

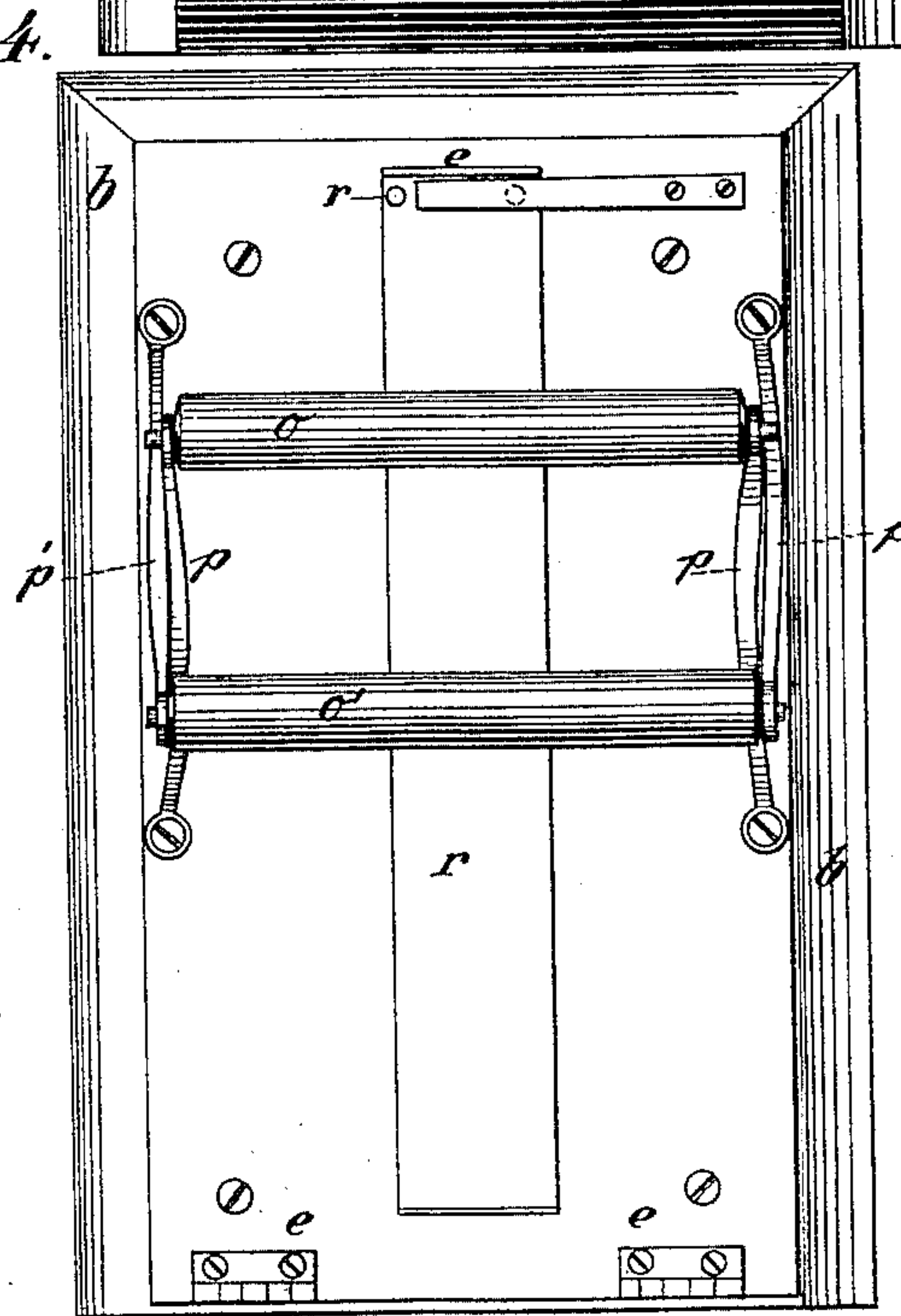
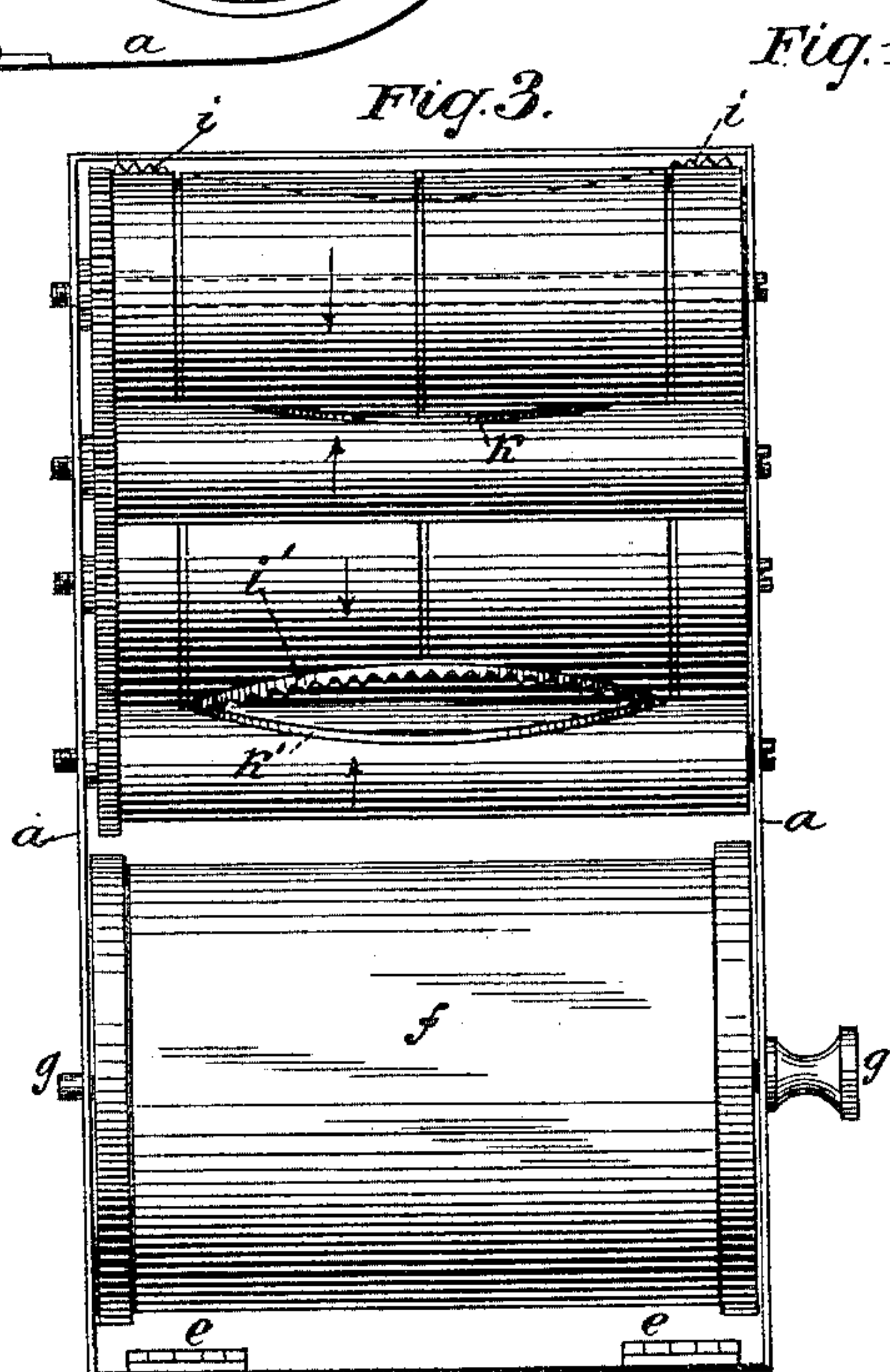
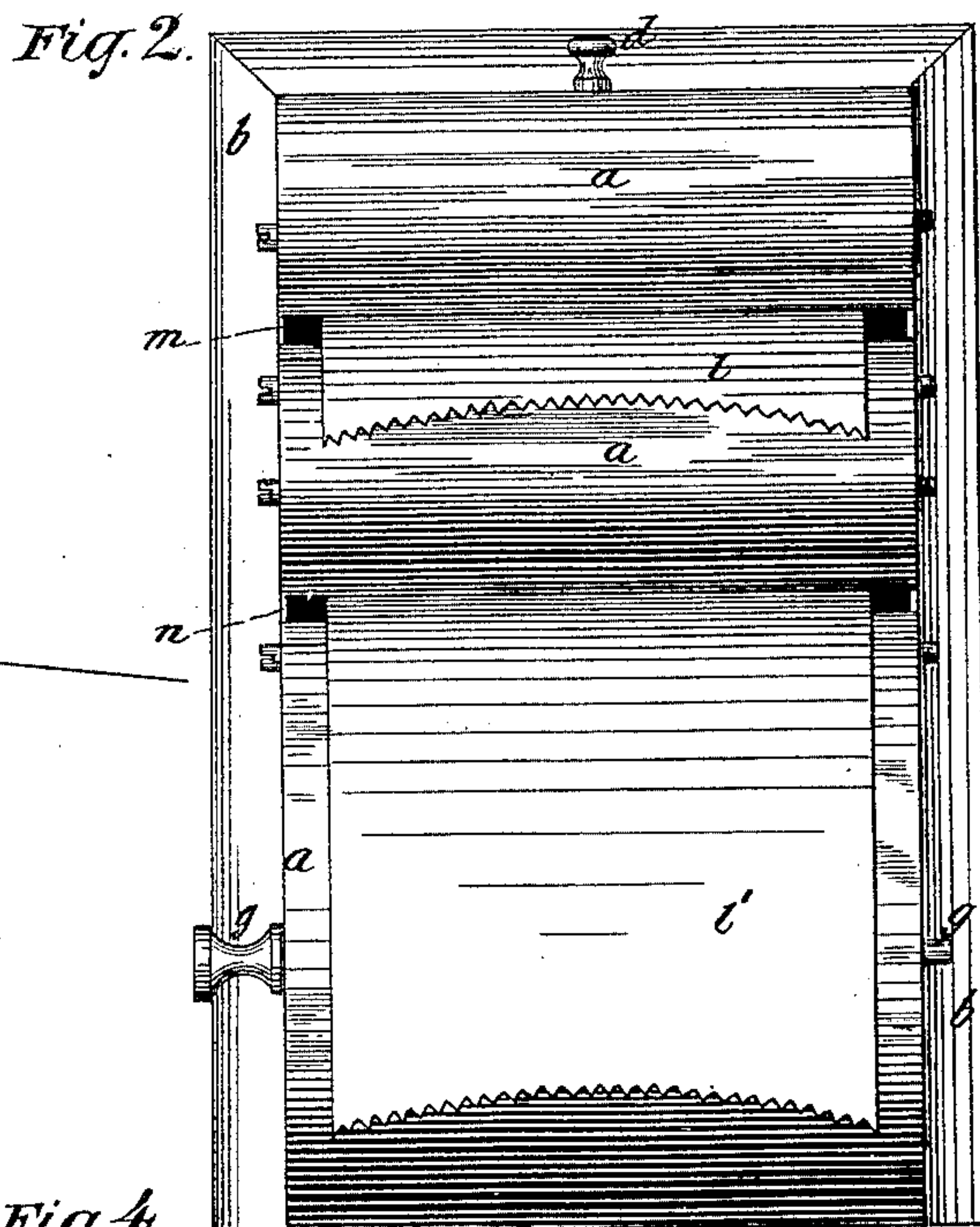
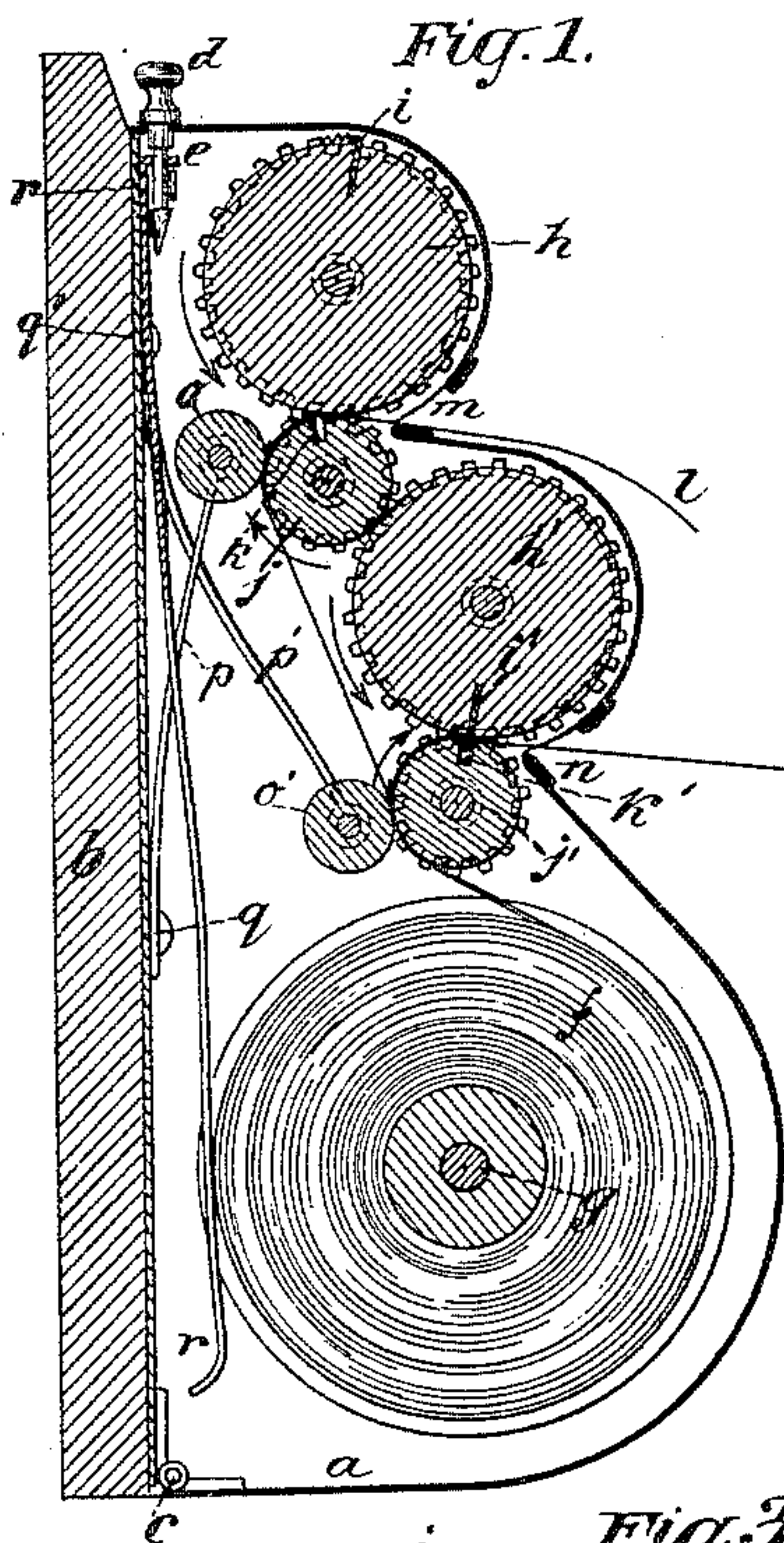
(No Model.)

2 Sheets—Sheet 1.

S. WHEELER.
TOILET PAPER FIXTURE.

No. 454,317.

Patented June 16, 1891.



Witnesses

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James C. Ward

Inventor

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(No Model.)

2 Sheets—Sheet 2.

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Fig. 5.

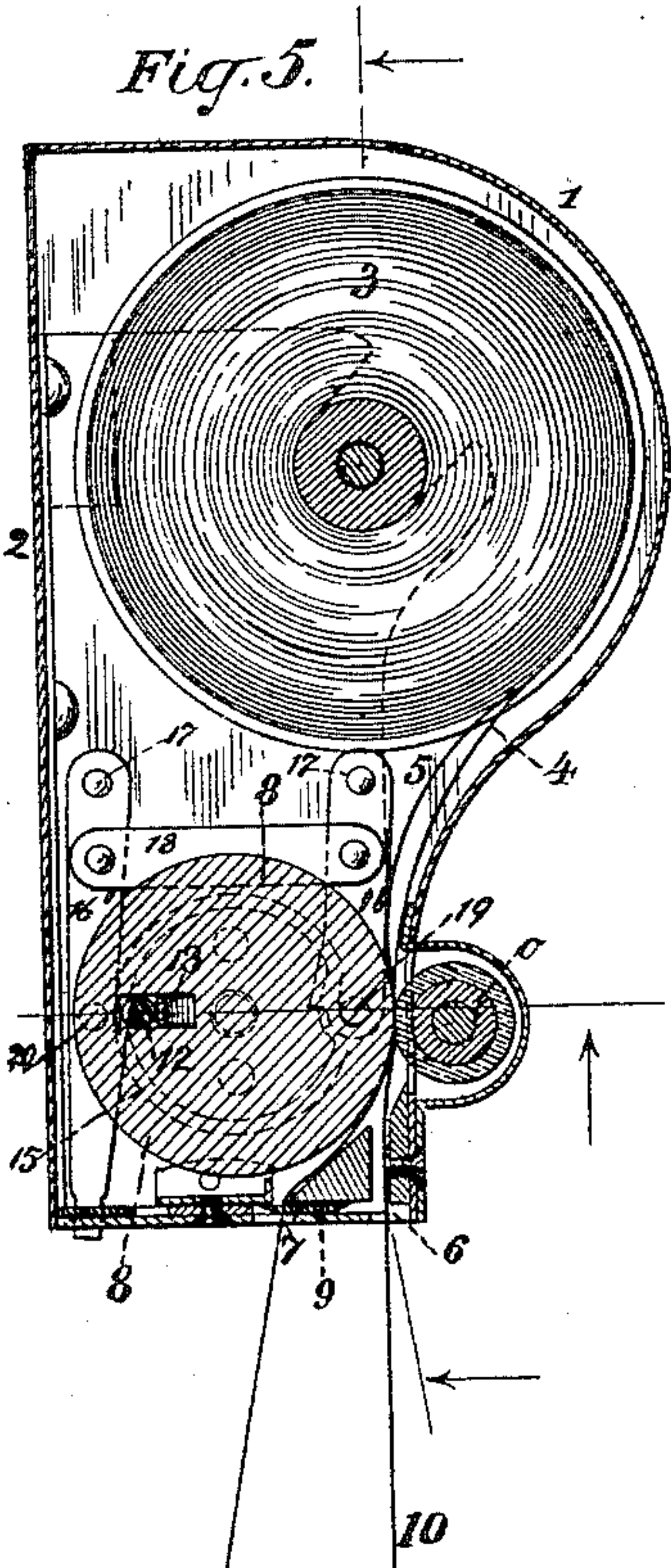


Fig. 6.

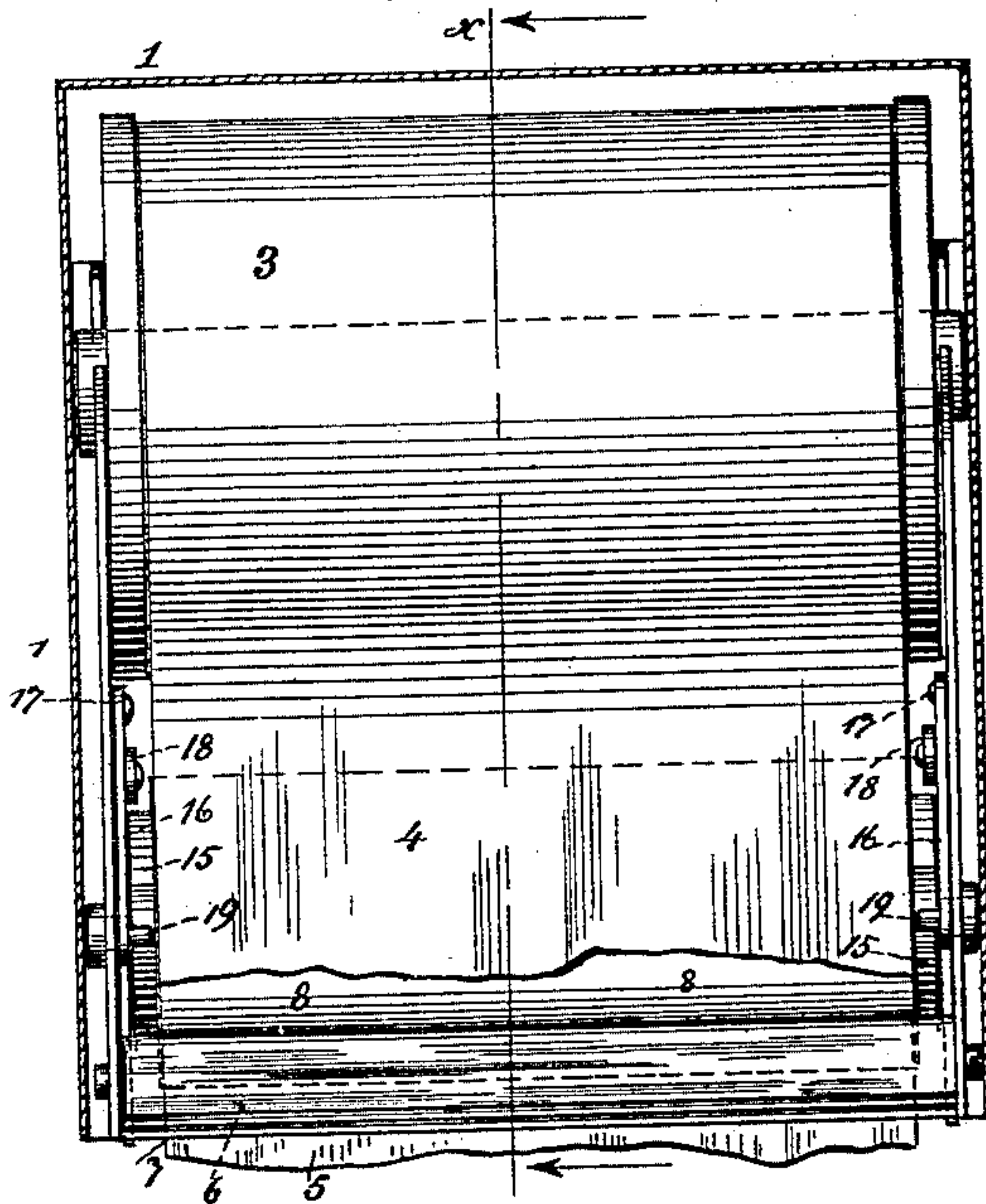


Fig. 7.

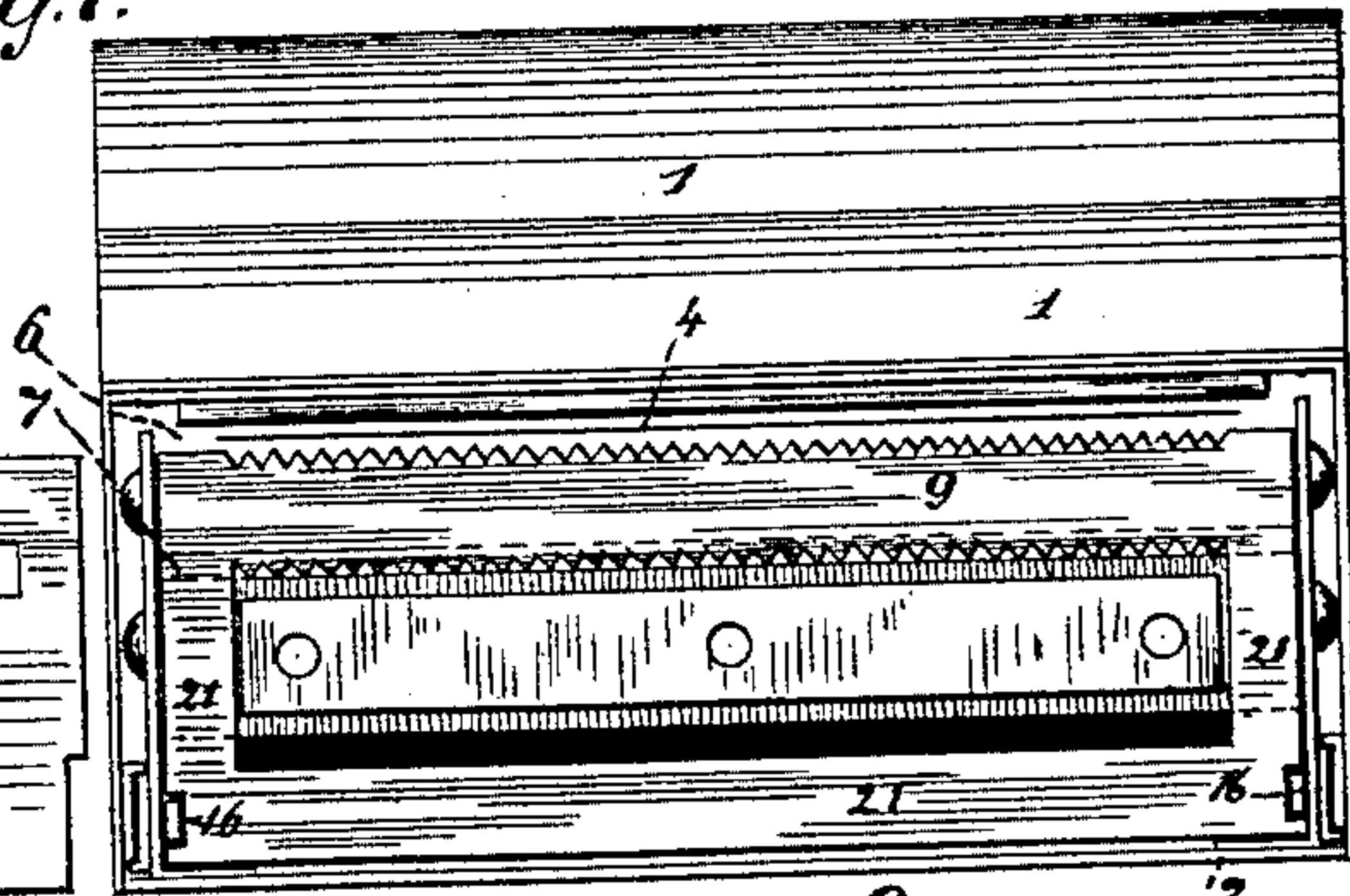


Fig. 8.

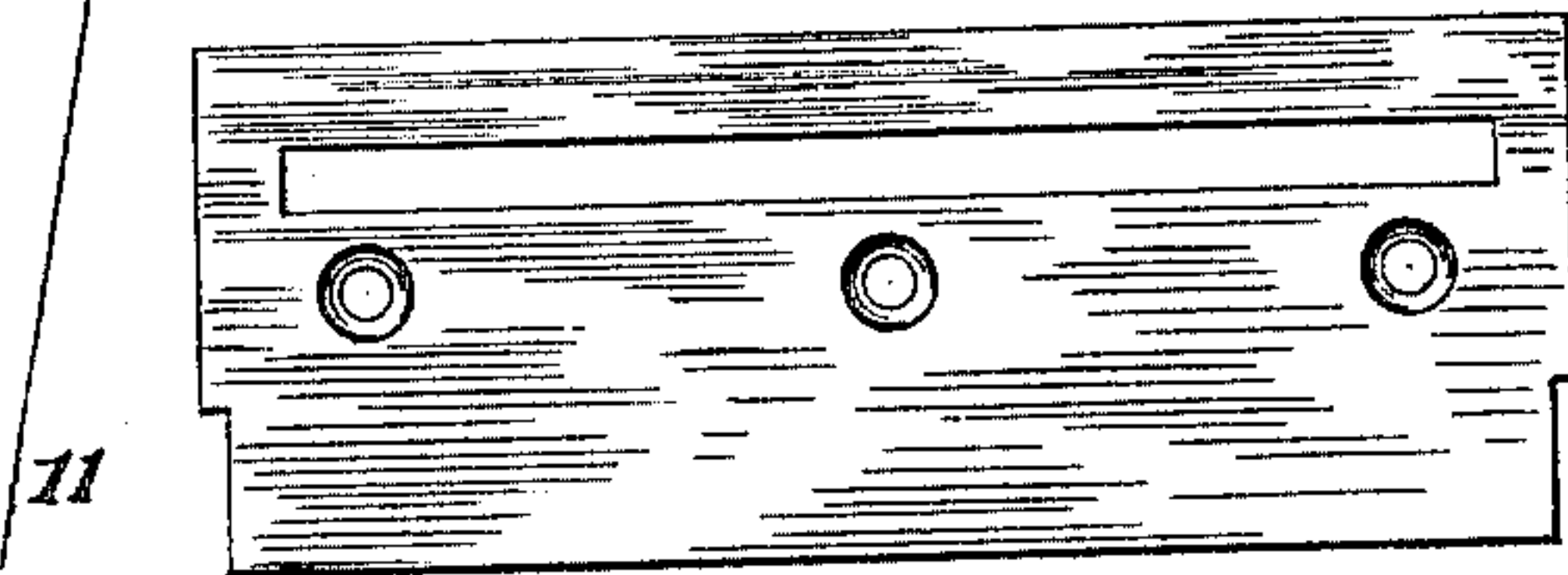


Fig. 9.

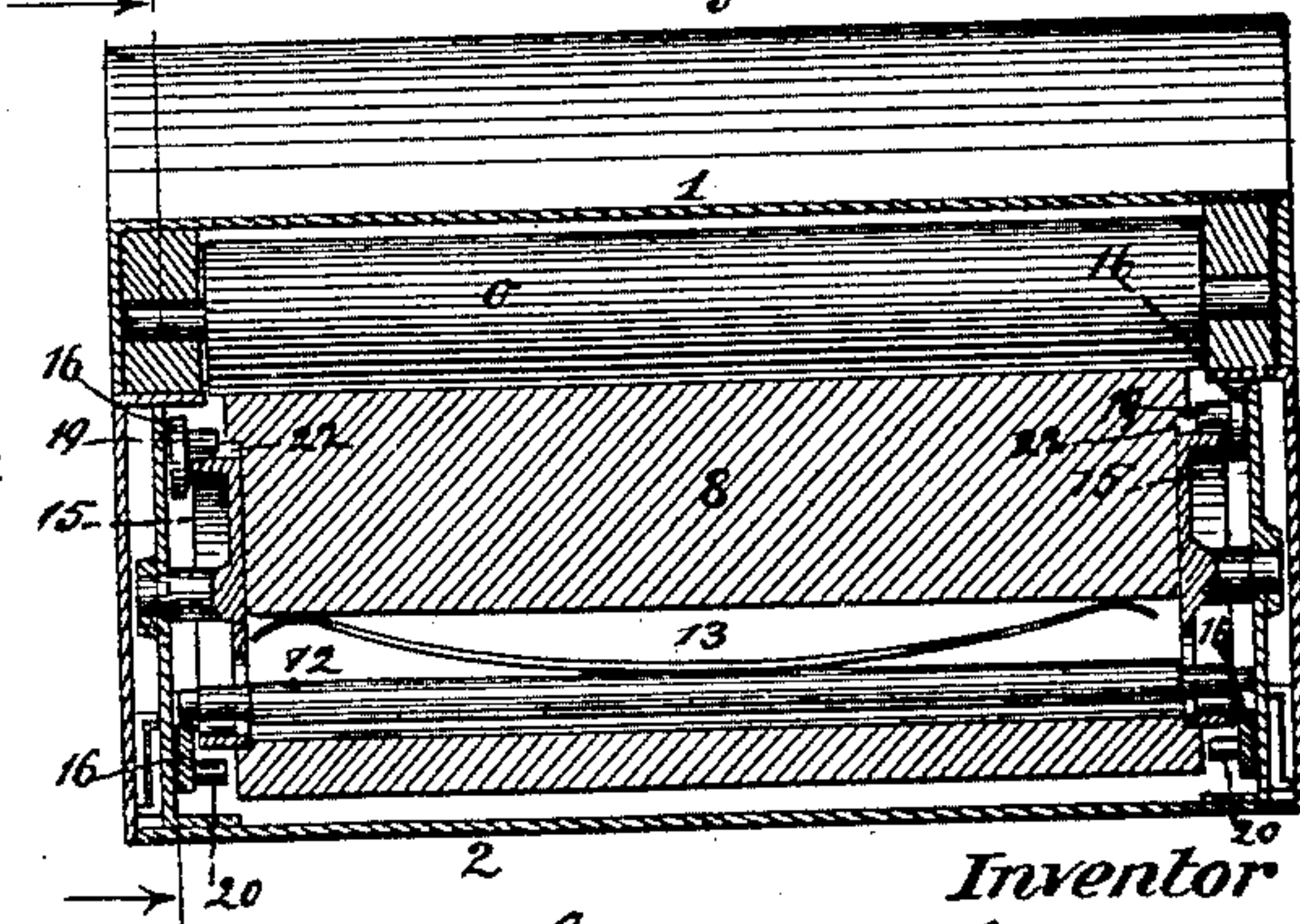
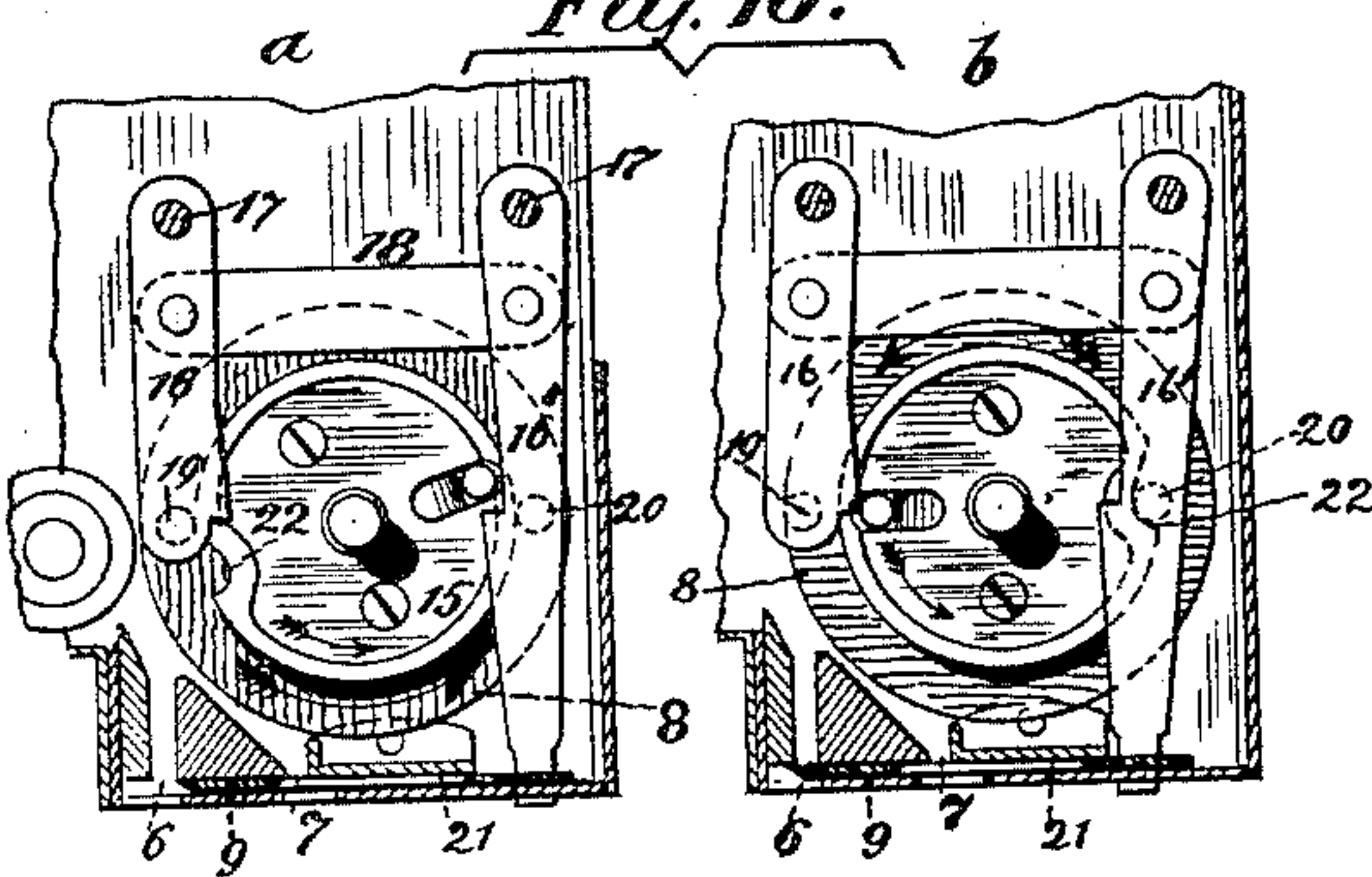


Fig. 10.



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UNITED STATES PATENT OFFICE.

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TOILET-PAPER FIXTURE.

SPECIFICATION forming part of Letters Patent No. 454,317, dated June 16, 1891.

Application filed July 22, 1889. Serial No. 318,200. (No model.)

To all whom it may concern:

Be it known that I, SETH WHEELER, of the city of Albany, in the State of New York, have invented certain new and useful Improvements in Cabinets or Fixtures for Wrapping or Toilet Paper; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to cabinets or fixtures for wrapping or toilet paper in roll form, in the operation of which the pulling out of one sheet brings another into position to be readily grasped in turn, the object being to produce a cabinet from which sheets of paper may be readily removed, of the desired size, without resort to means for actuating the mechanism of the fixture other than the movement of one hand of the user in the act of withdrawing the sheets.

It consists, principally, of a cabinet in which is a roll of paper composed of two or more webs of superposed paper or two or more independent rolls, each containing a single web of paper, in combination with means for measuring such webs and for cutting them off into sheets of a given size alternately as the ends are drawn out of the fixture by the hand.

In the drawings, Figure 1 is an end view of a cabinet or fixture containing my invention. Fig. 2 is a front view of same. Fig. 3 is a rear view of same having the back removed. Fig. 4 is a view of the inside of the back of the cabinet. Fig. 5 is a vertical cross-section, taken in the line *xx* of Fig. 6, of a cabinet or fixture containing a modification of the invention as shown in the first four figures. Fig. 6 is a front elevation of the last-mentioned cabinet with the case removed. Fig. 7 is a plan view of the same, viewing it from the underneath side, the outside plate covering the knife-bar being removed. Fig. 8 is a separate view of this outside plate to the knife-bar. Fig. 9 is a longitudinal cross-section taken in the line *yy* of Fig. 5, looking upward. In Fig. 10 *a b* are sectional end views of the paper-measuring cylinder, showing two different positions of it and its connections during the operation of withdrawing paper out of the cabinet.

In Figs. 1, 2, 3, and 4, *a* is the casing of the cabinet. *b* is the back, to which the casing is attached by means of hinge *c* at bottom and by a pin *d* at top through an eye *e*. In the lower portion of the casing is hung a duplex roll *f* on a rod *g*, passing through the sides of the casing. *h* is a measuring-cylinder containing a serrated knife or cutter-bar *i*, journaled in the sides of the casing. *h'* is another measuring-cylinder secured in the same manner, placed below and a little in front of the one just referred to and containing another serrated knife or cutter-bar *i'*. *j j'* are two counter-rollers, one for each of the measuring-rollers and each containing a groove *k k'*, into which the knife-bars *i i'* pass during the act of cutting off the paper. *l l'* are the superposed webs of paper passing from the duplex roll of paper *f*, the web *l* passing between the cutting-cylinder *h'* and counter-roller *j'* and out through a slot *n*, in the casing on the front of the cabinet. *l'* is the underneath superposed web of paper, which passes between the measuring-cylinder *h* and the counter-roller *j* and out through another slot *m* in the casing. *o o'* are pressure-rollers applied, respectively, to the superposed webs, one to web *l* and the other to web *l'*, so as to press the webs against the counter-rollers and prevent them from buckling or rucking up and to always insure their regular and even delivery to the cutting mechanism and the slots of the cabinet. These pressure-rollers are attached to the back *b* by means of flat steel springs *p p'* at the points *q q'*. The steady and regular delivery of the webs from the duplex roll *f* is insured by the flat steel spring *r*, attached to the back at *r'* at one end, the lower portion of which is free and gives pressure to the periphery of the duplex roll until it is all consumed by the cutting-knives.

The operation of the cabinet is as follows: The end of one of the webs of the paper of the duplex rolls is always in advance of the other. On pulling it, it is brought to a point where it is cut off by one of the cutting-cylinders. This operation at same time advances the end of the other web, so that when such first one is cut off the other is in the same position, in order to be readily grasped by the hand and be pulled until it is also cut off, which at same

time advances the end of the first-mentioned web of paper, and so on until all the paper is consumed. In Fig. 1 the web of paper *l'* is shown as pulled to a point at which it is about to be severed. The bringing of it to this point has advanced the end *l* of the other web about half-way out of the cabinet. It is thus seen that when the knife *i'* is about to cut off a piece of paper the measuring-cylinder *h* is carrying its knife *i* to the farthest point away from the counter-roller *j*. A further pull upon the web *l'* will not only sever the sheet by the knife *i'* of the measuring-roll *h'*, but will farther advance the end *l*, so that it can in turn be taken hold of by the hand, thereby rotating the knife *i* of the measuring-roll *h* into a position to sever off also a sheet from the web *l*. By this time the knife *i'* on measuring-roll *h'* will be at its greatest distance from the counter-roller *j'*, and will, if rotated, give through the slot *n* a sufficient amount of paper, which may in turn be grasped by the hand to get another sheet of paper cut from off of the web of paper *l'*, and at same time in turn again rotate out of slot *m* the end of the web of paper *l'*.

In the cabinet or fixture shown in Figs. 5 to 10, inclusive, 1 is the casing. 2 is the back. These parts may be secured together in any convenient manner. 3 is a duplex roll of paper, the webs of which 4 5 pass out of slots 6 7 in the bottom of the fixture. 8 is the measuring-roll. 9 is the cutting-knife, (in this instance being a thin steel blade with serrated edges on its opposite sides,) so as to cut alternately the superposed webs of paper as they pass out of the openings 6 7, one sheet being always in advance of the other. It will be seen that in this instance also the invention is carried out by one end of each web being advanced in front of the other alternately and by the operation of the cabinet on the pulling of the ends of such webs of paper alternately by the hand. It is therefore evident that the invention can be carried out by but three of the elements shown in fixture illustrated in Figs. 1 to 4—namely, by two or more webs of paper, the measuring-roller, and means for cutting off the paper, such means being in this instance the measuring-roller and the serrated knife-edges on the cutter-bar actuated by the element, the two or more webs of paper, by pulling on the ends of such webs alternately, the end of one web being always in advance of the other.

The paper is delivered and cut by the modified form of fixture, and the construction of its operative parts is as follows: The measuring-roller 8 is journaled in the sides of the fixture and both webs of paper run between its periphery and the periphery of a pressure-roller 9, the end 10 of the outer web 4 being delivered through the opening 6, and the end 11 of the inner web 5 through the opening 7, of the fixture.

The cutting mechanism which is to sever the webs into sheets and the mechanism of the

measuring-roller are as follows: The measuring-cylinder 8 has placed longitudinally in it, a short distance from its periphery, a rod 12. This rod is kept forced toward the periphery by the bow-shaped spring 13 within the cylinder. In each end of the cylinder is a circumferential cam 15. Inside of each end of the fixture are two levers 16 16', pivoted at 17 17'. These levers are connected, so as to have an oscillating motion in common, by a cross-bar 18. At the upper end of each lever 16 (being short levers) is a stud 19, and directly opposite on each lever 16' is a similar stud 20. The lever 16' is carried down through the casing of the cabinet and there connected to an oscillating frame 21, to which are attached the serrated knife-edges or cutter-bar 9. In the cams 15, directly opposite the projecting ends of the rod 12, are little indentations into which these pins 19 20 can alternately fall, and thus cause the knife-frame 21 to move to the right and to the left to make the severance of the sheets. When neither of the studs are in these recesses, they ride on the external periphery of the cam, keeping the levers 16 16' in a vertical or what may be termed "normal" position, and the frame 21 from moving either to the right or to the left, in which latter positions the serrated knife-edge bar 9 will not act upon the ends of the webs of paper 10 11. A pull upon either end of 10 or 11 will, however, when the parts are in their normal position, rotate the measuring-roll 8 and bring forward in unison the superposed webs of paper. A pull upon the longer end projecting out of slots 6 or 7, as the case may be, will bring one of the studs 19 or 20 into one of these recesses 22 of the cam 15 and cause the knife-bar to move either toward the right or left side to make severance of a sheet of paper. The pulling upon the longest projecting end of paper to sever it will also carry the stud 19 or 20 again immediately out of the recess 22, and thus bring the frame 21 and levers 16 16' again into their normal and central position. This will cause a quick movement of the knife-bar either to the right or to the left hand, as the case may be, and effect a successful severance of the sheet of paper. As one sheet is severed the end of the other will be sufficiently far rotated out of its opening to be caught hold of and to be in turn pulled out and severed. The sectional views *a* and *b* of Fig. 10 show this operation very plainly. In the view *a* the parts are in their normal position, and the cut having just been made of a piece of paper passing through the aperture 7, the studs 19 having just passed out of the recesses 22 of the cams 15. At the next half-revolution of the measuring-roll the studs 20 will pass into the recesses 22 of the cams 15 15, and the reciprocating frame will be thrown over into the other direction, thereby cutting a piece of paper from off of the other web of paper passing through opening 6. The action of the spring 13 on the

rod 12 forces the ends of the rod 12 against the levers alternately, thus giving a quick spring motion to the knife-bar 9 of the reciprocating frame 21 just before the studs 19 drop into the recesses 22—that is to say, as it is moved out of the normal position, as shown in view *a* of Fig. 10, in order to make a severance of a sheet of paper, which it is about to do in view *b* of Fig. 10, from the end of the web passing through slot 6. It is evident from this that the cylinder 8 measures two sheets of paper and the severance is done at different intervals of time, leaving one web projecting always from the cabinet in advance of the other to be grasped by the hand, as is also the case with the cabinet shown in Figs. 1 to 4, inclusive.

In all of the foregoing it will be seen that the separation is effected by a cutter carried by the measuring-roll. I do not, however, confine myself to the use of the particular mechanism shown.

Figs. 5 to 9 exhibit a modification in which the cutter is not mounted on a cutting-cylinder; but its action and the forward movement of the web are equally dependent upon the withdrawal of the paper from the cabinet. If desired, the gear connection between the rolls may be dispensed with by bringing the rolls in close contact; but I prefer the use of gearing, as insuring the maintenance of their proper relative position under all circumstances.

It may be observed that the measuring and separating devices in both cabinets accomplish the same result—namely, the separation of the web of paper into sheets of uniform lengths—and it is obvious that a roll containing three or more webs could be substituted for the duplex roll, or the same result attained by enlarging the cabinet to admit two or more single-web rolls, and that delivery-openings may be readily arranged by which single sheets or two or more superposed sheets would be delivered. I have shown a knife or separator having a serrated edge, and it is obvious that a straight-edged knife could be used; but I prefer the former. It will also be seen that by the mechanism shown in Figs. 5 to 9 a sheet of paper is separated at every half-revolution of the measuring-roll, the length of each sheet being equivalent to the circumference of the roll, the duplex or two single-web rolls being operated upon, as the case may be,

and that the same device would deliver two superposed sheets from two duplex rolls or four single-web rolls. If required to deliver single sheets of uniform length from these rolls at four openings, the same measuring-roll would effect the separation by duplicating the separating device and arranging it to engage the roll at points midway between those shown in the drawings. The same measuring-roll may also be made to deliver shorter sheets by arranging it to actuate the separators twice or more at each revolution.

I claim—

1. A cabinet for wrapping or toilet paper, in which is a roll of paper containing two or more webs, in combination with means for measuring such webs and cutting them off into sheets of a given size alternately, substantially as described.

2. In a cabinet for wrapping or toilet paper, the combination of a measuring-roller, means for severing the paper, and two or more webs of paper actuated by said measuring-roller when such webs are pulled alternately by the hand, substantially as described.

3. In a cabinet for wrapping or toilet paper, the combination of a measuring-roller, a knife or cutter-bar, and two or more webs of paper, substantially as described.

4. In a cabinet for wrapping or toilet paper, the combination of the measuring-rollers *h* *h'*, having knives or cutter-bars *i* *i'* on their peripheries, with the counter-rollers *j* *j'*, containing grooves *k* *k'* in their peripheries, substantially as described.

5. In a cabinet for wrapping or toilet paper, the combination of measuring-rollers *h* *h'*, having knives or cutter-bars *i* *i'* on their peripheries, with the counter-rollers *j* *j'*, containing grooves *k* *k'* in their peripheries, and the pressure-rollers *o* *o'*, substantially as described.

6. In a cabinet for wrapping or toilet paper, the combination of measuring-rollers *h* *h'*, having knives or cutter-bars *i* *i'* on their peripheries, with the counter-rollers *j* *j'*, containing grooves *k* *k'* in their peripheries, the pressure-rollers *o* *o'*, the spring *q*, and the roll of paper *f*, substantially as described.

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Witnesses:

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