

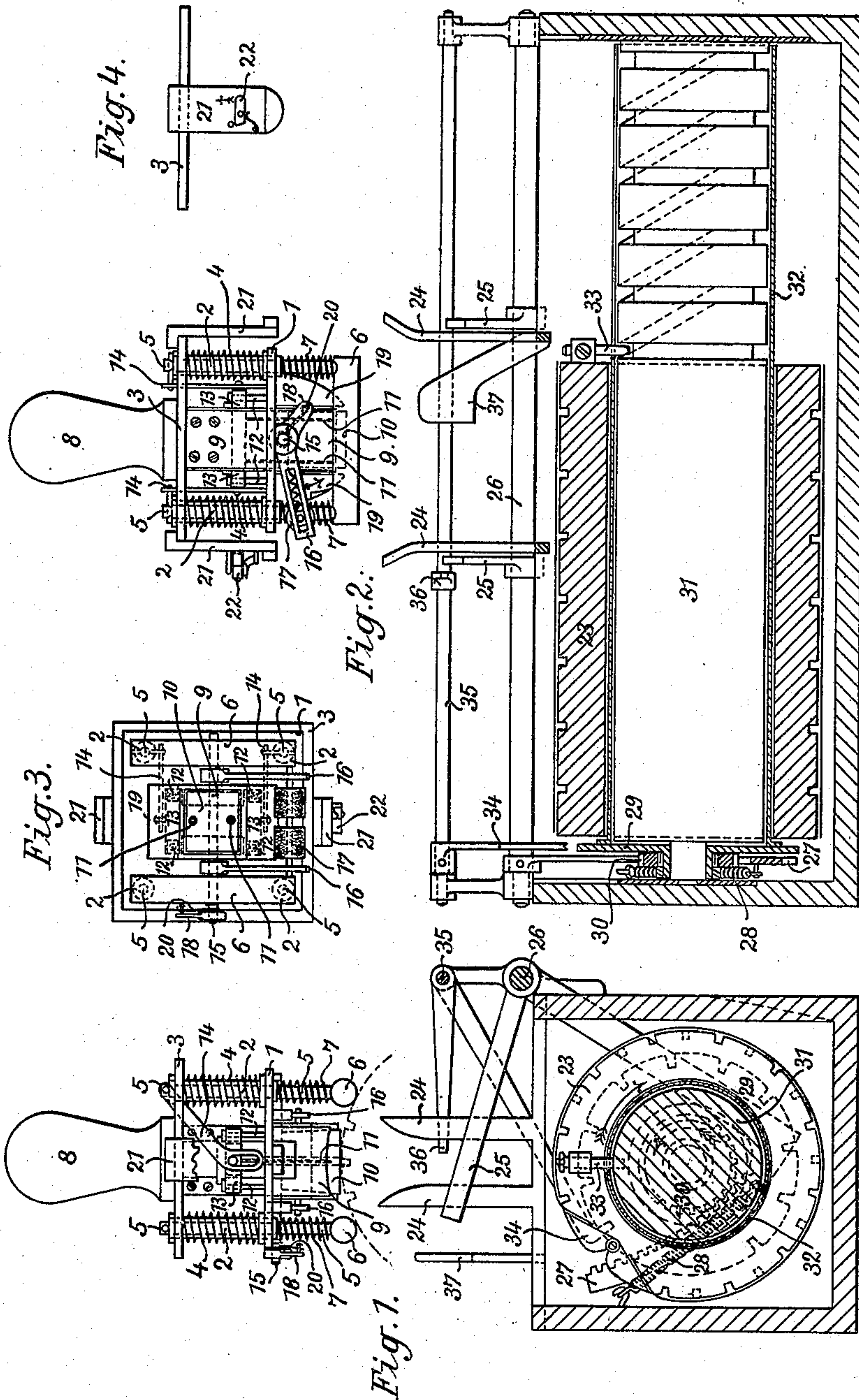
No. 840,736.

PATENTED JAN. 8, 1907.

P. ARNOLD.
APPARATUS FOR PUNCHING, DAMPENING, AND AFFIXING STAMPS.

APPLICATION FILED APR. 13, 1905.

4 SHEETS—SHEET 1.



Witnesses:
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J. George Barry.

Inventor:
Paul Arnold
by attorneys
Rount Seward

No. 840,736.

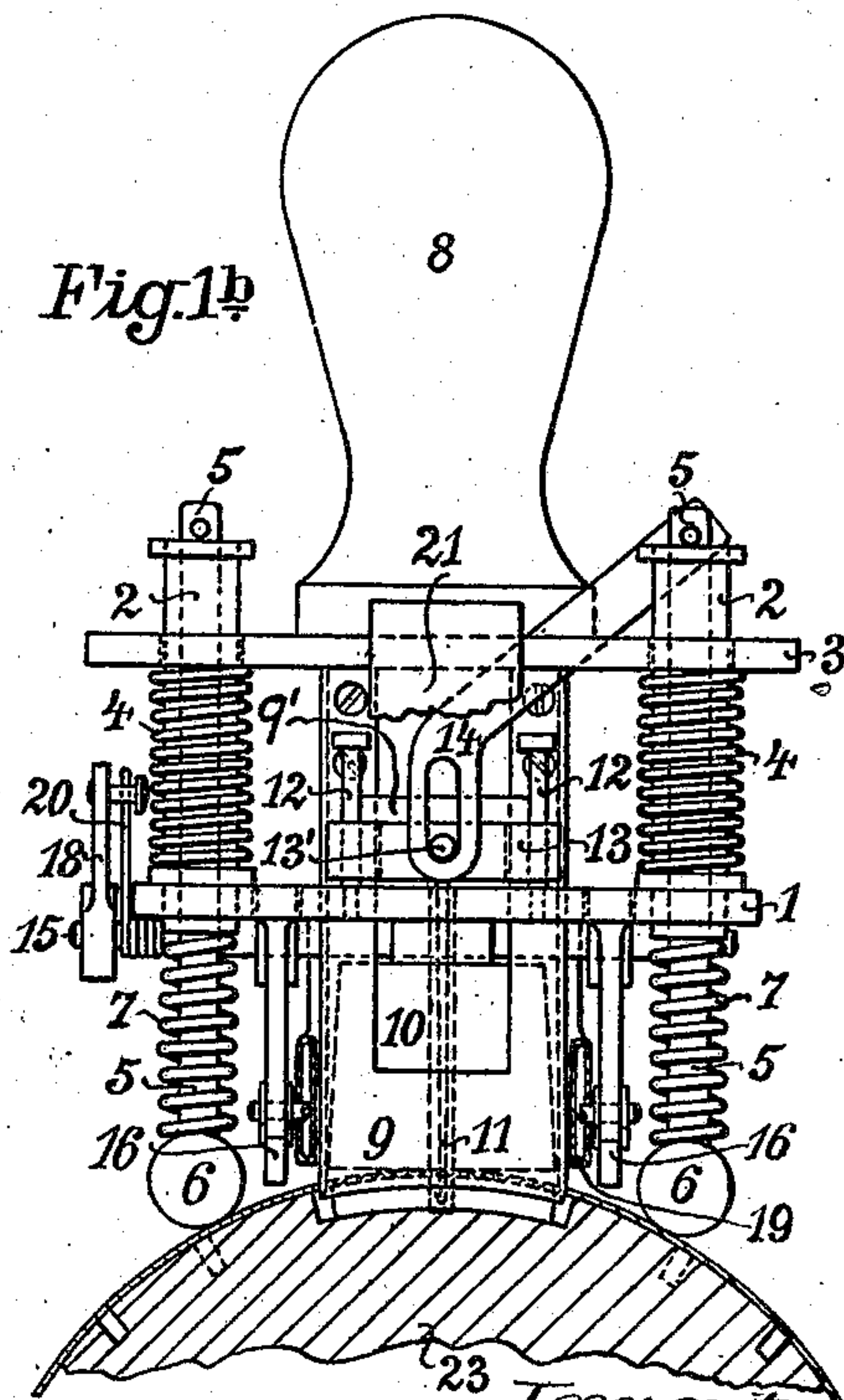
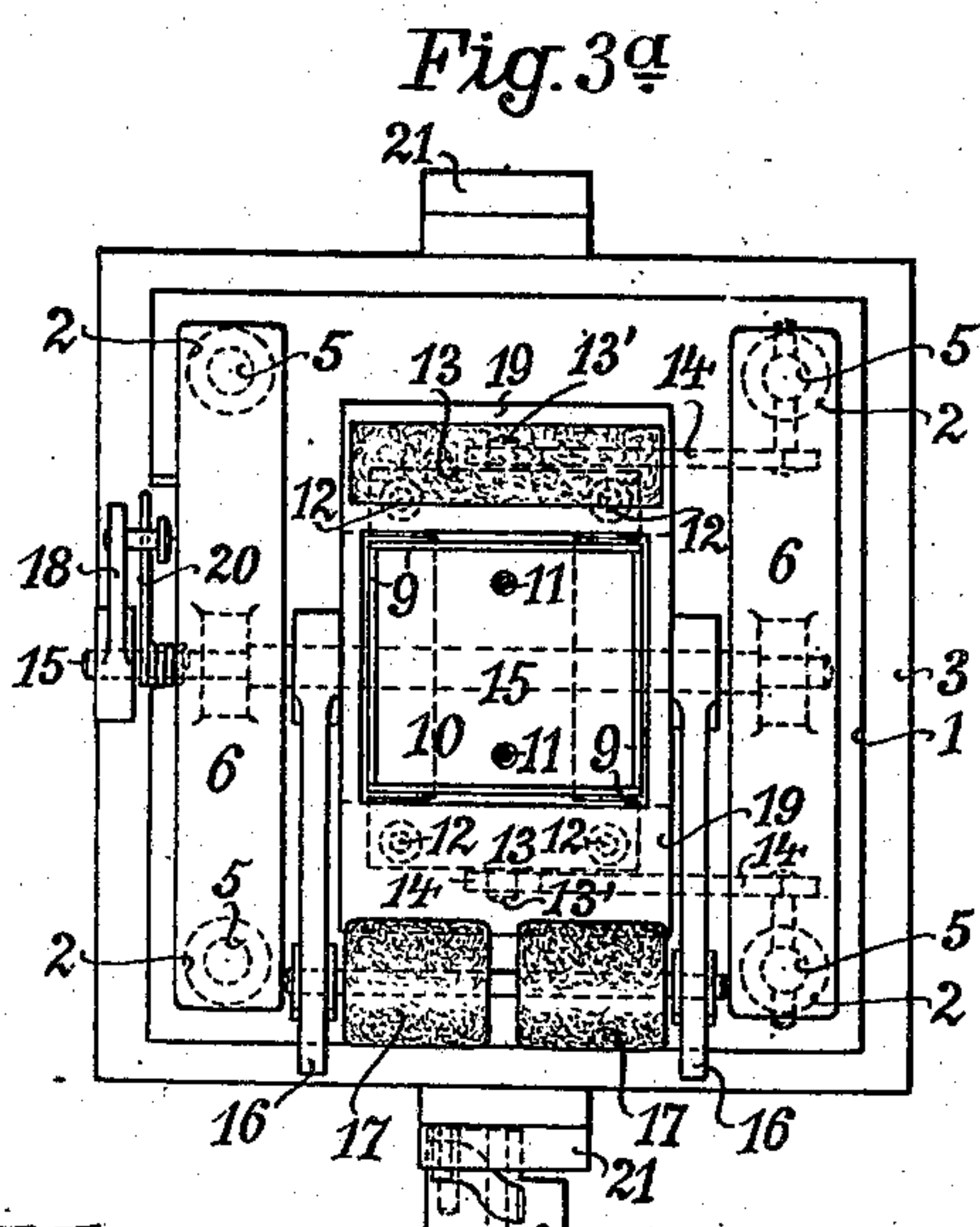
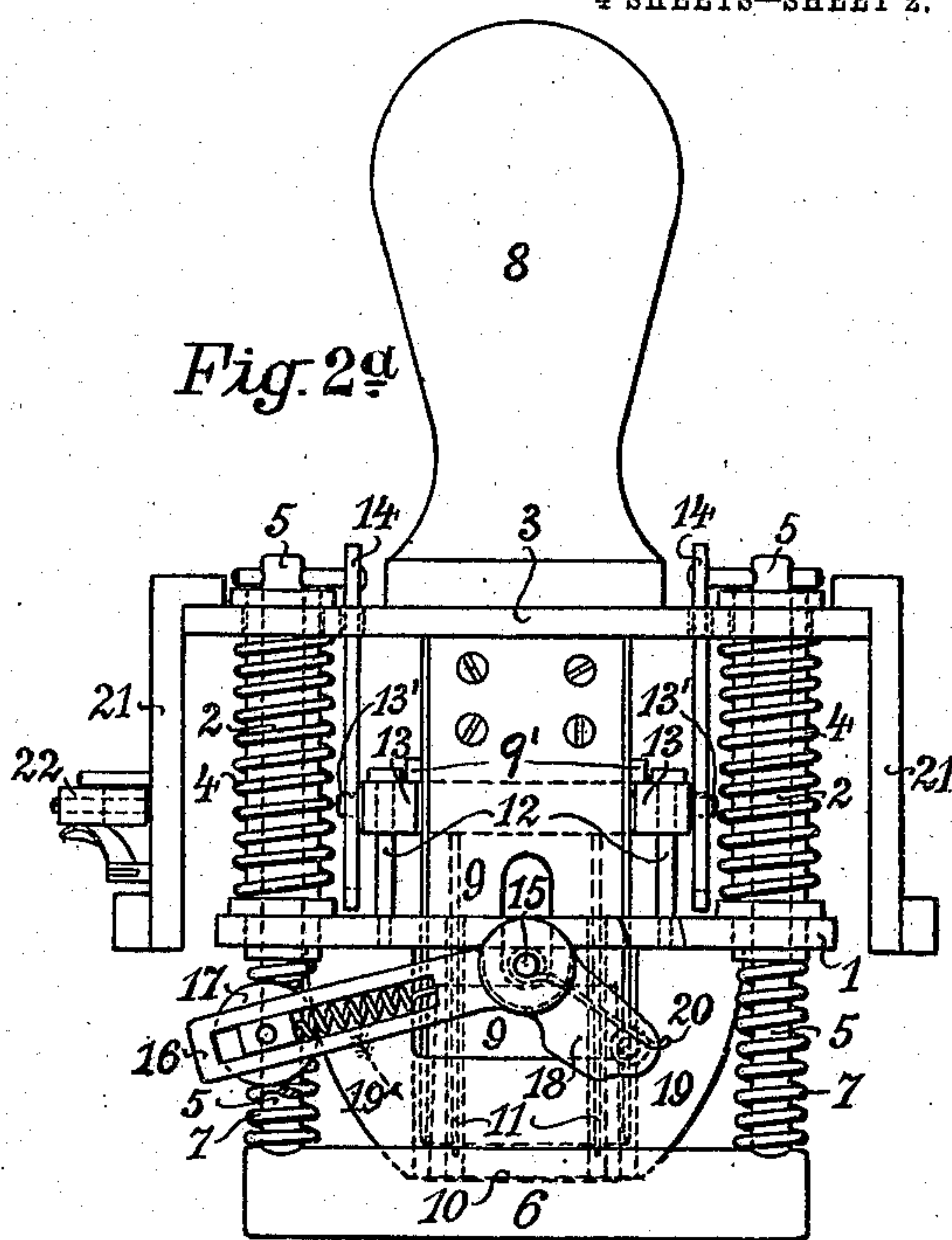
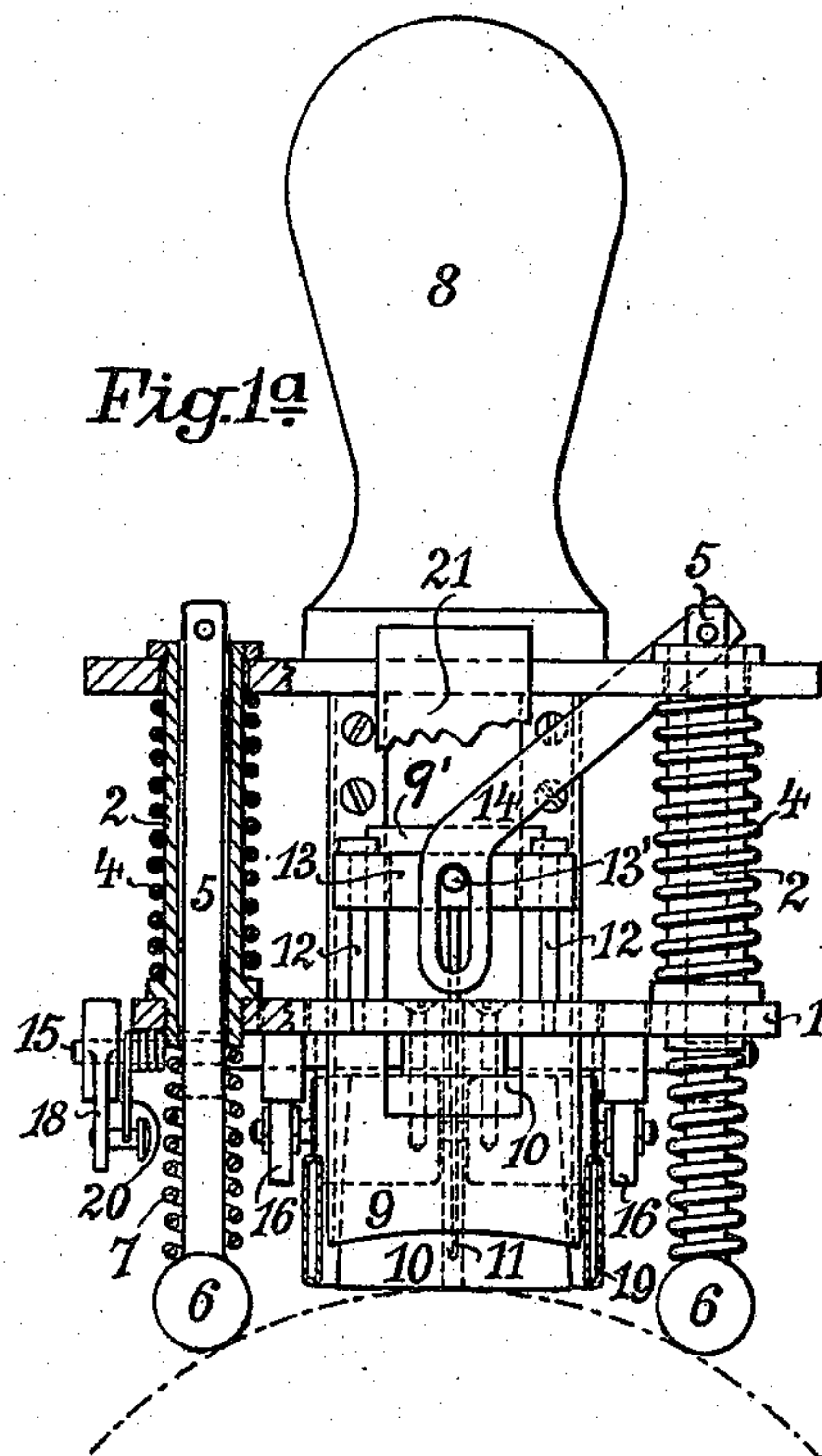
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4 SHEETS—SHEET 2.



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No. 840,736.

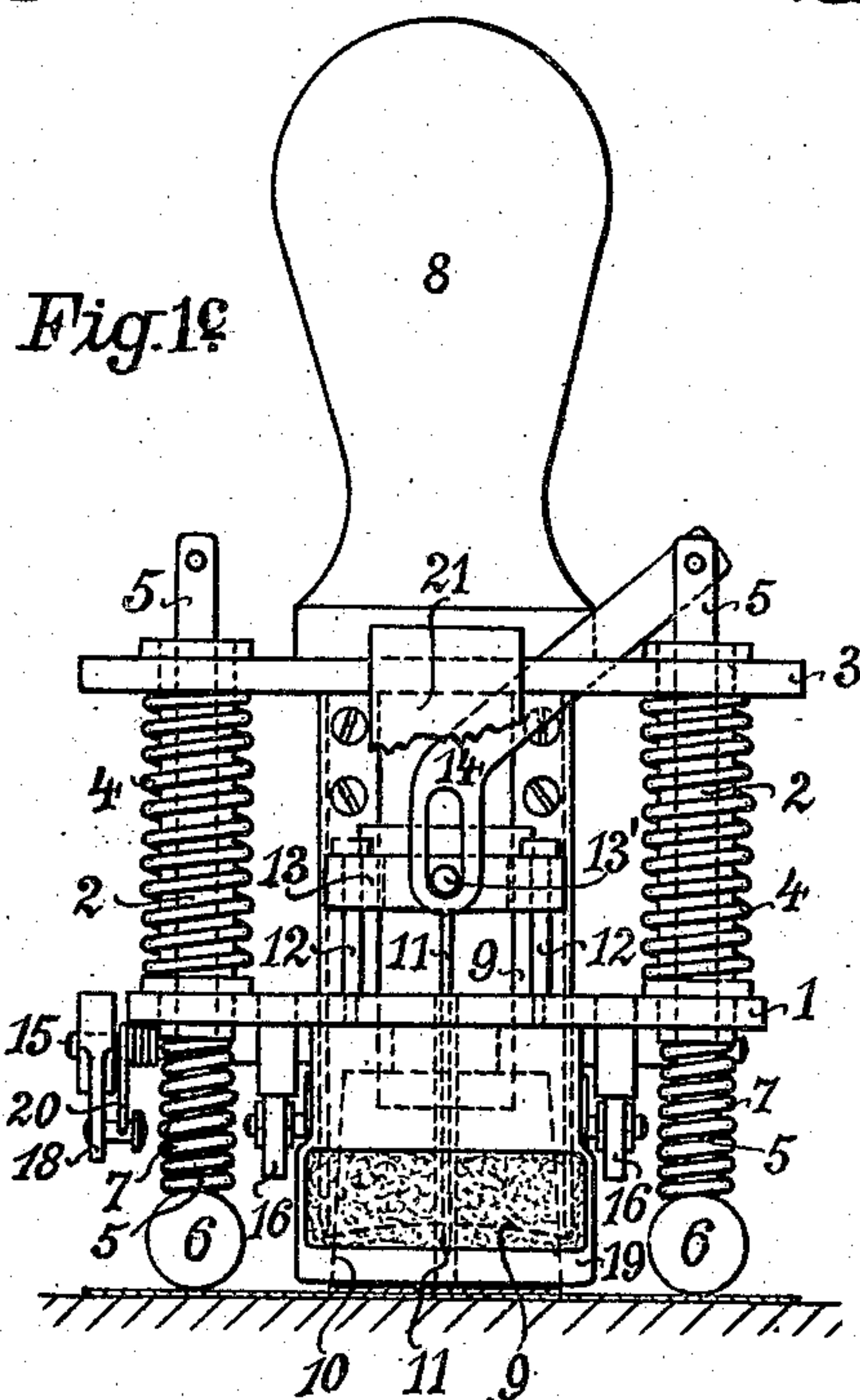
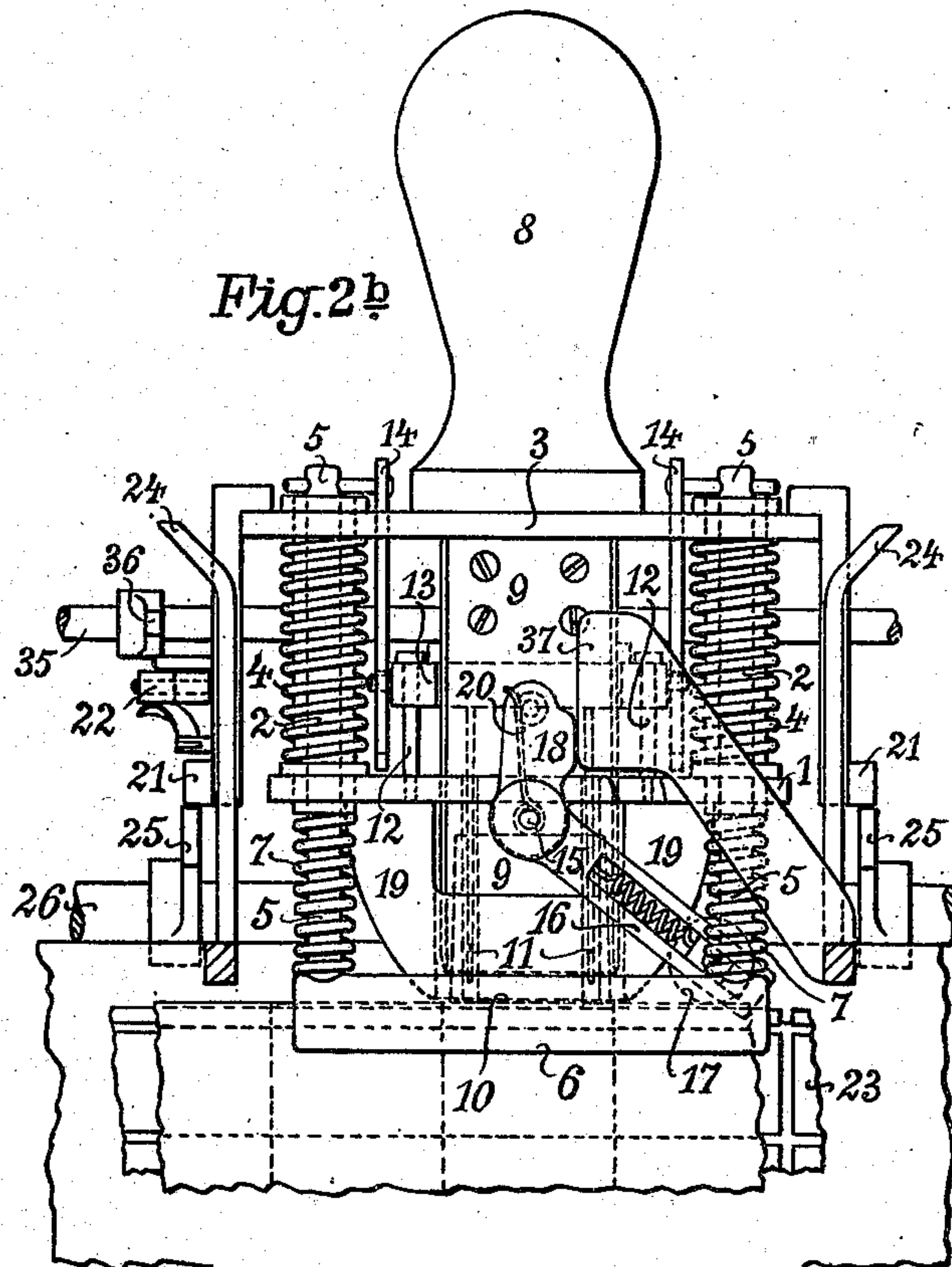
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4 SHEETS—SHEET 3.



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No. 840,736.

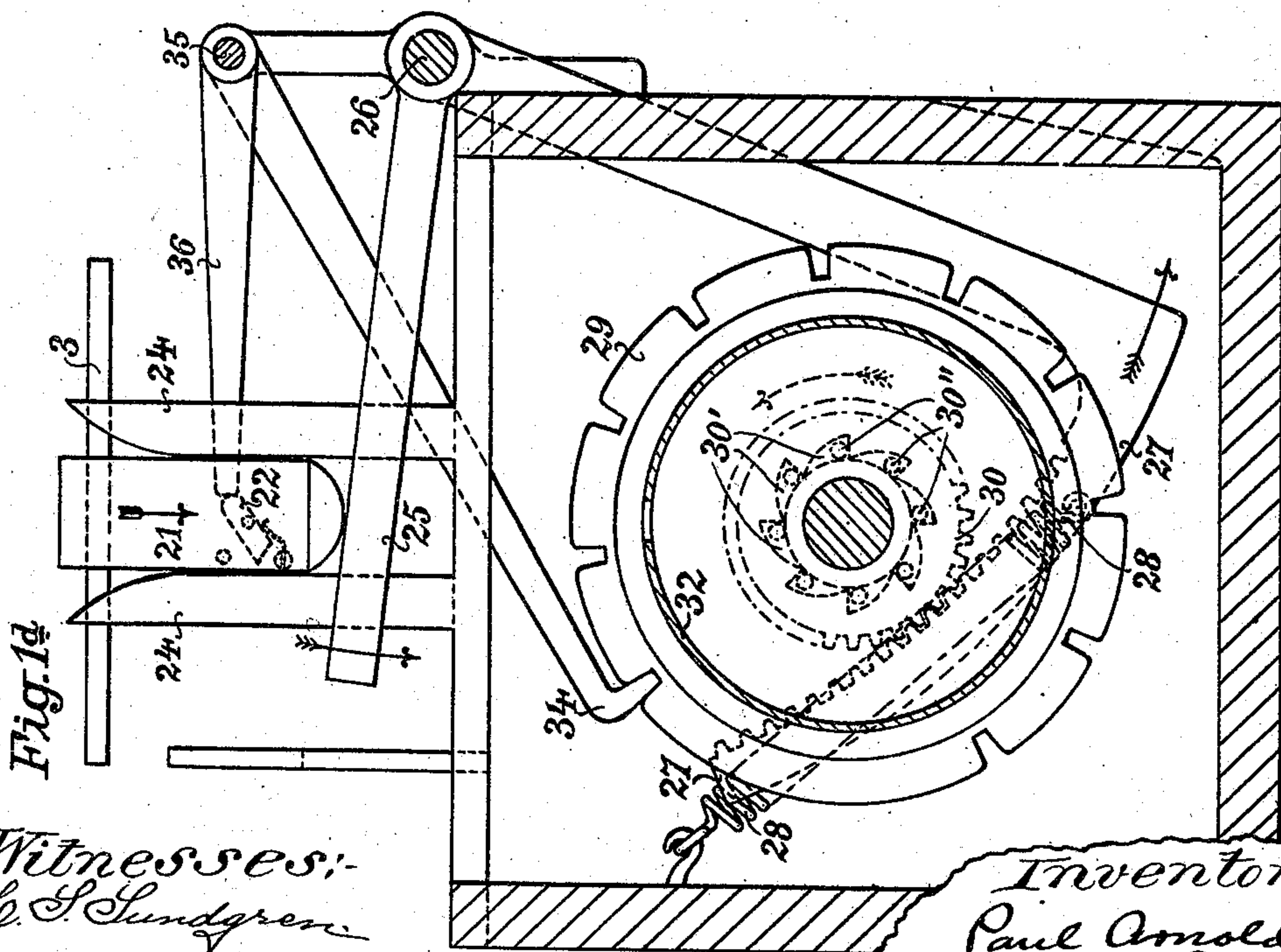
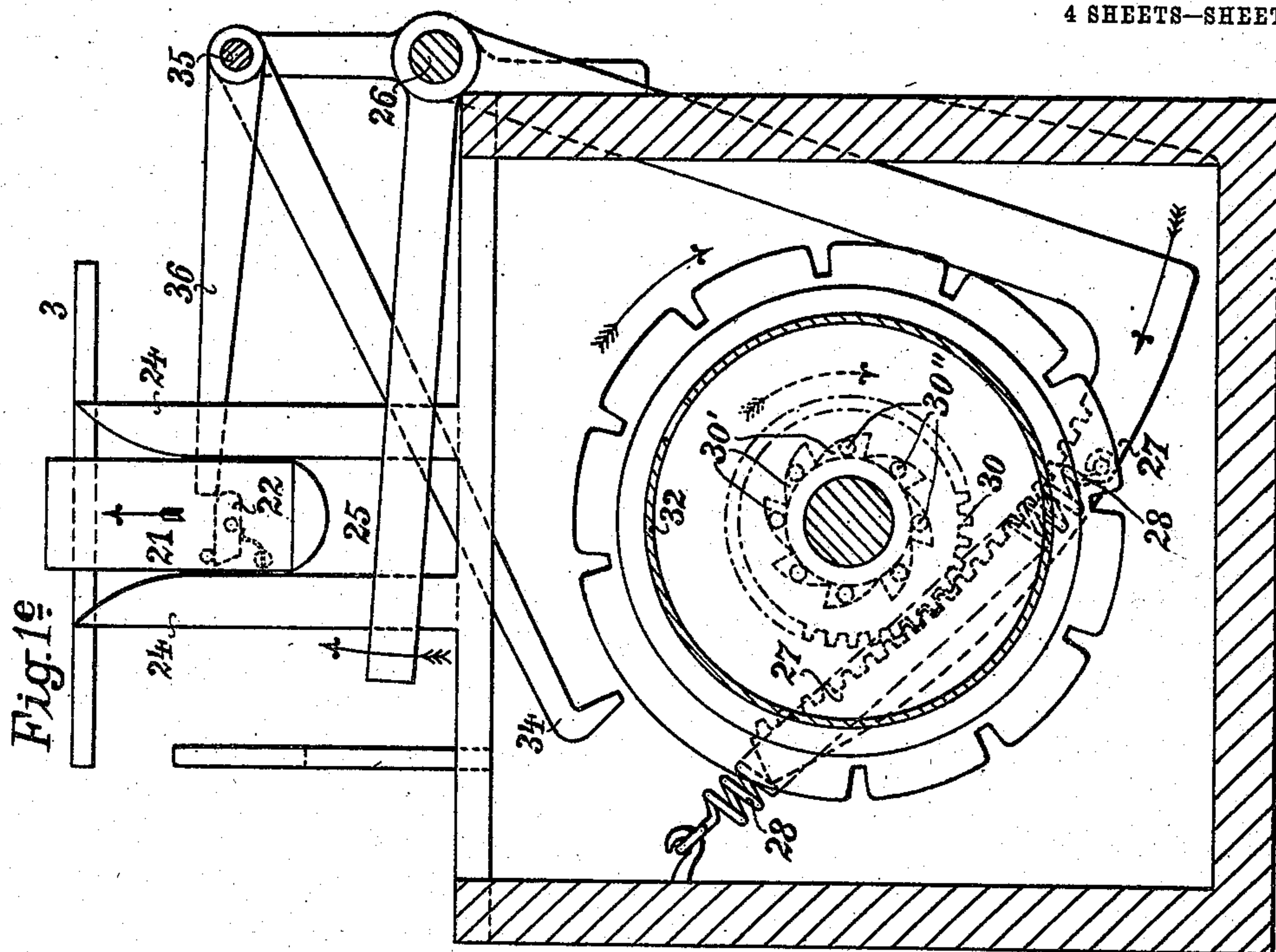
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4 SHEETS—SHEET 4.



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UNITED STATES PATENT OFFICE.

PAUL ARNOLD, OF GROSSENHAIN, GERMANY.

APPARATUS FOR PUNCHING, DAMPENING, AND AFFIXING STAMPS.

No. 840,736.

Specification of Letters Patent.

Patented Jan. 8, 1907.

Application filed April 13, 1905. Serial No. 255,469.

To all whom it may concern:

Be it known that I, PAUL ARNOLD, clergyman, a subject of the King of Saxony, and a resident of Grossenhain, Dresdnerstrasse 19, Kingdom of Saxony, German Empire, have invented a new and useful Apparatus for Punching, Dampening, and Affixing Stamps, of which the following is a specification.

This invention relates to apparatus for punching, dampening, and affixing stamps applied or secured in the shape of a sheet round a cylinder rotated step by step and moved laterally and temporarily in the direction of its axis.

The apparatus for punching, dampening, or gluing and affixing stamps according to the present invention is characterized by this, that a punch device brought in contact with the stamp-cylinder and capable of being used simultaneously for dampening or gluing punches and holds the stamp and causes at the same time the automatic adjustment of the stamp-cylinder for presenting a new stamp for the next operation. The punch device may be independent of the stamp-cylinder and moved by hand to and away from such cylinder, or it may be provided within a frame or casing to be raised and lowered underneath the stamp-cylinder and moved together with such frame or casing to and away from this cylinder by means of a lever. In both cases the automatic adjustment of the stamp-cylinder is caused by the movement of the punch.

The various novel features of my invention will be hereinafter described in the specification and particularly pointed out by the claims.

Figure 1 is a front elevation and partial section of the punch device separated from the stamp-cylinder, this cylinder being placed or situated below such punch device. Fig. 2 is a side view and a partial longitudinal section. Fig. 3 shows the punch device from below, and Fig. 4 a detail of it. Figs. 1^a, 2^a, and 3^a show views corresponding with Figs. 1, 2, and 3 of the punch device by itself, on a larger scale, Fig. 1^a being shown partly in section; and Figs. 1^b, 2^b, and 1^c show the punching device in different working positions. Fig. 1^d shows in correspondence with Fig. 1, on a larger scale, the casing which receives the stamp-roller, together with parts effecting the moving and stoppage of said

roller, partly in side elevation and partly in section, the stamp-roller and its adjustable shaft being omitted for the purpose of producing a clearer and more distinct view of the parts in question. Fig. 1^e shows the same parts visible in Fig. 1^d in a different working position.

The principal carrying-plate 1 of the device for punching, dampening, and affixing stamps, Figs. 1, 1^a, 2, 2^a, 3, and 3^a, is provided with four standards 2 in the form of small tubes, forming guides for a second plate 3, movable on them. Coiled springs 4 are wound round the tube-like standards to hold the plate 3 apart from the plate 1. Each tube-like standard 2 has, as shown on the left-hand side of Fig. 1^a, passing through it a rod 5, two of such rods being connected together by a traverse 6, situated underneath the plate 1. The traverses 6 are held by the springs 7 at a uniform distance apart from the plate. The upper surface of the plate 3 is provided with a handle 8, and a punching-knife 9, corresponding to the shape of the stamp, is secured to the lower surface of such plate. This punching-knife is passed through corresponding openings or grooves of the plate 1 and embraces a block 10, secured to the lower surface of such plate. This block is provided with two holes for the insertion of the needles 11, secured to a bridge-piece or traverse 13, movable on bolts 12.

The bridge-piece 13 is, as will be seen by Fig. 3^a, I-shaped, the middle part of which passes through the hollow space of the knife 9, whereas its two transverse rods are situated outside of the knife 9 and movably supported on the bolts 12, fastened within the plate 1. The downward movement of the bridge-piece 13, and thereby of the needles 11, takes place during the downward movement of the knife 9, carrying projections or small bars 9'. These projections or small bars press against the middle part of the bridge-piece 13 and move it downwardly, so as to meet its base with the surface of the plate 1, as clearly shown in Fig. 1^b. By this meeting of the parts mentioned, the downward movement of the needles 11 and that of the knife 9 is limited. The upward movement of the knife 9 is effected by the coiled springs 4, the action of which is, in comparison with that of the springs 7, of such an extent that they can resist the pressure neces-

sary for the compression of the springs 7. For the return movement of the bridge-piece 13 two protruding pivots 13' engage the slots of the arms 14, which are fixed to the free ends of two of the rods 5, as shown in Figs. 1^a, 2^a, and 3^a, in such a manner that the arms 14 move upward the bridge-piece 13, together with the needles 11, as clearly shown in Fig. 1^c. Two arms 16, situated below the plate 1, are secured to a shaft 15, suitably mounted in bearings on this plate and form, by means of yielding bearings, supports for the dampening or glue-supplying roller 17. This glue-supplying roller is moved by a finger 18, secured to the end of the shaft 15, and slides across the receptacle 19 and the block 10. A flattened bent spring 20, acting with its free end against the finger 18 and secured to the shaft 15, returns the glue-supplying roller to its normal position. The receptacles 19 are secured to the lower surface of the plate 1 and supply damp or glue to the roller 17. Two arms 21, projecting downward, are fixed to the plate 3. One of these arms carries a pawl 22, yielding in an upward direction, as shown in Fig. 4.

The device for punching, dampening, and affixing of the construction described is moved against the cylinder 23, supported within a casing. The stamps connected together in the shape of a sheet are situated with the damped or pasted surface toward the periphery and fixed in the shape of a roller to the cylinder 23, which may be rotated step by step and moved laterally and temporarily in the direction of its axis. The outer surface or periphery of the cylinder 23 is divided by longitudinal and traverse grooves into squares or panels corresponding to the shape of the stamps for the purpose of punching, dampening, and affixing them stamp by stamp in a known manner. In moving, the device for punching, dampening, and affixing stamps slides with its arms 21 in guides 24, provided above the cylinder 23, Figs. 1, 2, and 2^b. These arms push down a pair of levers 25, fixed to a rock or rocker shaft 26. A toothed segment 27, fixed to one end of the shaft, is moved to and fro on the rocking movement of the shaft, whereby a toothed wheel 30, fixed to the hub of a ratchet-wheel 29, by means of a temporarily-clutching action, is rotated under a simultaneous tension of the coiled spring 28 in the direction of the arrow shown in Fig. 1 and without in any manner actuating the stamp-cylinder. The ratchet-wheel 29 is loosely mounted to the shouldered pivot of the stationary shaft 31 for the adjustment of the cylinder and connected to a tube 32, mounted upon such shaft, so as to be rotated. The shaft 31 is provided with guide-grooves arranged parallel one to another. In these grooves the pin 33 engages, which pin is detachably fixed to the cylinder 23 and passes through a slot of the

tube 32, so as to engage one of the grooves provided on the shaft 31. The distance of two adjacent grooves corresponds to the width of the stamps to be affixed. Each two adjacent grooves are connected by a slanting groove engaged by the pin 33 when a series of stamps situated parallel to the front surface of the cylinder 23 is separated from the sheet. On the next rotary movement of the tube 32, together with the cylinder 23, by the sliding movement of the pin 33 within the slanting intermediate groove, such cylinder 23 is displaced in correspondence with the width of one stamp in the direction of the shaft 31, and a new series of stamps is placed above the punching-place. By a step-by-step rotary movement of the cylinder 23 the stamps of such new series are moved consecutively below the punching-place. This series of stamps being consumed, a further axial displacement of the cylinder 23, and thereby the adjustment of a new series of stamps, will take place. When the entire sheet of stamps is consumed, the cylinder 23 being in its right-hand end position, the pin 33 is disengaged, and the cylinder is moved to its left-hand end position. Hereinafter the pin 33 is adjusted again into the first groove, and a new sheet of stamps is laid under tension upon the cylinder 23, whereupon the punching of the stamps may be continued.

The pawl 34, engaging the ratchet-wheel 29, is mounted on a shaft 35, carrying a lever 36, which projects into the path of the pawl 22, secured to one of the arms 21 of the punch. This pawl gives way to the lever 36 on lowering the punching device against the shaft and returns, as shown in Fig. 2^b, to its normal horizontal position, Fig. 4, below such lever. The pawl 34 hereby maintains its locking position, whereby the cylinder 23 cannot yet rotate. Before the punching device meets in its downward movement the cylinder 23 the finger 18 engages a suitably shaped and fixed arm 37 and slides down on it, so as to rotate the shaft 15 in such a manner that the paste-supplying roller 17 is swung to the right side part of the receptacle 19, such part being provided or coated with an absorbing material. This roller is prevented from returning, as shown in Fig. 2^b, to its normal position by the arm 37, and is supplied with damp or glue. After sufficient downward movement of the punching device its block 10 meets the stamp to be punched, whereas the traverses 6 lie down on the stamps situated on both sides of the stamp to be punched and hold them on a further pressing down of the punching device, Fig. 2^b.

The block 10 resting on the stamp-cylinder, forms a rigid body together with the plate 1. Therefore on a continued pressure against the handle only the plate 3, and by

this the knife 9, fixed to it, will be pressed down on the tubes or standards 2 in opposition to the action of the springs 4, whereas the rods 5, together with their springs 7, will not be altered in position, as shown in Fig. 1^b. On moving downward the knife 9 pushes downward simultaneously, by means of the small bar 9', fixed to it, the bridge-piece 13 with the needles, so that such bridge-piece touches the plate 1, whereby a further downward movement of the knife 9 is prevented. As shown in Fig. 1^b, the knife has punched the stamp, and the needles 11 have left the block 10 and penetrated the punched stamp. By pressing down the bridge-piece 13 the pivots 13', connecting such bridge-piece with the arms 14, have reached the lower limitation of the slots of the arms 14, Fig. 1^b.

On releasing the handle 8 the plate 3, together with the punch-knife 9, is raised by the springs 4, whereas the needles maintain their lowered position and secure the punched stamp to the block 10 by the fact that the rods 5 and with them the arms 14 have not changed their position during the punching of a stamp and are by no means actuated by the upward movement of the plate 3. The consequence is that the bridge-piece 13 and the needles 11 will remain in their lower position, Fig. 1^b. If the punching device is taken off the guides 24, the pawl 22, projecting below the lower surface of the lever 36, causes the raising of the latter, and the pawl 34 is disengaged of the ratchet-wheel 29, whereupon the spring 28 returns the toothed segment 27, which by the agency of the gear-wheel 30 rotates the ratchet-wheel 29 and the cylinder 23 till the pawl 34, released again by the pawl 22, engages the next notch of the ratchet-wheel 29. By this rotary movement the next stamp is carried to its punching position. As soon as the finger 18 has left the arm 37 on lifting the punching device the roller 17 is returned by the spring 20 to the position shown in Fig. 2, and the stamp secured to the block 10 is dampened or applied with glue by the roller 17. Hereinafter the punching device is placed by hand to the object to be stamped and the handle 8 is moved down. By the action of the springs 4 surpassing that of the springs 7 the plates 1 and 3 are not distanced one from another, whereas the rods 5 are moved upward within the tubes or standards 2 in opposition to the springs 7 to such an extent that the base of the traverses 6 is situated in a common plan with the block 10. During this upward movement the rods 5 have moved upward the bridge-piece 13 and the needles, by means of the arms 14, to the position shown in Fig. 1^c. In this position the bridge-piece 13 will touch the small bars 9' of the knife 9, whereas the needles 11 have left the stamp and entered the block 10. By

a continued pressure on the handle 8 the stamp relieved of the needles will be applied or glued to the object or work in hand. On removing the punch device from the object the springs 7 move down again the rods 5, together with the arms 14, and all parts will be in a position ready to be used again, Fig. 1^a.

If the apparatus described is to be used for punching the stamps on the cylinder 23 only, the device for dampening or gluing is dispensed with.

By Figs 1^d and 1^e it will be seen more distinctly than in Fig. 1 how the punch on its downward movement onto the stamp-roller and on its upward movement away from the same will slide in the guides 24 by means of its arms 21, thus being protected against unequal and undue punching. Of the punch only the parts 3, 21, and 22 are shown. As more clearly shown by the Figs. 1^d and 1^e, the gear-wheel 30, loosely placed on the hub of the ratchet-wheel 29, is, for example, provided with recesses 30', similar to those of a ratchet-wheel which receive little balls or rollers 30'', resting on the hub of the ratchet-wheel. The diameter of said balls or rollers 30'' is a little smaller than the greatest depth of the recesses 30', provided within the wheel 30, so that the latter will consequently on its movement in one direction turn loosely on the hub of the ratchet-wheel 29, whereas it will on moving it in the opposite direction be clamped and fixed to the hub of the ratchet-wheel 29 by means of the balls or rollers 30'', whereby said ratchet-wheel will be forced to follow the turning movement of the gear-wheel, as shown by Figs. 1^d and 1^e. By Figs. 1^d it is shown how on the downward movement of the punch the pawl 22, placed on one of the guiding-arms 21, gets out of the way of the lever 36, so that consequently the pawl 34 will remain in its position which secures the ratchet-wheel 29, together with the tube 32, fixed thereto, and carrying the stamp-roller against turning, whereas the toothed segment 27 is swung by means of the arms 21 being pressed against the levers 25 under tension of the spring 28 in the direction shown by the arrow, whereby at the same time the loosening of the coupling device 30' 30'' is effected, the gear-wheel 30 thus being loosely turned on the hub of the clamped ratchet-wheel 29 in the direction of the dotted arrow. If after finishing the punching of a stamp the punch is again removed from the guides 24, the pawl 22 will lift, as shown in Fig. 1^e, through taking the lever 36 along the pawl 34 out of the ratchet-wheel 29. Thus the spring 28 being under tension, as aforesaid, starts to work and pulls the toothed segment 27 back in the direction shown by arrow. At the same time the toothed segment 27 turns the gear-wheel 30 in such a manner that it will, as shown in Fig. 1^e, be clamped and fixed to the hub of

the ratchet-wheel 29 by means of the balls or rollers 30", the ratchet-wheel 29 thus being also turned in the direction shown by arrow until the pawl 34, freed through the tooth 22 leaving the lever 36, falls into the next tooth-shaped recess of the ratchet-wheel 29. Naturally any other coupling device fulfilling the same purpose can be used instead of the well-known clutching or clamping device, as described above.

What I claim is—

1. In an apparatus for punching, dampening or gluing and affixing stamps connected together in the shape of a sheet, the combination with means for holding the stamp-sheet, of means for cutting the stamp off the sheet, means for dampening or gluing the stamp cut, means for holding the stamp cut and dampened or glued, and means for automatically adjusting the means for holding the stamp-sheet for the purpose of presenting another stamp to be punched, substantially as described.

2. In an apparatus for punching, dampening or gluing and affixing stamps connected together in the shape of a sheet, the combination with a stamping-cylinder for receiving the stamp-sheet, of means for cutting the stamp off the sheet, means for dampening or gluing the stamp cut, means for holding the stamp cut and dampened or glued, means for releasing the stamp cut and means for automatically adjusting the stamp-cylinder by the cutting device for presenting another stamp to be punched, substantially as described.

3. In an apparatus for punching, dampening or gluing and affixing stamps connected together in the shape of a sheet, the combination with a stamping-cylinder for receiving the stamp-sheet, of a punching-knife secured to a movable and yielding plate for cutting the stamp off the sheet, of means for dampening or gluing the stamp cut, means for holding the stamp cut, means for releasing the stamp cut and means for automatically adjusting the stamp-cylinder for presenting another stamp to be punched, substantially as described.

4. In an apparatus for punching, dampening or gluing and affixing stamps connected together in the shape of a sheet, the combination with a stamping-cylinder for receiving the stamp-sheet, of means for cutting the stamp off the sheet, of a dampening or glue-supplying roller, a finger, a shaft carrying such finger, levers carrying the dampening or glue-supplying roller and actuated by the finger on rotating the shaft, receptacles containing damp or glue to be applied to the roller, means for holding the stamp cut, means for releasing the stamp cut, and means for automatically adjusting the stamp-cylinder for presenting another stamp to be punched, substantially as described.

5. In an apparatus for punching, dampening or gluing and affixing stamps connected together in the shape of a sheet, the combination with a stamping-cylinder for receiving the stamp-sheet, of means for cutting the stamp off the sheet, means for dampening or gluing the stamp cut, of a block, needles, a bridge-piece carrying such needles inserted in the block, slotted arms connected to the bridge-piece, a pair of rods carrying the latter, traverses for holding down the stamps situated on both sides of the stamp cut on affixing it to the object to be stamped and means for automatically adjusting the stamp-cylinder for presenting another stamp to be punched, substantially as described.

6. In an apparatus for punching, dampening or gluing and affixing stamps connected together in the shape of a sheet, the combination with a stamping-cylinder for receiving the stamp-sheet, of means for cutting the stamp off the sheet, means for dampening or gluing the stamp cut, means for holding the stamp cut, means for releasing the stamp cut, of a toothed segment, a wheel engaging it and fixed to the shaft of the stamp-cylinder, a pair of levers fixed to a reciprocating shaft, a pair of arms fixed to the plate carrying the punching-knife, of grooves, a pin for the step-by-step rotary movement of the stamp-cylinder engaging such grooves for lateral adjustment the stamp-cylinder on rotating the latter, a locking-pawl, a lever actuated on the upward movement of the punching device for locking the stamp-cylinder rotated step by step and adjusted laterally in the width of a stamp for presenting another stamp to be punched, dampened or glued, held and released, substantially as described.

7. In an apparatus for punching, dampening or gluing and affixing stamps connected together in the shape of a sheet, the combination with a stamping-cylinder for receiving the stamp-sheet, of a punching-knife secured to a movable and yielding plate for cutting the stamp off the sheet, of a dampening or glue-supplying roller, a finger, a shaft carrying such finger, levers carrying the dampening or glue-supplying roller and actuated by the finger on rotating the shaft, receptacles containing damp or glue to be applied to the roller for dampening or gluing the stamp cut, of a block, needles, a bridge-piece carrying such needles inserted in such block, slotted arms connected to the bridge-piece, a pair of rods carrying the latter, traverses for holding down the stamp situated on both sides of the stamp cut for holding and releasing the stamp cut, of a toothed segment, a wheel engaging it and fixed to the shaft of the stamp-cylinder, a pair of levers, a reciprocating shaft carrying such levers, a pair of arms fixed to the plate carrying the punching-knife, of grooves, a pin engaging such grooves

for the step-by-step rotary movement and
the lateral adjustment of the stamp-cylinder,
of a locking-pawl actuated on the upward
movement of the punching-knife for locking
5 the stamp-cylinder rotated step by step ad-
justed laterally for presenting another stamp
to be punched, dampened or glued, held and
released, substantially as described.

In testimony that I claim the foregoing as
my invention I have signed my name, in 10
presence of two witnesses, this 31st day of
March, 1905.

PAUL ARNOLD.

Witnesses:

PAUL E. SCHILLING,
PAUL ARRAS.