

(No Model.)

2 Sheets—Sheet 1.

J. W. DICK & A. L. EASTIN.

AUTOGRAPHIC MANIFOLDING AND REGISTERING MACHINE.

No. 462,665.

Patented Nov. 3, 1891.

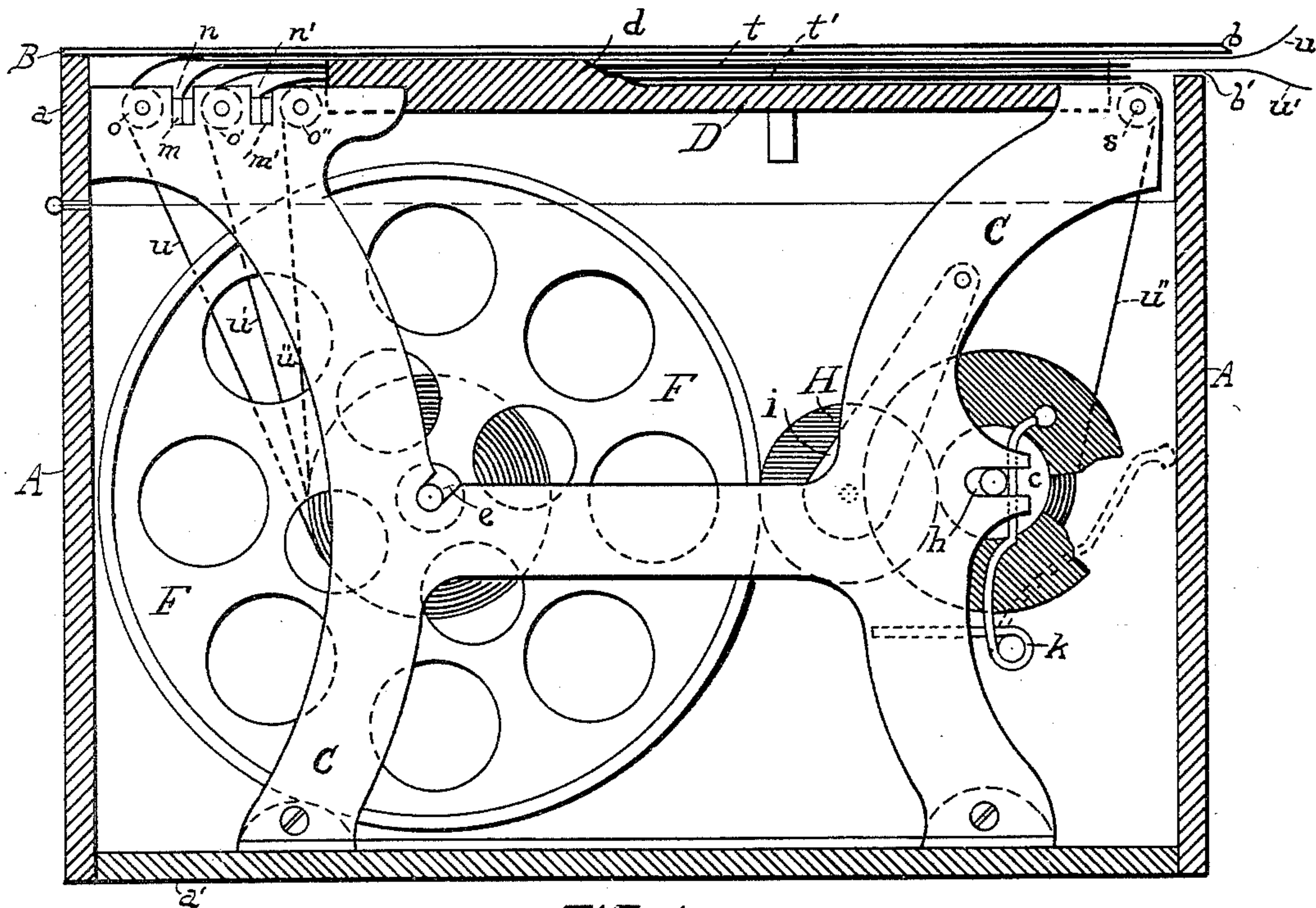


FIG. 1.

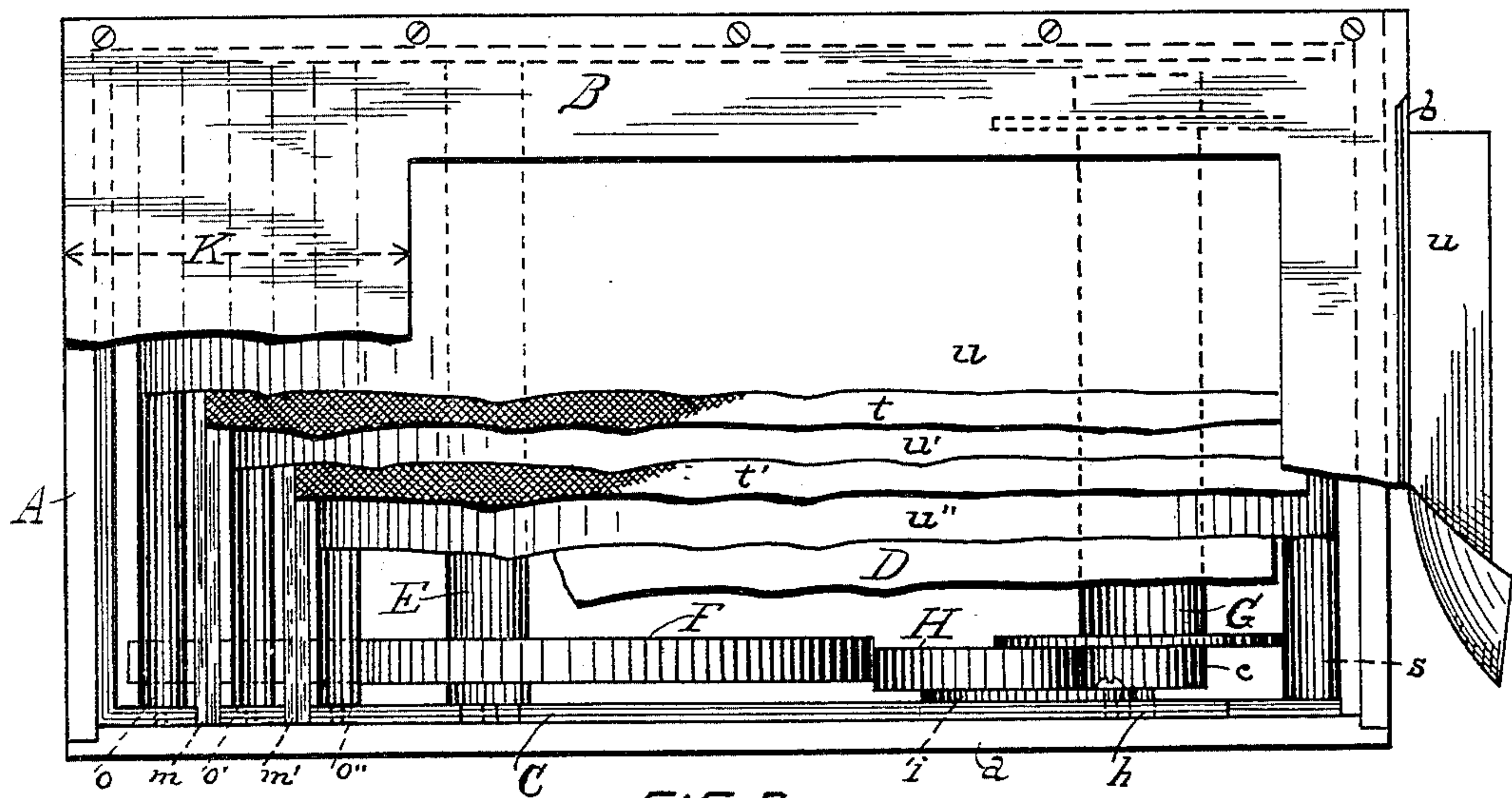


FIG. 2.

WITNESSES.

INVENTORS.

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Wm. H. Byrne.

John H. Dick and
Arthur L. Eastin, by
Paul Bakewell
their attorneys.

(No Model.)

2 Sheets—Sheet 2.

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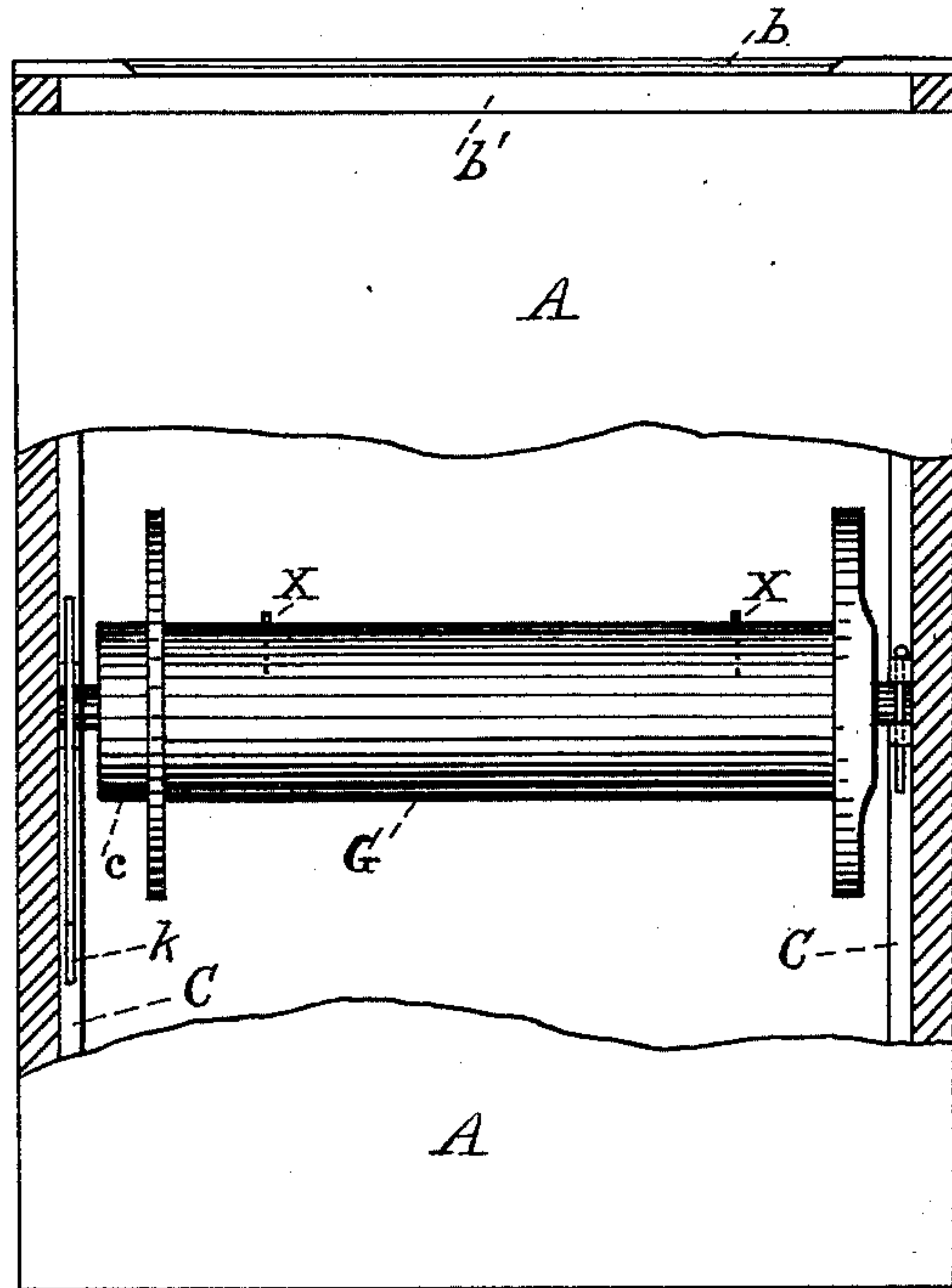


FIG. 3.

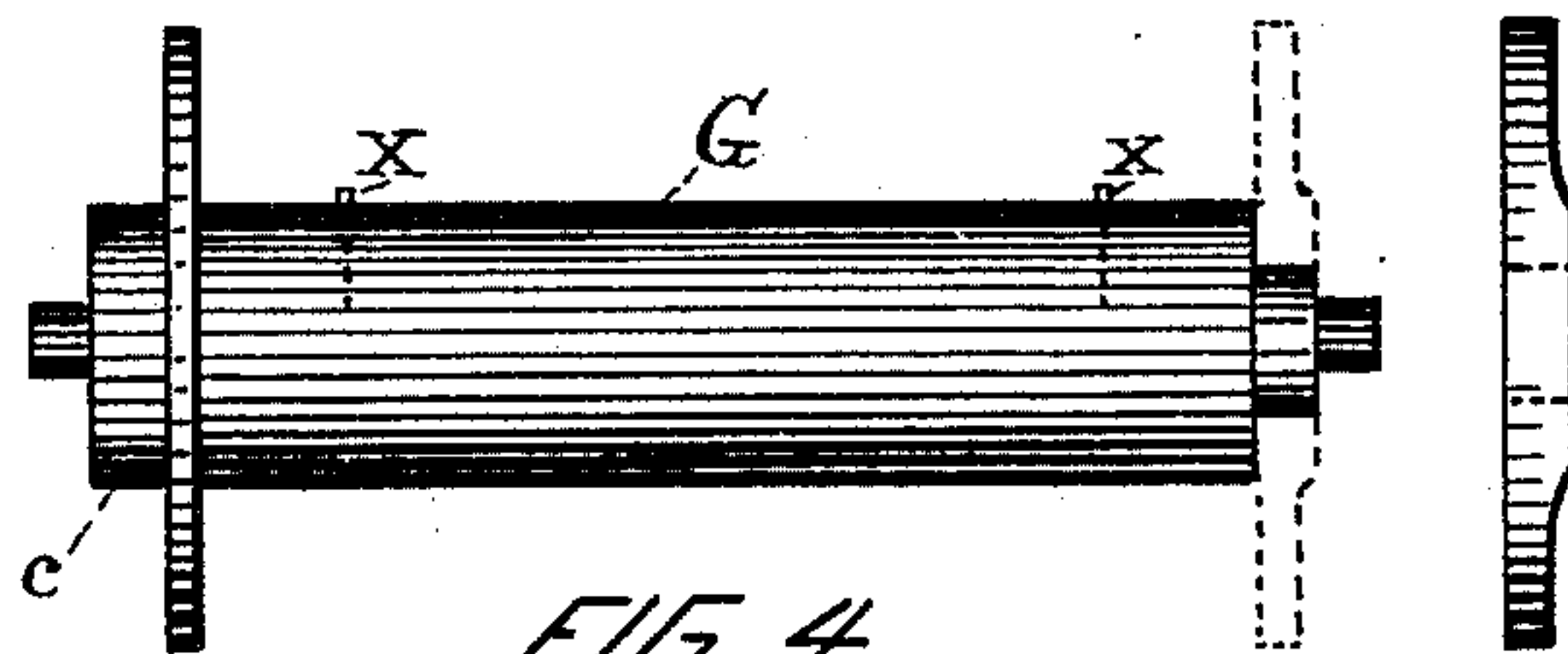


FIG. 4.

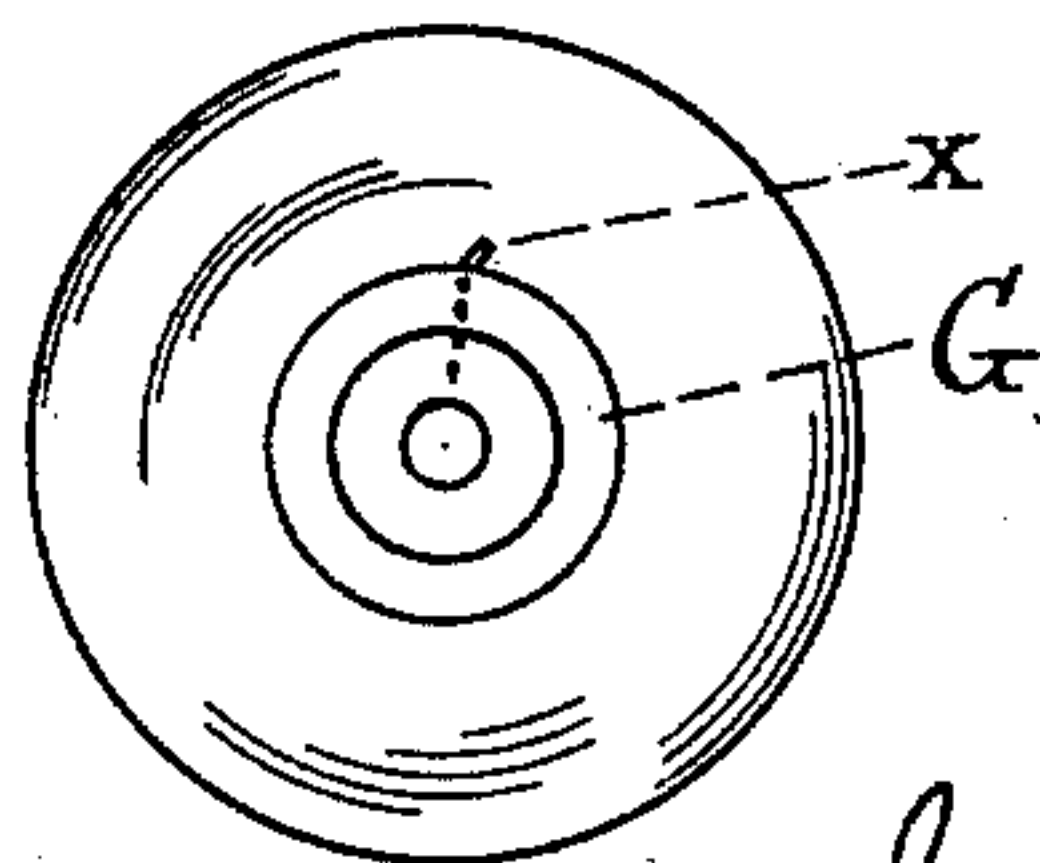


FIG. 5.

WITNESSES.

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UNITED STATES PATENT OFFICE.

JOHN W. DICK AND ARTHUR L. EASTIN, OF ST. LOUIS, MISSOURI.

AUTOGRAPHIC MANIFOLDING AND REGISTERING MACHINE.

SPECIFICATION forming part of Letters Patent No. 462,665, dated November 3, 1891.

Application filed May 20, 1890. Serial No. 352,438. (No model.)

To all whom it may concern:

Be it known that we, JOHN W. DICK and ARTHUR L. EASTIN, citizens of the United States, residing in the city of St. Louis and State of Missouri, have invented certain new and useful Improvements in Autographic Manifolding and Registering Machines, of which the following is a full, clear, and exact description.

Our invention relates to improvements in that class of machines known as "autographic registers," used for making several copies of a memorandum simultaneously with the production of the original, and in which there is generally provided means for preserving one or more of the copies for future reference, so as to be inaccessible to the person using the machine.

Our invention consists in the combination, with the supply-roller, of a large friction-wheel mounted on the shaft thereof, a copy-sheet-receiving spool loosely journaled in the frame and having a friction-wheel secured to its shaft, an interposed swinging friction-roll, a spring for holding said frictional rolls in frictional contact, and a paper-supporting platform intermediate the supply and copy-receiving rolls.

In the accompanying drawings, in which like letters of reference denote like parts in the several figures, Figure 1 is a side elevation of our improved machine with the rear side of the containing-case removed. Fig. 2 is a plan view of the same with a portion of the supporting-platform for the writing-surface removed and portions of the memorandum and carbon sheets torn away, showing the superposed position of the several sheets. Fig. 3 is an end view of our machine with a portion of the containing-case removed, showing the copy-receiving mandrel and the pins thereon for securing the end of the sheet wound on it, also showing the slot in the end of the containing-case. Fig. 4 is a side view of the copy-receiving spool, showing the removable end. Fig. 5 is an end view of the copy-receiving spool, the detachable end removed, showing the inclination of the pins for securing the end of the sheet of paper.

In our machine we inclose the working parts in a containing-case A, made in two parts *a* and *a'*, the upper part or lid *a* being

secured at one end to the lower or box part *a'* by a hinge and fastened at the other end with a lock. The top of the lid *a* is made, preferably, of sheet metal, with the middle portion thereof cut away, forming a frame or scroll B, for holding the paper flat and exposing a portion of the top sheet on which to write the memorandum. One end of the frame B is extended beyond the margin of the box and beveled, forming the cutting-edge *b*, against which the paper can be torn in separating the memorandum slips from the sheets in the machine. Immediately under the cutting-edge the material of the containing-case A is cut away, forming the slot *b'* across the upper edge of that end of the containing-case through which the sheets of paper are passed to the outside of the containing-case. The framework C for supporting the working parts of the machine is made to fit snugly the containing-case A when the lid *a* is closed down. The platform D for supporting the sheets of paper when being written on is supported by the frame C immediately under the opening in the frame B. The platform D is formed with a raised edge *d* along each side, leaving a shallow longitudinal groove throughout the length of the supporting-platform D a little wider than the width of the sheets of paper used, acting as a guide for the sheets and preventing the frame B from binding on the paper. The depth of this groove formed by the raised edges *d* is governed by the number of sheets of paper used on the machine. In the drawings it is somewhat exaggerated in order to properly show the sheets of paper.

The journal-bearings in the frame C for the ends of the supply-roll mandrel E are formed in the ends of inclined slots *e*, so that the supply-roll can be conveniently inserted in or removed from the machine. On one end of the mandrel E there is rigidly secured the large flat-faced friction-wheel F. The mandrel for the preserved copy roll or spool, which has its journal-bearings in the frame C, carries on one of its ends a small friction wheel or pulley *c*. The journal-bearing for the shaft or mandrel G at this end is a slot *h*, cut in the frame C, so as to permit of an adjustable movement of the end of the mandrel G, carrying the friction-pulley *c* in a direction toward and from the friction-wheel F. It has

been found preferable to place an intermediate friction-wheel H between the two wheels or pulleys F and c. This wheel H is mounted on the free end of an arm *i*, which is pivotally secured at its other end to the framework C, so as to freely assume a position between the two wheels F and c and merely transmit the motion of rotation from one to the other. The proper friction between the faces of the wheels is produced by the spring *k*, the tendency of which is to press the friction-wheel c against the wheel H, and this being free to move against the large wheel F. The office of this combination of friction-wheels is to operate the copy-roll mandrel in rolling up the preserved copy-sheet by the rotation of the mandrel of the supply-roll caused by the unwinding of the paper on it.

It is obvious that the mandrel G for the copy-roll will have to travel faster relatively when the paper is first started on it and the roll of paper on the supply-mandrel E is larger than when the paper on the supply-mandrel has been partly used and unreeled and the roll on the mandrel G larger. The proportionate size of the two wheels F and c is such and the friction between them sufficient to keep the copy-sheet rolled up and taut at first, and when the conditions become such that it is not necessary for the copy-roll to rotate so fast relatively its friction-wheel will slip on the other. The sheets of paper are carried from the supply-roll on the mandrel E over independent rollers *o o' o''*, which have their journal-bearing near the upper edge of the frame C so separated as to leave room for the recesses *n n'*, cut in the upper edge of the frame C to accommodate the ends of the clamping-rods *m m'*, which are used to secure the ends of the sheets of carbon-paper. This arrangement permits of the carbon-sheets *t t'* being properly interleaved between the memorandum-sheets *u u' u''* and securely held there. The lower memorandum-sheet is carried down over the roller *s* at the other end of the writing-table D and the end secured to the mandrel or spool G. The end of the paper is secured to the spool by pressing it over two short pins *x*, protruding from the surface of the material of the spool G near each end, which are slightly inclined in the direction of rotation of the spool

in winding up the sheet of paper, so that when the roll of paper is turned as a whole on the spool in the opposite direction from which it was wound the roll will be loosened and will slip off the retaining-pins *x*. The roll can then be slipped off the spool, one end of which is removable for that purpose.

The comparative wide part K of the frame B at one end of the top of the box forms a convenient resting-place for the hand when writing on the machine.

When the memorandum has been written on the machine, the protruding ends of the paper are grasped and pulled out and torn off. In polling the sheets the supply-roll on the mandrel E is rotated, and with it, by means of the friction-wheels mounted on the same, the mandrel G, which takes and reels up the copy-sheet, the end of which has been fastened to it.

It may in practice prove preferable to secure the carbon-papers in their position between the memorandum-sheets by clamping devices secured to the sides of the platform D and pass the several sheets of memorandum-paper over the same roller, thereby doing away with the friction of the other rollers.

If it is not desired to preserve a copy, as is done in the machine described, the copy-roll can be dispensed with and all the sheets withdrawn together.

We claim—

In a manifold-copying machine, the combination, with the supply-roller, of a large friction-wheel mounted on the shaft thereof, a copy-sheet-receiving spool loosely journaled in the frame and having a friction-wheel secured to its shaft, an interposed swinging friction-roll, a spring for holding said friction-wheels in frictional contact, and a paper-supporting platform intermediate the supply and copy-receiving rolls, substantially as and for the purposes described.

In testimony whereof we have affixed our signatures, in presence of two witnesses, this 9th day of May, 1890.

JOHN W. DICK.
ARTHUR L. EASTIN.

Witnesses:

JOS. W. CROOKES,
A. RAINES.