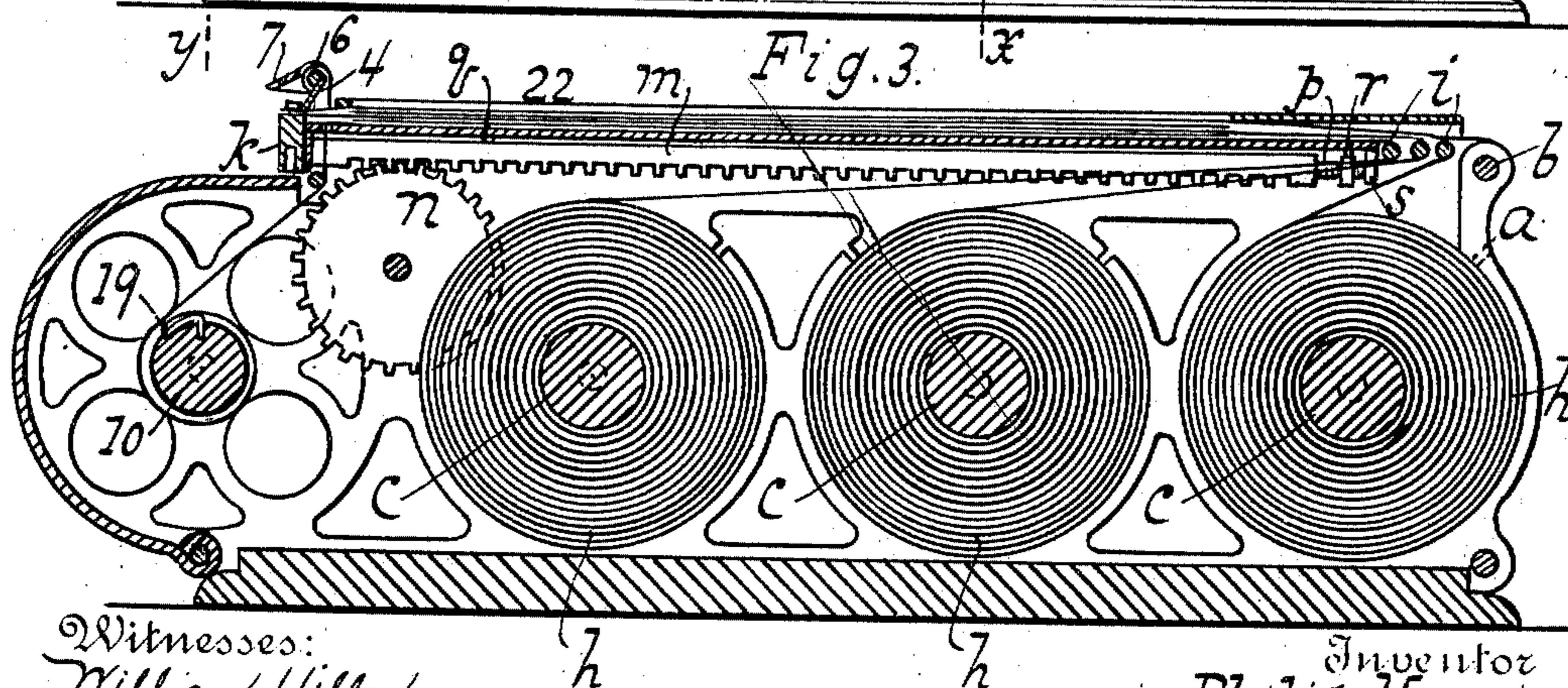
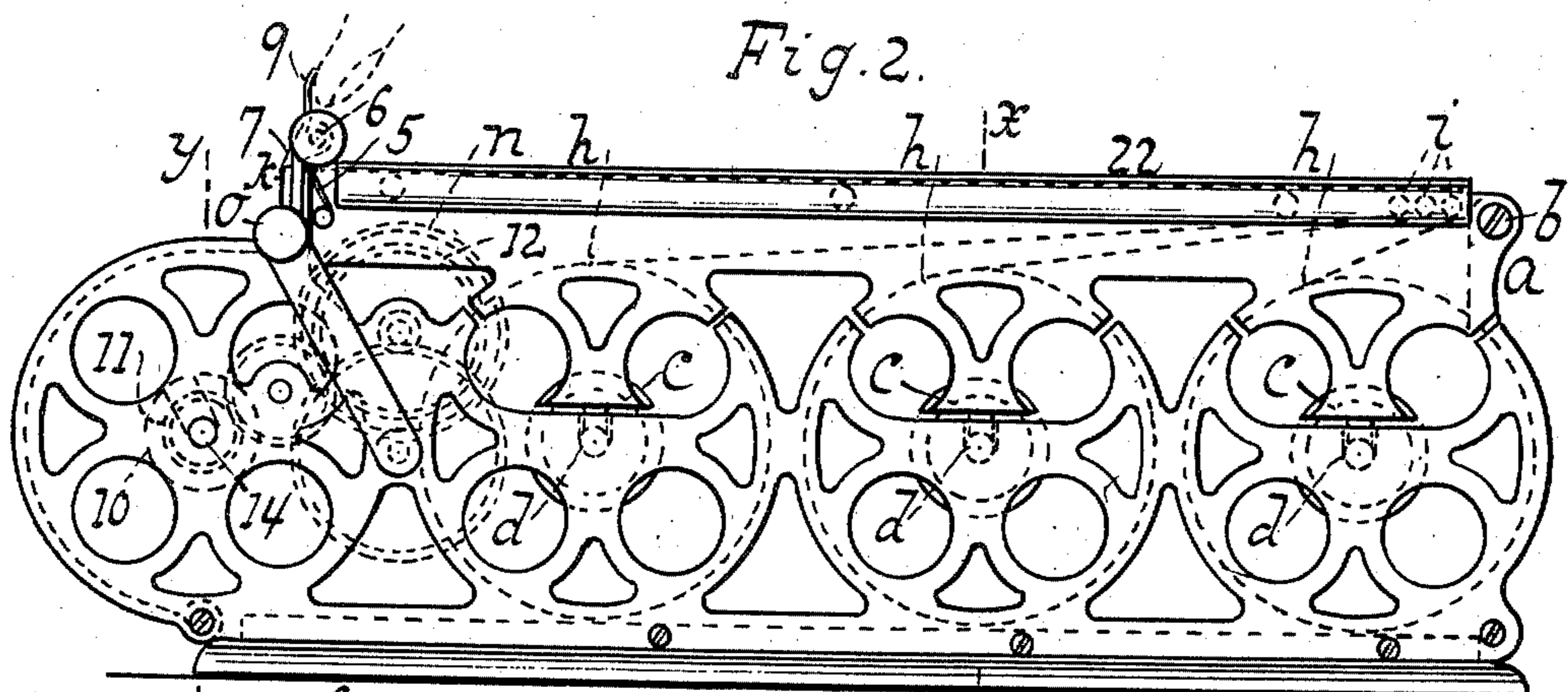
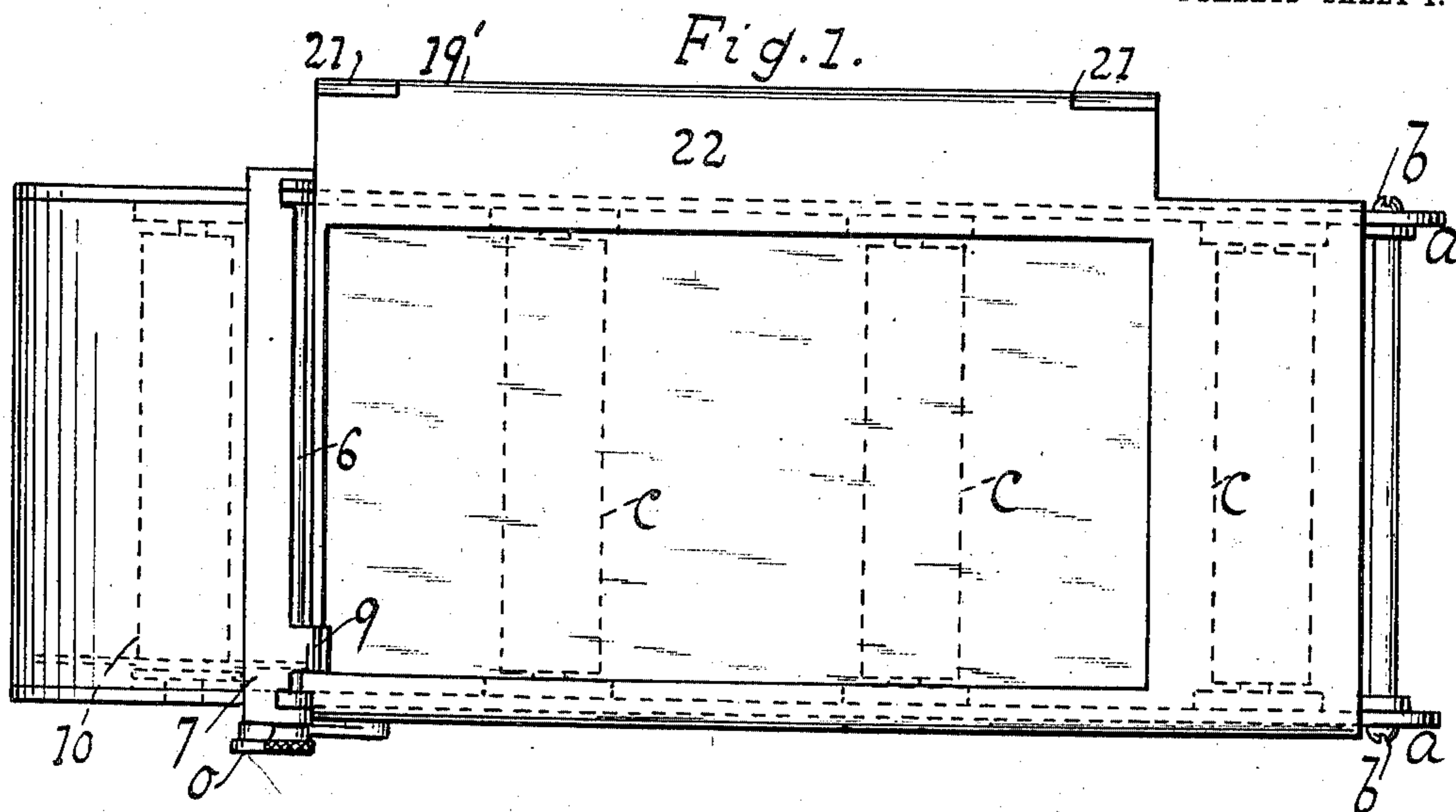


965,708.

P. HANO.
 AUTOGRAPHIC REGISTER.
 APPLICATION FILED OCT. 7, 1909.

Patented July 26, 1910.

4 SHEETS—SHEET 1.



Witnesses:
 William Miller
 Christian Almstaedt

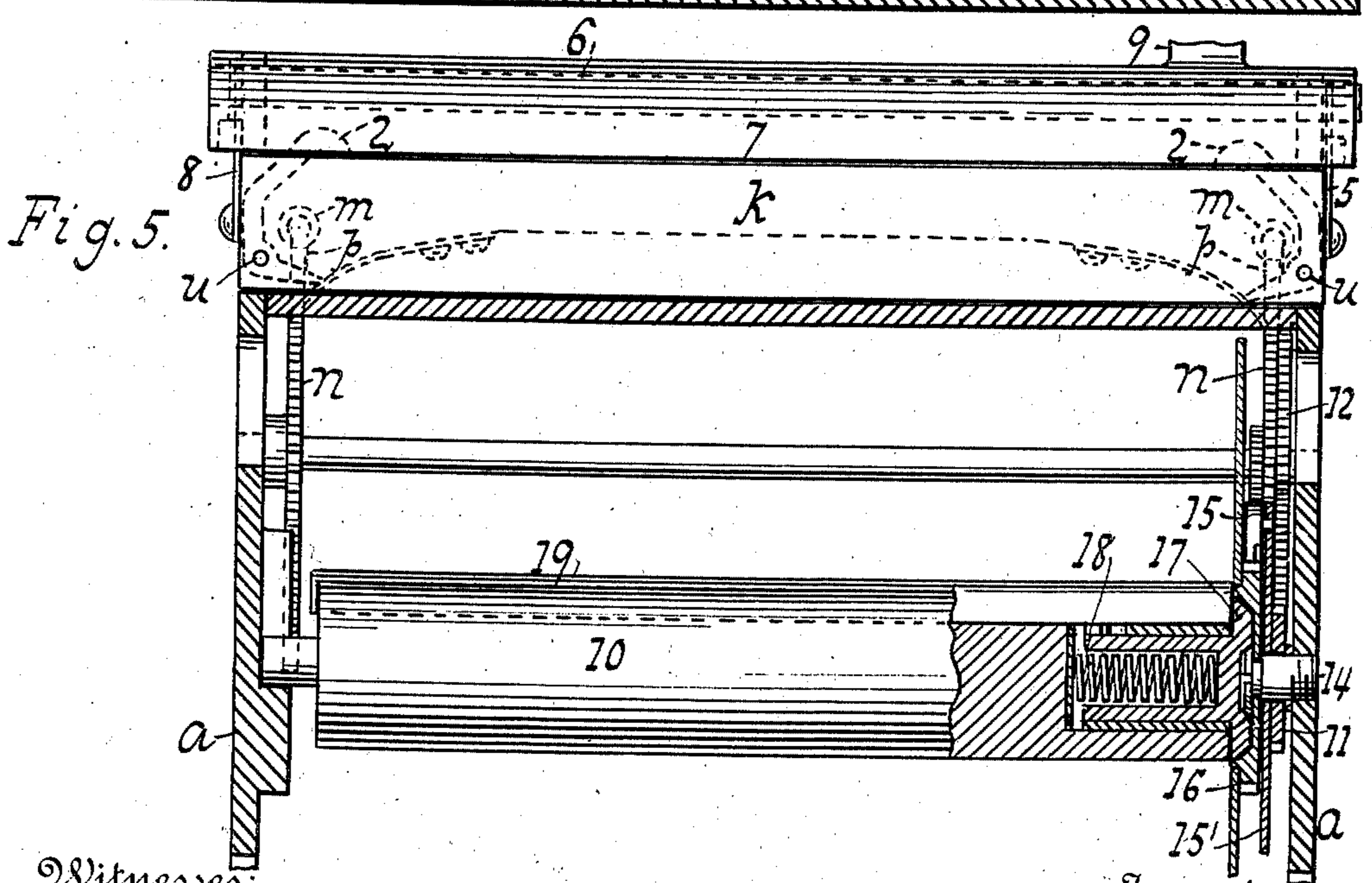
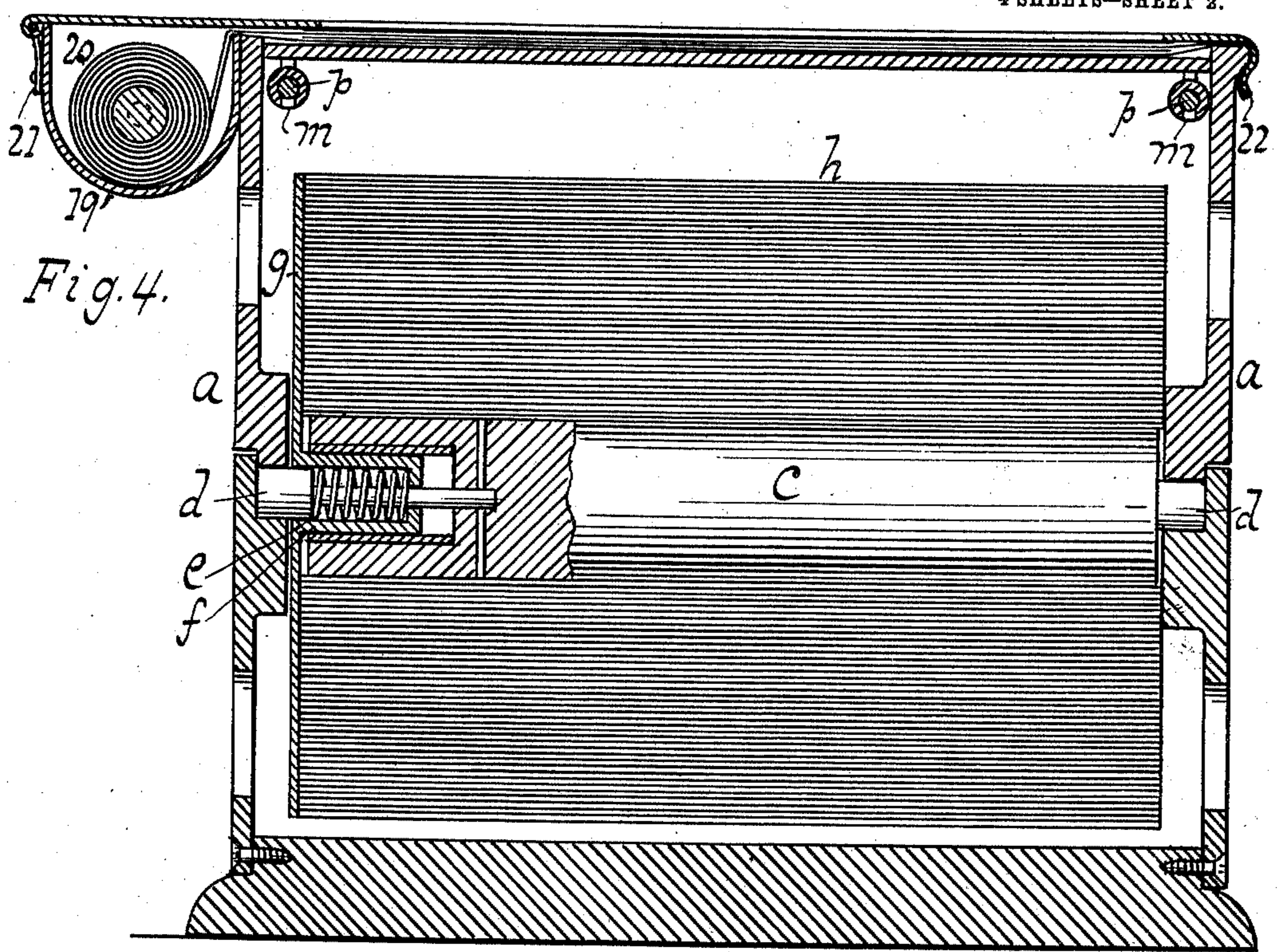
Inventor
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 By his Attorney,
 Hauff & Murland

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4 SHEETS—SHEET 2.



Witnesses:
 William Miller
 Christian Amstad.

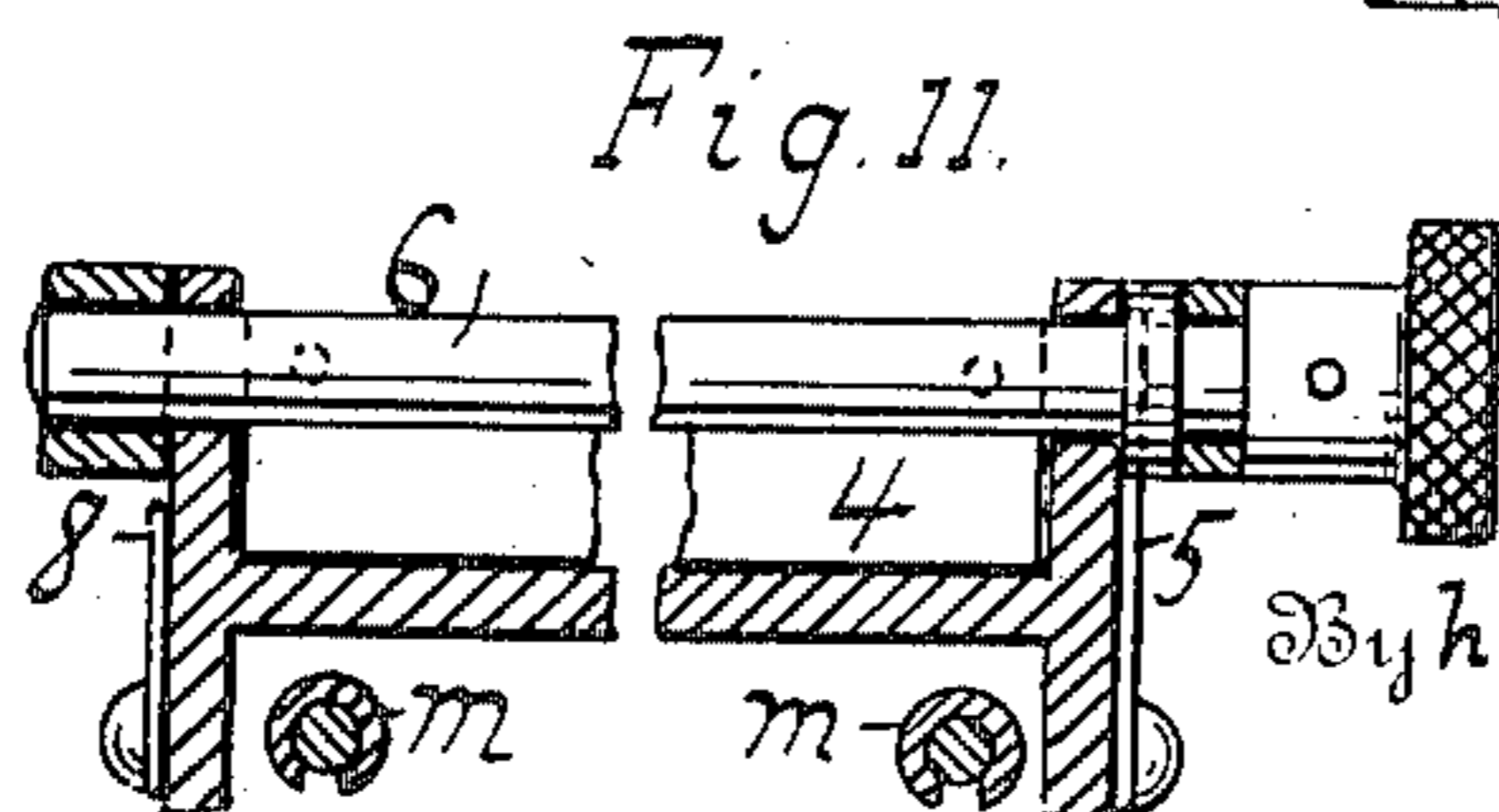
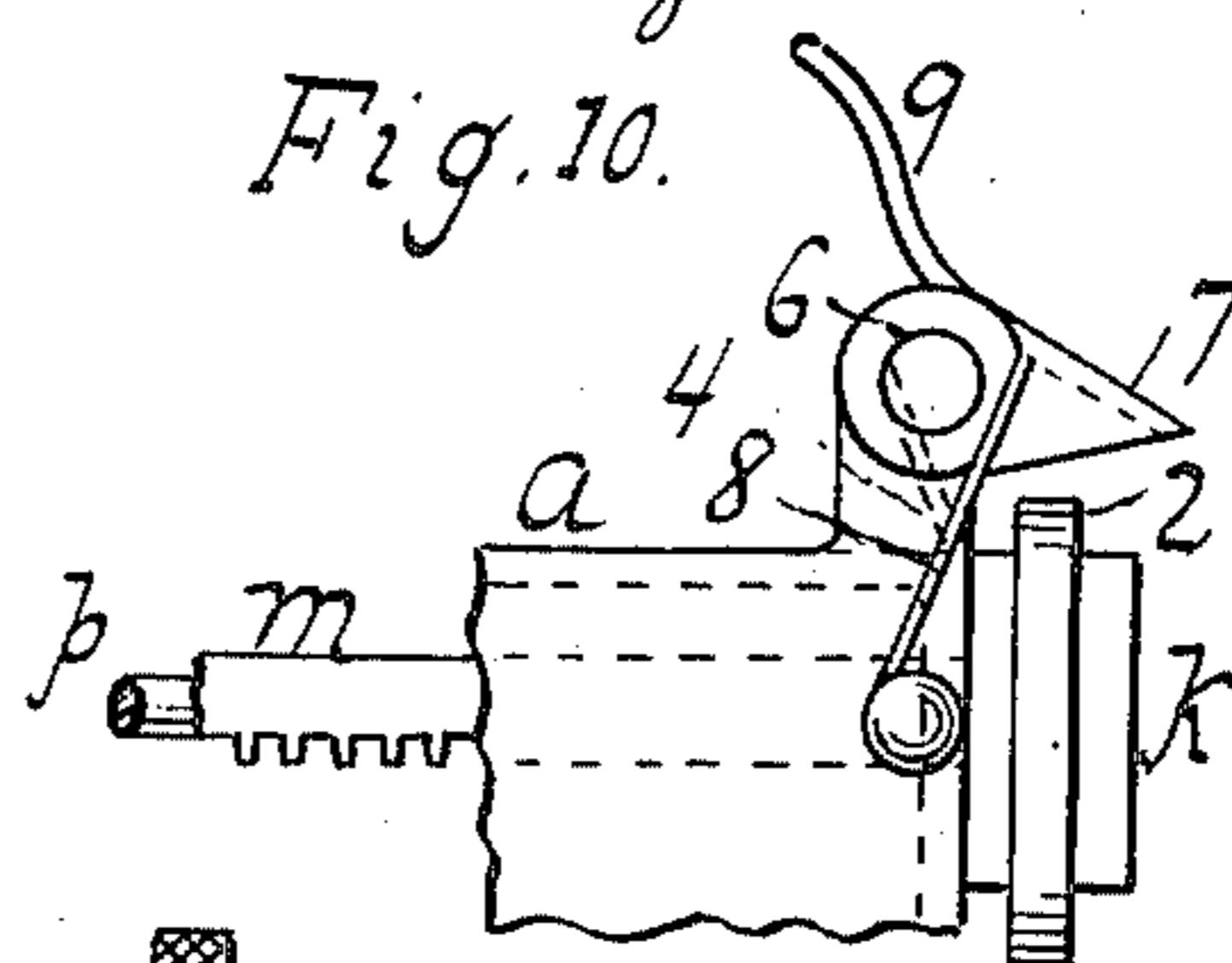
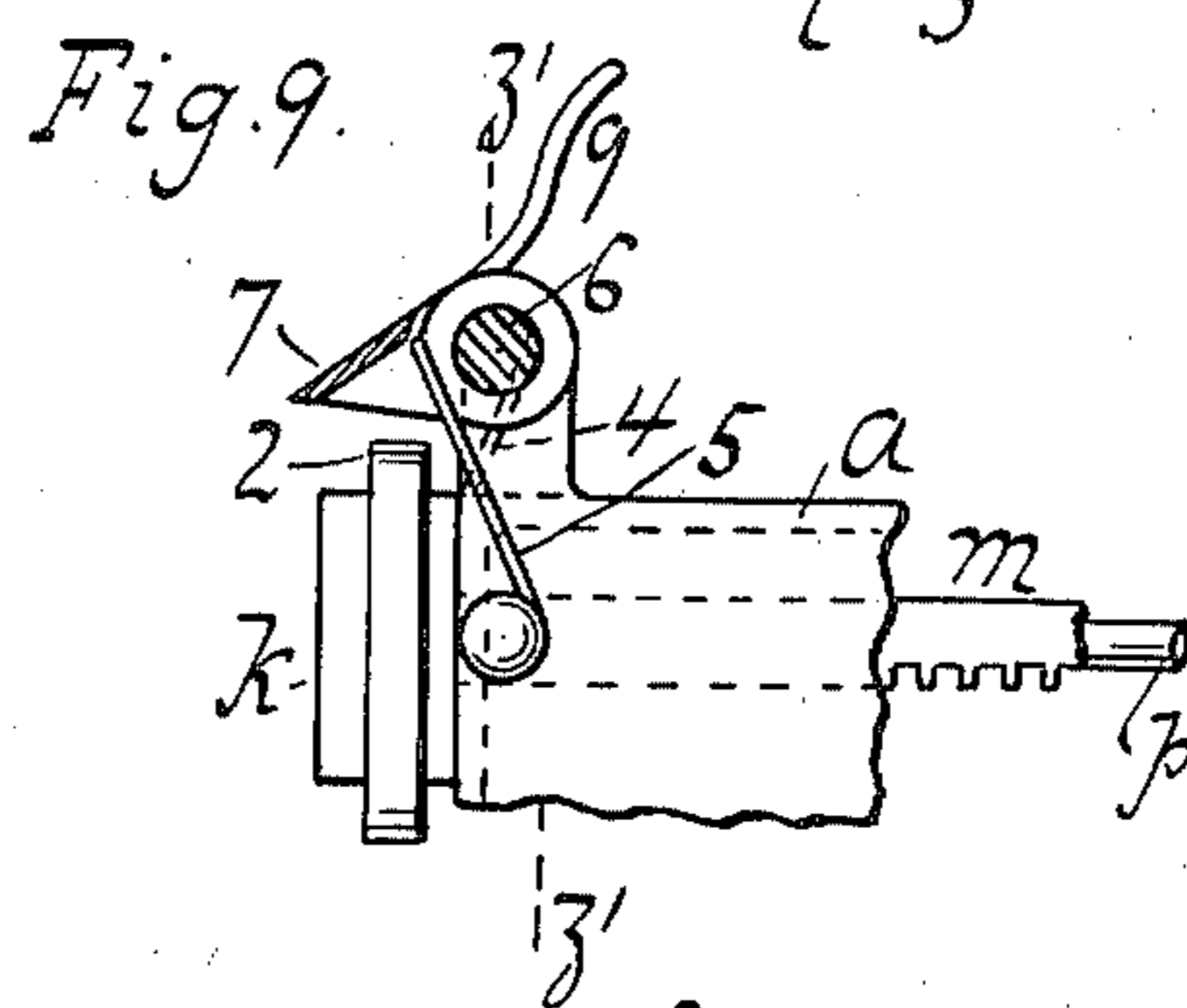
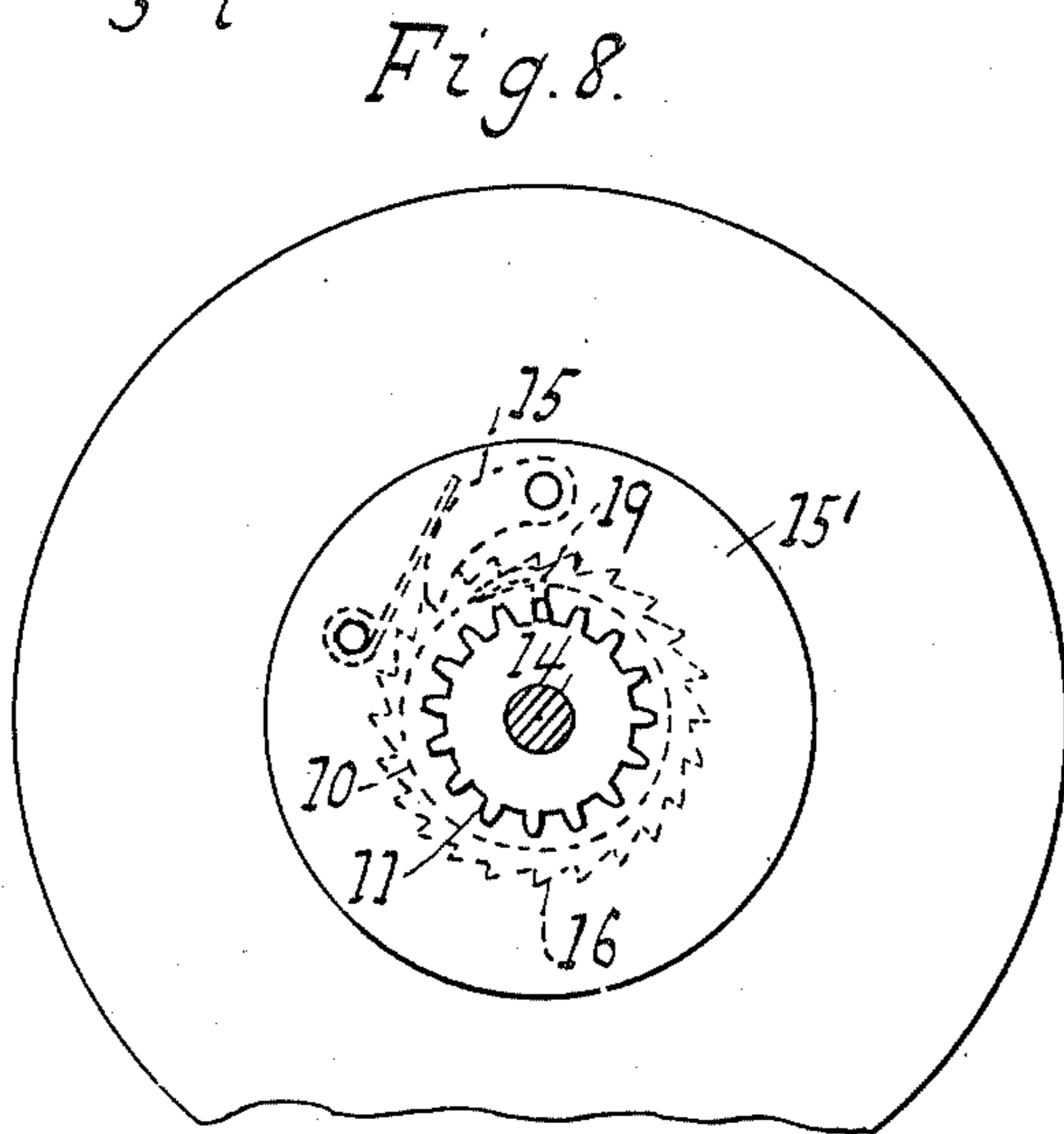
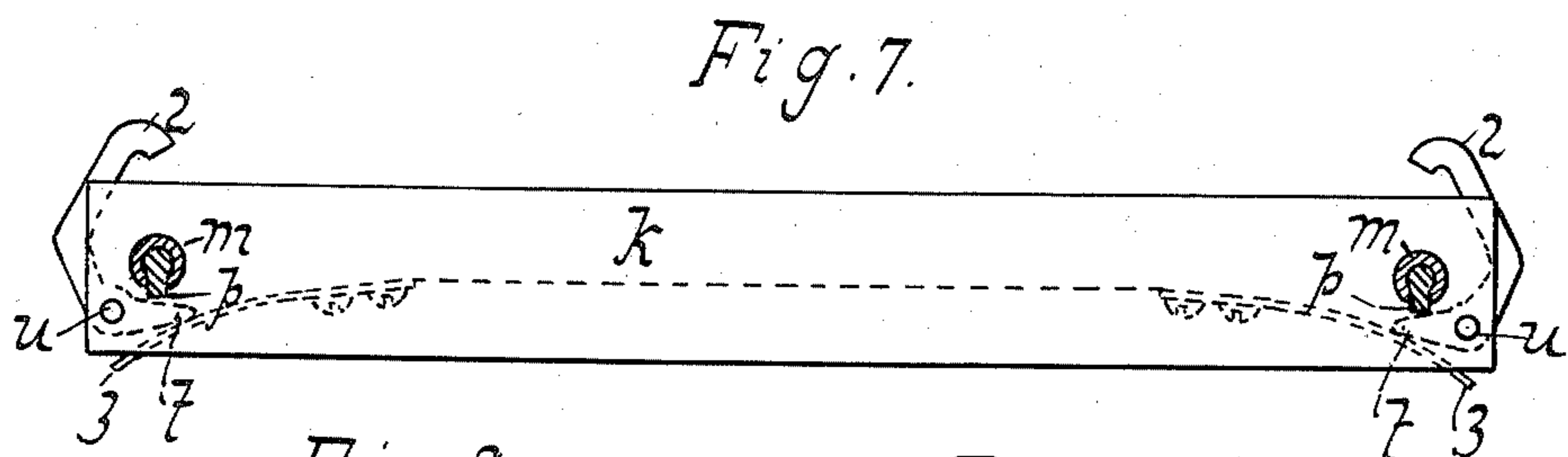
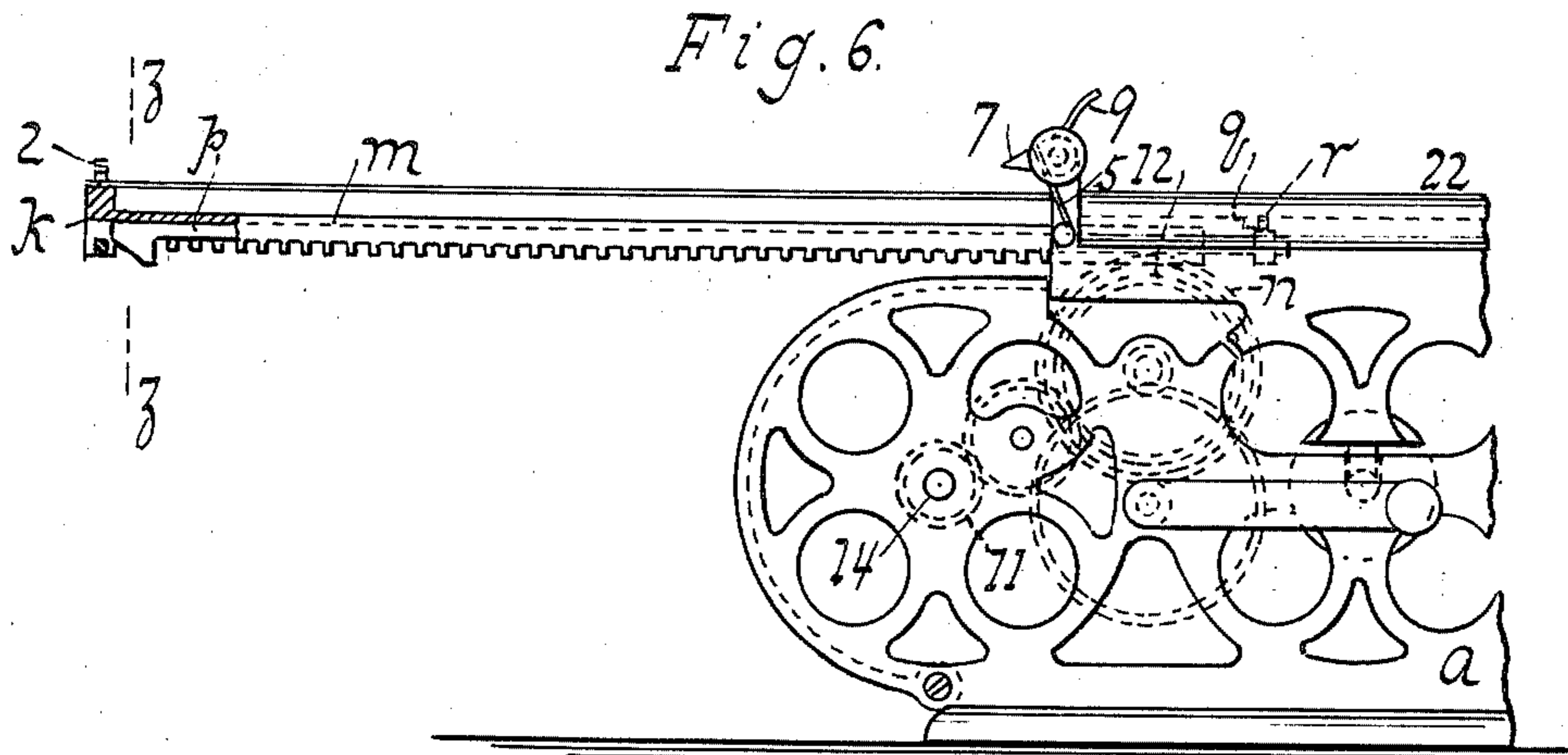
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P. HANO.
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Patented July 26, 1910.

4 SHEETS—SHEET 3.

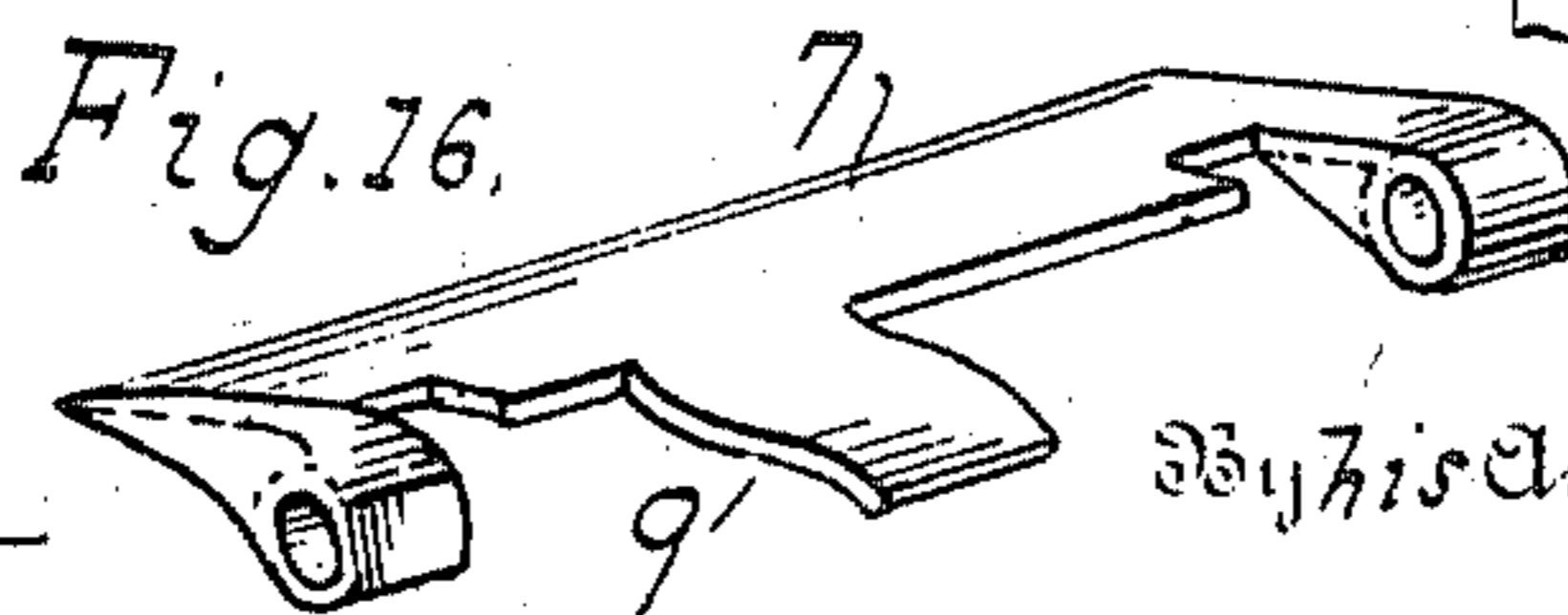
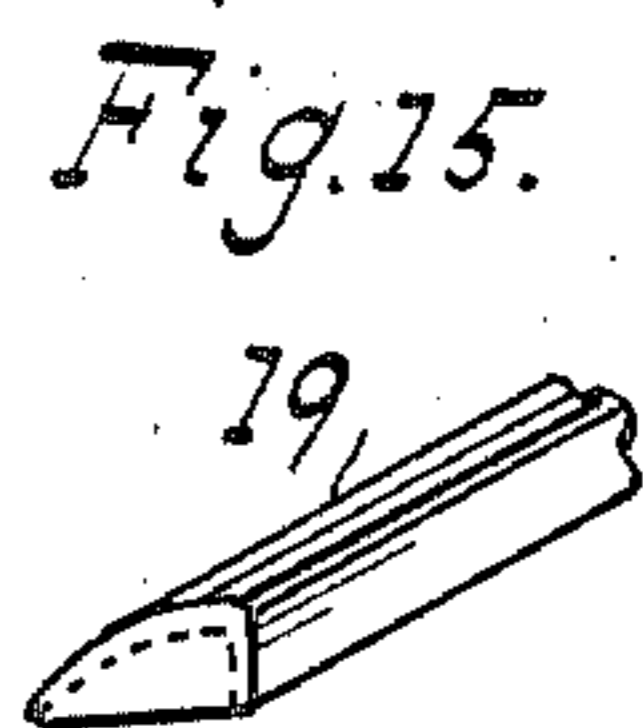
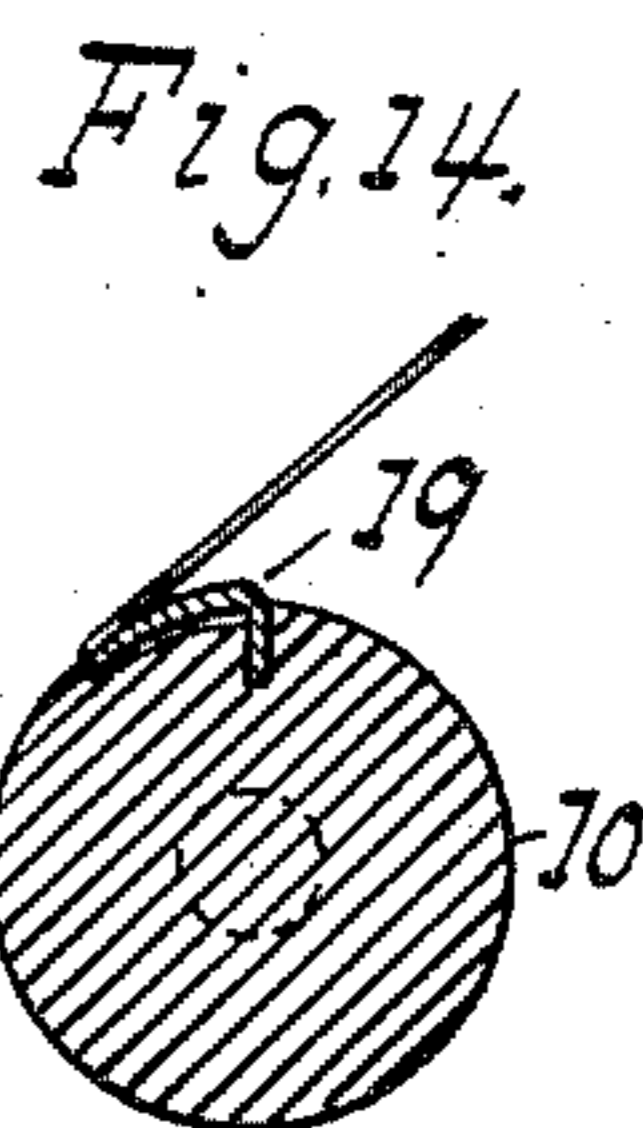
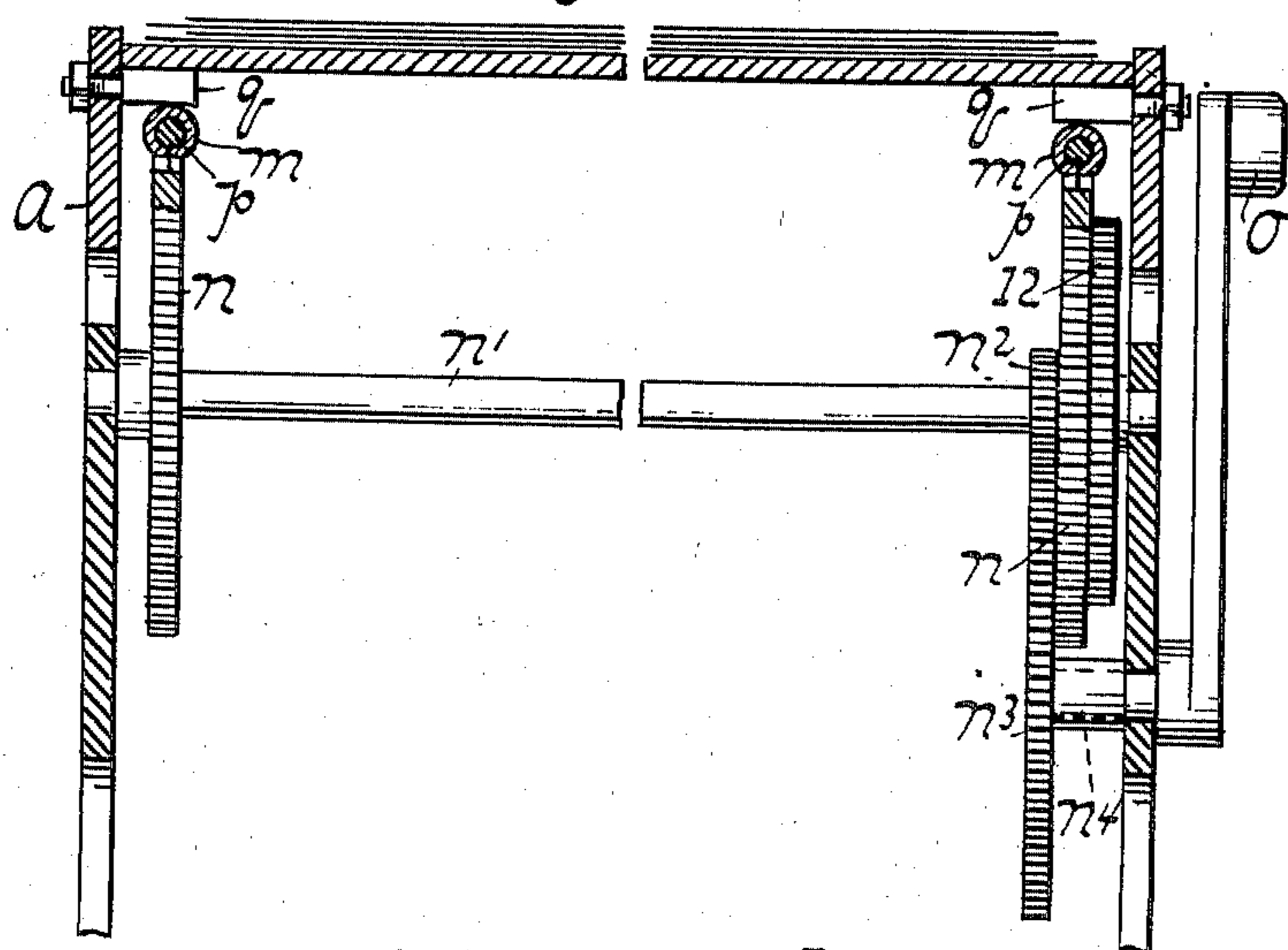
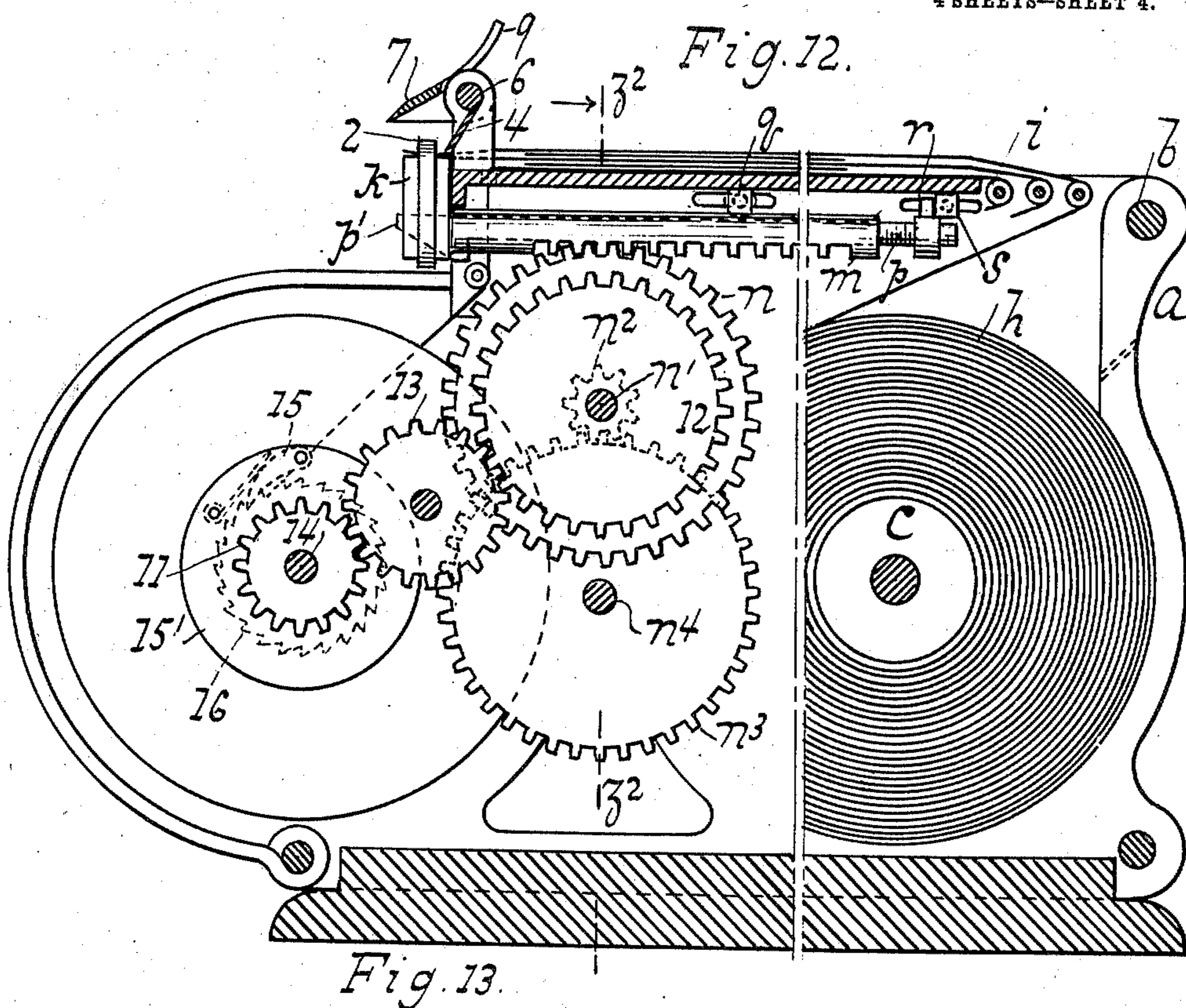


Witnesses:
 William Miller
 Christian Remstedt

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P. HANO.
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 APPLICATION FILED OCT. 7, 1909.

4 SHEETS—SHEET 4.



Witnesses:
William Heller
Christian Almstedt

By His Attorneys

Inventor
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eye
Hauff & Harland

UNITED STATES PATENT OFFICE.

PHILIP HANO, OF NEW YORK, N. Y.

AUTOGRAPHIC REGISTER.

965,708.

Specification of Letters Patent.

Patented July 26, 1910.

Application filed October 7, 1909. Serial No. 521,502.

To all whom it may concern:

Be it known that I, PHILIP HANO, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented new and useful Improvements in Autographic Registers; of which the following is a specification.

This invention relates to autographic registers, the machine being equipped to take any suitable number of rolls of paper. Three rolls of paper are shown in the drawing but this number can be varied as required.

The machine is adapted to register the sheets or rolls in alinement as well sidewise as longitudinally by means of certain devices hereinafter more fully described. The paper is in the form of continuous strips wound on reels, the arrangement being such that the paper is pressed against the side wall of the machine, so as to prevent lateral movement of the paper as well as overspeeding, along longitudinal or transverse lines so as to insure correct writing on the same.

The machine is provided with a reciprocating frame fed forward and backward by means of suitable devices and is provided with a clamping device. This clamping device is operated automatically by suitable stops which can be arranged for throwing a greater or less length of paper and which stops can be set to an accurate and positive throw. A tension device is provided which will prevent the paper from getting out of alinement and from receding when the machine is moving backward to prevent the paper from buckling and to hold the paper firmly and tightly on the platen at all times. The supply of paper comes from a series of reels placed in the machine and the paper is fed out over guides and then over the platen, through the front tension device and into the automatic clamping device.

The machine is provided with a box at the side to hold the roll of carbon paper to stretch over the platen and between the writing papers. This carbon paper is held tightly by a cover over the platen which cover can serve as a knife for tearing off the carbon paper.

This invention is set forth in the following specification and claims and illustrated in the annexed drawings in which:—

Figure 1 shows a plan view of an autographic register embodying this invention. Fig. 2 is a side elevation of Fig. 1. Fig. 3

is a vertical longitudinal central section of Fig. 1. Fig. 4 is a section along the line $x x$ Fig. 2. Fig. 5 is a section along the line $y y$ Fig. 2. Fig. 6 shows the reciprocating slide in forwardly projected position. Fig. 7 is a section along the line $z z$ Fig. 6. Fig. 8 shows an operating mechanism for the storage roller. Fig. 9 is a detail view of the tension device and knife blade. Fig. 10 is a view from the opposite side to that shown in Fig. 9. Fig. 11 is a section along the line $z' z'$ Fig. 9. Fig. 12 is an enlarged fragmental sectional side elevation of the register, one of the side frames being omitted. Fig. 13 is a transverse vertical section along the line z^2 of Fig. 12. Fig. 14 is a detail section of the storage roller. Fig. 15 is a fragmental perspective view of the clip associated with said roller. Fig. 16 is a perspective view of the knife.

In this drawing, a indicates the two side frames of the machine, which frames are each composed of upper and lower sections. The two upper sections are hinged to a bolt b , which connects the two lower sections, whereby said upper sections may be lifted up; (see Fig. 12.) The reels c have their trunnions d seated in the lower sections of the frame, and when the upper sections are swung up about hinge b , the reels will be freed, so that their trunnions may be lifted out of place.

About each of the trunnions d at one side of the reels c is coiled a spring e which is arranged within a housing f and bears against the inner end thereof, said housings being provided with or forming part of flanges g of such size as to press laterally against one side of the paper rolls h and force the same against the opposite side of the machine, said rolls being of somewhat greater width than the reels.

The paper strips coming from the reels are led over idlers i toward the front of the machine and fed forward by a reciprocating frame which is provided with a clamping device hereinafter described. This frame consists essentially of a pair of longitudinally arranged sliding bars m having their front ends connected by a cross-bar k . Bars m are tubular in form and are provided upon their under faces with rack teeth which are engaged by gears n , mounted upon a shaft n' , said shaft having also mounted thereon a second pair of gears n^2 in mesh with and driven by a pair of gears n^3 mount-

ed upon a drive shaft n^4 provided with an operating handle o . Rotation of shaft n^4 by means of its handle will thus impart an endwise movement to the rack bars m through the medium of gears n^3 , n^2 and n , as will be apparent.

The tubular rack bars m contain slide rods p which fit sufficiently tight within the bores of said bars to enable them to be carried by the latter and yet be capable of an independent movement with respect thereto. At their front ends, rods p are formed with noses p' provided for a purpose hereinafter stated, while at their rear ends they are provided with projections r . These projections r are designed to strike against lugs q and s , located at suitable points on the under face of the platen or other stationary part of the machine, the lugs q being positioned toward the front and the lugs s toward the rear of the machine. Consequently, when handle o is turned in the proper direction to advance the reciprocating frame, rods p will be carried forward with bars m (by reason of their frictional fit within the bores thereof), until the projections r strike against lugs q . When this takes place, the movement of the rods will be arrested, and as the forward movement of the frame with the bars continues, said rods will slide rearwardly within said bars. When the frame starts on its rearward movement, the rear ends of the rods will thus project beyond those of bars m , and will remain in such position until their projections r strike against lugs s , whereupon said rods will be forced back into the bores of said bars and will thus assume their original position.

The above-described shifting movements of rods p cause the noses p' at the front ends of said rods to engage and recede from the rocker arms t of a pair of clamps located adjacent the ends of the cross-bar k . Each of these clamps is in the form of a two-armed lever which is pivoted to bar k , as indicated by the letter u , and comprises in addition to the rocker arm t a gripper arm 2. When the afore-mentioned noses p' on rods p strike against and ride over the arms t of the corresponding clamps, the latter will be rocked upon their pivots, so as to cause their gripper arms 2 to move downwardly into engagement with the paper, the edge of which rests upon said bar k . On the succeeding rearward movement of rods p , the noses p' thereof will recede from arms t , whereupon the gripper arms of the clamps will release the paper under the influence of a spring 3, the ends of which bear against said arms t , said spring being shown in Figs. 5 and 7.

The arrangement of the parts is such that the noses p' are normally engaged with the rocker arms of the clamps, the gripper arms of the latter being, in consequence,

forced against the paper. Therefore, when the frame is advanced together with the rack bars m and the rods p , the paper will likewise be advanced until the projections r strike against the front lugs q ; when this takes place, the noses p' will be caused to recede from said rocker arms by the rearward movement of rods p , as above described, whereupon the gripper arms will be forced to release the paper by the action of the springs 3. When the frame and bars are subsequently moved rearwardly, and the projections r strike against the rear lugs s , the rods p will be returned to their initial position in said bars m , and the noses p' will be reengaged with the rocker arms of the clamps, thereby bringing the gripper arms of the latter into operation.

At the front portion of the machine above the platen there is arranged a tension device comprising a blade 4, rigidly secured to a rock shaft 6 which is held yieldingly by means of a suitable spring 5 in such a position that said blade is normally in contact with the paper passing over the platen, so as to permit a free forward movement of the paper, but to prevent backward movement thereof. Shaft 6 also carries a loosely mounted blade 7, normally held against operation by a spring 8, but capable of movement into operative position in contact with the paper when pressure is applied upon a thumb piece 9, the spring buckling at such time. In this position the cutting edge of blade 7 may be utilized in tearing off a portion of the paper strip, and since said edge projects beyond the gripping arms 2 of the clamps, the succeeding part of the strip may be seized and fed forward when the reciprocating frame is again advanced.

The memorandum or register made upon the uppermost sheet on the platen is duplicated by means of suitably interposed sheets of carbon paper, presently referred to. The lowermost sheet fed over the idlers i and through the machine, is stored in a housing located at the front end of the machine. This housing contains a roller 10 upon which said sheet is wound. The rotation of this roller is effected in the following manner: Shaft n' , on which gears n are mounted is provided adjacent one end with a gear 12 which meshes with a suitably mounted transmission gear 13, said gear 13 meshing in turn with a gear 11, mounted on a stud 14 set into the adjacent frame side. This stud carries a disk 15' provided with a pawl 15 which engages a ratchet 16 formed with a recess for the reception of a friction disk 17. The hollow elongated hub of the friction disk fits in an opening in the adjacent end of roller 10 and is suitably held against rotation therein. Said hub is normally forced outwardly of said opening by a spring 18, whereby said friction disk is

caused to bind against the wall of the aforementioned recess in the ratchet. (See Fig. 5.) The operative engagement of pawl 15 with ratchet 16 takes place only upon the forward movement of handle *o*. It will thus be seen that when shaft *n* is rotated, gear 12 will turn gear 13 which, in turn, rotates gear 11; disk 15' rotates with gear 11, and its pawl 15 engages and rotates ratchet 16, the rotation of said ratchet effecting that of friction disk 17, and, in consequence, of roller 10.

In order to permit the permanent record or lowermost sheet to be wound around roller 10 during the rotation of the latter, said roller is formed with a longitudinal groove wherein is slipped a clip 19 which is designed to engage the front edge of said sheet, and hold the same in place upon the roller. When the winding up of the sheet in question has been completed, and the roller is to be withdrawn, the clip may be readily removed by the thumb nail or finger of the person in charge of the machine.

At the side of the machine is located a suitable box 19' adapted to hold the roll of carbon paper 20, the arrangement being such that the latter may be drawn across the platen and between the record sheets, and held stationary during the feed movements of said record sheets. This box is provided with a cover 22 connected thereto by spring hinges 21 and having its free edge beaded, so as to snap over the edge of the adjacent side frame of the machine. When the carbon paper in use has become worn, a fresh portion may be drawn from roll 20, and the used portion torn off against the free edge of cover 22, which thus acts as a knife.

With reference to the lugs *q* and *s* against which the projections *r* on the frame bars *m* are adapted to strike, it may be stated that they are preferably in the form of screws, pins or studs, which, as stated, are removably set into the under face of the platen. It will be apparent, therefore, that the position of these lugs bears a definite relation to the shifting movements of rods *p* and, hence, to the time of operation of the clamps, or, in other words, to the extent of the feed of the sheets of paper. Consequently, if said lugs be positioned at points other than those shown, a corresponding variation in the extent of the feed will result. It is intended, therefore, to provide lugs which may be adjusted from one position to another.

I claim:—

1. In a machine of the kind described, the combination, with a platen; of reciprocating tubular racks; driving gears for the racks;

a cross piece at the forward ends of the racks; clamps carried by the cross piece; slides located in the tubular racks and movable within the same for operating the clamps; and stops for arresting the movements of said slides at predetermined intervals during the movements of the racks.

2. In a machine of the kind described, the combination, with a platen; of reciprocating tubular racks; driving gears for the racks; a cross piece at the forward ends of the racks; clamps carried by the cross piece; slides located in the tubular racks and provided with means for engaging the clamps to operate the same; and stops for arresting the movements of said slides at predetermined intervals during the movements of said racks, said stops being adjustably mounted to regulate the extent of such intervals.

3. A machine of the kind described comprising a platen; a tension device arranged adjacent the front end of the platen, said device consisting of a swinging blade, and a shaft on which the blade is mounted; reciprocating racks and driving gears for the racks, the free edge of the said blade being arranged to contact with the platen to hold the paper in place thereon and to prevent the same from receding during the return movement of the racks; and a ripping blade arranged to swing about the same shaft as the first-mentioned blade, said ripping blade having an arm for holding it in and out of operative position.

4. A machine of the kind described comprising a platen; a reciprocating frame provided with clamps adapted to feed paper coming from the platen; a storage roller located below the platen to receive a record sheet therefrom; gears for actuating the frame; and a gear connection between the frame-actuating gears and the storage roller comprising a disk, a pawl carried by said disk, a ratchet engaged by the pawl, and a stud for supporting the ratchet and disk, said ratchet having a recessed face and the storage roller being provided with a spring-pressed member arranged to seat in the recess in the face of the ratchet, said pawl and gear connection being made to rotate the ratchet with the storage roller in but one direction, to wind the paper to be stored.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

PHILIP HANCOCK

Witnesses:

CHRISTIAN ALMSTAEDT,
W. C. HAUFF.