

998,209.

Patented July 18, 1911.

2 SHEETS—SHEET 1.

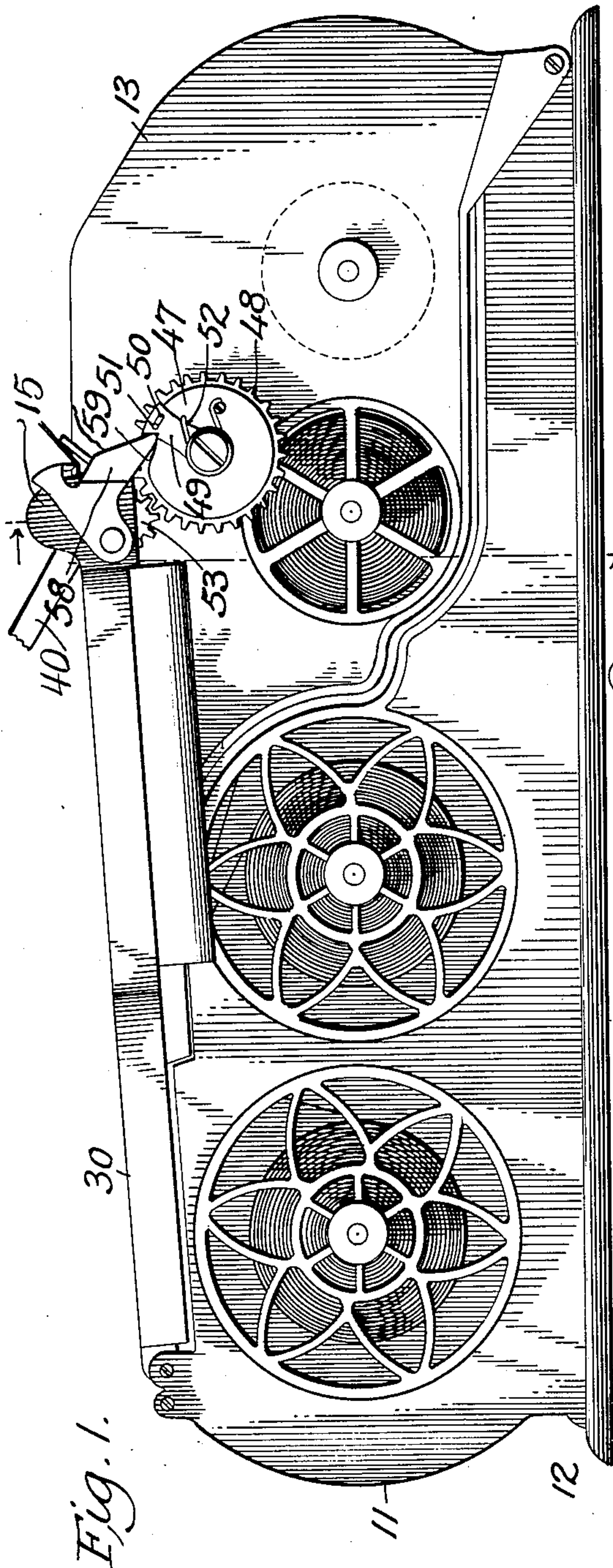


Fig. 1.

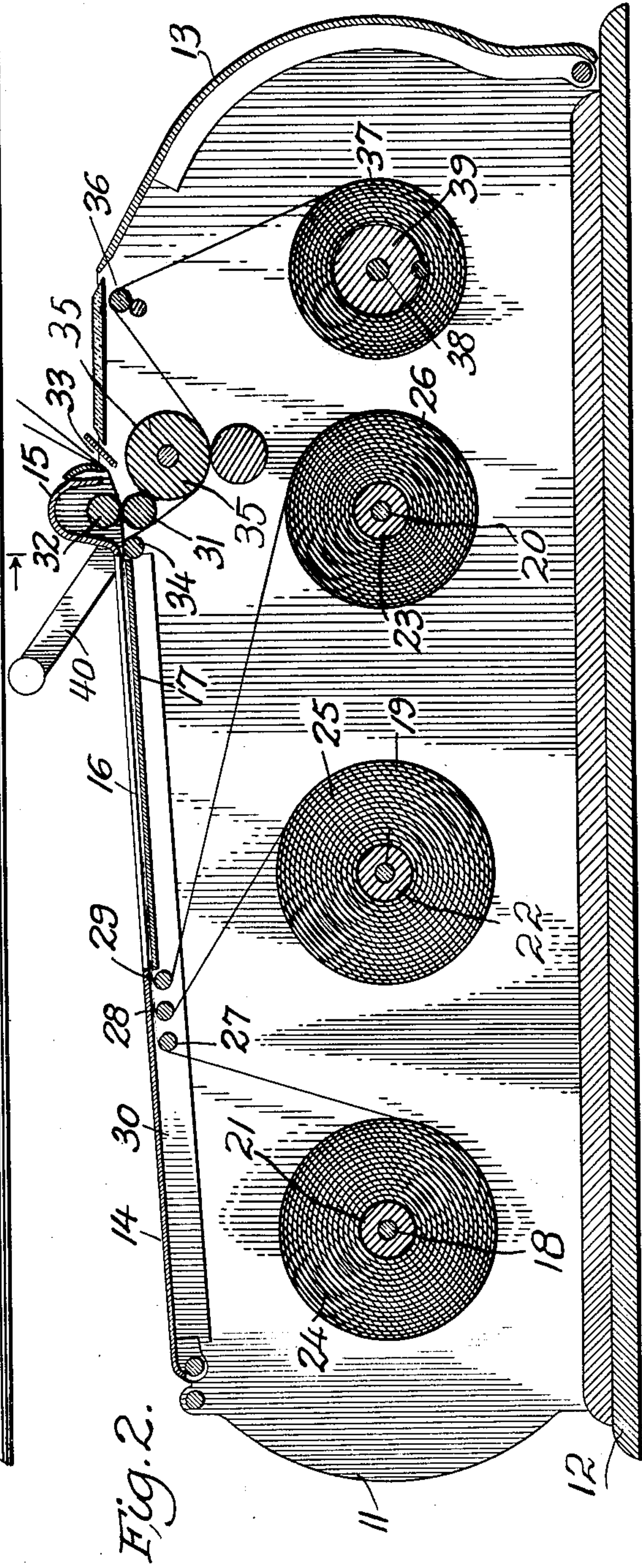


Fig. 2.

WITNESSES:

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INVENTOR

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BY

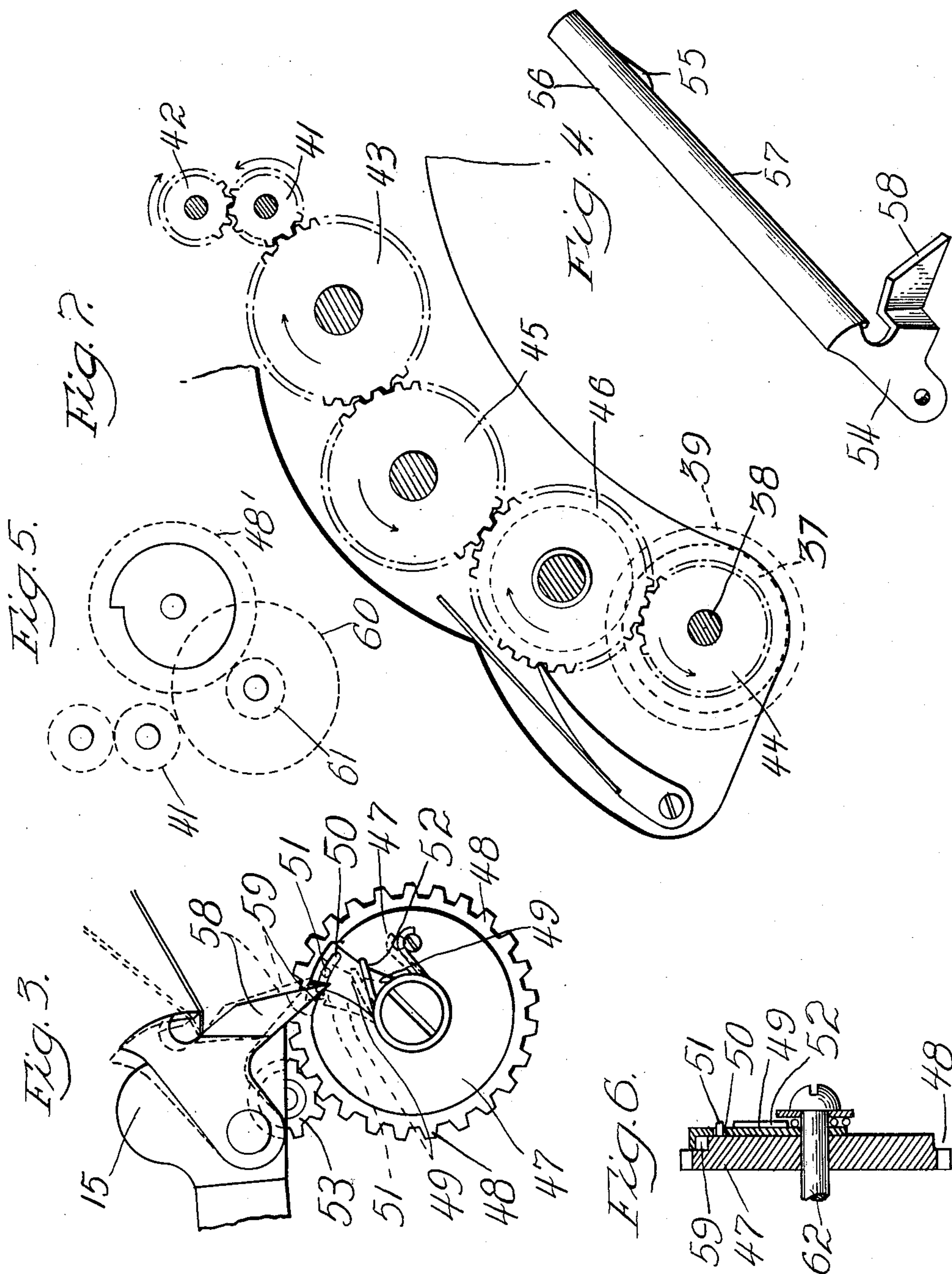
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S. R. SHOUP.
 AUTOGRAPHIC REGISTER.
 APPLICATION FILED NOV. 9, 1909.

998,209.

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2 SHEETS-SHEET 2.



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Inventor:
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UNITED STATES PATENT OFFICE.

SAMUEL R. SHOUP, OF HOBOKEN, NEW JERSEY, ASSIGNOR TO AUTOGRAPHIC REGISTER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

AUTOGRAPHIC REGISTER.

998,209.

Specification of Letters Patent.

Patented July 18, 1911.

Application filed November 9, 1909. Serial No. 526,957.

To all whom it may concern:

Be it known that I, SAMUEL R. SHOUP, a citizen of the United States, and a resident of Hoboken, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Auto-graphic Registers, of which the following is a specification.

This invention relates to what are termed autographic registers. The better known forms of these devices comprise a suitable casing in which are journaled a plurality of rolls of paper strips, the ends of which are brought together in superposed relation and carried over a suitable plate or platen, with manifolding material therebetween, the plate or platen being accessible for writing, whereby the words or characters written upon the upper and exposed sheet are auto-graphically transferred to the sheets underneath the same. The ends of these strips are then simultaneously withdrawn a suitable distance and detached in some manner, as by tearing off along a suitable straight edge, this operation providing the desired completed papers, in duplicate or triplicate, and leaving the ends of said strips in position for the next succeeding and corresponding operation. As is well known, these paper strips are generally provided each in the form of a series of printed blanks, with spaces to be filled in by writing, and it will be apparent that not only must corresponding blanks or forms in each of the superposed strips register with each other, but the distance through which the strips are drawn for the purpose of detaching the completed paper or document must be carefully and reasonably accurately measured, else the next succeeding form will not be properly positioned for the following operations. It is desirable, therefore, to provide for what is termed a "measured throw," this being sometimes secured through the employment of a gripping carriage which engages the end of the strips and is movable to withdraw the same from the device a measured distance, after which said carriage may be returned and the filled-in forms detached, leaving the next succeeding forms in proper position.

In connection with machines in which the paper strips are unwound from their rolls by simultaneously pulling out the ends thereof, no very serious problems are en-

countered in providing for this very desirable feature of "measured throw." For many purposes, however, what is known as a crank-operated machine is considered preferable—such machines being provided with a crank usually secured to one of the pair of friction or gripping rollers between which the superposed strips pass and rotation of which serves to advance the end portions of these strips and unwind the same from their respective rolls. It will be apparent that there are many difficulties in the way of providing for a "measured throw" in connection with the crank-operated device. Obviously, rotation of the friction rollers must be checked at precisely the proper point, possibly after a plurality of revolutions, and yet they must be free to rotate again and perform their usual functions as soon as the completed end portions of the strips have been detached.

The principal object of this invention is the provision of means in connection with a crank-operated or other rotary feed autographic register for checking movement of the superposed end portions of the strips at the proper point, said checking means being automatically released by or simultaneously with the operation of detaching the filled-in forms. Incidental to the above, I have in view a device of this character which is simple in construction and accurate and dependable in operation.

My invention will be more readily understood by reference to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side elevation of an autographic register embodying my invention; Fig. 2 is a longitudinal vertical section thereof; Fig. 3 is an enlarged detail view of the checking gear, hereinafter described; Fig. 4 is a perspective view of the movable member provided with the knife or straight edge along which the end portions of the strip are detached; Fig. 5 is a detail view of an arrangement of gears for providing for a longer throw without materially increasing the diameter of the largest gear; Fig. 6 is an enlarged detail section view of the checking gear and Fig. 7 is an enlarged detail view of the gear train after winding the record gear, looking from the inside of the casing.

Referring now to the drawings in detail, I have shown a suitable and preferably me-

tallic casing comprising a portion 11 mounted upon a base 12, and a portion 13 hinged to said portion 11, whereby these two portions may be separated or "opened" and
 5 afford access to the interior of the casing for the purposes of repair or that of replenishing the paper rolls, and preventing access thereto when said sections are suitably locked together. A top plate 14 is hinged at
 10 its rear end to the section 11 of the casing, and is provided at its forward end with a hood 15 for a purpose which will hereinafter be made clear. This top plate 14 is provided with a large aperture 16, immediately below which is suitably supported the
 15 plate or platen 17.

In the sides of the casing are suitably journaled the axles 18, 19 and 20 of the spools 21, 22 and 23, respectively, which
 20 carry the rolls 24, 25 and 26 of paper strips. In the construction shown, the axles 18 and 19 are journaled in the fixed portion of the casing. The ends of the strips from the rolls 24, 25 and 26 are carried around the
 25 idler rollers 27, 28 and 29, respectively, preferably journaled in the wings 30 of the top plate 14, and thence over the top of the plate or platen 17.

In the preferred construction, the end of
 30 the two upper strips pass between the friction rollers 31 and 32, in close and yielding contact with each other, and thence out through the slot 33 at the edge of the hood 15, which is designed to cover the upper of
 35 these friction rollers. The lower strip from the roll 26 passes over an idler roller 34, under the roller 35 over the idler 36, and thence to the spool 37 upon the axle 38, on which it is wound upon the roll 39. I prefer
 40 that the lower friction roller 31 be provided with a crank 40, and for the purposes of accuracy that the two rollers be intergeared together through the provision of the gears 41 and 42 at one end of said rollers. The
 45 gear 41 on the roller 31 is also in mesh with the gear 43 on the roller 35, thus being positively driving said roller to facilitate the winding of the record sheet upon the roll 39. Interposed between the gear 43 and the
 50 gear 44 upon the winding spool 37, are the gears 45 and 46, this gear train operating to rotate the winding spool 37 at a proper velocity as the friction rollers 31 and 32 are rotated.

55 Suitably located upon the exterior of the casing, I provide the rotatable disk-wheel 47, integral with or suitably secured to the gear 48, the length of the periphery of said disk wheel controlling the length of the sheet
 60 available for a single writing operation. Loose upon the short stud or shaft 62 upon which this disk-wheel and gear are mounted, is the arm 49, provided with a slot 50 near the end thereof into which projects a pin 51
 65 on the disk-wheel 47. It will be apparent

that this pin and slot limit rotary movement of said arm relatively to said disk-wheel, a spring 52 constantly subjecting said arm to a yielding pressure in a direction opposite to that in which said disk-wheel and gear rotate. The gear 48 is in mesh with a gear 53
 70 on the axle of the roller 31 exterior of the casing.

Pivoted near the ends of the wings 30 of the top plate 14, are the arms 54 and 55 of
 75 the preferably curved plate 56 which is provided with a lower knife-edge 57. These are preferably parts of the same integral strip, as shown, although it will be apparent that the arms 54 and 55 may be separate members
 80 carrying the knife-blade 56. From the arm 54 projects the pawl or detent 58, the end of which is so positioned as to ride upon the periphery of the disk-wheel 47 and normally hold the edge 57 of the knife 56 out of con-
 85 tact with the paper strips which are passing through the slot 33 below said knife. This disk-wheel 47 is provided with a notch 59, to the side of which is located the spring-pressed arm 49.
 90

It will be apparent that as the rollers 31 and 32 are rotated to withdraw the paper strips, the disk-wheel 47 will be rotated through the intermeshed gears 53 and 48 until the pawl 58 drops into the notch 59,
 95 the pawl also operating to engage the end of the spring-pressed arm 49 and relatively move the same against the action of its spring to the position indicated in Fig. 1. When the pawl 58 drops into the notch 59,
 100 the knife 56 is lowered to contact with the uppermost paper strip, and said strips may be engaged by the hand and detached by tearing the same along the edge of the knife blade.
 105

The forces exerted in drawing the paper against the knife edge, if sufficient to tear the paper, are also sufficient to raise the knife blade bodily and thereby withdraw the pawl 58 from the notch 59. While the
 110 pawl is thus being held in its elevated position, the spring 52 operates to move the arm 49 to a position underneath said pawl whereby, when the end portions of the paper strip have been detached and the knife member returns by gravity to its depressed position, said pawl 58 is resting upon the curve
 115 top end of the arm 49, and the disk-wheel 47 is free to be turned through another revolution.
 120

It will be apparent that the length of the paper which is detached may be varied by varying the diameter of the disk-wheel 47 and correspondingly the pitch of the gear 48. Should the desired length of paper be
 125 so great as to make the necessary wheel or gear of a size too large to be convenient or practical, it will be seen that I may interpose a gear 60, in mesh with the gear 41, said gear 60 being provided with a pinion
 130

61 in mesh with the gear 48', as shown in Fig. 5, thus reducing the velocity with which the gear 48' is rotated and correspondingly increasing the length of the strip of paper withdrawn by the friction rollers 31 and 32.

Many modifications of minor details of my improved autographic register will doubtless readily suggest themselves to those skilled in the art to which it appertains, and I therefore do not desire to limit my invention to the specific construction shown and described.

I claim as new and desire to secure by Letters Patent:

1. The combination, with a suitable platen and means for mounting a plurality of paper strips for unisonal movement of the end portions thereof in superposed relation across said platen, of means for checking movement of said strips when predetermined lengths thereof have been drawn across said platen, means for severing the withdrawn end portions of said strips, and means actuated by said severing means for releasing said checking means.

2. The combination, with means for directing the end portions of a plurality of strips in superposed arrangement over a suitable platen, of means for advancing said strips across said platen, means for checking said advancing means when predetermined lengths of strips have been drawn across said platen, means for severing the advanced end portions of said strips, and means actuated by said severing means for releasing said checking means.

3. The combination, with means for directing the end portions of a plurality of strips in superposed relation over a suitable platen, of means rotatable to advance said strips across said platen, means for checking said advancing means at a predetermined point, means for severing the advanced end portions of said strips, and means actuated by said severing means for releasing said checking means.

4. The combination, with means for directing the end portions of a plurality of strips in superposed relation over a suitable platen, of means having rotary actuating means to advance said strips across said platen, means for checking said advancing means at a predetermined point, means for severing the advanced end portions of said strips and means actuated by said severing means for releasing said checking means.

5. The combination, with means for directing the end portions of a plurality of strips in superposed relation over a suitable platen, of means rotatable to advance said strips across said platen, means for checking said advancing means at a predetermined point, a member provided with a straight-edge along which the advanced end portions of said strips may be severed,

and means actuated by the forces directed against the straight-edge during the severing operation to release said checking means.

6. The combination, with means for directing the end portions of a plurality of strips in superposed relation over a suitable platen, of means having rotary actuating means to advance said strips across said platen, means for checking said advancing means at a predetermined point, a member provided with a straight-edge along which the advanced end portions of said strips may be severed, and means actuated by the forces directed against the straight-edge during the severing operation to release said checking means.

7. The combination, with means for directing the end portions of a plurality of paper strips in superposed relation over a suitable platen, of means rotatable to advance said strips across said platen, means for checking said advancing means at predetermined intervals, and means for releasing said checking means by the operation of detaching the advanced end portions of said strips.

8. The combination, with means for directing the end portions of a plurality of paper strips in superposed relation over a suitable platen, of means having rotary actuating means to advance said strips across said platen, means for checking said advancing means at predetermined intervals, and means for releasing said checking means by the operation of detaching the advanced end portions of said strips.

9. The combination, with means for superposing the end portions of a plurality of strips over a suitable platen, of a pair of gripping rollers engaging the ends of said strips, means for rotating said rollers to advance said strips, and means for automatically checking rotation of said rollers when said strips have been drawn a regulated distance across said platen, and means for releasing said checking means by the operation of detaching the advanced end portions of said strips.

10. The combination, with means for superposing the end portions of a plurality of strips over a suitable platen, of a pair of gripping rollers engaging the ends of said strips, means for rotating said rollers to advance said strips, means for automatically checking rotation of said rollers when said strips have been drawn a regulated distance across said platen, a member provided with a straight-edge along which the advanced end portions of said strips may be severed, and means actuated by the forces directed against said member during the severing operation to release said checking means.

11. The combination, with a casing and a suitable platen, of means for rotatively

supporting a plurality of rolls of paper strips, means for directing the end portions of said strips into superposed relation over said platen, friction rollers engaging the
5 ends of said strips, means for rotating said rollers and thereby advancing said strips, and means for automatically checking rotation of said rollers when said strips have been advanced a regulated distance across
10 said platen, and means for releasing said checking means by the operation of detaching the advanced end portions of said strips.

12. The combination, with a casing and
15 a suitable platen, of means for rotatively supporting a plurality of rolls of paper strips, means for directing the end portions of said strips into superposed relation over said platen, friction rollers engaging the

ends of said strips, means for rotating said 20 rollers and thereby advancing said strips, means for positively checking said rollers when said strips have been advanced a regulated distance across said platen, a member provided with a straight-edge along 25 which advanced end portions of said strips may be severed, and means actuated by the forces directed against said member during the severing operation to release said checking means. 30

In testimony of the foregoing, I have hereunto set my hand in the presence of two witnesses.

SAMUEL R. SHOUP.

Witnesses:

S. V. SMITH,

P. V. WENING.