(No Model.)

A. GRETHEN.

AUTOGRAPH MANUSCRIPT COPYING TABLE OR DEVICE.

No. 421,926. Patented Feb. 25, 1890.

Fig. 2.

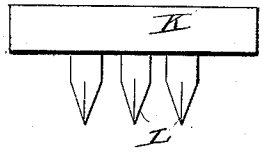


Fig. 1.

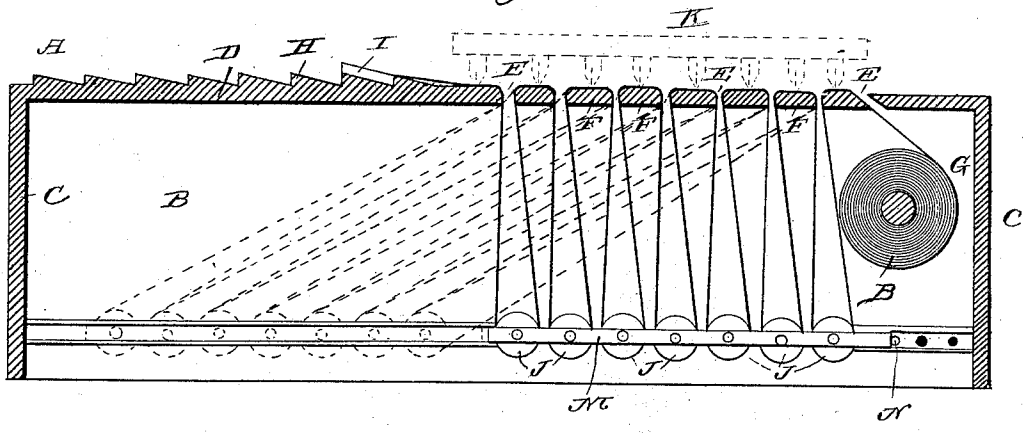
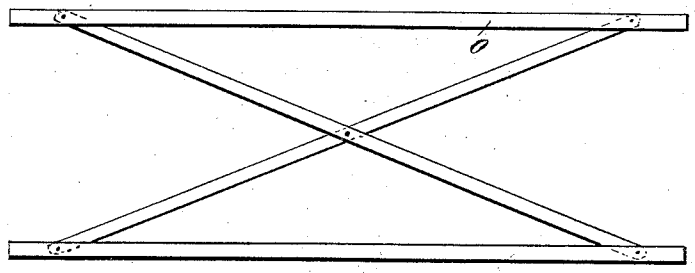


Fig. 3.



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UNITED STATES PATENT OFFICE.

ADOLF GRETHEN, OF MINNEAPOLIS, MINNESOTA.

AUTOGRAPH-MANUSCRIPT-COPYING TABLE OR DEVICE.

SPECIFICATION forming part of Letters Patent No. 421,926, dated February 25, 1890.

Application filed January 19, 1888. Serial No. 261,311. (No model.)

To all whom it may concern:

Be it known that I, ADOLF GRETHEN, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented a certain new and useful Manuscript Manifold-Copying Device or Table, of which the following is a specification.

The invention is designed to obtain simultaneous copies or duplicates of writings, one being a fac-simile of the other to all practical purposes. This result is obtained without the use of special inks or methods that impair the beauty and appearance of the original writing or the paper, and it is accomplished at one writing, thus saving the time and labor of duplicating the writing after it is made, as the original autograph and its duplicates are made at one and the same time.

The invention will be hereinafter described and claimed, reference being had to the accompanying drawings, forming a part hereof, in which—

Figure 1 is a longitudinal vertical section of the device; Fig. 2, a side view of the pen used, which in use will stand as indicated by dotted lines in Fig. 1. Fig. 3 is a view of an ordinary pantograph to which the pens may be secured.

In the drawings, the letter A designates a frame or table having sides B, ends C, and top D. The top is formed transversely with a number of slits E, which divide the top into a number of distinct slats or writing-surfaces F, each of which will have a flat and smooth surface, as shown. The slit at one end of the table is preferably made obliquely, as shown, for the better passage of the writing-paper from a roll G, journaled in the sides of the table and beneath its top, as shown. The other end of the table is formed with a series of teeth H, constituting a ratchet or spacing-teeth, which will receive a frame or block I, to which one end of the paper drawn from the roll G will be temporarily secured. This block will aid in holding the paper taut, and by moving it from one tooth to another as a portion of the writing is completed it will move the paper to bring a fresh portion into place to receive further writing. The teeth also serve to insure regular spacing, as the paper will be moved the same distance in each shifting of it.

The paper received from the roll G, after passing up through the first slit E, is passed down through the next one and around a roller J, and then up through the next slit and across the flat face of the slat over which the writing is done, and then down and around the next roll and up, as before, and so on through the desired number of slits and rolls to be used. The writing is effected by a pen K, composed of any desired number of points L, spaced so as to bring a point over each one of the slats F, on which the writing is to take place. It will thus be seen that as one point is moved over the paper lying across one slat the other pen will be moved over another slat, and so on, according to the number of pens used, and hence as one pen is used all the others are carried through the same movement and the same matter is inscribed upon the paper lying across the whole series of slats. It will thus be seen that there may be as many writings or duplicates as there are pen-points and slats employed, and each will be an exact counterpart of another and quite as strong and legible in its lines, so that each will look like the original. When the space over one slat has been fully inscribed, the block or frame I will be moved to the next tooth of the ratchet and engaged therewith, so that the paper will be moved that space and to that extent bring a fresh surface to position to receive the additional matter to be written. After the length of page desired has been written the paper is removed from the table and the long strip cut up into sheets of the proper length.

The length of each page may be determined by regulating the space or distance between the rolls and the slats, and that may be effected by the horizontal adjustment of the rolls. The manner preferred for adjusting the rolls is to journal them in a frame M, which will fit into recesses or ways in the sides of the table A, so that when the slide is moved along the distance, as is obvious, may be increased between the rolls and the slats, and thus a longer sheet of paper obtained. The frame may be held in its adjustment by

any suitable means—for instance, by a pin N, passed back of the end of the frame and into a hole in the side B. No invention is claimed for such means of securing the sliding frame; but it is merely shown as one suitable means.

The rolls J are covered with blotting-paper, so as to blot the writing when a pen is used; but it is obvious that if a pencil instead of a pen is used the blotting-paper is not necessary.

If desired, a pantograph O may be used for the purpose of keeping the pen parallel and uniform when many are used; but as the pantograph is old and well known only a reference to it and the statement that it may be used will here be made.

The device may be used by the lawyer and by the physician, as well as by the merchant, and whoever uses it will rest assured that he has a correct copy of the original and that the duplicate is as legible as the original, and is an autographic duplicate. It may be used for duplicating music as well as other productions, and also be used for a variety of purposes. Furthermore, it is simple and efficient for the uses intended.

Having described my invention and set forth its merits, what I claim is—

1. In a manifold-copying device, the table formed with a series of transverse slits for the passage of paper and a series of transverse slats having flat surfaces for the paper to rest upon, in combination with a roll to hold a web of paper, a series of rollers for the paper to pass around, and a block and ratchet for securing the paper and insuring uniformity in spacing, substantially as and for the purposes set forth.

2. In a manifold-copying device, the combination, with the table formed with a series of openings for the passage of the paper and a series of slats for the paper to rest upon, of a series of rolls to receive the paper from said slats and a horizontally-moving frame carrying said series of rolls, substantially as and for the purposes set forth.

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