stamping bar r^3 and pad r^5 , circular flange 5^a on casing having a recess D and stop-stud S therein against which the ends of grooves G in tumblers 4 successively abut so as to partially revolve them and the type-plate-carrying cylinders at each complete revolution of the cheek-disks, and inking pad for smearing the cants with ink just prior to their coming under the stamping lever these several parts and motions thereof being arranged and combined to act together substantially as and for the purposes herein set forth.

2. The combination of mechanisms for revolving the cheek-disks type-plate-carrying cylinders and tumblers in circumferential units consisting of levers A' L', L and r with check-pawls L^2 and P' acting in conjunction with wheel rack on cheek-disks, and means for rotating the type-plate-carrying-cylinders a portion of a revolution during each complete revolution of the cheek-disks consisting of a flange 5^a on casing recess D and stop S therein acting in conjunction with grooves G in tumblers 4, and means for stamping envel-

opes during each cessation of rotation of cheek-disks consisting of treadle-actuated lever r^2 operating through crank 6 bent arm r^3 and pad r^5 the resilient non-smudging plate M, and means for smearing the cants successively with ink prior to their arrival under the stamping or pressure pad consisting of the receptacle H having its lower surface so arranged with an ink-pad that each cant in passing same must become smeared with ink, all these several parts with their several motions being arranged and combined to cooperate together substantially as and for the purposes herein set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEO. CLARK.

Witnesses:

HY. HODGSON,

GEO. WILLS,

Clerks with Messrs. Wright & Brown, Solicitors, Carlisle, England.