

(No Model.)

4 Sheets—Sheet 1.

R. L. CHOPE.
MANUFACTURE OF COIN CASES.

No. 559,263.

Patented Apr. 28, 1896.

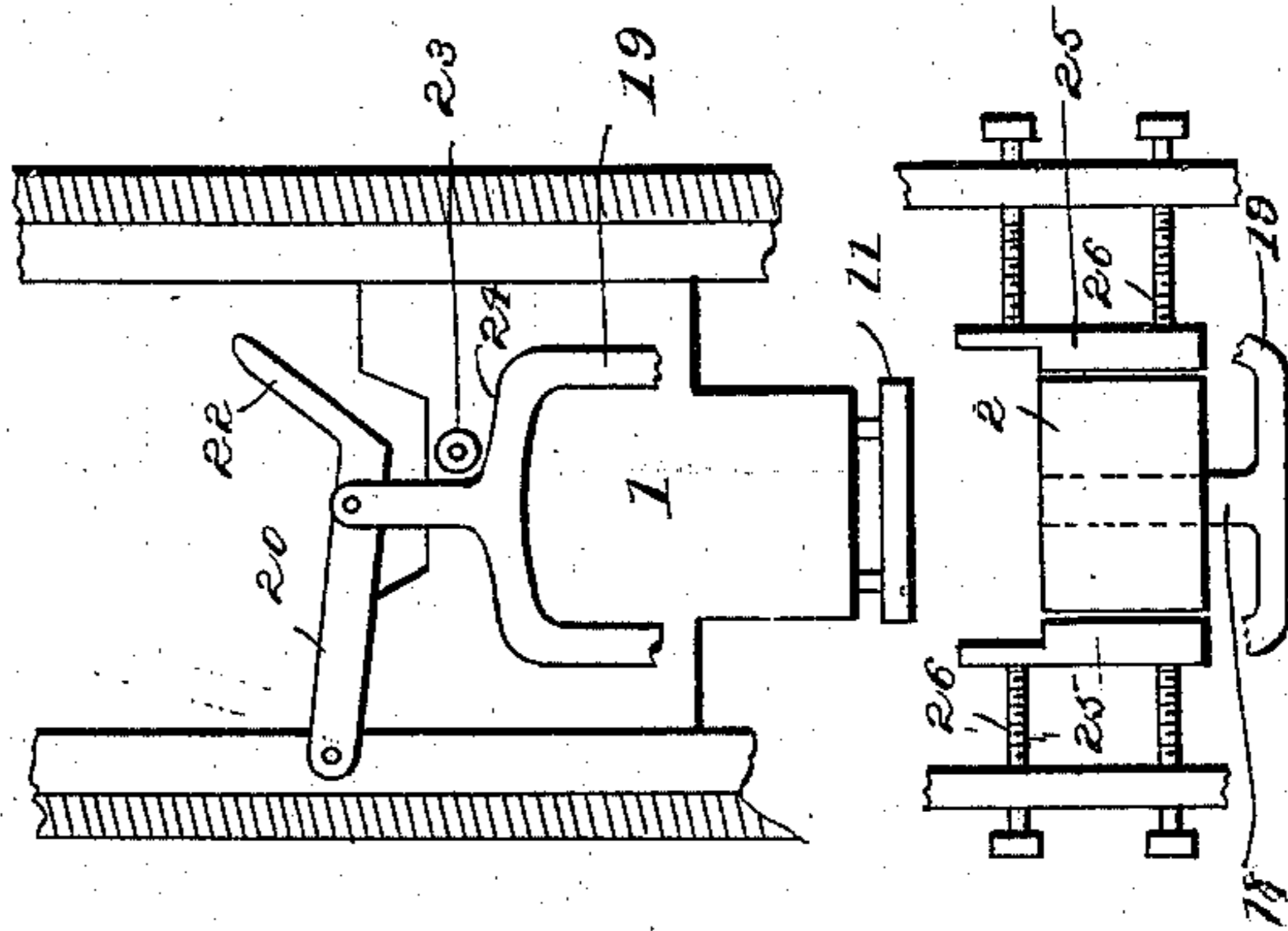
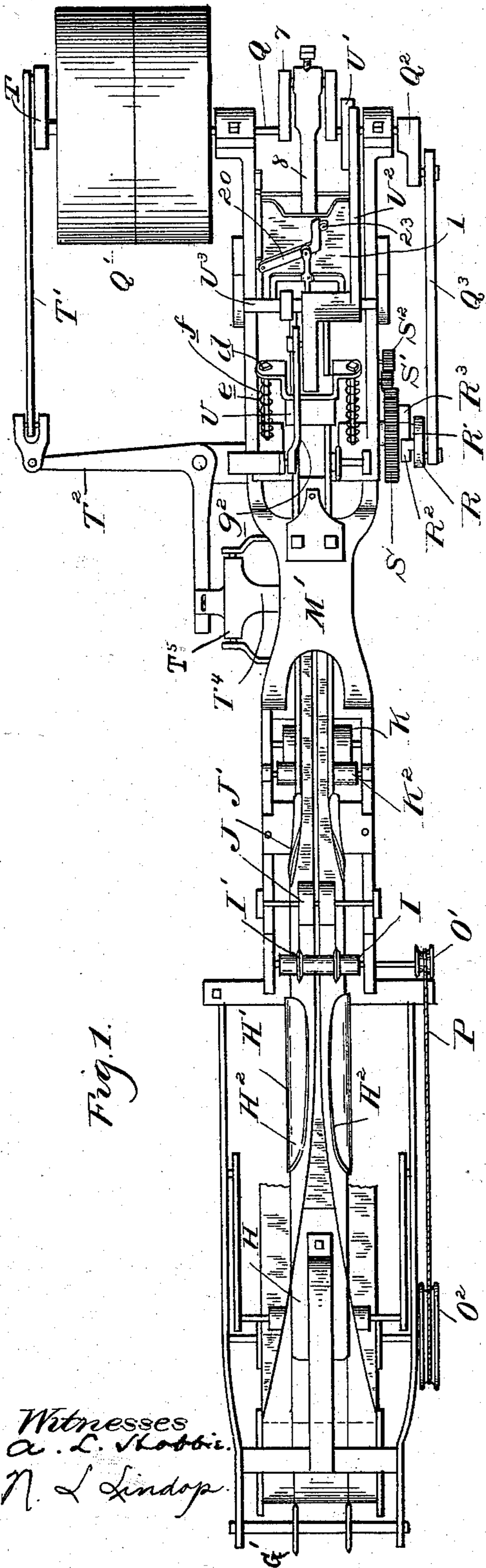


Fig 17.

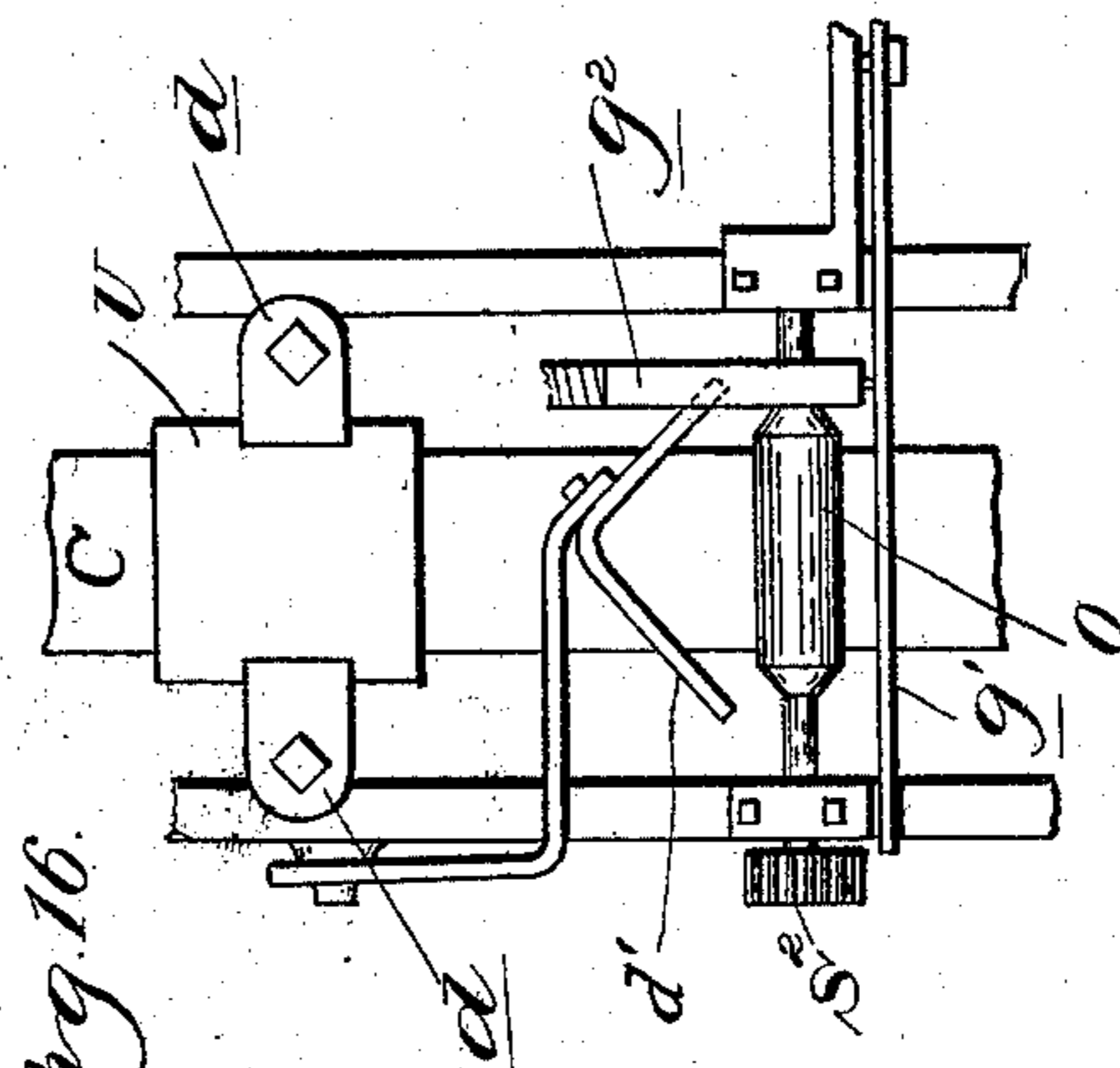


Fig. 16.

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(No Model.)

4 Sheets—Sheet 2.

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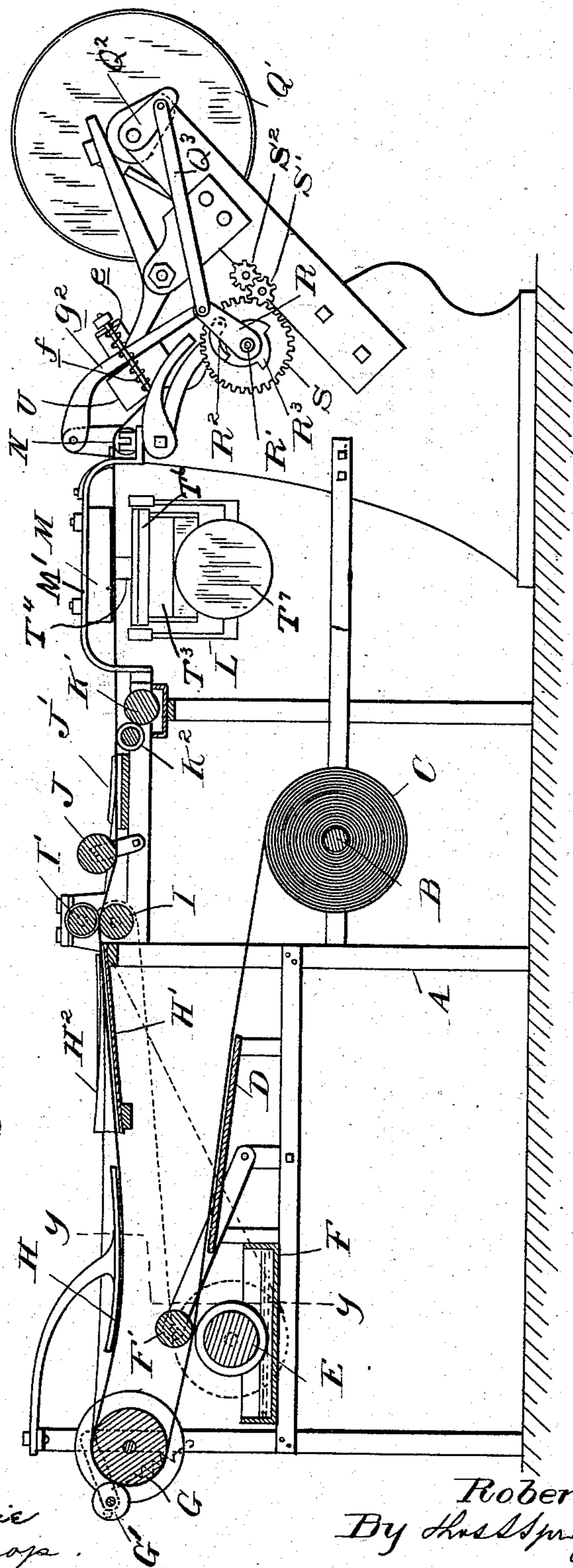


Fig. 2.

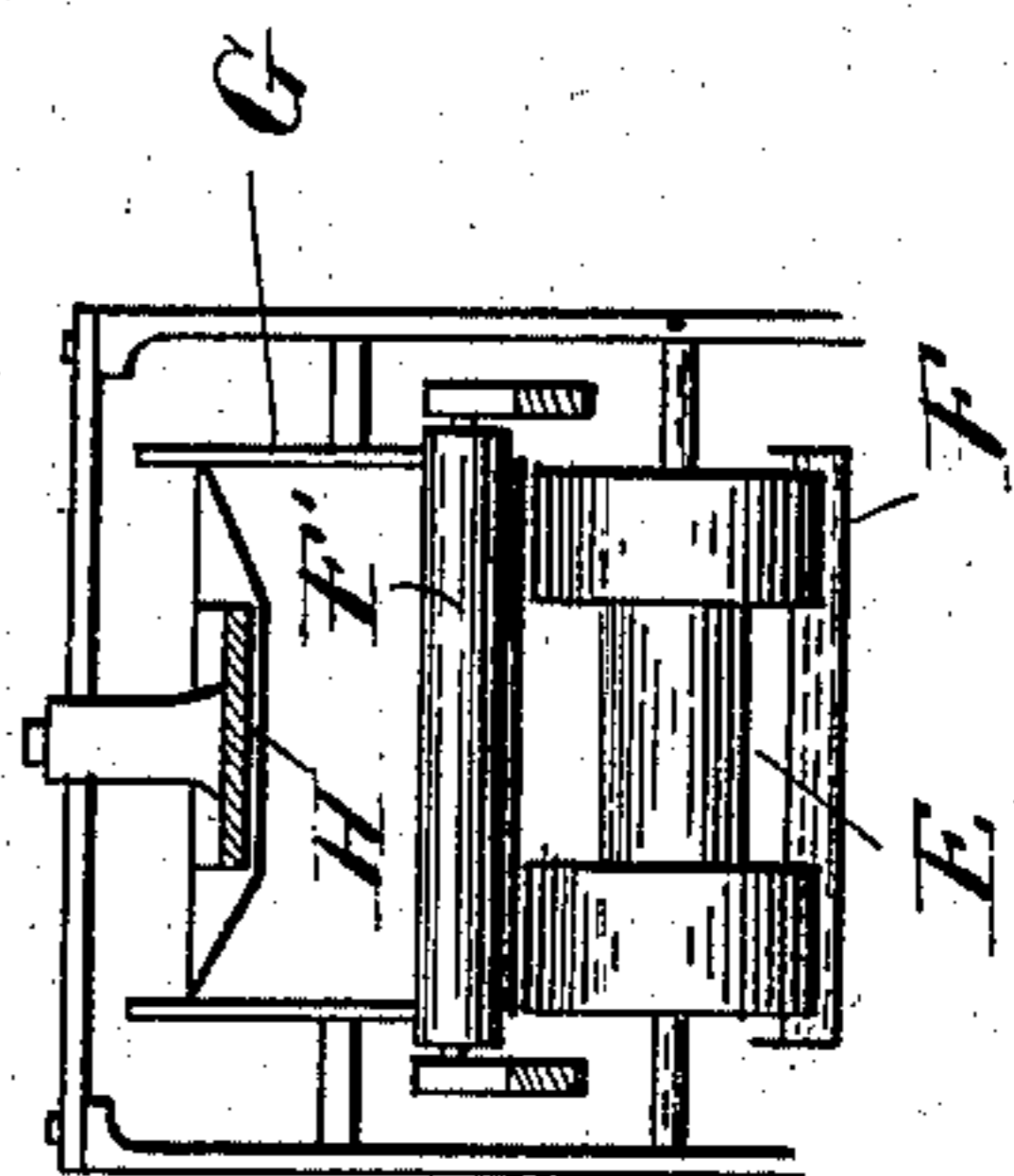


Fig. 3.

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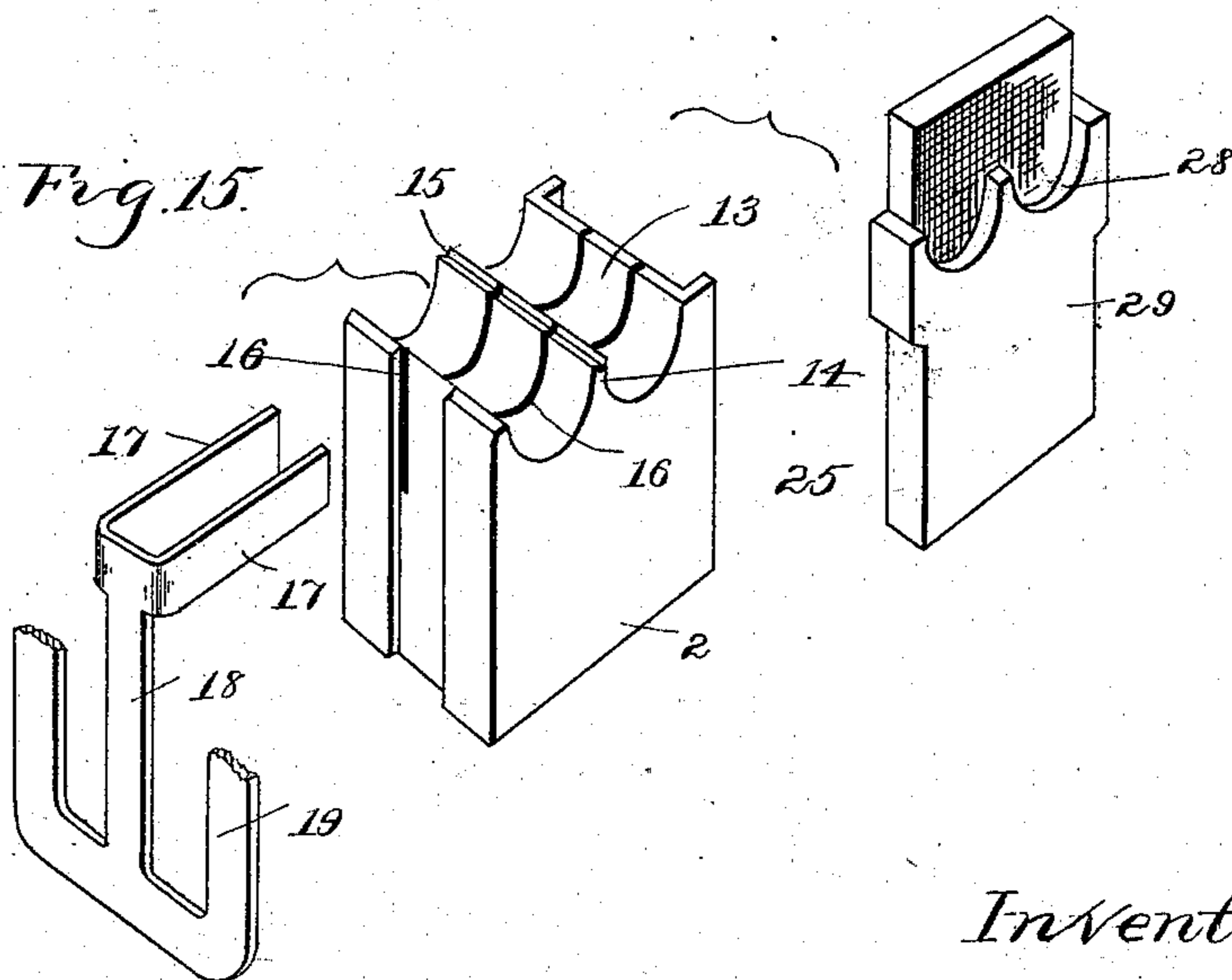
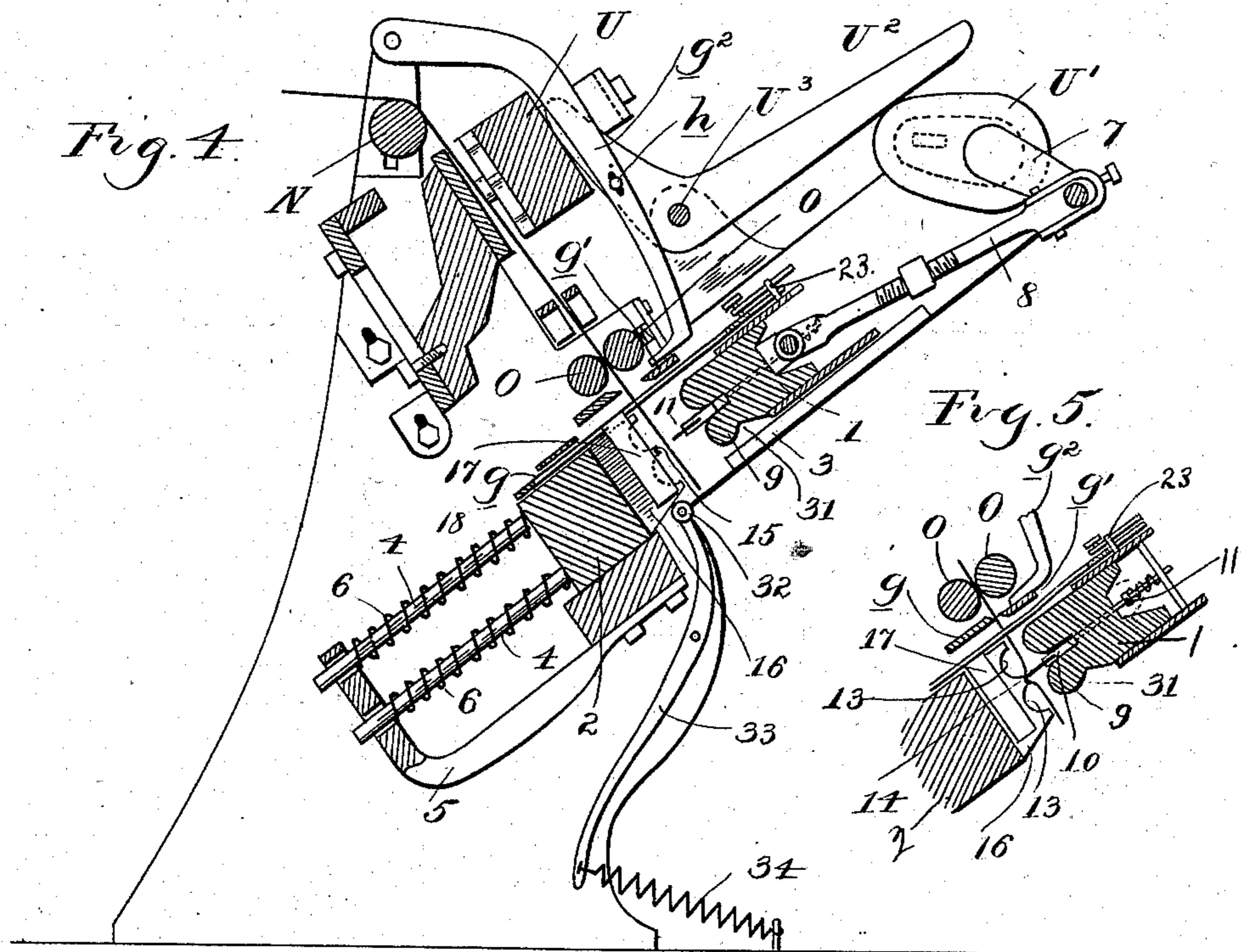
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4 Sheets—Sheet 4.

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Fig. 6.

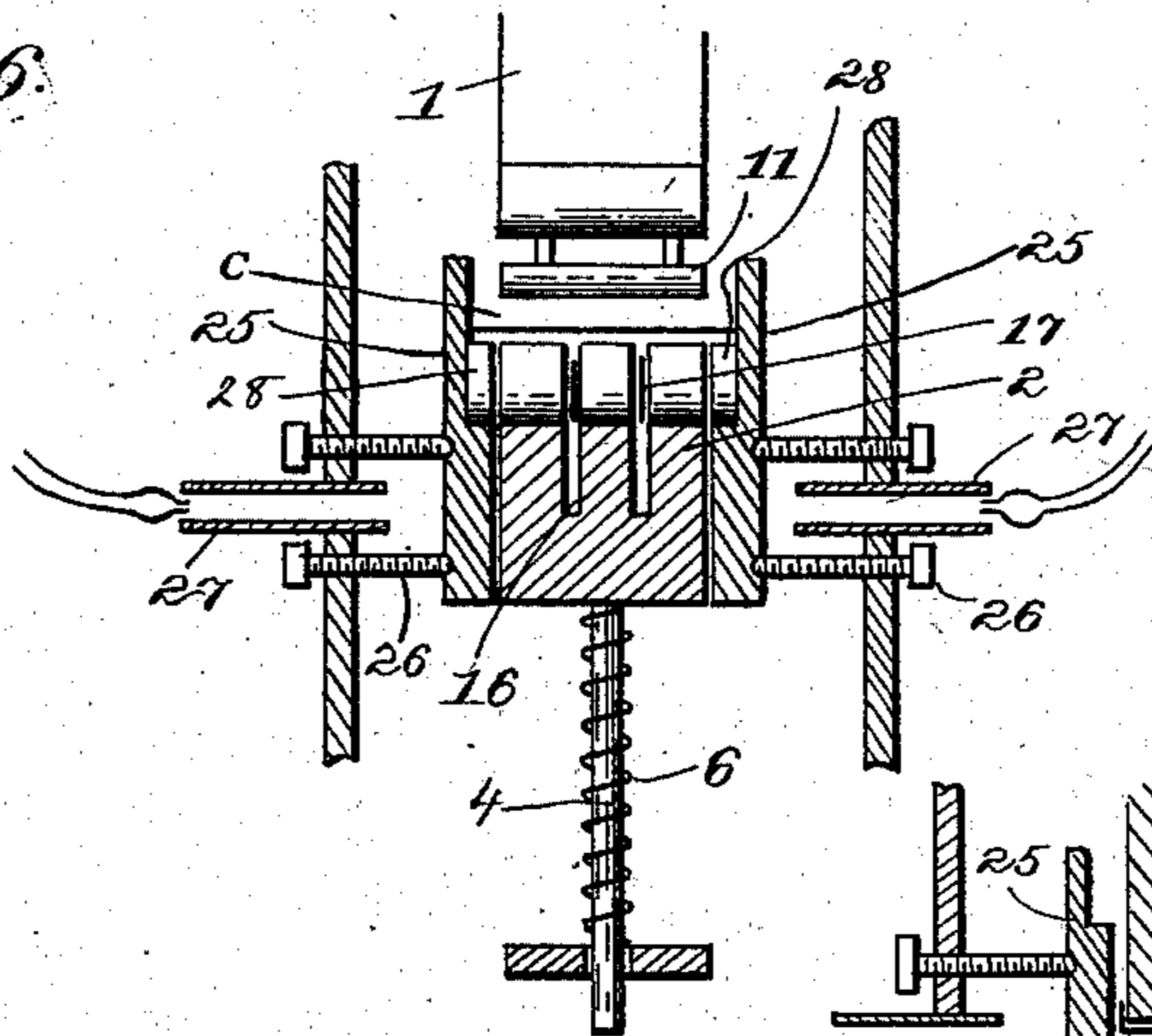


Fig. 7.

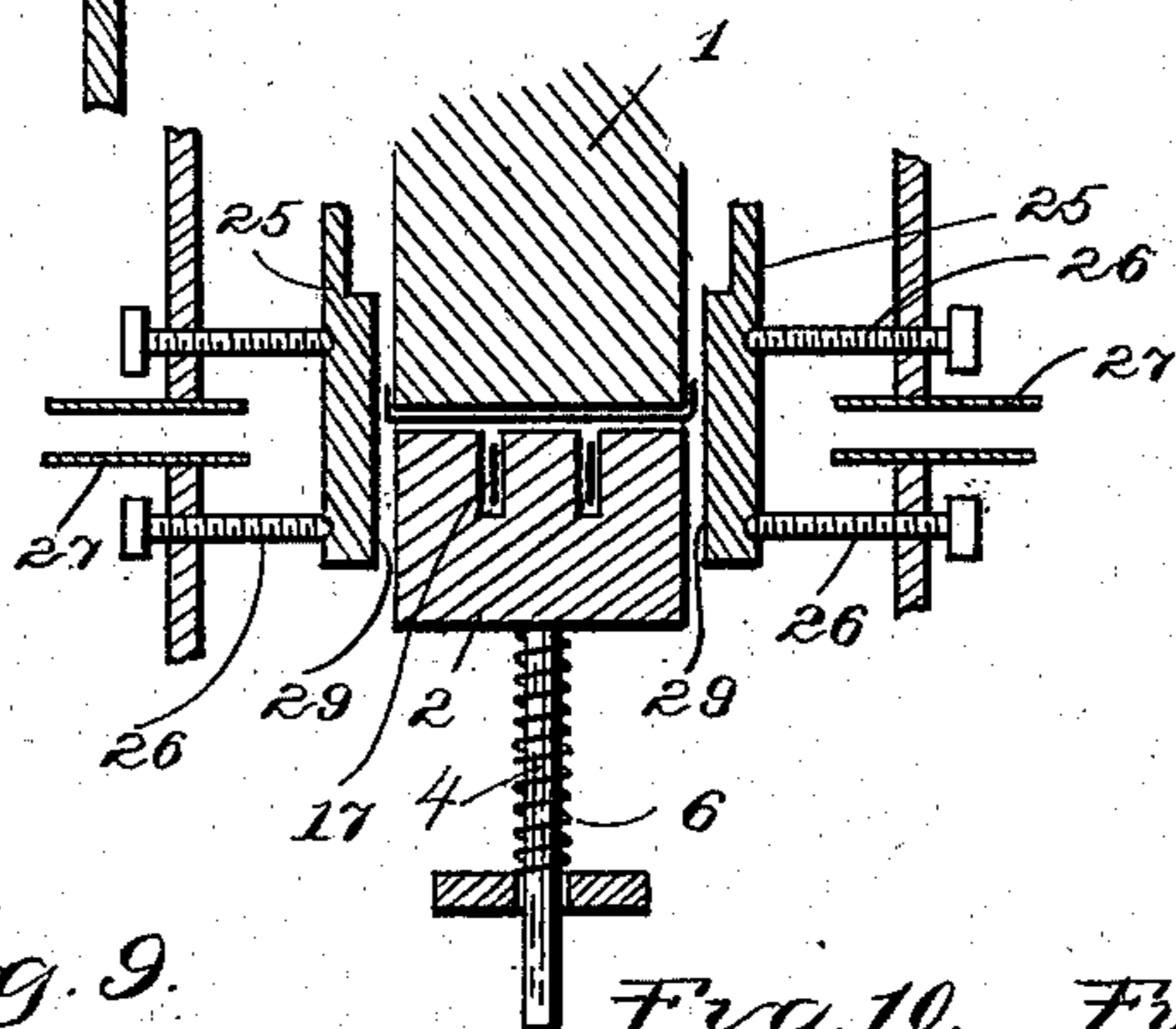


Fig. 8.

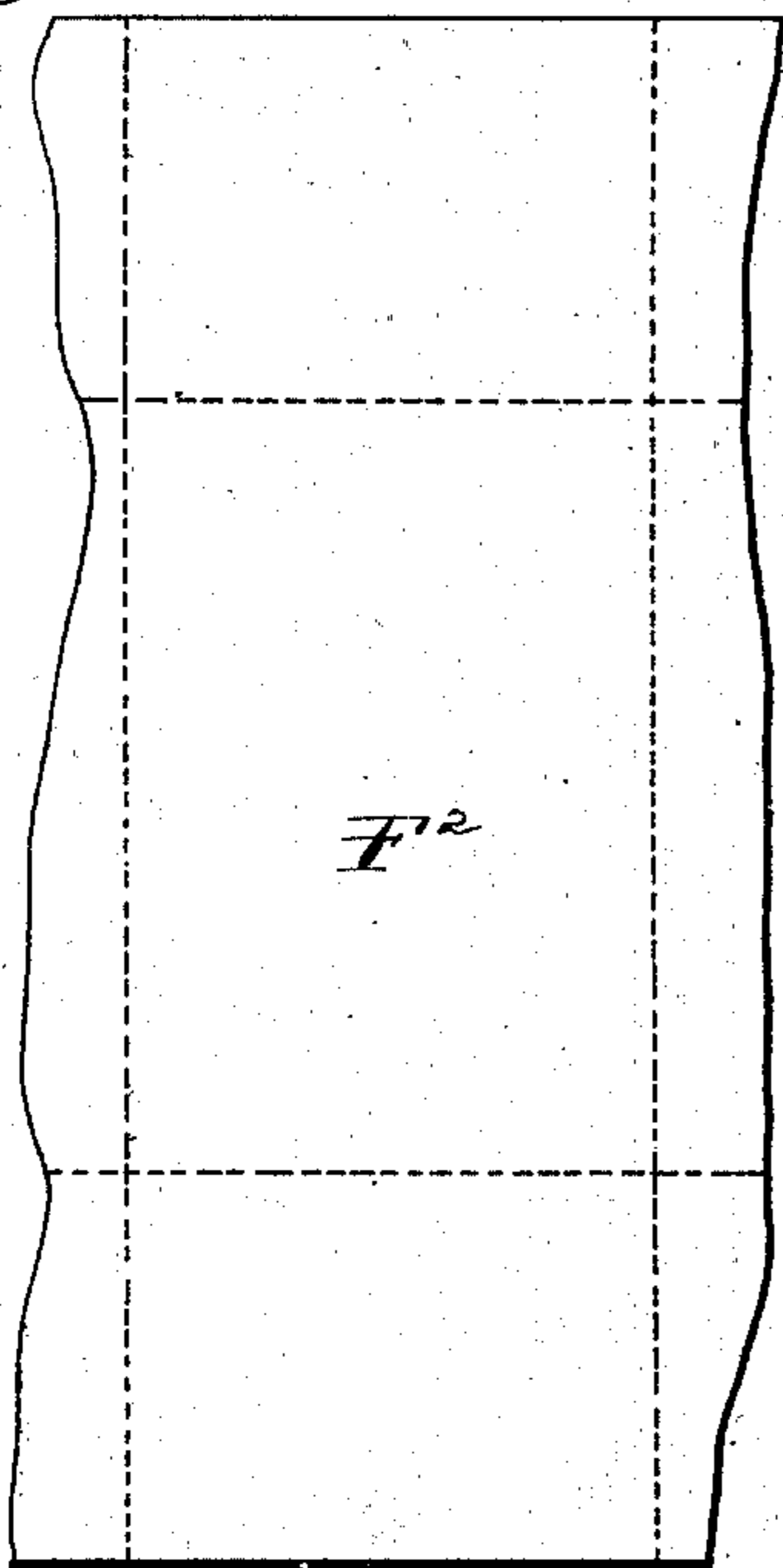


Fig. 9.

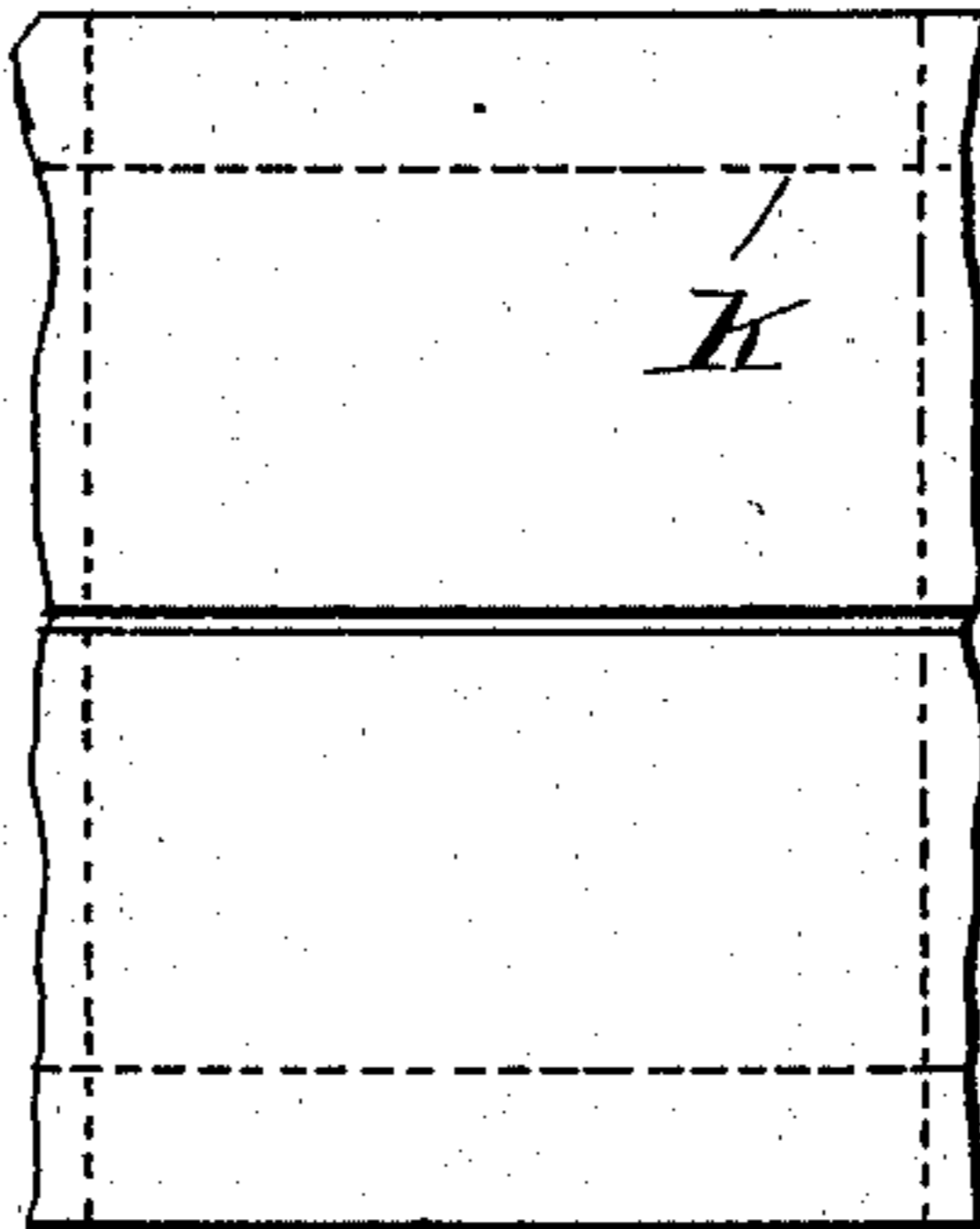


Fig. 10. Fig. 11.

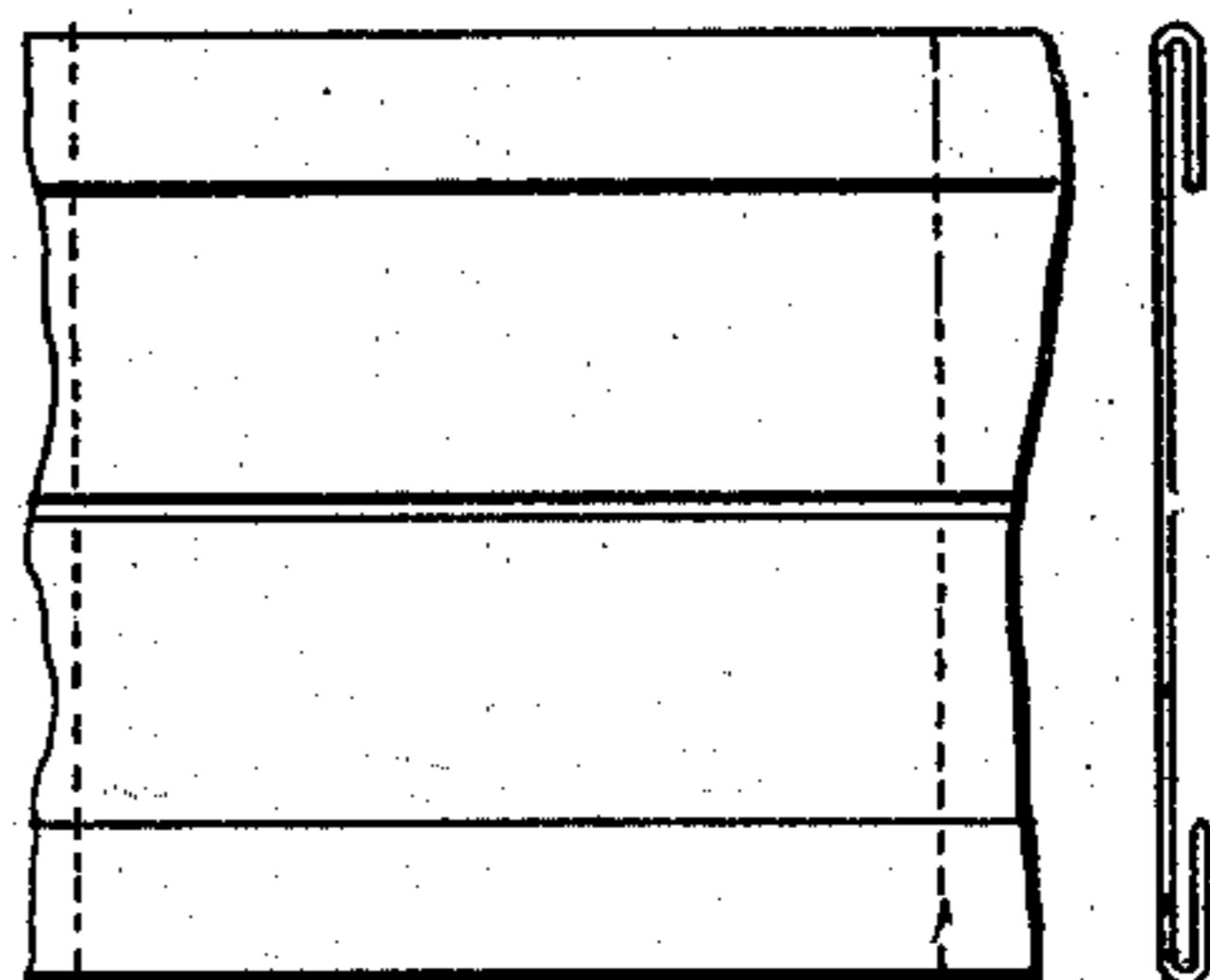


Fig. 12.

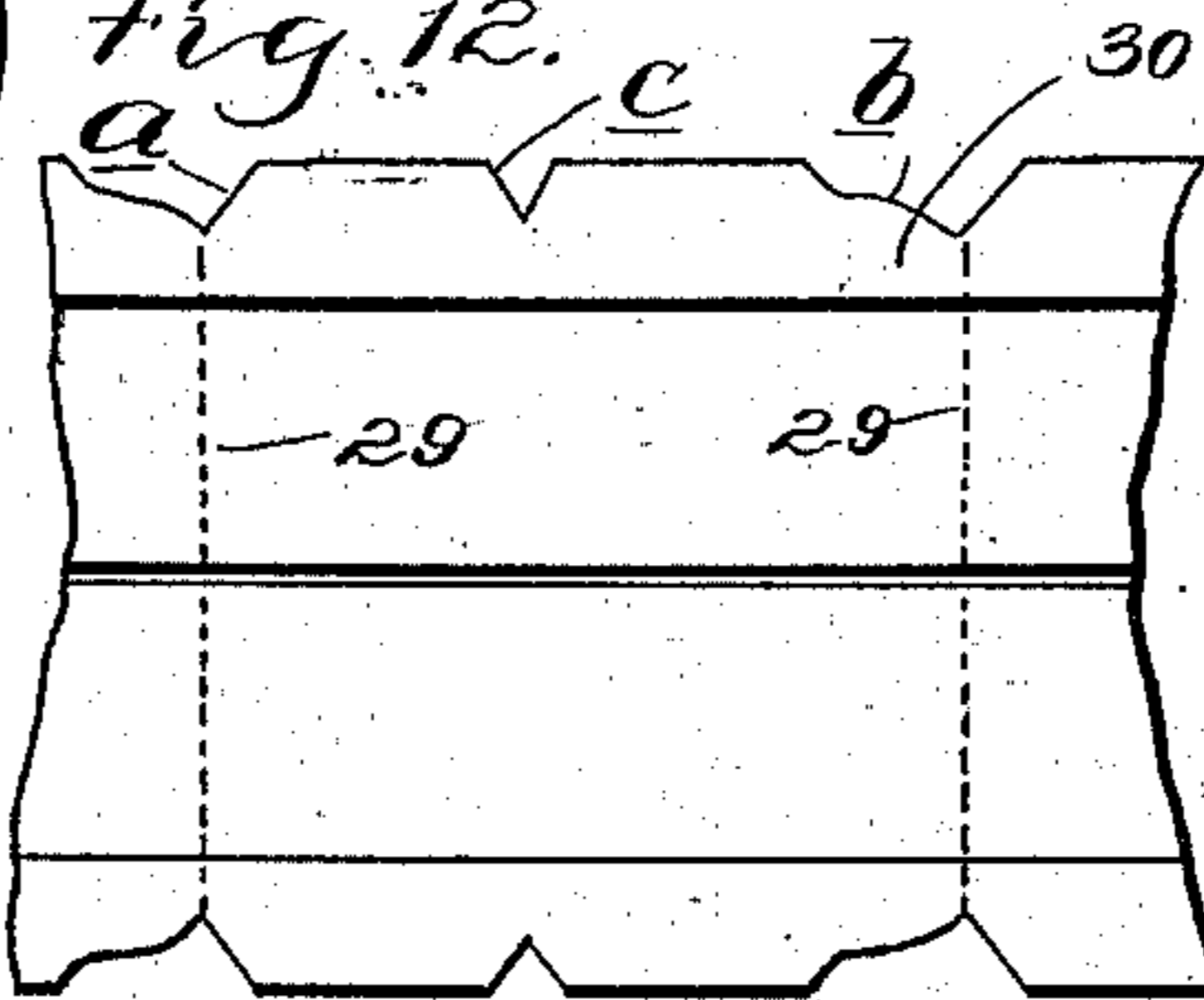


Fig. 14.

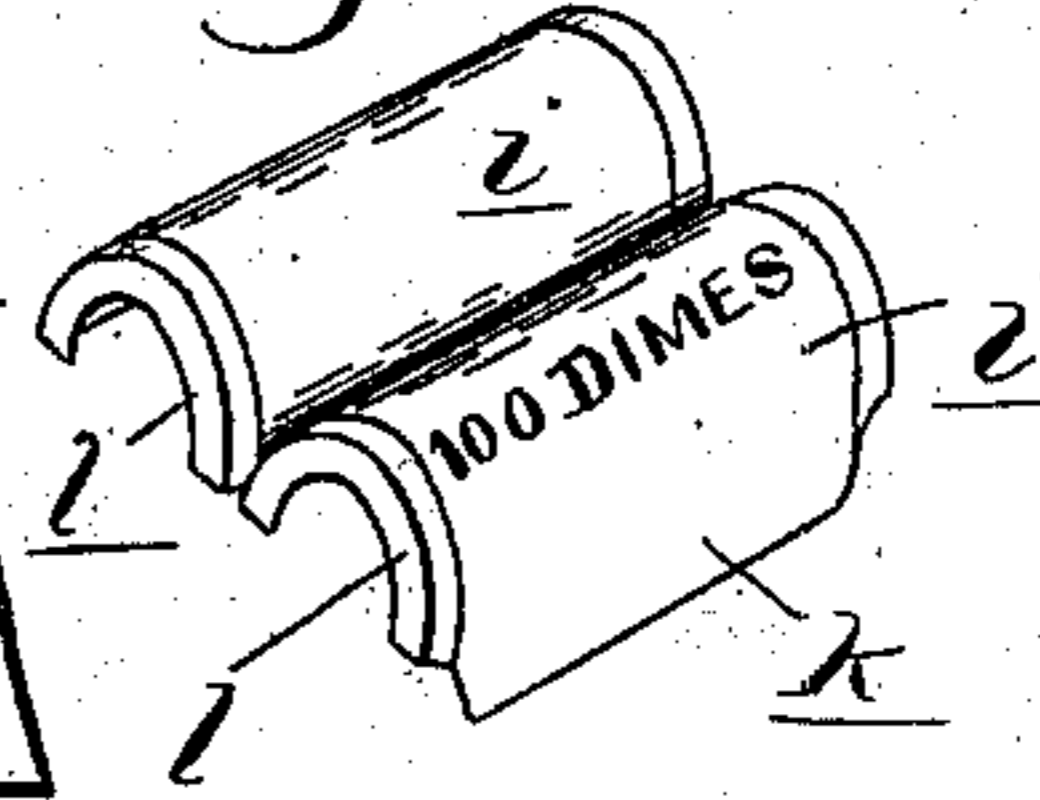
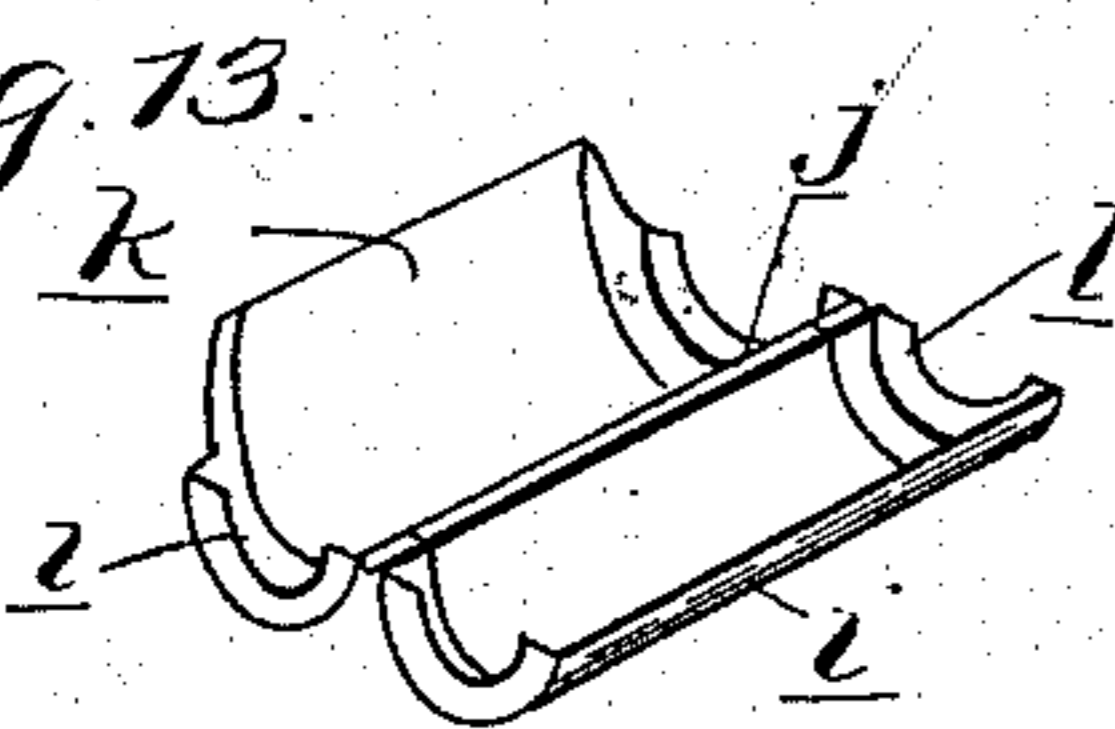


Fig. 13.



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UNITED STATES PATENT OFFICE.

ROBERT L. CHOPE, OF DETROIT, MICHIGAN.

MANUFACTURE OF COIN-CASES.

SPECIFICATION forming part of Letters Patent No. 559,263, dated April 28, 1896.

Application filed August 4, 1892. Serial No. 442,092. (No model.)

To all whom it may concern:

Be it known that I, ROBERT L. CHOPE, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Machines for Manufacturing Coin-Cases, of which the following is a specification, reference being had therein to the accompanying drawings.

10 The invention relates to improvements in machines for manufacturing coin-cases; and it consists in the construction and arrangement of parts hereinafter described, and definitely pointed out in the claims.

15 In the accompanying drawings, Figure 1 is a top plan view of my machine. Fig. 2 is a side elevation, partly in section. Fig. 3 is a cross-section on line *y y*, Fig. 2. Fig. 4 is an enlarged section of the forward end of the machine, showing the dies, &c. Fig. 5 is a similar section of the dies, showing the parts in a different position. Fig. 6 is a cross-section through the dies at right angles to the section in Fig. 4. Fig. 7 is a similar section showing the parts in a different position. Figs. 8, 9, and 10 are plans showing the manner of folding the paper to form the blank. Fig. 11 is an end elevation of Fig. 10. Fig. 12 shows the blank ready to be shaped. Figs. 13 and 20 14 show top and bottom perspective views, respectively, of the coin-case, substantially as described. Fig. 15 shows detached perspective views of the parts of the dies. Fig. 16 is a detail elevation showing the guards for the feed-rolls. Fig. 17 is a detail elevation showing the extractor-actuating mechanism.

My invention relates to the manufacture of folding coin-cases, comprising two semicylinders hinged together, adapted to be closed to form a cylinder of suitable diameter and length to hold a definite number of coins.

Heretofore somewhat similar coin-cases have been made, and they have been manufactured from a single thickness of cardboard or paper, and ordinarily have been manufactured by hand.

50 I have found that cases made of a single thickness of paper have many disadvantages. If made from light paper, they will not hold their shape, and if made from heavier paper they will crack in shaping and use, and there is necessarily a waste of material, while by

making them of a single sheet of paper doubled and pasted, with the edges reinforced by a fold of the doubled blank, I obtain the necessary stiffness, with the desired strength at the edges, where it is required, and a minimum of material. To construct such a case, I employ the following process carried out by the herein-described machine. 55

A is a suitable frame for the operating parts of my machine. Centrally of the frame is the shaft B, upon which is spirally wound a paper strip C. 60

D is a guide, over which the strip passes, and E is a pasting-roller dipped in a suitable paste-pan F. 65

F' is an idler-roll resting upon the top of a strip to hold it in contact with the pasting-roll. 70

The pasting-roll is of suitable shape to paste the strip through its central portion, preferably separated centrally to leave a section F² (shown in Fig. 8) free from paste. The strip next passes over the roll G and beneath a spring-actuated creasing-wheel G'. The strip passes forward from the roll G beneath the curved guide H, which is of a width corresponding substantially to the distance between the creases made by the wheels G'. 75

H' is a folder consisting of a bed-plate and marginal flanges H², forming tapering guide-ways from one end of the plate to the other. The guide H, together with these flanges, folds in the edges of the paper strip upon the pasted portion on the line of the grooves formed by the creasing-wheel G', as shown in Fig. 1, and when thus folded the strip passes between compression-rolls I, which press the unturned edges to the strip and which are provided with circumferential creasing-flanges I', which form marginal grooves or creases in the folded edges of the strip. The strip next passes beneath an idler-roll J of a width equal to the distance between the creases, this roll being slightly in advance of the folder J', which is of substantially the same construction as the folder H' heretofore described, having flanges forming gradually-narrowing guide-grooves for turning in the edges of the strip. 80 85 90 95 100

The operation thus far described is shown more particularly in Figs. 1, 2, 8, 9, 10, and 11. Fig. 8 shows the strip its full width. Fig. 9

shows it with the edges turned in and pasted upon the body with dotted lines at K, showing the path of the creasing-rolls I', while Fig. 10 shows the strip as folded upon itself with the reinforcing edges, Fig. 11 showing an end elevation of the strip at this stage of the operation.

K' is an ink-feeding roller for the lining-roll K², which is provided with a suitable flange for marking lines upon the surface of the strip.

L is a printing-press of any known or usual construction, adapted to print from the under side against the platen M, which is above the strip and supported by an arched frame M'. This printing mechanism preferably comprises the form T³, secured to the rock-arm T⁴ upon the rock-shaft T⁵, together with the inking-roll T⁶ and the inking-plate T⁷. The strip next passes over the roller N at the front end of the frame, and from thence downward in an inclined direction between the feed-rollers O, which are intermittently-driven rollers, and draw the strip through the machine for the entire operation. As the paper is drawn through the machine by means of the driven rollers O it imparts motion to the roller I, upon the shaft of which, at one side of the machine, is formed the grooved wheel O', and motion is transmitted from this grooved wheel to the grooved wheel O² upon the shaft of the pasting-roller E by means of a belt or rope P. Motion is intermittently transmitted to the feed-rollers O from the drive-shaft Q, having a suitable drive-pulley Q' and provided at one end with the crank Q². From this crank extends a connecting-rod Q³, connected at its outer end with a crank R, journaled upon the shaft R'. The crank R carries a pawl R², which carries with it the ratchet-wheel R³, journaled upon the shaft R' and secured to a drive-gear S, which meshes with a pinion S' upon the shaft of one of the feed-rollers O, the shaft of the other roller being provided with an intermeshing pinion S². It is evident from this construction that at each revolution of the shaft Q and crank Q² during half of the revolution a rotary motion will be imparted to the feed-rolls; while during the other half they will remain stationary, the pawl moving backward upon the ratchet-wheel. In this manner I get an intermittent feed to my strip, the length of the feed being equal to the length of the strip required to make a single coin-case. During the interval that the strip is at rest the printing-machine is actuated by means of a crank T upon the shaft Q through the medium of a connecting-rod T' and the bell-crank lever T², connected with the actuating-arm of the printing-machine—that is, when the actuating-arm is rocked by the bell-crank lever T² the form T³ is pressed up against the strip, and in the return movement the inking-rolls are drawn over the form as in the usual construction of printing-presses. During the same interval a shaping-die U is actuated to trim the blank

into the desired shape preparatory to its entering the forming-dies. The object of trimming it is to enable me to form a hinge and the fastening device for the ends to the best advantage, and to this end the shaping-die is provided with cutting portions adapted to cut off the corners *a b*, as shown in Fig. 12, and to cut a V-shaped notch *c* at substantially the middle of the blank, or at the point where the hinge is to be formed between the two sections. This shaping-die U is actuated by the cam U' on the shaft Q, which actuates the bell-crank lever U², pivoted upon the transverse shaft U³, one end of this lever resting upon the top of the shaping-die. The die is provided at each side with an apertured lug *d*, through which passes a rod *e*, upon which are sleeved the springs *f*. Supported by one of the lugs *d* is an angle-arm, carrying at its lower end an inclined guard-plate *d'*, against which the cuttings from the die strike and are prevented from falling onto the rollers O. As the die is moved downward by the lever U² the springs are compressed, and when the cam is turned to the upper position the springs are free to act and lift the die for another operation. The lever U² also actuates the cutting-off mechanism, which mechanism consists of a stationary blade *g* beneath the strip just in advance of the feed-rollers O and the movable blade *g'* just above the strip and secured to the front end of a lever *g*². The actuating-arm of the bell-crank U² is provided with a pin *h*, which engages in an aperture in the lever *g*², so that when the lever U² is actuated it will carry down with it the lever *g*² and cause the knife *g'* to pass the knife *g* and cut off the strip in advance of the feed-roll, the section which is cut off forming a blank, as shown in dotted lines in Figs. 10 and 11, and shaped as shown in Fig. 12. I next shape this blank into a coin-case, which case is shown in Figs. 13 and 14 and consists of the two semicylindrical sections *i*, the hinge *j*, the securing-flap *k* at one side, and the inwardly-extending flanges *l* at each end of each section *i*, this flange forming the means of preventing the longitudinal displacement of the coin from the case.

I will next describe the construction of the dies, which consist of two parts.

1 is a cameo die, and 2 the intaglio die.

3 is the guide for the die 1, and 4 are guide-rods on the under side of the die 2, passing through guide-slots in the frame 5, the springs 6 being sleeved upon these rods to bear against the under side of the die 2.

The die 1 is actuated from the shaft Q by means of a crank 7, formed thereon, and the connecting-rod 8. The die 1 is provided with two downward-projecting semicylindrical bosses 9, separated by a groove 10, as shown in Fig. 4.

11 is a creasing-blade secured to the end of the spring-backed arms 11', which slidingly engage in guide-grooves in the die 1, entering through the groove 10.

The die 2 is provided with semicircular grooves 13, corresponding to the bosses 9, and a central raised portion 14, corresponding in width substantially to the width of the groove 10. This raised portion 14 is provided with a central notch or groove 15 in line with the edge of the creasing-blade 11. The die 2 is provided with longitudinal slots 16, in which the extractor-plates 17 slidably engage. These plates are preferably connected together and have an extension 18 connecting with the yoke-shaped frame 19, which at its upper end is connected to the lever 20. (See Fig. 1.) This lever has a finger 22 extending upward therefrom.

23 is a roller-pin secured on the die 1. In the downward movement of this die this pin strikes upon the shoulder 24 at the top of the frame 19 and pushes down the extractor-plates below the bottom of the semicircular grooves in the die 2. In moving down the frame 19 it also moves downward the lever 20 across the path of the roller-pin 23, so that in the upward movement of the die the roller-pin will strike the under side of the lever 20 and raise it and the extractor-plates, causing the extractor-plates to be lifted to the position shown in Fig. 6, with their upper edge flush (or nearly so) with the upper face of the lower die, thereby pushing out the coin-case formed in the die in the downward movement thereof. When the roller-pin 23 passes the end of the lever 20, it will continue its movement upward parallel with the face of the finger 22, retaining the extractor-plate in its upper position until it again moves downward and strikes the shoulder 24.

At the right hand of Fig. 15 is shown detached the ironing-plate 25 for turning over and ironing the inwardly-extending flange 7 of the coin-case. These ironing-plates are secured on the frame at each side of the lower die by means of adjusting-screws 26. Gas-jets 27 throw a flame against their outer surfaces, keeping them at all times at a high temperature. The gas-jets will also maintain the dies in a highly-heated condition. These plates have a short distance below their upper end the flange 28, corresponding in shape to the shape of the lower die, and below these flanges is formed an ironing-surface 29.

I will now proceed to describe the operation of the forming mechanism at the front end of the machine.

The parts being in position, as shown in Fig. 4, the rotation of the shaft Q will turn the crank 7 and cause the die 1 to approach the die 2. The creasing-blade 11 will first strike in the groove 15, the parts being then in position, as shown in Fig. 5. Simultaneously with the striking of this creasing-plate upon the lower die the cam U' will actuate the lever U², and through the connections described will cause the upper knife G to descend past the stationary knife and sever the blank from the strip, cutting it, as shown by the dotted lines 29, Fig. 12. The upper die

will continue to descend, lowering the extractor-plates, as previously described, and causing the semicircular bosses 9 to enter the semicircular groove 13, shaping the blank into two semicircular sections separated by the raised portion 14. The pressure of the creasing-blade 11 in the groove 15 will at the same time form a longitudinal groove which serves as a hinge between the two semicylindrical sections. The upper die continuing its downward movement will force the lower die downward, compressing the springs 6. In this further downward movement the ends of the blank which project over the flanges 28 of the ironing-plate 25, as shown in Fig. 6, will be forced between the sides of the upper die and the ironing-face 29 of the ironing-plate, as shown in Fig. 7, and during both the upward and downward movement of the two dies beyond the initial position this flange will be ironed against these plates, which, as before described, are highly heated. The result of this ironing of the flanges is to dry up the paste and iron them into a stiff flange which will stand considerable strain and prevent endwise disengagement of the coin even with rough handling. As the upper die withdraws the lower die is caused to follow it by the expansion of the springs 6 until it has reached its initial position, then the upper die is lifted away from it; the extractors are moved up, and the coin-case thrown out ready for another operation.

In order to enable me to overlap the meeting ends of the sections of the coin-case, I form the end 30 slightly the longer. In order to give this longer end the necessary curvature, I preferably form the upper die with a curved side recess 31 and provide a roller 32, secured to a lever 33 and actuated by a spring 34 toward the dies, all so arranged that as the dies descend the spring 34 will press the roller 32 against the end 30 of the blank and roll this end into the recess 31, both in its upward and downward movement, so that the flap will be substantially of the same curvature as the two sections of the coin-case and the ends will more readily go together in using. The gas-jets which heat the ironing-plates also highly heat the lower die, the result being that while pressed in the heated dies the paste will be rapidly dried and the case will be stiffer and will better retain its shape.

What I claim as my invention is—

1. In a machine for manufacturing coin-cases from a roll of paper, the combination of means for feeding it in a strip, a pasting-roll for pasting one side of the strip, mechanism for doubling the strip, a pressure-roll for pressing the doubled blank together, mechanism for folding in the edges of the doubled blank, a cutter, dies for forming the case and actuating mechanism, substantially as described.

2. In a machine for manufacturing coin-cases from a roll of paper, the combination of means for feeding it in a strip through the

machine, a pasting-roll for pasting one side of the strip, mechanism for folding in the edges of the strip upon itself and pasting the edges upon the body of the strip, mechanism
5 for folding in the edge of the doubled strip, a shaping-die for the blank, a cutter, forming-dies and actuating mechanism, substantially as described.

3. In a machine for manufacturing coin-
10 cases from a roll of paper, the combination of means for feeding it through the machine in a strip, of a pasting-roller for pasting the strip on one side, a folding device comprising a folder-plate having gradually-narrowing side
15 flanges, a compression and creasing roller, a second folder-plate for turning in the edges of the doubled strip, a shaping-die, and a knife, a forming-die and an intermittent feed mechanism, substantially as described.

20 4. In a machine for manufacturing coin-cases from a paper blank, the combination of shaping-dies, adapted to move together after their engagement, of heated ironing-plates at the ends of the dies, recessed at the upper
25 ends to allow of the extension of the blank beyond the dies, substantially as described.

5. In a machine for manufacturing coin-cases from a paper blank, the combination of the dies comprising two semicylindrical sec-

tions and a yielding creasing-blade between the two, substantially as described.

6. In a machine for manufacturing coin-cases from a paper blank, the combination of a cameo die, having two downward-projecting semicircular bosses separated by a groove, 33 a creasing-blade secured to spring-backed arms in the cameo die and adapted to be forced into said grooves, the intaglio die comprising two corresponding grooves separated by a
40 flange or rib, and a notch or groove at the apex of said rib, in which the creasing-blade is adapted to engage, substantially as described.

7. In a machine for manufacturing coin-cases from a paper blank, the combination of
45 the dies, substantially as described, of an extractor comprising the plate 17 engaging in grooves in the intaglio die, the frame 19 connected to said plates and actuating from the upper die to lift the plates out of the grooves
50 when the dies are separated, substantially as described.

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

ROBERT L. CHOPE.

Witnesses:

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N. L. LINDOP.