

No. 710,080.

Patented Sept. 30, 1902.

R. C. SEYMOUR.

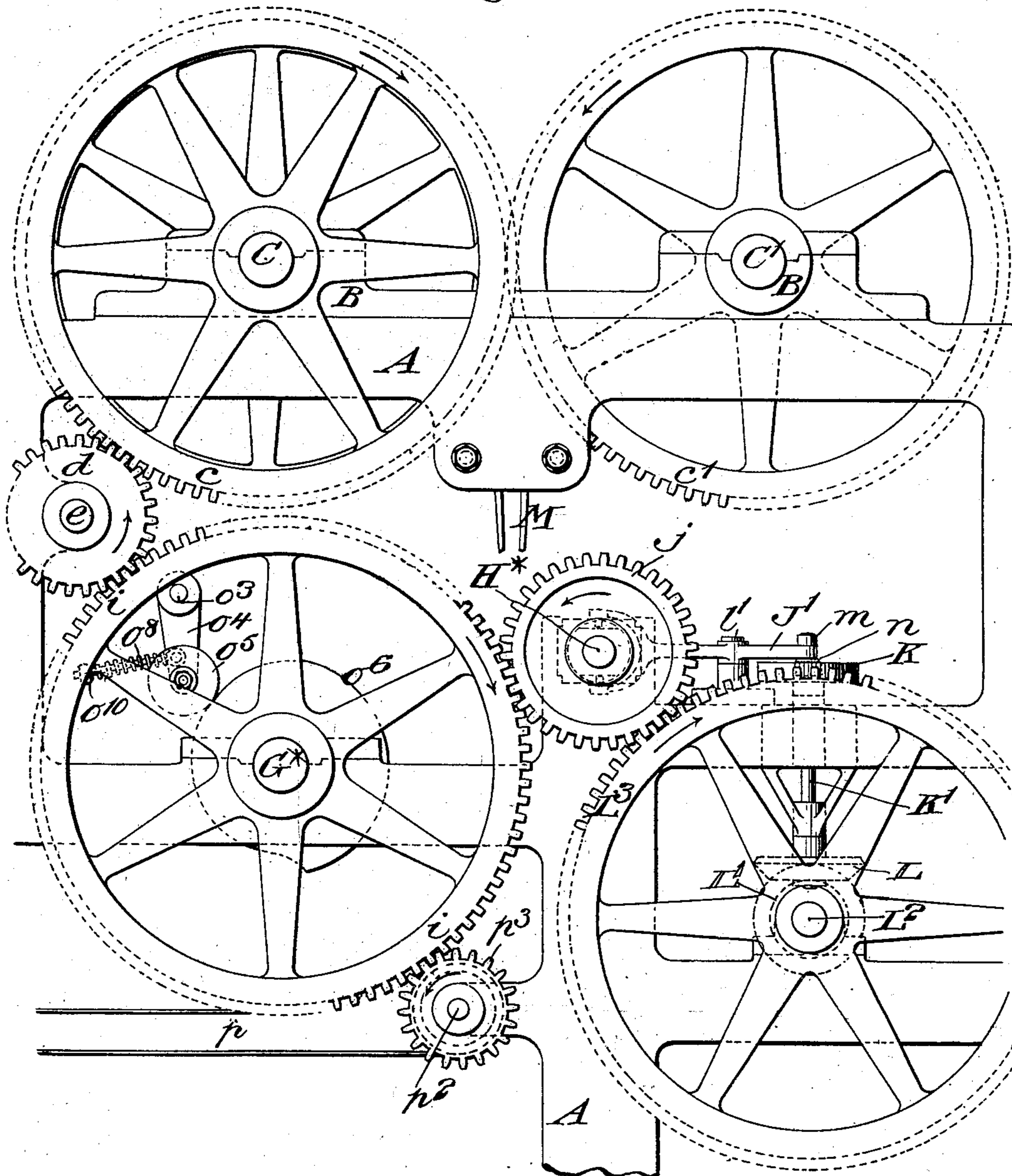
MACHINERY FOR CUTTING AND FOLDING PAPER OR OTHER FABRICS.

(Application filed May 31, 1902.)

(No Model.)

5 Sheets—Sheet 1.

Fig. 1.



Witnesses:-

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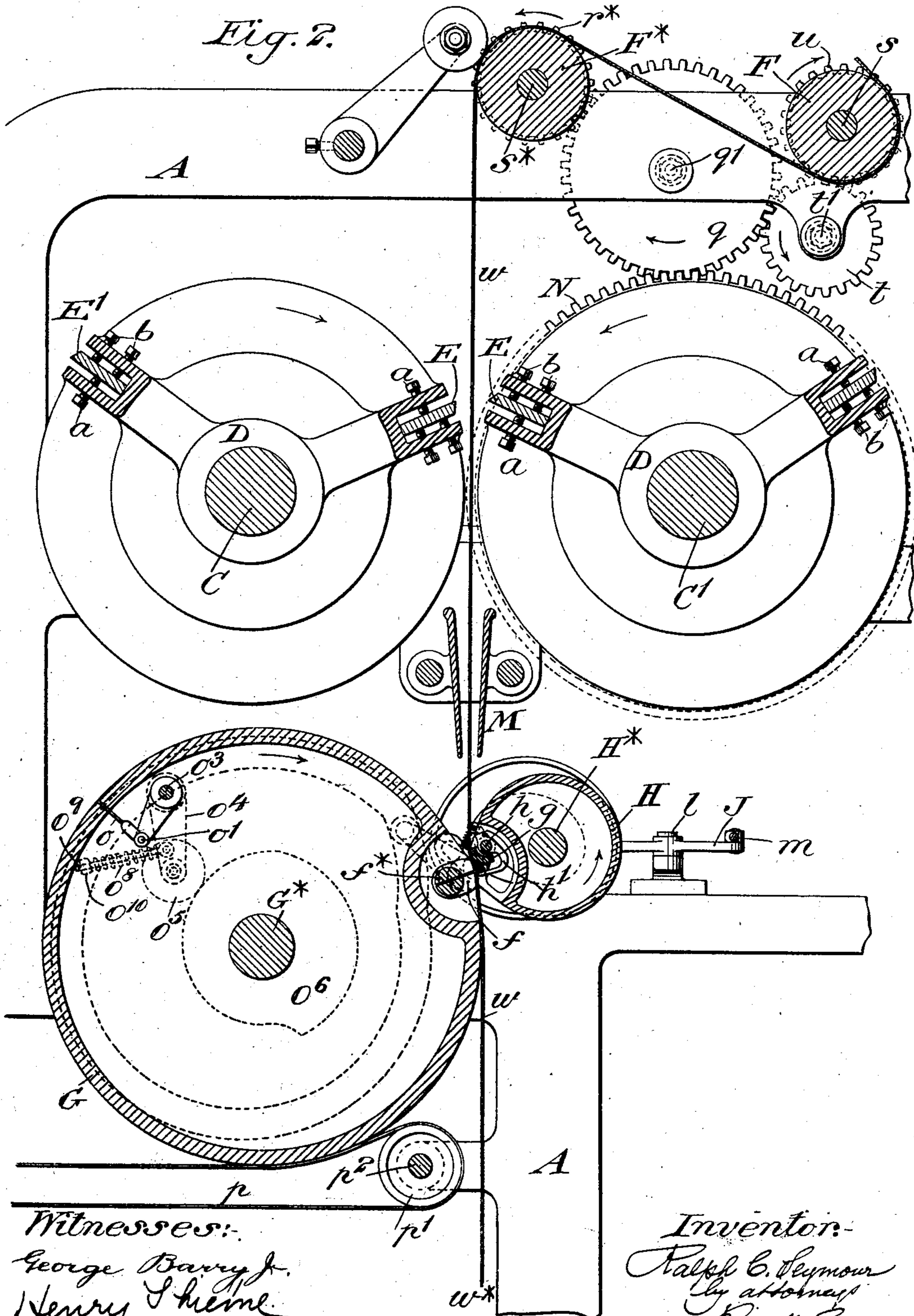
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(No Model.)

5 Sheets—Sheet 2.

Fig. 2.



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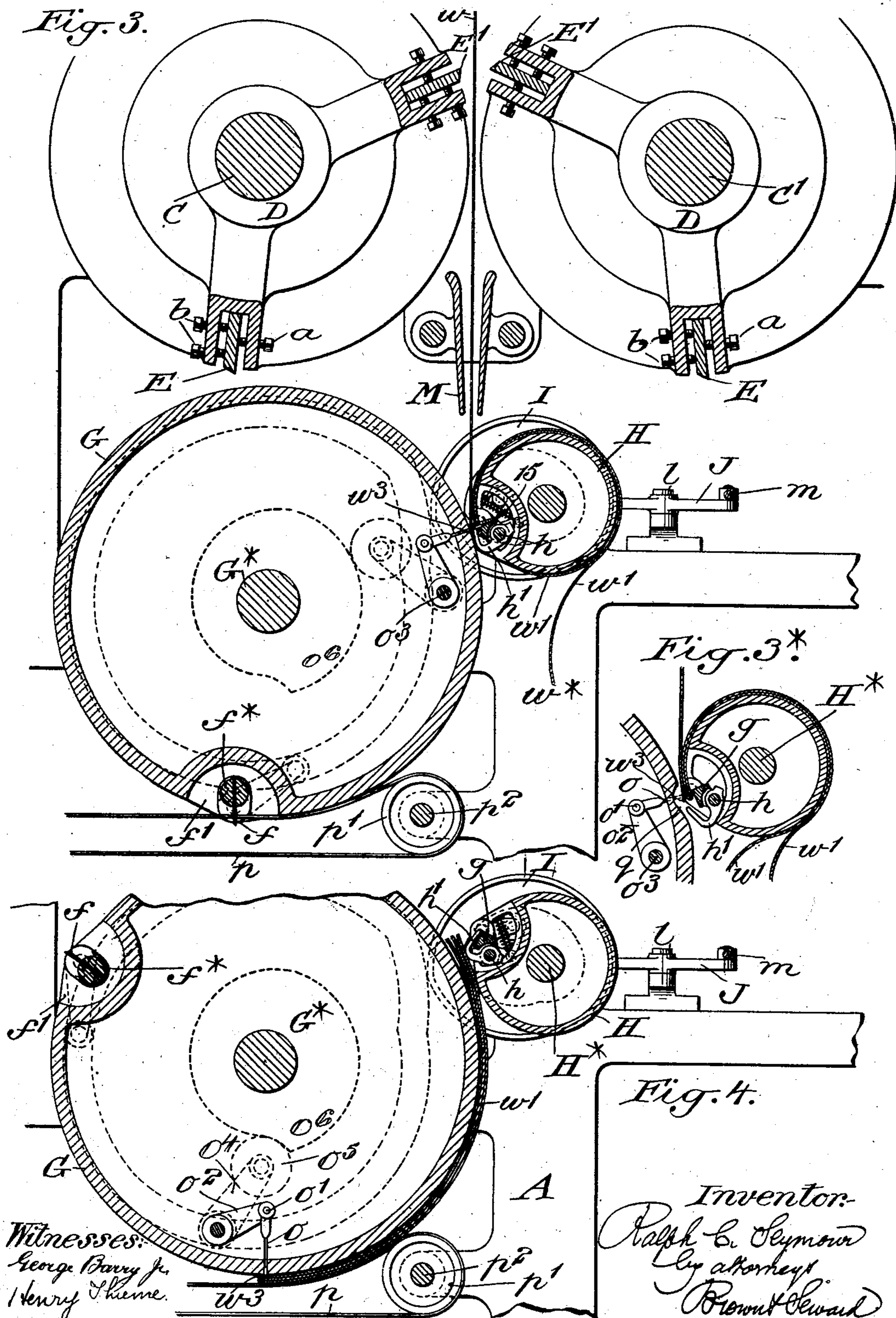
MACHINERY FOR CUTTING AND FOLDING PAPER OR OTHER FABRICS.

(Application filed May 31, 1902.)

(No Model.)

5 Sheets—Sheet 3.

Fig. 3.



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Patented Sept. 30, 1902.

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(No Model.)

5 Sheets—Sheet 4.

Fig. 5.

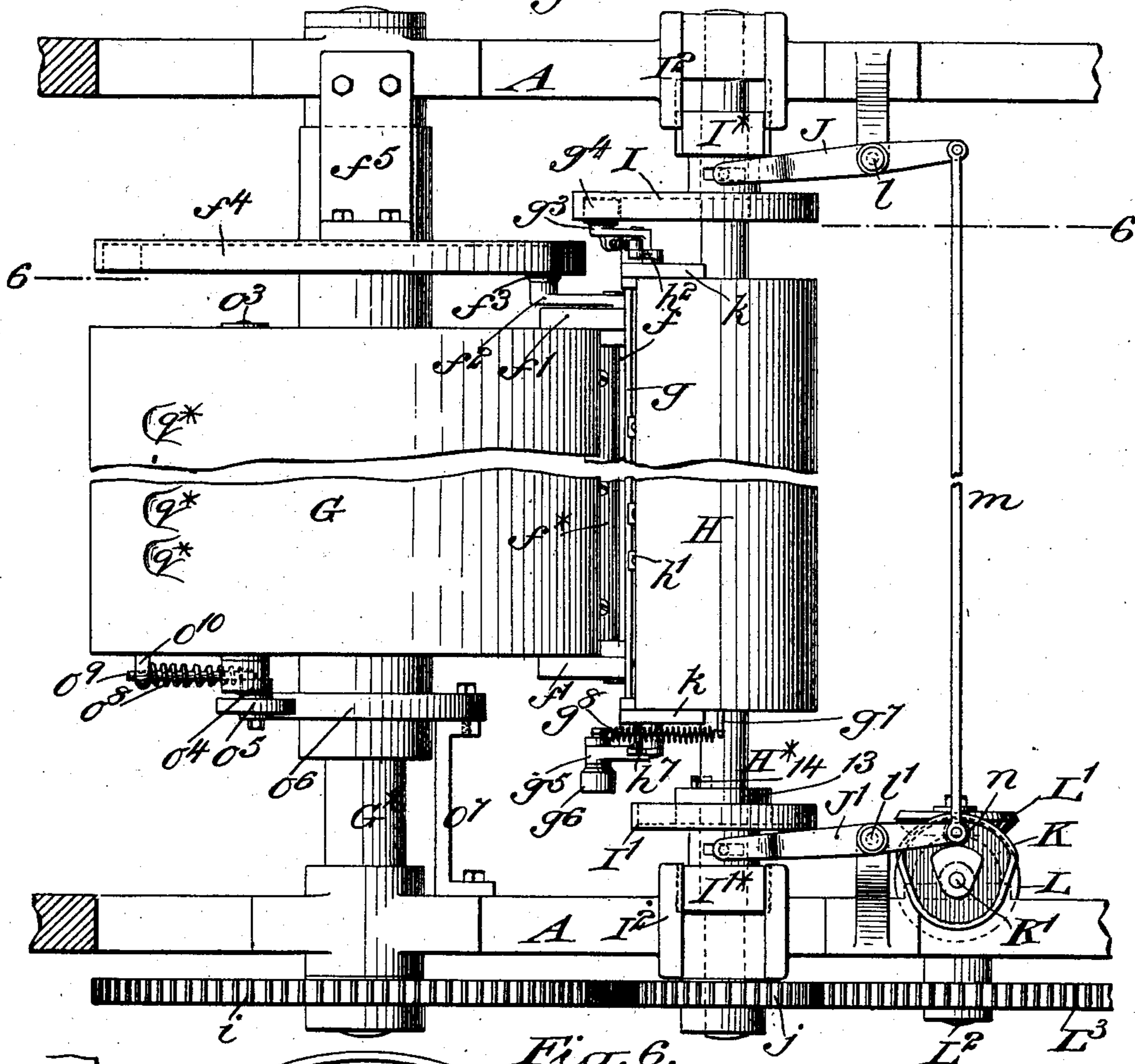
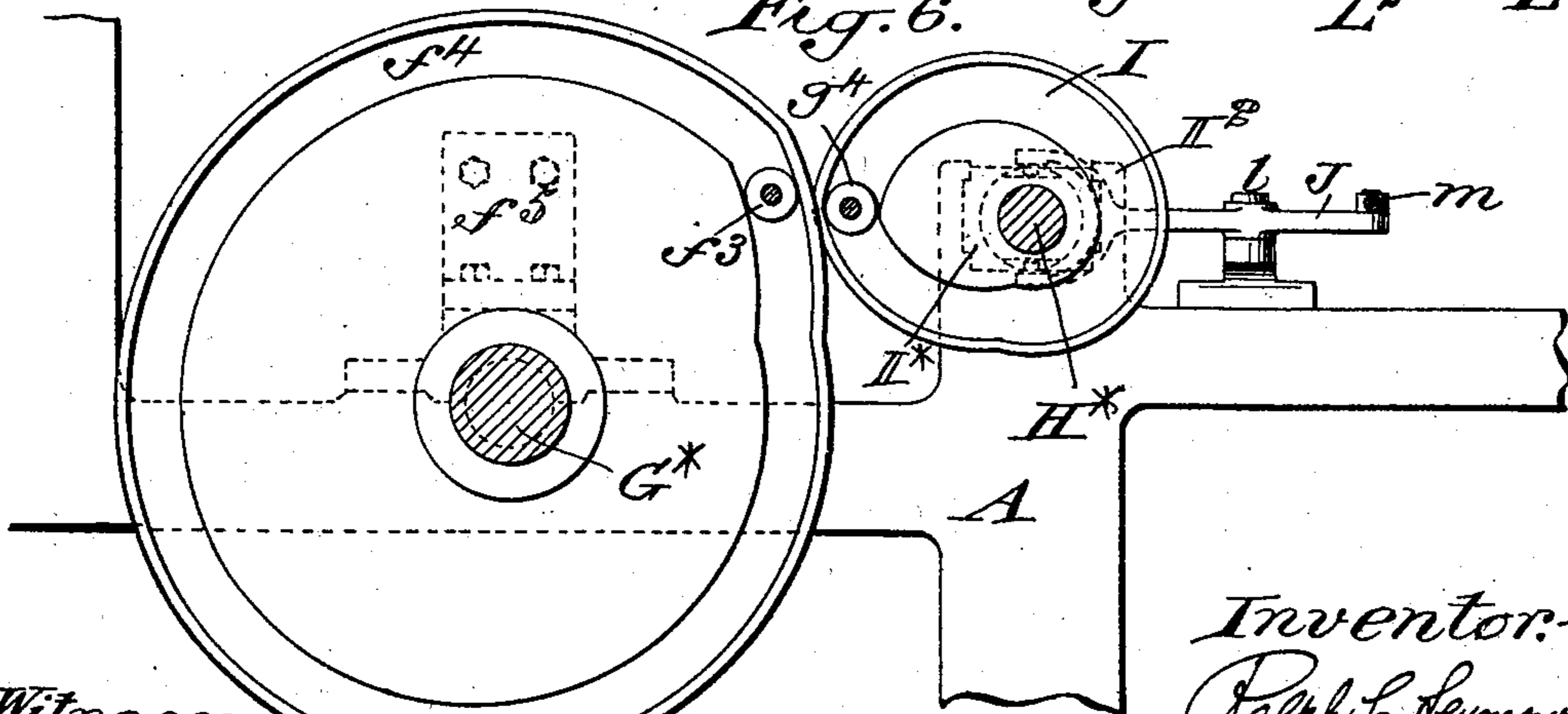


Fig. 6.



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5 Sheets—Sheet 5.

Fig. 8.

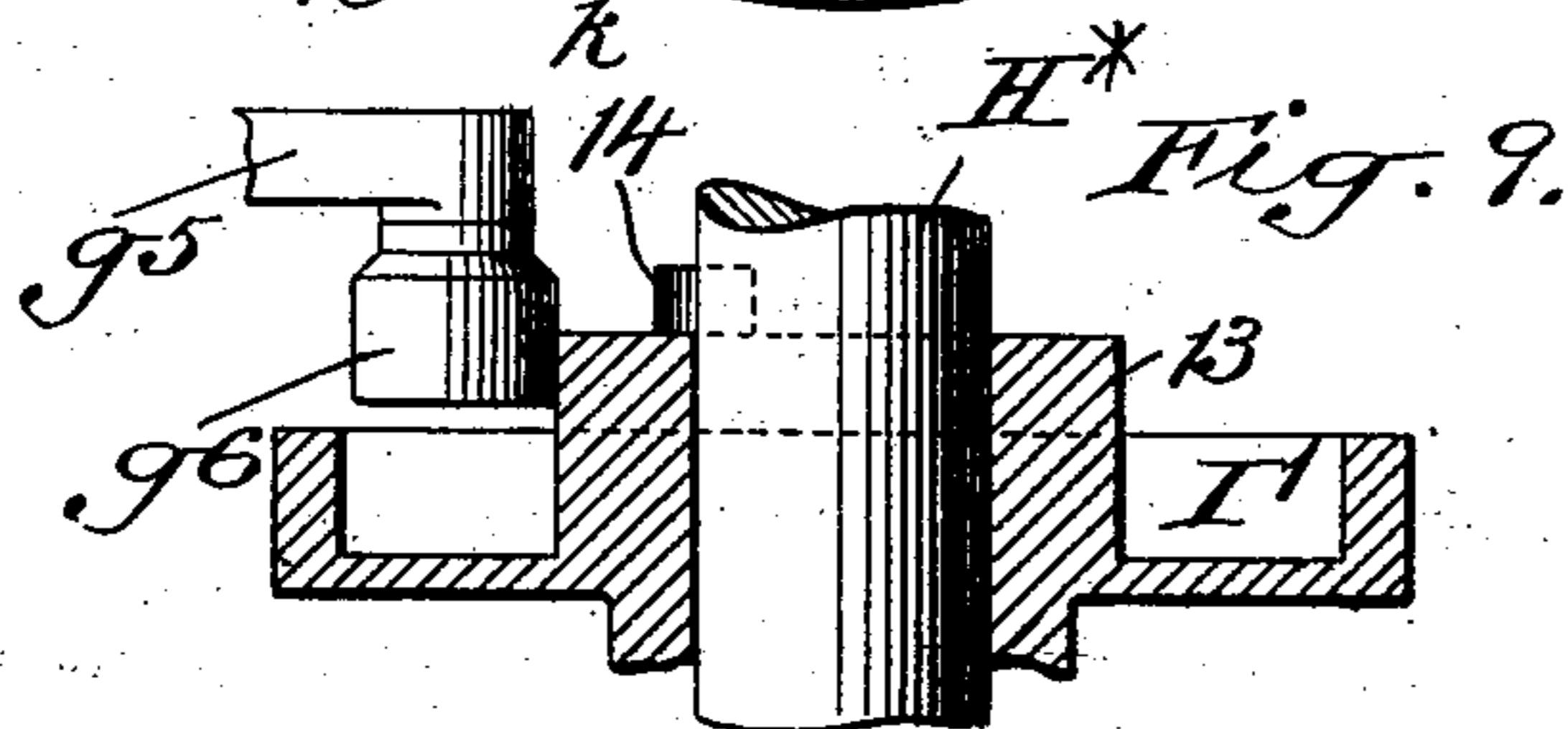
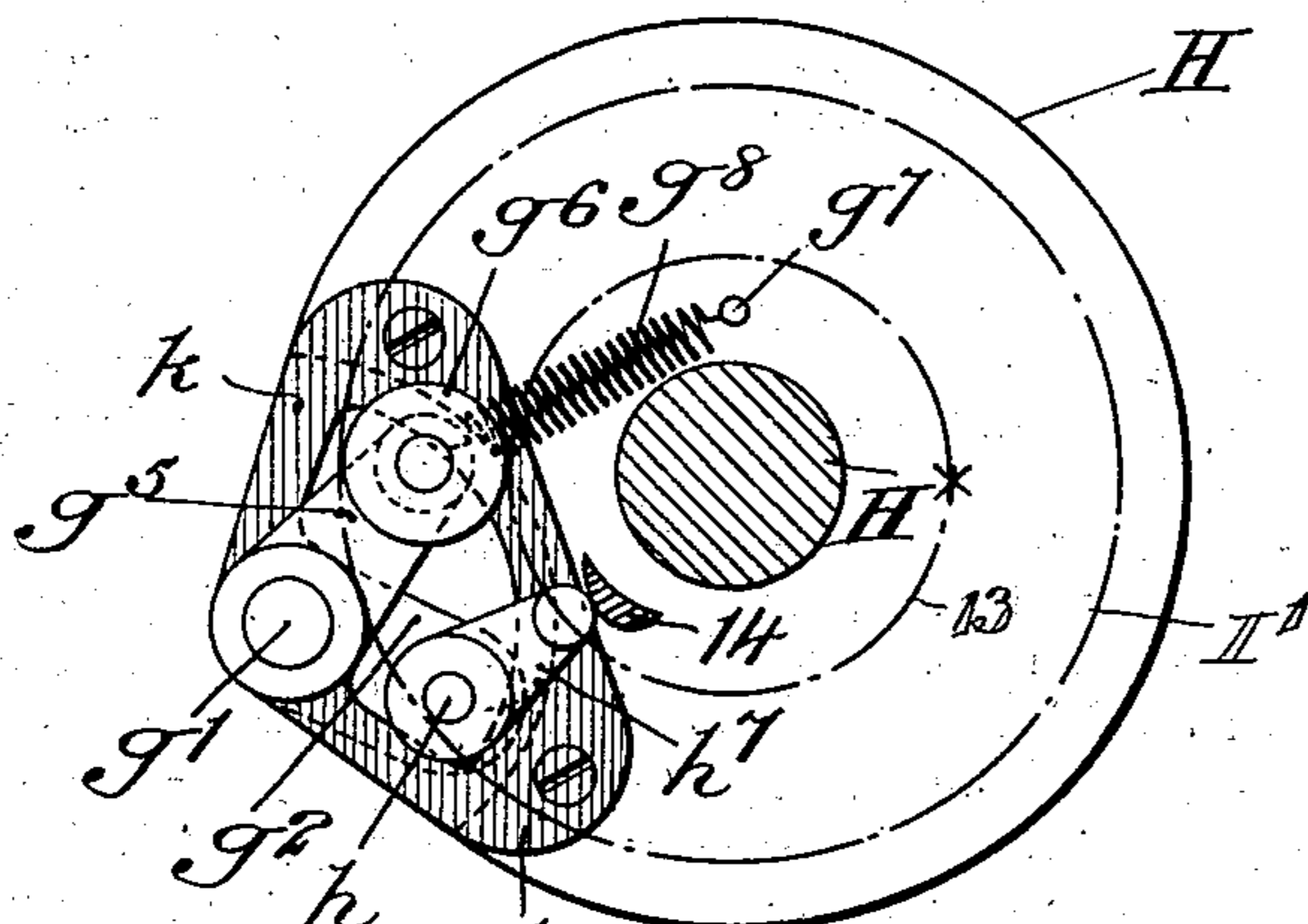


Fig. 7.

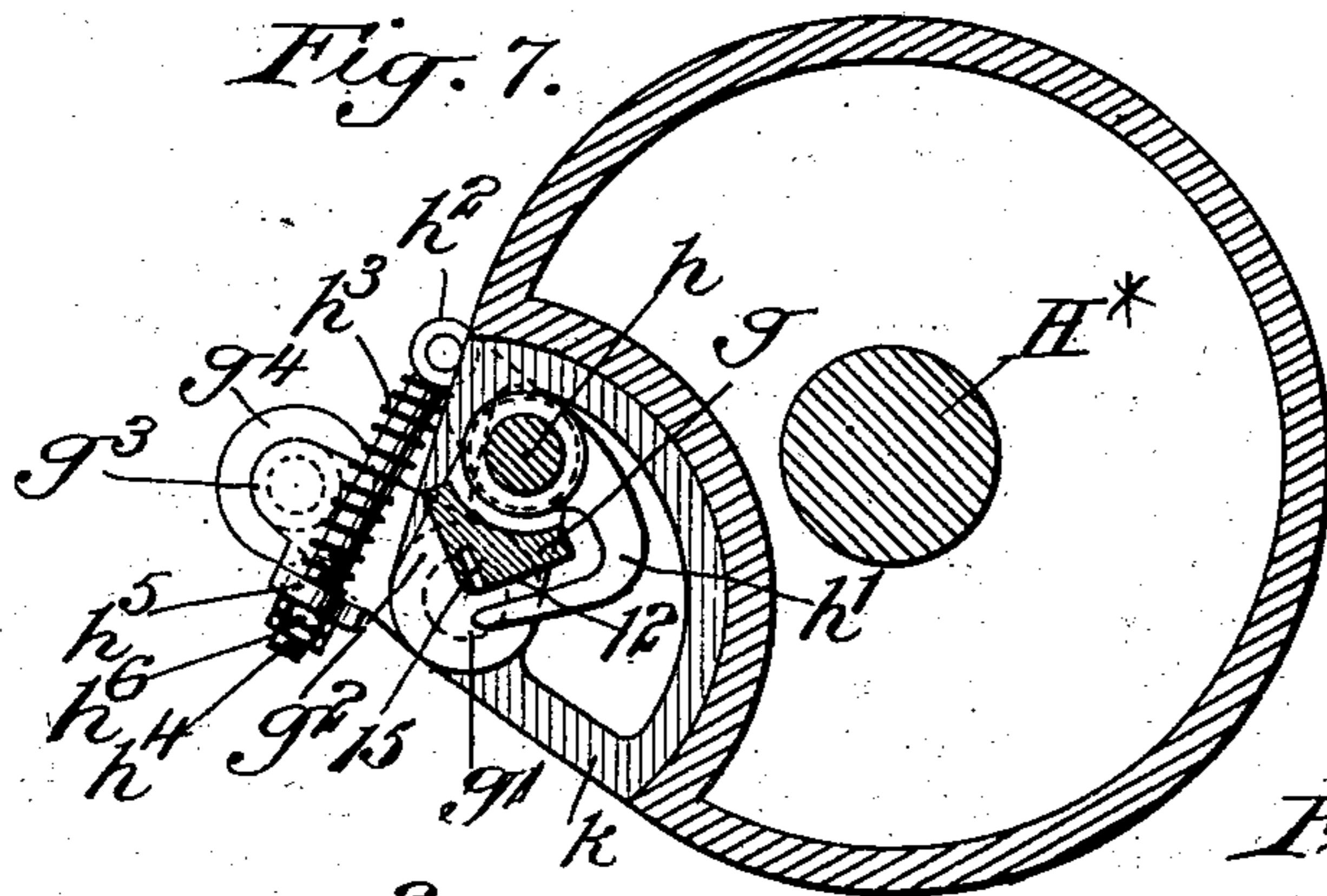
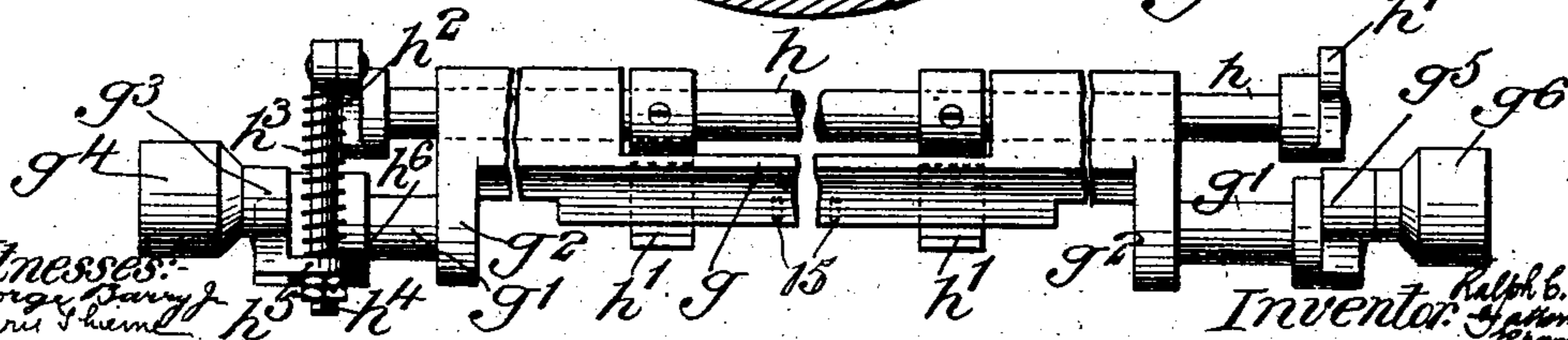


Fig. 10.



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UNITED STATES PATENT OFFICE.

RALPH C. SEYMOUR, OF SOUTH ORANGE, NEW JERSEY, ASSIGNOR TO C. B. COTTRELL & SONS COMPANY, OF NEW YORK, N. Y., AND STONINGTON, CONNECTICUT, A CORPORATION OF NEW JERSEY.

MACHINERY FOR CUTTING AND FOLDING PAPER OR OTHER FABRICS.

SPECIFICATION forming part of Letters Patent No. 710,080, dated September 30, 1902.

Application filed May 31, 1902. Serial No. 109,608. (No model.)

To all whom it may concern:

Be it known that I, RALPH C. SEYMOUR, a citizen of the United States, and a resident of South Orange, in the county of Essex and State of New Jersey, have invented a new and useful Improvement in Machinery for Cutting and Folding Paper or other Fabrics, of which the following is a specification.

A machine embodying this invention in its entirety cuts successively from a web two sheets, of which one is twice the length of the other, folds the longer of the two sheets, and collects the shorter sheet and the folded longer sheet one upon the other.

The invention consists in the combinations hereinafter described and claimed whereby such cutting, folding, and collection are effected.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 represents a side elevation of all those parts of a cutting and folding machine necessary for the illustration of my invention except the means for feeding the web; Figs. 2 and 3, vertical sections taken parallel with Fig. 1 through the feeding, cutting, folding, and collecting devices, showing them at different stages of their operation; Fig. 3*, a section corresponding with Figs. 2 and 3 of what is hereinafter termed the "gripper-cylinder" and part of what is termed the "blade-cylinder;" Fig. 4, a section of the folding and collecting devices corresponding with Figs. 1 and 2, but showing them at another stage of their operation; Fig. 5, a plan view taken below the cutters and showing only the folding and collecting devices; Fig. 6, a vertical section taken in the line 6 6 of Fig. 5, showing cams for operating the folding devices; Fig. 7, a transverse section of a cylinder hereinafter termed the "gripper-cylinder;" Fig. 8, an end view of said cylinder, showing also in dotted outline a circular cam in front of said cylinder; Fig. 9, a central horizontal section of one of the gripper-operating cams; Fig. 10, a longitudinal view of the grippers detached from their cylinder. Figs. 7 to 10 are on a scale twice that of the preceding figures.

A designates the framing of the machine, on the upper part of which are bearings for

the shafts $s s^*$ of the feeding-rollers $F F^*$, by which the web w is fed continuously to the cutting and folding devices. Below these rollers there are arranged on said framing the bearings B for the two parallel horizontal cutter-shafts $C C'$, on which are mounted the rotary cutter-carriers D , in which the cutting-blades or cutters $E E'$, having their edges at equal distances from the axes of their shafts $C C'$, are secured and adjusted by screws $a b$. The said shafts $C C'$ are geared together to run at the same speed by gears $c c'$ and are represented as driven by a gear d on a driving-shaft e , which works in bearings on the framing A , the said gear d gearing with the gear c . I prefer that these cutters be arranged with their cutting edges oblique or spiral to the axes of their shafts, according to United States Letters Patent of C. B. Cottrell, No. 391,949. The said cutters, of which there are two pairs, one of each pair attached to each shaft, are according to the present invention arranged at unequal distances apart on their respective carriers, the spaces between their cutting edges taken on a circle concentric with the axes of their shafts and circumscribing their cutting edges being, as shown in Figs. 2 and 3, two hundred and forty degrees in one direction and one hundred and twenty degrees in the opposite direction, so that in cutting sheets from a web of paper w , presented to them during their revolution, they will cut alternately a longer sheet and a shorter sheet, the longer sheets cut by the cutters E being twice the length of the shorter ones cut by the cutters E' . Below the cutter-shaft, and cutters there are on the framing A bearings for the shaft G^* of the horizontal cylinder G , which carries the folding-blade f , and the shaft H^* of the horizontal cylinder H , which carries the folding-grippers g and $h h'$, which cooperate with said folding-blade to produce a fold in each longer cut sheet at the middle of its length. The said cylinders, folding-blade, and folding-grippers, which I prefer to use in carrying out this invention and which I have illustrated, are in most respects essentially like those which are subject-matter of my United States Patent No.

668,719; but for the purpose of this invention the folding-blade cylinder G has an exterior circumference three times that of the folding gripper-cylinder H. The two cylinders G H derive continuous rotary motion from the driving-gear d , hereinbefore mentioned at a surface velocity slightly less than that of the edges of the cutters, allowance being made for the lap of the cut, the said gear d meshing with a gear i on the shaft G^* of G, and the said gear i meshing with a gear j on the shaft H^* of H, so that the blade-cylinder G makes one revolution for each revolution of the cutters and the gripper-cylinder H makes three revolutions for every one of the blade-cylinder and cutters. Between the cutters and the cylinders G and H there is a stationary guide M for the uncut end of the web and for the cut sheets passing from the cutters to the said cylinders. The folding-blade f of the cylinder G is inserted and secured radially in an eccentric portion of a rock-shaft f^* , which is journaled in bearings in cheek-pieces f' , secured to the ends of said cylinder, and it has fast on one end outside of the said cylinder an arm f^2 , which carries a truck-roller f^3 , which as the cylinder rotates runs in a stationary grooved cam f^4 , attached to the framing near one end of said cylinder by a bracket f^5 . The running of the roller f^3 in the cam f^4 produces the oscillating movement of the folding-blade necessary to its cooperation with the folding-grippers g and h h' , as described in my United States patent aforesaid. The folding-grippers consist of two members g and h h' , which are shown in Figs. 2, 3, 4, and 7 and also in Fig. 10, which is a longitudinal view of said grippers. The gripper member or jaw g consists of the offset greater portion of the length of a cranked rock-shaft, the journals g' of which are fitted to bearings in cheek-pieces k , attached to the ends of the cylinder H, the axis of said journals being parallel with the axis of said cylinder and on a line with the periphery of the latter, in which there is a recess for the reception of the grippers. The gripper member h h' consists of a rock-shaft h and attached gripper-fingers h' , the journals of said rock-shaft h being fitted to turn in bearings in the crank-arms g^2 of the rock-shaft g g' g^2 , which may be termed the "main" gripper-shaft, said gripper-fingers cooperating with the face 12 of the jaw or member g . It will be understood that the member h h' being journaled into the arms g^2 of the member g both members move together about the pivots or journals g' of the member g , but that the member h h' has an independent pivotal movement relatively to that, g , for taking and releasing sheets. The grippers are intended to be kept normally closed or so nearly so, as shown in Figs. 4 and 7, as to allow the sheet which is to be folded to be tucked in between them by the folding-blade f and to grip the so-tucked-in sheet, as shown in Figs. 2 and 3, and for the purpose of keeping

them so closed the rock-shaft h is furnished at one end with an arm h^2 (see Figs. 5, 7, and 10) to receive the pressure of a spring h^3 , which is coiled upon a rod h^4 , which is connected with said arm h^2 and which passes through a lug h^5 on an arm g^3 , fast on one end of the main gripper-shaft, said spring abutting against said lug. On the end of said rod h^4 which projects through the lug there is secured a stop-nut h^6 , which prevents the grippers from being so closely shut by the spring h^3 as to prevent the folding-knife from tucking the creased sheet within them, a sufficient opening being always left between them when shut to permit the blade to tuck or crowd the fold-line of the sheet between them. To facilitate the entry of the tucked fold-line between them, their edges are slightly beveled or rounded off, as shown in Fig. 7. The arm g^3 , above mentioned, on the main gripper-shaft g g' g^2 carries a truck-roller g^4 , which is adapted to run in the face-groove of a non-rotative cam I, (see Figs. 5 and 6,) which surrounds the cylinder-shaft H^* . The said shaft has on the other end an arm g^5 , which carries a truck-roller g^6 , adapted to run in the face-groove of a non-rotative cam I', (see Figs. 5, 8, and 9,) which surrounds the said shaft H^* . These cams do not rotate, but are both capable of moving toward and from the ends of the cylinder parallel with the axis of the latter to permit such movement, and at the same time to hold them against turning they are provided, respectively, with squared hubs I* I', which are fitted to slide in boxes I² on the framing A. In order that one of said cams may move toward the cylinder to receive in its face-groove the respective truck-roller g^4 or g^6 while the other of said cams moves away from the cylinder to release its respective truck-roller g^6 or g^4 and that either cam may be operative while the other is inoperative, the said cams are connected each with one of two levers J J', (see Fig. 5,) having fixed fulcrums l l' in brackets affixed to the framing A, and these levers are connected together by a rod m . In Fig. 5 the cam I is shown in its operative position, with the roller g^4 in engagement and the cam I' in its inoperative position, with the roller g^6 out of engagement. The purpose of the cam I' is to hold the grippers during approximately one complete revolution of the cylinder H in the position shown in Figs. 3 and 4—that is to say, with their cooperative faces tangential to said cylinder. The groove of the said cam in which the roller g^6 runs is therefore of circular form and concentric with the axis of the gripper-cylinder, as indicated by the dotted circles in Fig. 8. The purpose of the cam I is to move the grippers to and fro between the tangential position above mentioned and the position shown in Figs. 2 and 7, in which their cooperative faces are radial to their cylinder, which operation, as will be understood by reference to the form of the cam shown in Fig. 6, takes place during about two-thirds

of the revolution of the cylinder. The shifting of the two cams I and I', hereinbefore mentioned, is effected by means of a grooved cam K (see Figs. 1 and 5) on an upright shaft K', which works in fixed bearings on the framing A, said cam receiving a truck-roller *n* on the lever J'. The said shaft K' is furnished at its lower end with a bevel-gear L, through which it derives motion from a bevel-gear L' on a short horizontal shaft L², running in fixed bearings on the framing A. This shaft L² is furnished with a spur-gear L³, through which it derives motion from the gear *j* on the gripper-cylinder. The several gears above described are so proportioned that the cam K makes one revolution for every three revolutions of the gripper-cylinder H and one revolution of the blade-cylinder G. The cam K is so shaped that it shifts the lever J' and the cams I and I' in either direction during about one-sixth of its own revolution or one-half of the revolution of the cylinder H and that during one-third of its own revolution or one complete revolution of the cylinder H it holds one of the cams I or I' in its operative position and during another third it holds the other of the latter cams in its operative position. The arm *g*⁵ of the main gripper-shaft is connected with a lug *g*⁷ on the adjacent end of the cylinder by means of a pulling-spring *g*⁸, which turns the grippers to the tangential position shown in Figs. 3 and 4, when the cams I I' are shifted to release the truck-roller *g*⁴ at the other end of the said shaft. To stop this turning movement of the grippers to the tangential position and stop the truck-roller *g*⁶ in the proper position to enter the circular concentric groove of the cam I', there is formed on the inner face of said cam, as shown in Figs. 5 and 9, a cylindrical hub 13, which forms a continuation of the inner circumference of the said groove. It has been hereinbefore stated that the grippers are kept normally closed by the spring *h*³. (See Fig. 7.) They are only opened for an instant once during every third revolution of their cylinder for releasing the collected sheets. This opening is produced by a small projection 14 (see Figs. 8 and 9) on the inner face of the cam-hub 13, against which at the proper time passes, as shown in Fig. 8, the end of an arm *h*⁷ of the rock-shaft *h*. The said opening takes place while the gripper-faces are in the tangential position shown in Fig. 3 and while the two cylinders G H are respectively at the stages of their revolution shown in that figure, as will be hereinafter further described. To permit the said opening, recesses *q*^{*} are provided in the face of the cylinder G for the reception of the gripper-fingers *h*'. In both positions of the grippers, radial and tangential, their lips always remain, as shown in Figs. 2 and 4, opposite or substantially in line with the axes of the journals *g*' of their main shaft and coincident with the external surface of the cylinder. At the distance of one-third of the circumference of the

cylinder G, in rear of the folding-blade *f*, there are provided any suitable number of pins *o*, which are arranged to protrude radially through holes in the said cylinder, as shown in Figs. 3 and 3*, or to be withdrawn thereinto, as shown in Figs. 2 and 4. The said pins are affixed in a rod *o*', which is carried within the cylinder, which is hollow, by the two arms *o*² of a rock-shaft *o*³, which is journaled into the heads of the cylinder. On one end of this rock-shaft *o*³, outside of the cylinder, there is an arm *o*⁴, (see Figs. 1 and 5,) which carries a truck-roller *o*⁵, which as the cylinder rotates runs against a stationary cam *o*⁶, which surrounds the cylinder-shaft G*, said cam being carried by a bracket *o*⁷ on the framing A. The roller *o*⁵ is held to the cam by a spring *o*⁸, which is coiled upon a rod *o*⁹, which is connected with the arm *o*⁴ and passes through a lug *o*¹⁰, affixed to the adjacent cylinder-head, the said spring abutting between the said arm and the said lug. The purpose of the pins *o* is to temporarily impale together, as shown in Figs. 3, 3*, and 4, and, as will be presently described, a long sheet folded at the middle of its length by the folding-blade and grippers and the end of a short sheet presented, as shown in Fig. 3, between the two cylinders outside of the grippers. The gripper member *g* has in its face a series of holes 15 for the reception of the ends of the said pins *o*, and the gripper-fingers *h*' are so spaced on their rock-shaft *h* that the said pins may pass between them. Under the cylinder there is an endless tape-carrier *p*, between which and the said cylinder the sheets consisting of one folded sheet and one unfolded sheet are to be taken together to be conveyed by said tapes wherever desired—as, for example, to another folding apparatus to be folded together. The tapes of said carrier run on tape-wheels *p*' on a shaft *p*² and other tape-wheels on another shaft. (Not shown.) The movement of this carrier may be produced by any suitable means. It is represented as produced by a spur-gear *p*³ on the shaft *p*², meshing with the gear *i* on the cylinder G. The shafts *s* and *s*^{*} of the web-feeding rollers F F* are represented (see Fig. 2) as driven with a surface speed corresponding with the speed of the cutters and the surface speed of the cylinders G and H by a gear N on the cutter-shaft C', which gears with and drives a gear *q*, turning on a fixed stud *q*', supported by the framing A. This gear *q* gears with and drives a gear *r*^{*} on the roller F*. The said gear *q* also gears with and drives a gear *t*, turning on a fixed stud *t*', supported by the framing A, and this gear *t* gears with and drives a gear *u* on the roller F.

Having described the construction and organization of the several parts of the machine, I will before describing consecutively the operations thereof explain that the cylinders G H are so arranged relatively to each other and to the cutters that the distance be-

tween the meeting-line of the folding-blade f and the folding-grippers g and h h' and the meeting-line of the edges of the cutters is sufficiently less than half the length of the sheets to be folded to allow the fold-line of said sheet to be tucked by the folding-blade as far as is necessary into the gripper members to commence the fold.

I will now proceed to describe the consecutive operations of cutting, folding, and collecting the sheets. Referring first to Fig. 2, the web w which is being fed between the cutter-carriers and through the guide M has had its end or free edge w^* carried down beyond the meeting-line of the folding-blade and grippers a distance equal to half the length of the long sheet w' to be folded, having passed freely between the cylinders G and H before and until the grippers, with their operating faces radial to the cylinder H and the folding-blade in its radial relation to the cylinder G , had arrived at said meeting line and the blade f had commenced to tuck the folding-line of the sheet between the grippers. As soon as sufficient of the web for the other half of the length of the sheet has passed the cutters E the said cutters meet and sever the sheet. As the cylinders G H then continue their rotary motion and while the cylinder H makes one revolution and the cylinder G makes one-third of a revolution the sheet w' thus taken by the grippers is wrapped double around the cylinder H and its fold is thereby completed, the grippers having been in the meantime brought by the running of the roller g^4 of the main gripper-shaft in the cam I to the tangential position shown in Fig. 3 and retained in that position by the shifting of the cams I I' by the cam K to bring the roller g^6 of said shaft into the circular cam I' . This one revolution of the cylinder H brings the fold-line, as shown in Fig. 3, just past the point at which the corresponding one-third revolution of the cylinder G brings the collecting-pins o of the latter cylinder toward the holes 15 in the gripper member g , while the continued feeding of the web has brought its free end w^3 , from which the long sheet w' had been cut off, even with the fold-line of that sheet, as shown in Figs. 3, 3*. As the pins o arrive opposite the holes 15 the cam o^6 by its action upon the roller o^5 of the shaft o^3 , which carries said pins o , causes the said pins to penetrate the doubled long sheet near the line of the fold and also to penetrate the web at a corresponding distance from its free end w^3 , the doubled long sheet and the said end being thus impaled on the said pins. A slight continuation of the rotation of the cylinder H carries the arm h^7 of the gripper-shaft h , as shown in Fig. 8, past the projection 14 on the cam I' , and so produces the opening of the grippers, as shown in Fig. 3*, which leaves both the doubled sheet w' and the short sheet w^3 , which has now been cut from the web by the cutters E' , impaled upon

the said pins to be thereby carried to the tape-carrier p , upon which by the withdrawal of the pins o within the cylinder G they are left, the shorter one upon the folded longer one, to be taken by said carrier wherever desired. The withdrawal of the pins o at the proper time is effected by the action of the spring o^8 on the passing of the roller o^5 beyond the prominent point of the offset of the cam o^6 , as shown in Fig. 4. The two cutting operations—viz., one by the cutters E to cut the longer sheet and another by the cutters E' to cut the shorter sheet—the folding of the longer sheet, and the collection of the two sheets upon the pins o all take place during little more than one revolution of the cylinder H and one-third of a revolution of the cylinder G . During the second and third revolutions of the cylinder H and two-thirds of a revolution of the cylinder G and the corresponding two-thirds of a revolution of the cutters a sufficient length of the web is fed between the cutters to make another long sheet to be cut and folded, as above described, and during said second revolution of the cylinder H the folded sheet is unwound from the said cylinder by its own revolution as the said sheet is drawn from it by the pins o . During the first revolution of the cylinder H , as above described, the roller g^4 of the main gripper-shaft remains in the cam I , and although by the movement of said roller in said cam during said revolution the grippers are turned from the radial position to the tangential position in which they commence the winding of the sheet on said cylinder and then turned back again this turning back is only incidental and immaterial, as the edges of the grippers always remain, as hereinbefore described, in line with the axis of the gripper-shaft and with the external surface of the cylinder. As the said first revolution terminates the cams I I' are shifted by the cam K , as before explained, and the cam I liberates the roller g^4 and the main gripper-shaft, which is then instantaneously turned by the spring g^8 to bring the grippers to the tangential position, in which they are stopped by the hub 13 of the cam, so that the roller g^6 of the main gripper-shaft will enter the circular groove of the cam I' , wherein it will remain during the second revolution of the cylinder H , retaining the grippers in the tangential position during said revolution while the folded sheet is being unwound from said cylinder. During the third revolution of the cylinder H the cams I I' are shifted by the cam K to move the cam I' out of engagement from the roller g^6 and bring the cam I into engagement with the roller g^4 for the commencement of the repetition of the operations described of folding a new long sheet which is to be cut from the web by the next meeting of the cutters E .

What I claim as my invention is—

1. The combination with means for continuously feeding a web, of two rotary cutter-

carriers geared together and each having upon it a plurality of cutters arranged at unequal distances apart for cutting sheets of different length from the web during each revolution of said cutters, substantially as herein described.

2. The combination with means for continuously feeding a web, of two rotary cutter-carriers and shafts therefor geared together and each having two cutting-blades the spaces between the edges of which on a circle concentric with the axes of their shafts are unequal in opposite directions for cutting sheets of different length from the web during each revolution of said cutters, substantially as herein described.

3. The combination of two rotary cutter-carriers and shafts therefor geared together and each having two cutting-blades the spaces between the edges of which on a circle concentric with the axes of their shafts are two hundred and forty degrees in one direction and one hundred and twenty degrees in the opposite direction for cutting at each revolution two sheets one of which is double the length of the other, substantially as herein described.

4. The combination with two rotary cutter-carriers each having two cutter-blades whose edges are spaced at two hundred and forty degrees and one hundred and twenty degrees apart as described, of two rotary cylinders of which one is of a circumference three times that of the other, a folding-blade carried by the larger of said cylinders, folding-grippers carried by the smaller of said cylinders and cooperating with said folding-blade and means for producing the rotation of said cylinders and cutter-carriers with a surface velocity of the cylinders corresponding with that of the cutter edges, substantially as herein set forth.

5. The combination with two folding-cylinders one of which is provided with a folding-blade and the other of which is provided with folding-grippers cooperating with said blade, of impaling-pins carried by the first-mentioned cylinder and cooperating with said grippers to take folded sheets therefrom, substantially as herein described.

6. The combination of two folding-cylinders, a folding-blade carried by one of said cylinders, a rock-shaft provided with gripper members pivoted on the other of said cylinders and impaling-pins on the first-specified cylinder, one of said gripper members having in it holes for the reception of the ends of said impaling-pins, substantially as herein described.

7. The combination of two rotary folding-cylinders one of which is provided with a folding-blade and the other of which is provided with grippers consisting of one member directly pivoted to the cylinder and the other member pivoted to said directly-pivoted member, and a spring between the two mem-

bers for holding them in a closed or nearly-closed condition at the time of entry of the folding-blade between them in the rotation of the two cylinders, substantially as herein described.

8. The combination of two rotary folding-cylinders one of which is provided with a folding-blade and the other of which is provided with grippers consisting of one member directly pivoted to the cylinder and the other member pivoted to said directly-pivoted member, a spring between the two members for closing them, and a stop between the two members against which the spring holds them nearly closed at the time of the entry of the folding-blade between them in the rotation of the two cylinders, substantially as herein described.

9. The combination of two rotary cutter-carriers and cutting-blades thereon spaced to cut a longer and a shorter sheet at each revolution, two rotary cylinders one of which is provided with a folding-blade and the other with folding-grippers cooperating with said blade to fold a longer sheet presented between said cylinders, pins carried by the first-specified cylinder and cooperating with said grippers first to impale together an unfolded shorter sheet presented between said cylinders and the so-folded longer sheet and afterward to take both sheets together from between the cylinders, substantially as herein described.

10. In a folding-machine, the combination with a rotary cylinder, a rock-shaft journaled on said cylinder and grippers carried by said rock-shaft, of a cam located at one end of said cylinder and engaging with said rock-shaft for turning the same to bring the grippers to a position radial or tangential to said cylinder, a cam located at the other end of said cylinder and engaging with said rock-shaft to hold the grippers in the tangential position, connections between said cams and means for moving them together to place either one into engagement and the other one out of engagement with the rock-shaft, substantially as herein described.

11. In a folding-machine, the combination of a horizontal rotary cylinder, a rock-shaft journaled on said cylinder and grippers carried by said rock-shaft, a non-rotative cam located at one end of said cylinder for engaging with said rock-shaft for turning the same to bring the grippers radial or tangential to said cylinder, a non-rotative cam located at the other end of said cylinder and engaging with said rock-shaft to hold the grippers in the tangential position, the said cams being movable toward and from the ends of the cylinder, connections between said cams whereby when either one is moved toward the cylinder into engagement with said rock-shaft the other is moved from the cylinder and out of engagement with the rock-shaft, and an upright shaft on which is a cam for moving

the before-mentioned cams together into and out of engagement respectively, substantially as herein described.

12. In a folding-machine, the combination
5 of a rotary cylinder, a rock-shaft journaled on said cylinder and gripper members carried by said rock-shaft, a second rock-shaft journaled into the first one and forming part of one member of said grippers, a non-rotative
10 cam located at one end of said cylinder and movable toward and from the cylinder and into and out of engagement with the first-mentioned rock-shaft for holding the grippers in and releasing them from a position tan-

gential to the cylinder, and a projection on 15 said cam for operation on said second rock-shaft to open the grippers while in their tangential position, substantially as herein described.

In testimony that I claim the foregoing as 20 my invention I have signed my name, in presence of two witnesses, this 29th day of May, 1902.

RALPH C. SEYMOUR.

Witnesses:

FREDK. HAYNES,
LIDA M. EGBERT.