

F. A. JOHNSON.
 MULTIPLE WRITING MACHINE.
 APPLICATION FILED JULY 8, 1912.

1,066,118.

Patented July 1, 1913.

3 SHEETS—SHEET 1.

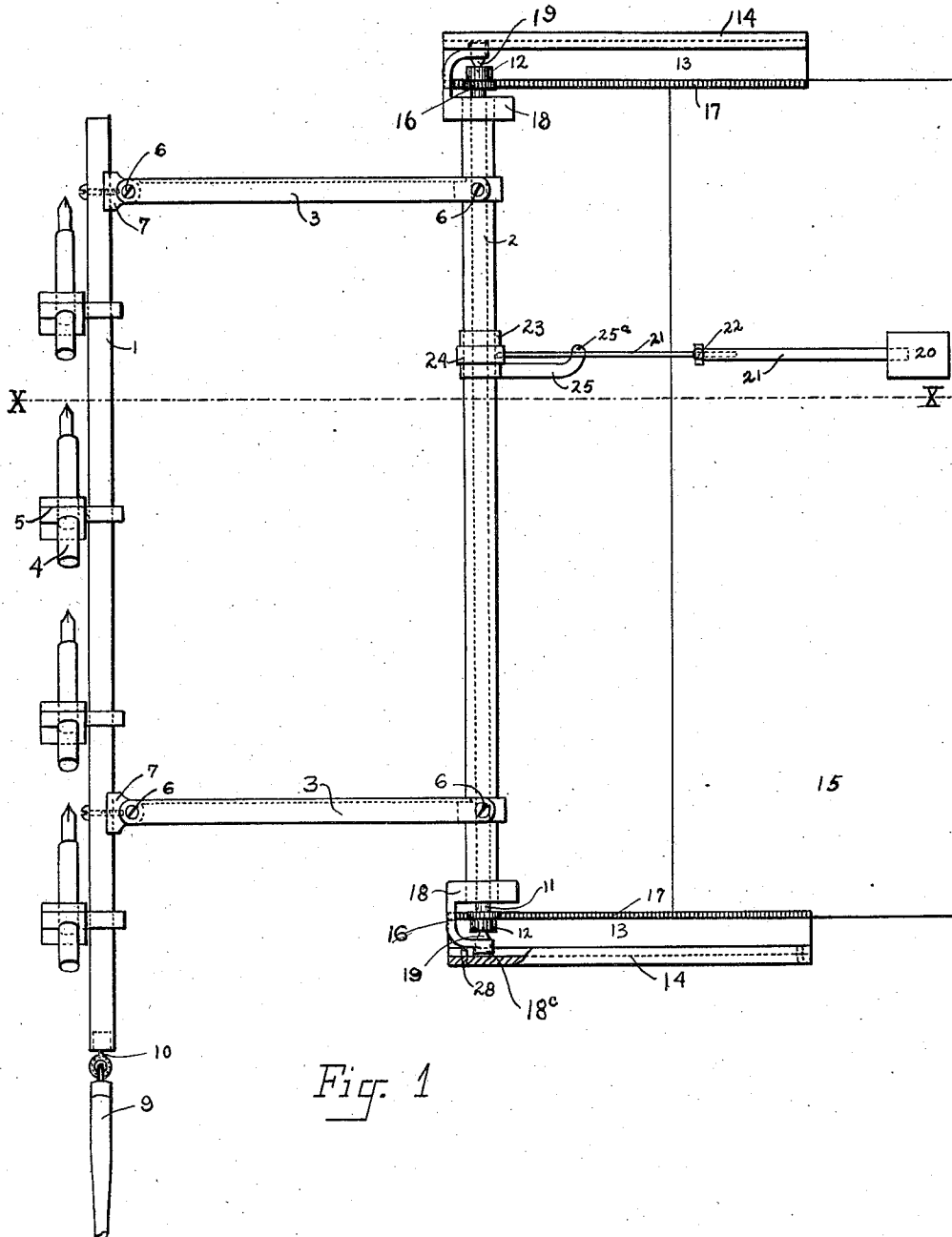


Fig. 1

Witnesses,
Leth Johnson
T. B. Mackinnon

Inventor,
F. Amos Johnson,

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3 SHEETS-SHEET 2.

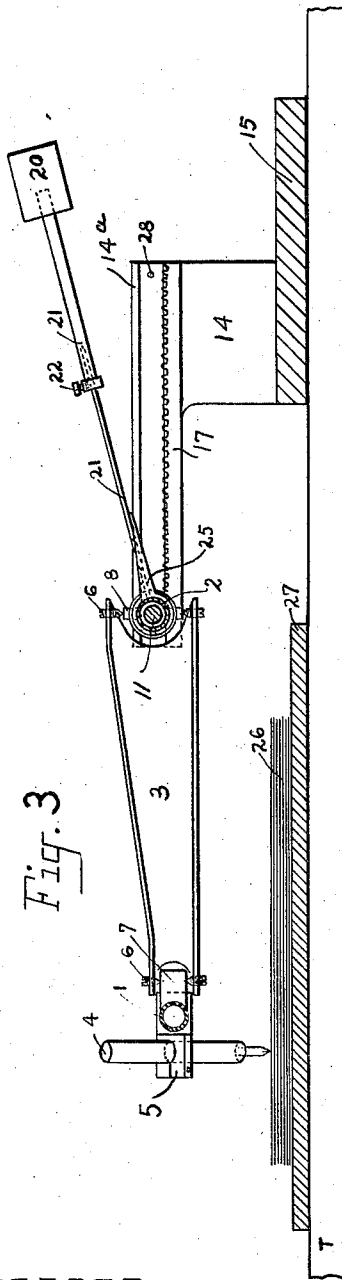


Fig. 3

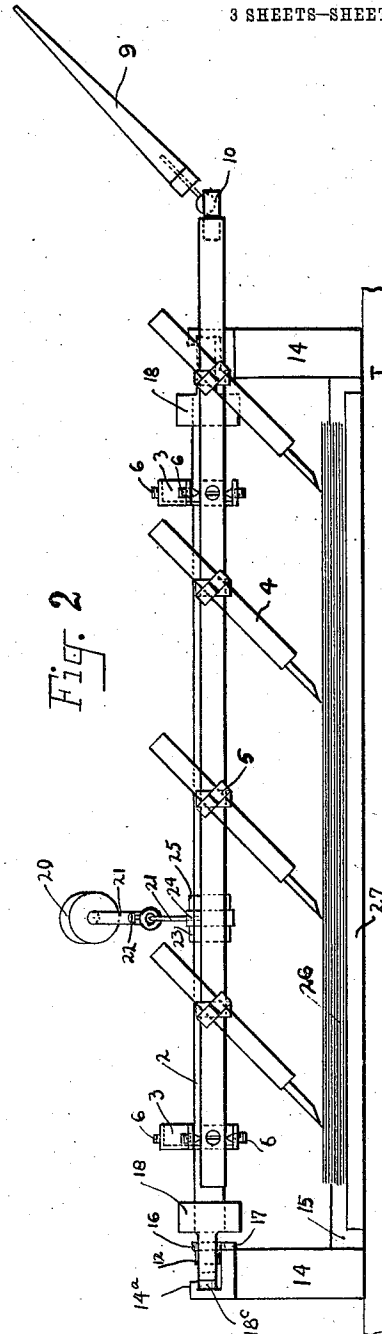


Fig. 2

Witnesses,
Leth Johnson
P. O. Mackinnon

Inventor,
F. Amos Johnson

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3 SHEETS—SHEET 3.

Fig. 4

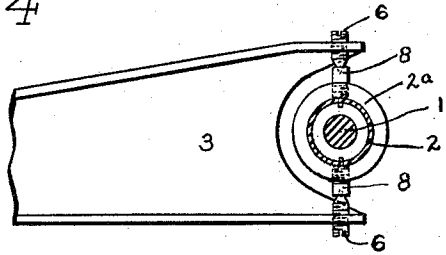


Fig. 5

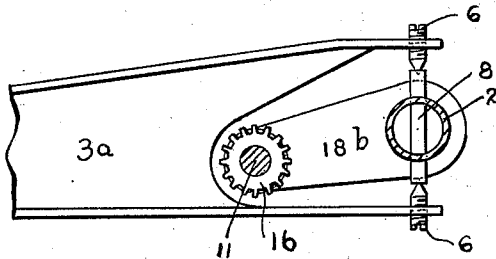


Fig. 6

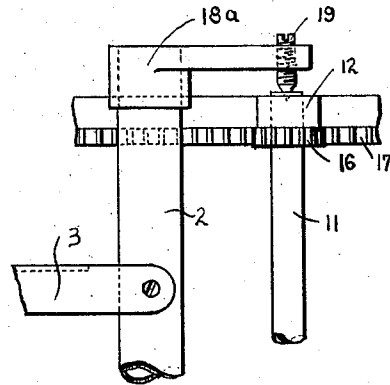
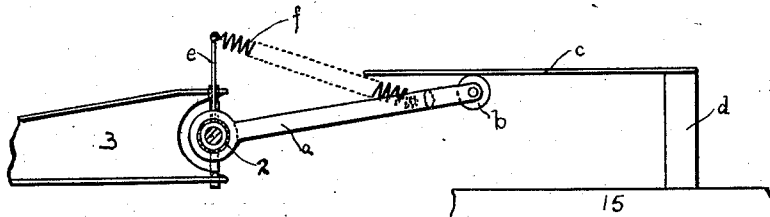


Fig. 7



WITNESSES,
Edith Johnson
R. O. Mackinnon

INVENTOR,
F. Amos Johnson

UNITED STATES PATENT OFFICE.

FRANK AMOS JOHNSON, OF DUNELLEN, NEW JERSEY, ASSIGNOR TO THE SIGNATURE COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

MULTIPLE-WRITING MACHINE.

1,066,118.

Specification of Letters Patent.

Patented July 1, 1913.

Application filed July 8, 1912. Serial No. 708,130.

To all whom it may concern:

Be it known that I, FRANK AMOS JOHNSON, a citizen of the United States, and a resident of Dunellen, in the county of Middlesex and State of New Jersey, have invented certain new and useful Improvements in Multiple-Writing Machines, of which the following is a specification.

My invention relates to machines for simultaneously writing a plurality of signatures and is designed especially for signing checks or similar instruments where there are a large number of signatures to be affixed.

It belongs to that class of machines referred to in which the pens or marking members are secured to a common pen-bar which has a universal movement in a horizontal plane and where the pen pressure is given and maintained by the hand of the writer.

My present improvement relates to the means for mounting the pen-carrying frame. In the following description reference is made to the accompanying drawings, in which:

Figure 1 is a plan; Fig. 2 is a left elevation; Fig. 3 is a front sectional elevation on the line X—X; Fig. 4 is an enlarged detail of the parts identified by the reference characters thereon; Figs. 5, 6 and 7 are alternative constructions referred to in the description.

The construction of the pen-carrying frame is substantially identical with that shown in the application referred to and is in the form of a parallelogram the sides of which are pivoted. The pen-bar constitutes one side of the parallelogram and, in the present instance, a tubular bar 2' constitutes the other. The remaining two sides are formed by a pair of links 3 which are forked at both ends to inclose the pen-bar and the opposite side of said frame to which they are pivotally secured. This construction gives a parallel ruler movement and permits the pens 4 to be carried in a longitudinal direction with relation to the pen-bar to which they are secured by adjustable clamps 5. The links 3 are pivoted to the pen-bar by conical pins 6 which enter corresponding centers in blocks 7 which are attached to the pen-bar and the links are attached to the side 2 by similar conical pins also marked 6 and posts 8. These posts are firmly fixed in the side 2 and are of

sufficient length to give the necessary leverage to secure the required rigidity to the frame, so that when the front end of the pen-bar is depressed by the pilot 9, to which it is secured by an arm 10, the pen-bar will be evenly depressed at both ends.

My present improvement differs from the construction shown in the application referred to in the means for mounting the pen-carrying frame to secure a parallel reciprocating movement. Instead of attaching one side of the pen frame to or mounting it upon a carriage which has more or less spring to it, I provide a traveling shaft 11 which has rigidly secured thereto a pair of supporting rolls 12 (one at each end). These rolls rest upon trackways which are formed in front and rear brackets 14 which are secured to the bed plate 15. The shaft is held to parallel movement right and left by a pair of gears 16 which mesh with a corresponding pair of racks 17 which are secured, one to each of the brackets 14—the pitch diameter of the gears being the same as the diameter of the rolls 12. The side 2 of the pen frame is provided with a pair of brackets or arms 18 which have conical bearing pins 19, by means of which the shaft 11 is axially pivoted between said arms. I prefer to make the side 2 hollow or of tubular construction and to so shape the arms 18 that the shaft 11 will pass through the tubular side 2, with the axes of the shaft and tube substantially concentric. This construction necessitates the cutting in two of the posts 8 and in order to firmly secure them in the side 2 a pair of collars 2^a are added as shown in Fig. 4 at the point where the posts are inserted. The arms 18 may be shaped as shown in Fig. 6 (marked 18^a) which brings the shaft 11 outside of the tubular side 2 of the pen frame.

By making the forked ends of the links 3 a little longer, to allow for the longitudinal movement of the pen-bar, as shown in Fig. 5 (marked 3^a) and by turning the arms which connect the pen frame to the traveling shaft (marked 18^a) to the left, a portion of the pen frame is thrown to the opposite side of the shaft 11 from the pen bar and the weight of the pens and pen-bar is partially balanced on the shaft 11 as a fulcrum. I provide, however, a special balance for the pen-bar to partially or completely support it, as individual writers may prefer;

which consists of a counterweight 20, which is attached to a telescoping rod 21—the parts being held by a screw 22. This rod is secured to a collar 24 which is loose on the side 2 of the pen-frame and which is held between a collar 23 and an arm 25 which are fixed to the side 2. The arm 25 has a toe 25^a which supports the counterweight rod 21 when the pen frame is in writing position. This construction allows the pen frame to be thrown completely over on the centers 19, as the arm 25 will leave the rod 21 and the counterweight 20 will rest on the bed 15. The object of making the rod 21 so long is to enable a small weight to be effective in balancing the pen frame without, at the same time, unduly increasing the total weight that has to be carried; so there is no danger from momentum of the parts when writing rapidly.

Instead of the counterweight 20, a construction very similar or identical with that shown in the application referred to may be used. Such a construction is illustrated in Fig. 7. The side 2 has a loose arm *a* which carries in its free end a roll *b*. This roll acts against the under side of a trackway *c* which is attached to a post *d* which is secured to the bed 15. An arm *e* which is fixed to the side 2 of the frame is connected by a spring *f* to the arm *a*. The action of the spring *f* in holding the roll *b* against its trackway *c* and wholly or partially supporting the weight of the pen-bar is obvious.

The documents 26 which are to be signed are represented in Figs. 2 and 3 as supported on a platen 27 which rests on a shelf or table T, by the side of the bed and at the left of the same. The transverse movement of the writing frame is limited by pins 28 in the brackets 14 and the brackets 18 have projecting hubs 18^a which travel under flanges 14^a of the brackets 14.

Having now described my invention, what I claim is:

1. In a machine of the class described, the combination of the following elements, to-wit: a pen-carrying frame in the form of a parallelogram; a shaft; a pair of rigid connections from one side of said frame, between which said shaft is axially pivoted; a pair of rolls secured to said shaft and adapted to support the same; parallel trackways for said rolls; a pair of gears secured to said shaft adjacent to said rolls; a pair of racks with which said gears mesh secured adjacent to said trackways to hold said shaft to parallel movement on said trackways and a support or bed for said trackways and racks.

2. In a machine of the class described, the combination of the following elements, to-wit: a pen-carrying frame in the form of a parallelogram; a shaft; a pair of rigid connections from one side of said frame, be-

tween which said shaft is axially pivoted; a pair of rolls secured to said shaft and adapted to support the same; parallel trackways for said rolls and means for obtaining uniform movement of said rolls on said trackways.

3. In a machine of the class described; a pen-carrying frame in the form of a parallelogram; a shaft; a pair of rigid connections from one side of said frame, between which said shaft is axially pivoted; in combination with a bed and means for supporting and holding said shaft to a reciprocating transverse movement with relation to said bed.

4. In a machine of the class described, the combination of the following elements, to-wit: a pen-carrying frame in the form of a parallelogram; a shaft; a pair of rigid connections from one side of said frame, between which said shaft is axially pivoted; a pair of rolls secured to said shaft; supporting trackways for said rolls; means for holding said shaft to a parallel reciprocating movement on said trackways and means for balancing said pen-carrying frame on said shaft as a fulcrum.

5. In a machine of the class described, the combination of the following elements, to-wit: a pen-carrying frame in the form of a parallelogram; a shaft; connections from one side of said frame, between which said shaft is axially pivoted; a pair of rolls secured to said shaft; supporting trackways for said rolls; means for holding said shaft to a parallel reciprocating movement on said trackways and a counterweight secured to said pen-carrying frame and adapted to balance said frame on said shaft as a fulcrum.

6. In a machine of the class described, the combination of the following elements, to-wit: a pen-carrying frame in the form of a parallelogram; a shaft; connections from one side of said frame, between which said shaft is axially pivoted; a pair of rolls secured to said shaft and adapted to support the same; a bed plate; a pair of brackets secured to said bed plate—said brackets being cut away to form trackways for said rolls; a pair of gears on said shaft adjacent to said rolls and a pair of racks intermeshing with said gears secured to said brackets.

7. In a machine of the class described, a pen-carrying frame in the form of a parallelogram; a shaft; rigid connections from one side of said frame, between which said shaft is axially pivoted; a bed plate; a pair of brackets secured to said bed plate; means formed in and secured to said brackets co-acting with means secured to said shaft to retain and support said shaft, and to hold said shaft to a parallel reciprocating movement and to limit the range of said movement.

8. In a machine of the class described, a

pen-carrying frame in the form of a parallelogram; a shaft; rigid connections from one side of said frame, between which said shaft is axially pivoted—said side of said frame being tubular in form and the axis of said shaft being substantially concentric with the axis of the tube; in combination with means for supporting and holding said shaft to a parallel reciprocating movement.

10 9. In a machine of the class described, a pen-carrying frame; in combination with a shaft on which said frame is axially pivoted

and a counterweight for said frame—said counterweight being pivoted to said frame—and means for rendering said counterweight operative when said frame is in writing position. 15

In testimony whereof I affix my signature in presence of two witnesses.

F. AMOS JOHNSON.

Witnesses:

T. O. MACKINNON,
M. C. CRANE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."