

No. 618,648.

Patented Jan. 31, 1899.

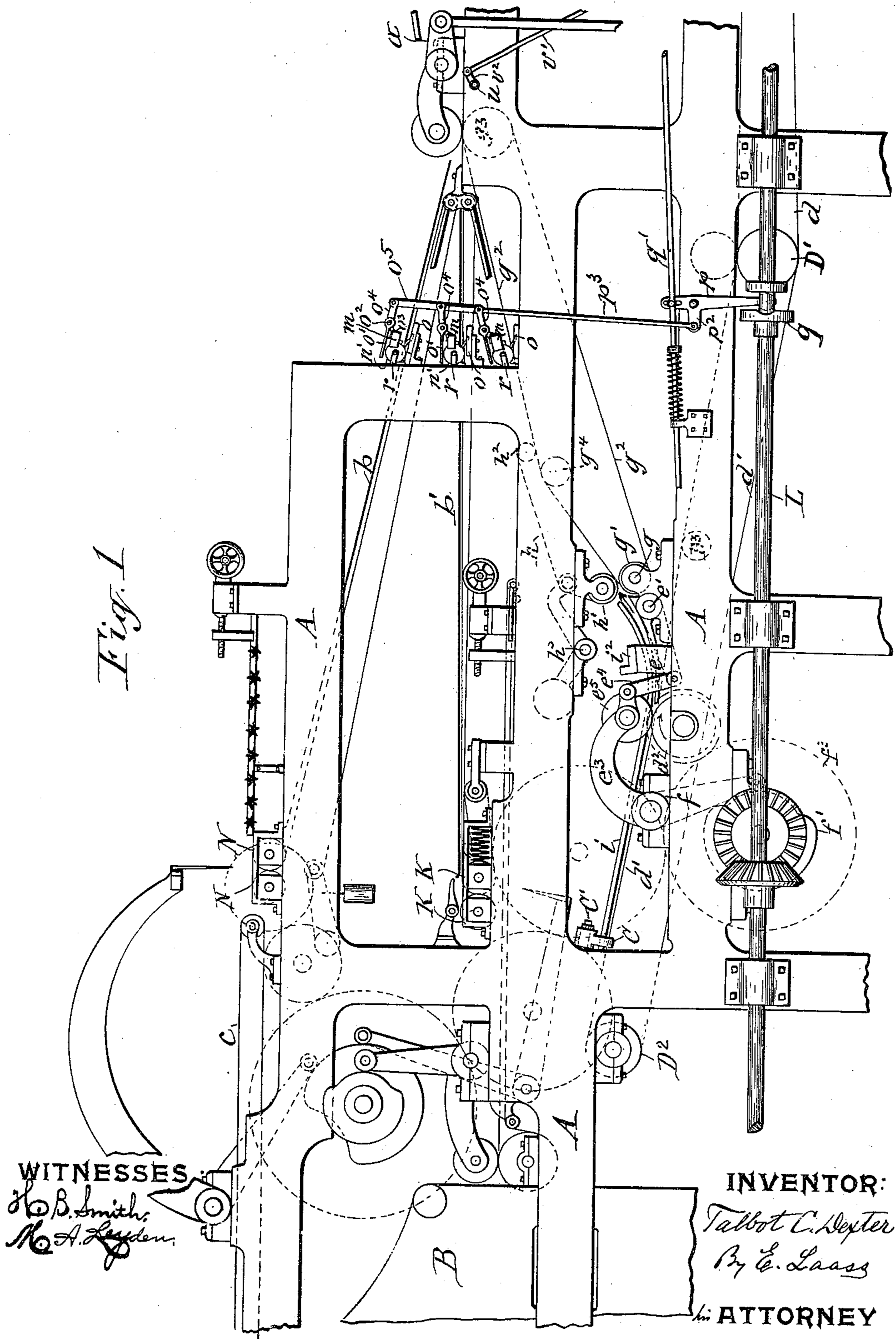
T. C. DEXTER.  
PAPER ASSEMBLING AND STAPLING MACHINE.

(Application filed Oct. 11, 1897.)

(No Model.)

11 Sheets—Sheet 1.

Fig. 1



WITNESSES:

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M. A. Lyden.

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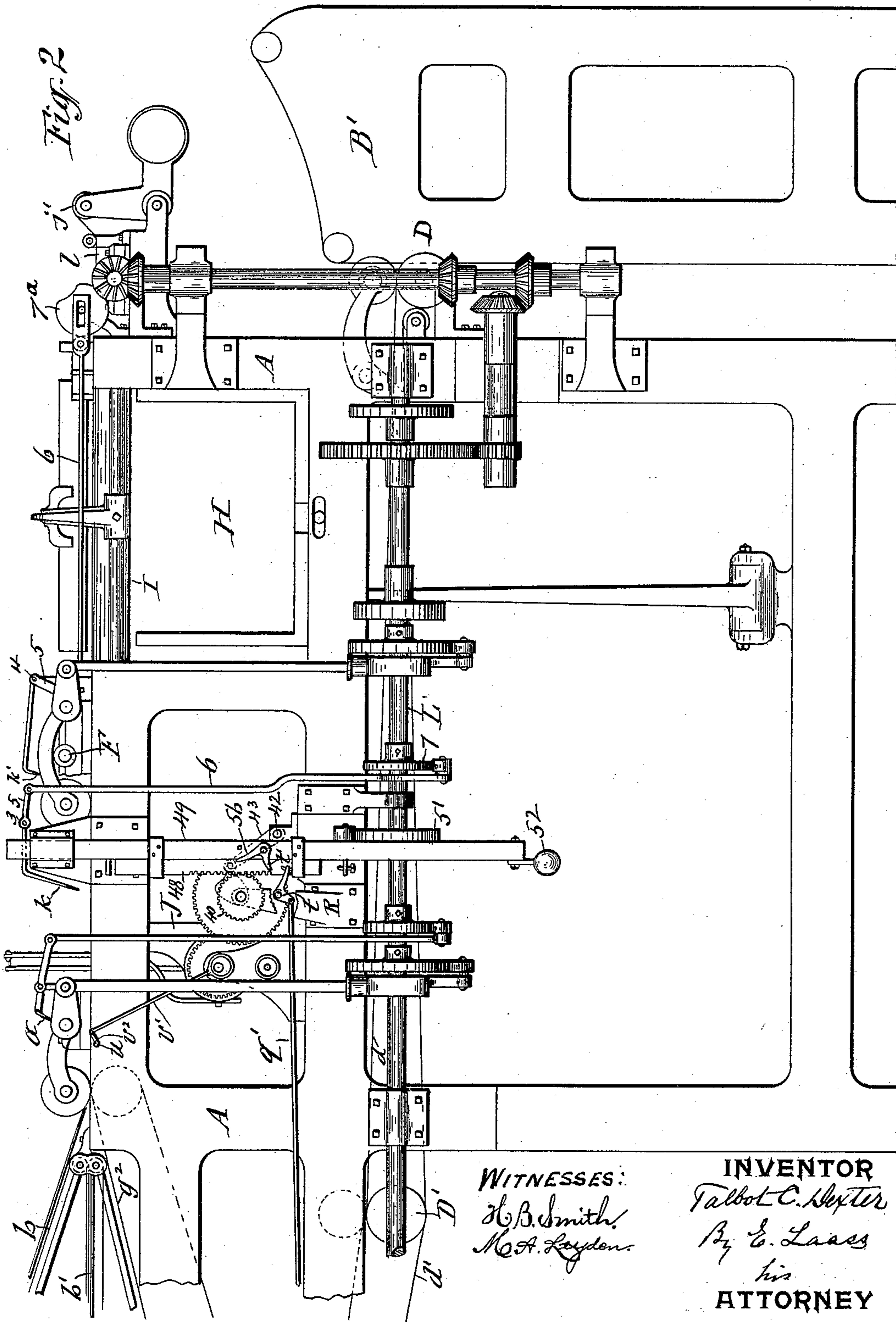
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11 Sheets—Sheet 2.



WITNESSES:  
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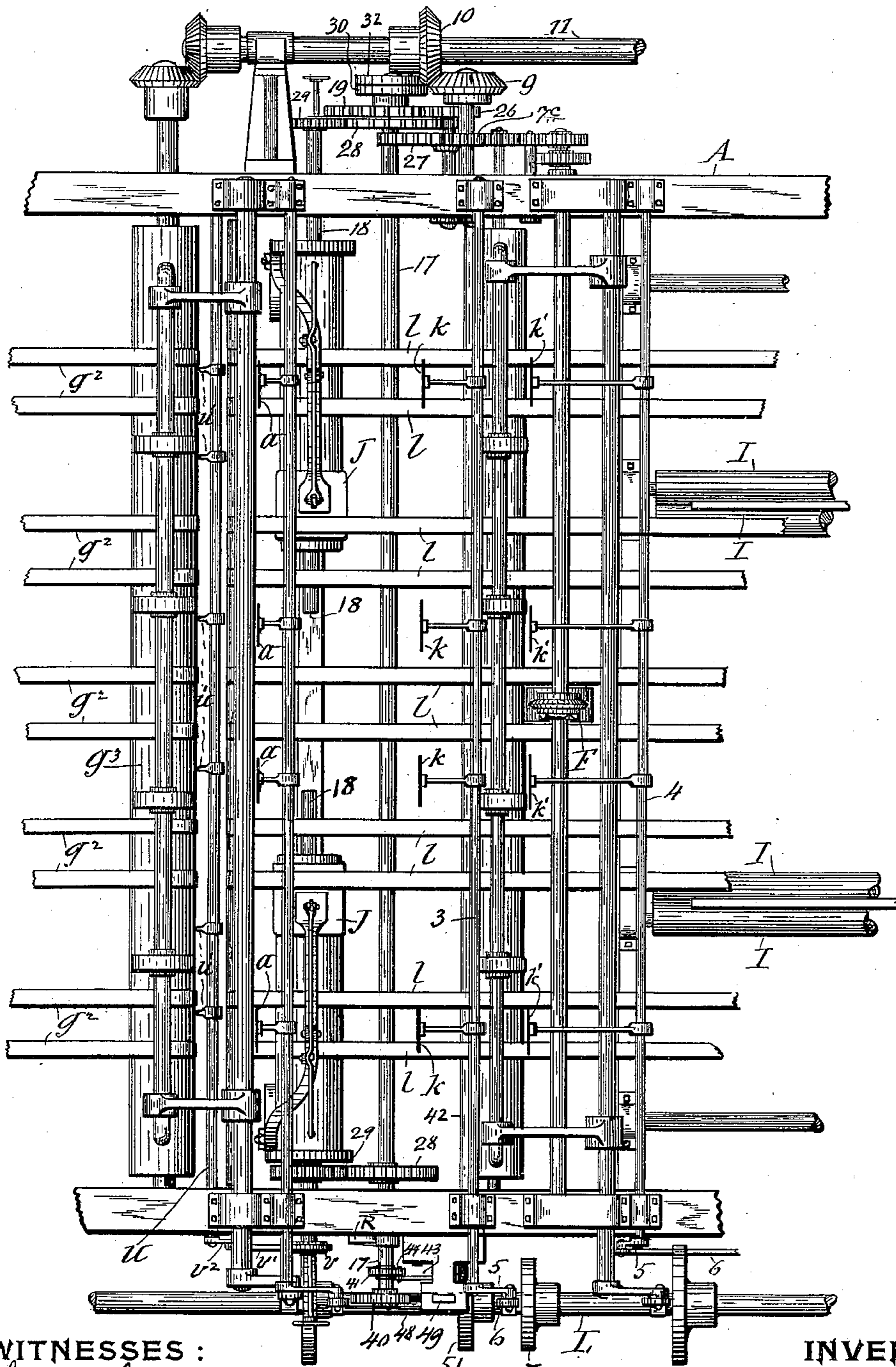
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11 Sheets—Sheet 3.



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*Fig. 3*

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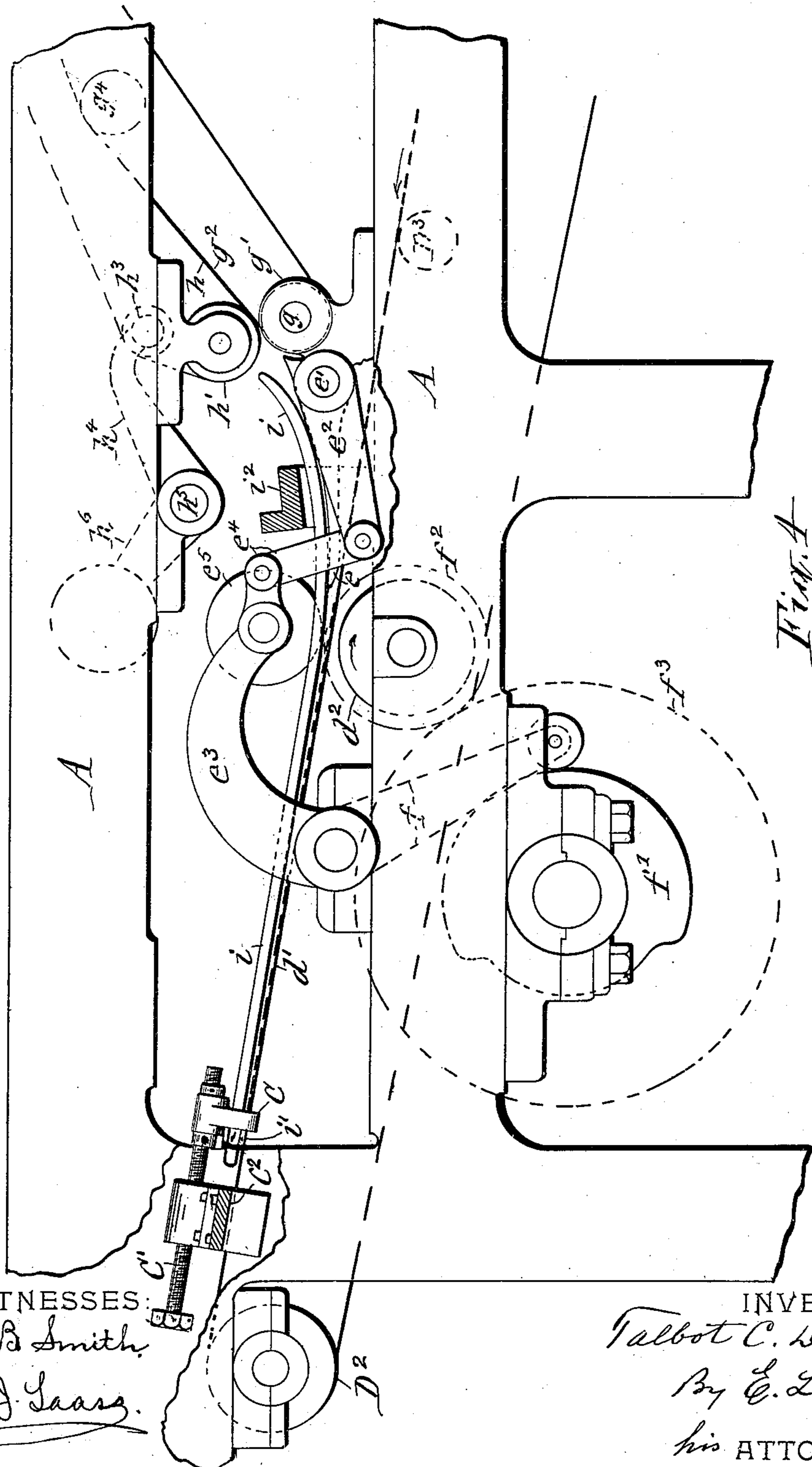
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(No Model.)

11 Sheets—Sheet 4.



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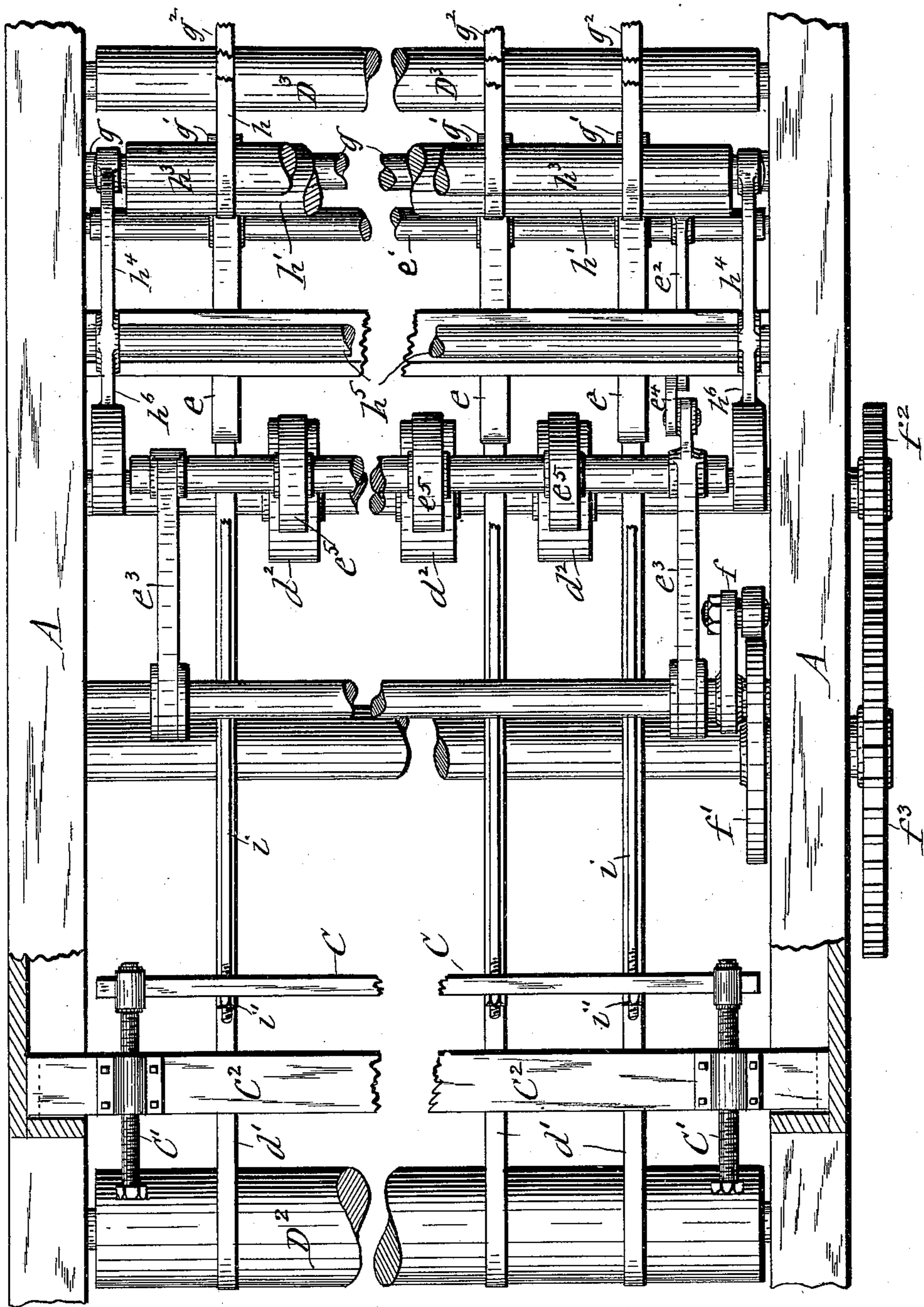
PAPER ASSEMBLING AND STAPLING MACHINE.

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11 Sheets—Sheet 6.

Fig. 6



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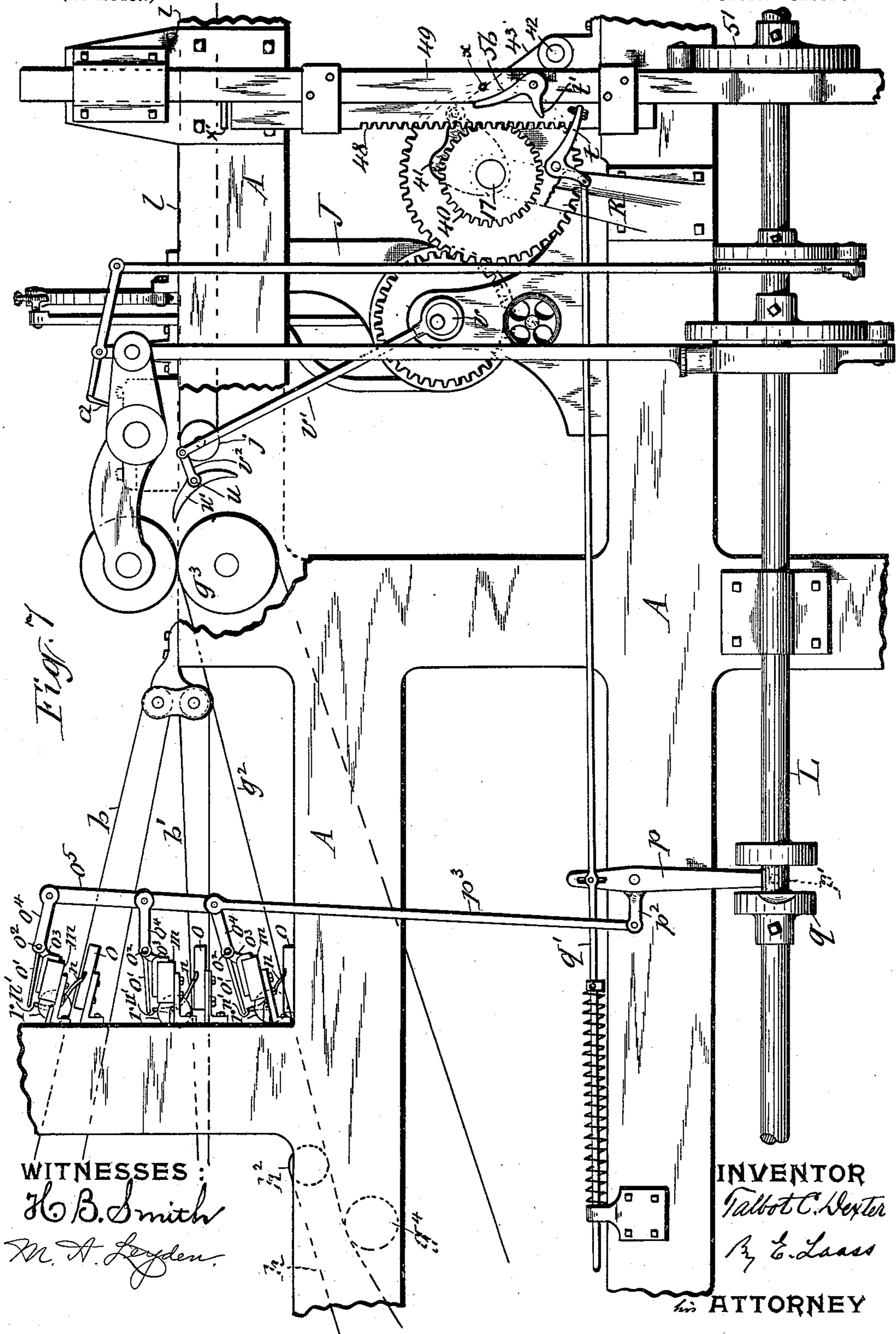
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(No Model.)

11 Sheets—Sheet 7.



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**Patented Jan. 31, 1899.**

**T. C. DEXTER.**

**PAPER ASSEMBLING AND STAPLING MACHINE.**

(Application filed Oct. 11, 1897.)

(No Model.)

**11 Sheets—Sheet 8.**

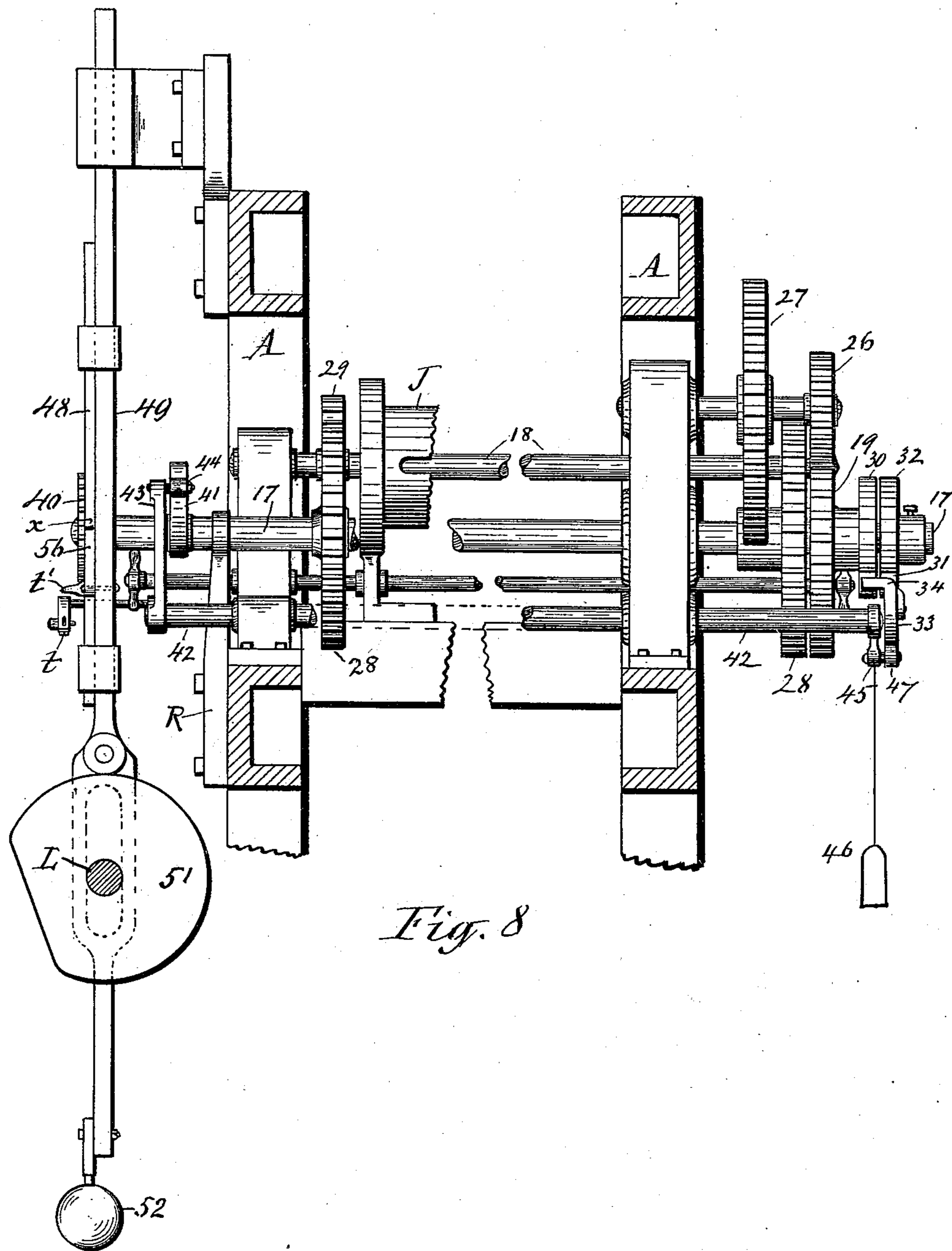


Fig. 8

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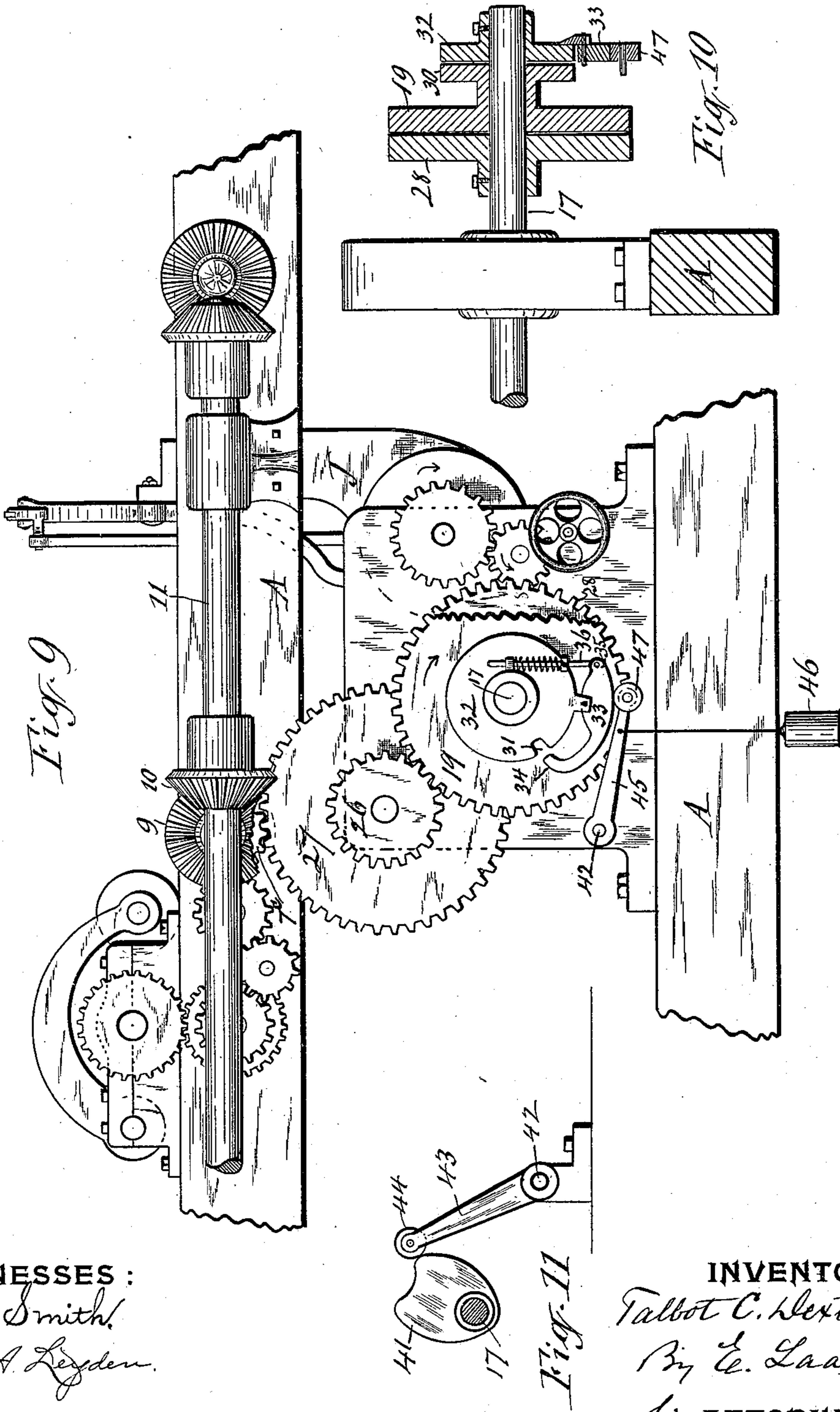
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(No Model.)

11 Sheets—Sheet 9.



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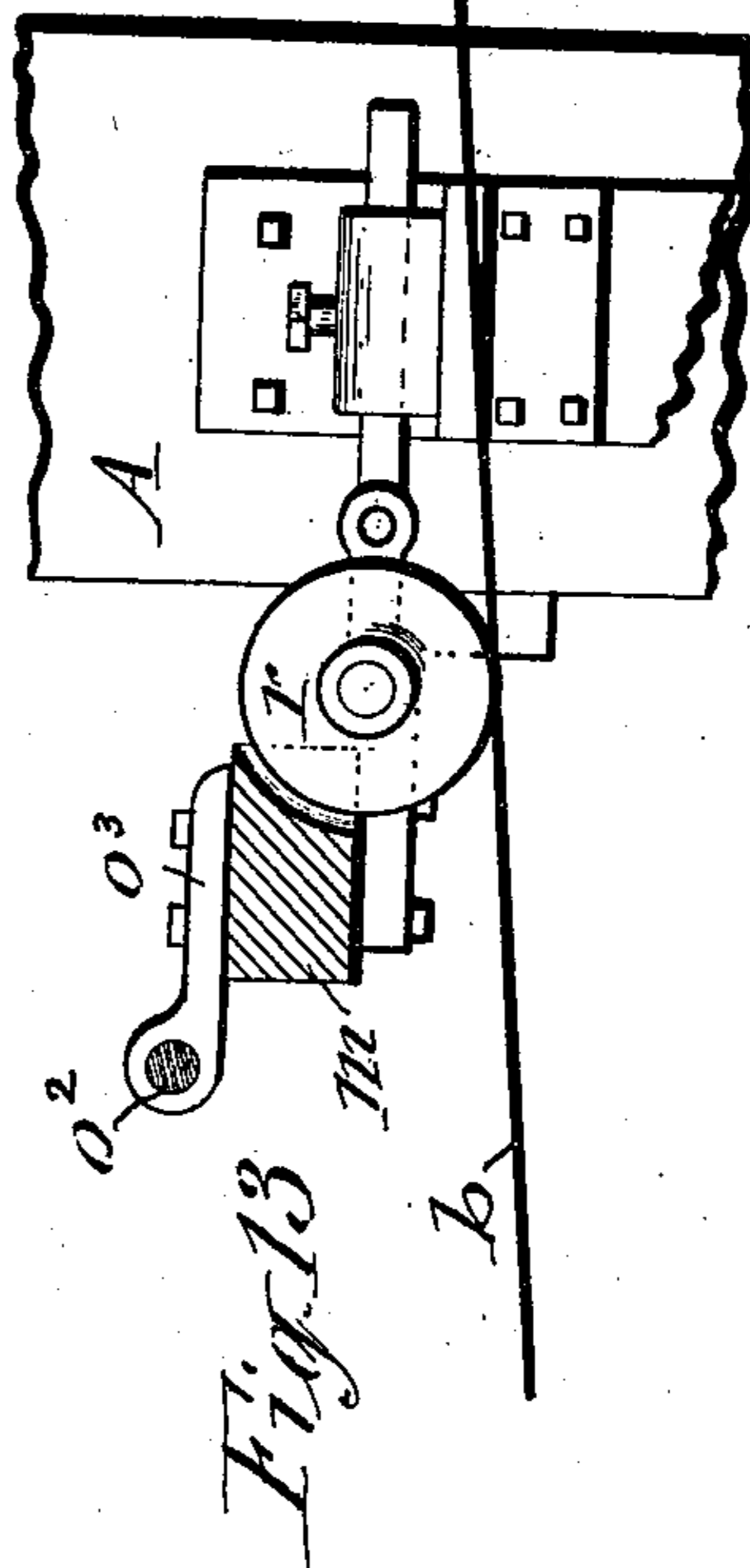
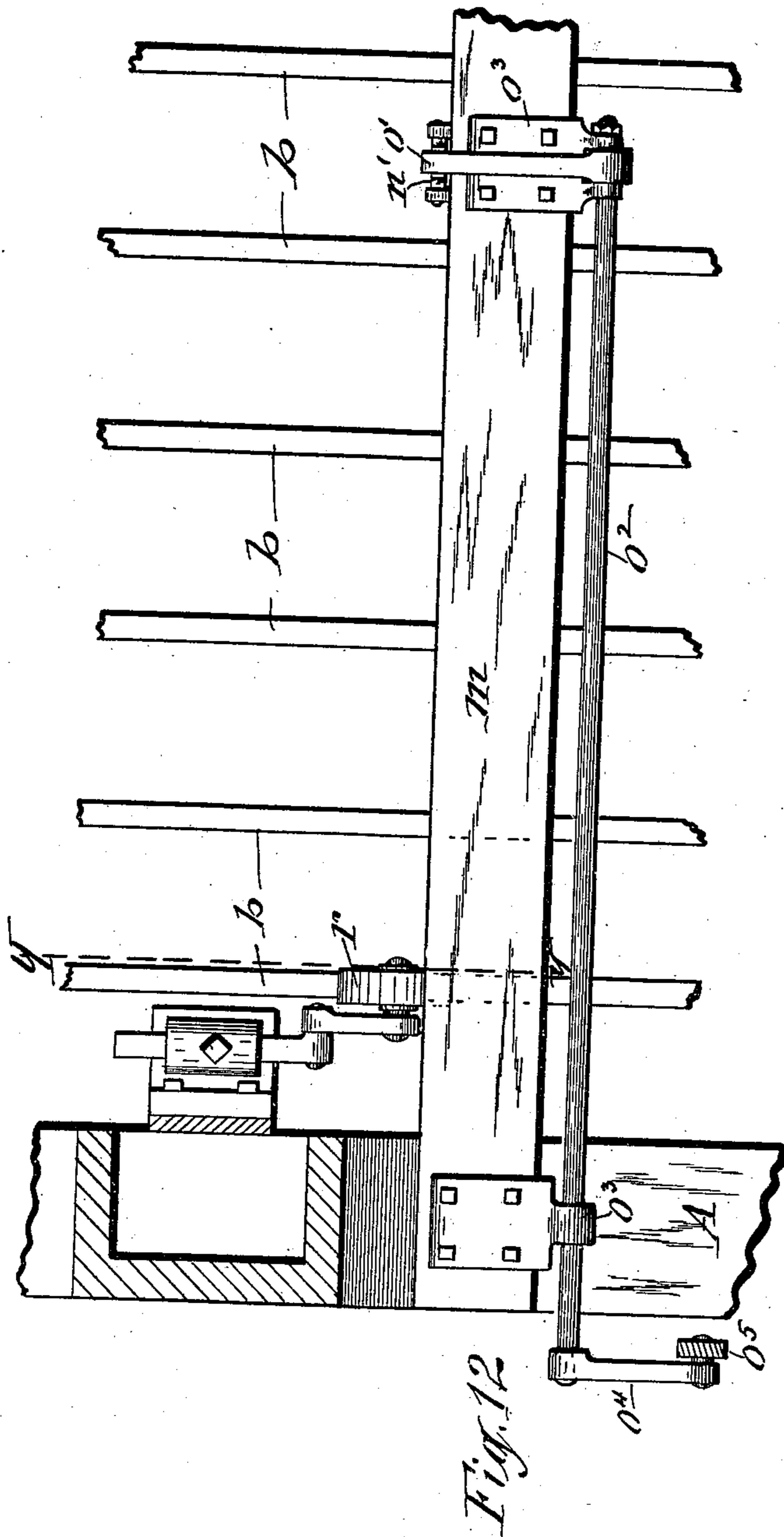
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**T. C. DEXTER.**  
**PAPER ASSEMBLING AND STAPLING MACHINE.**

(Application filed Oct. 11, 1897.)

(No Model.)

**11 Sheets—Sheet 10.**



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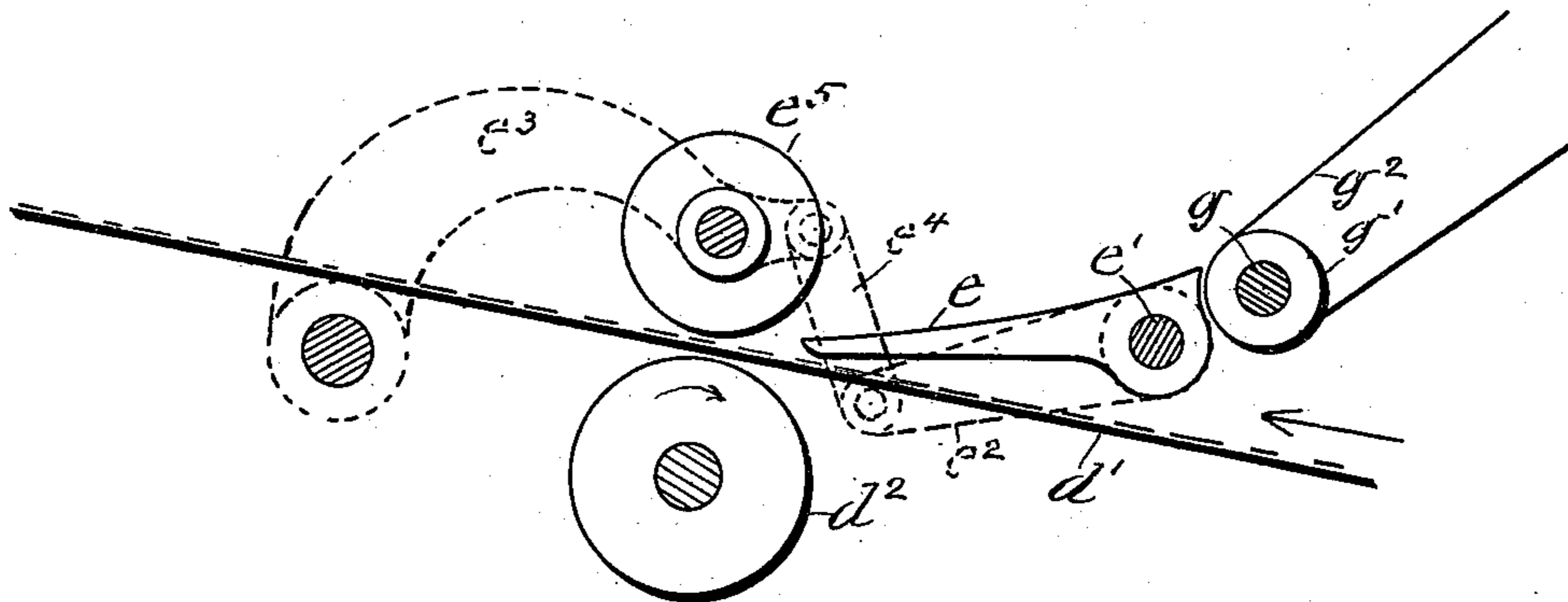
**T. C. DEXTER.**

**PAPER ASSEMBLING AND STAPLING MACHINE.**

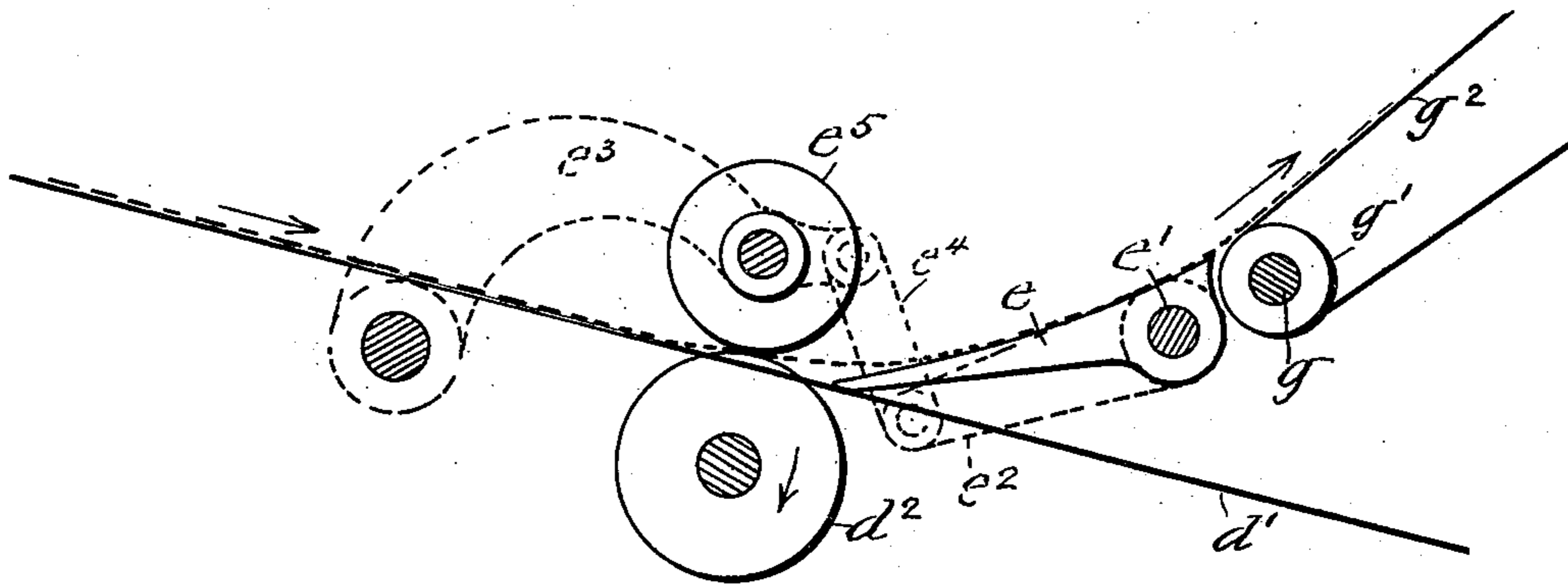
(Application filed Oct. 11, 1897.)

(No Model.)

**11 Sheets—Sheet 11.**



*Fig. 14*



*Fig. 15*

WITNESSES:

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# UNITED STATES PATENT OFFICE.

TALBOT C. DEXTER, OF PEARL RIVER, NEW YORK.

## PAPER ASSEMBLING AND STAPLING MACHINE.

SPECIFICATION forming part of Letters Patent No. 618,648, dated January 31, 1899.

Application filed October 11, 1897. Serial No. 654,743. (No model.)

*To all whom it may concern:*

Be it known that I, TALBOT C. DEXTER, of Pearl River, in the county of Rockland, in the State of New York, have invented new and useful Improvements in Paper Assembling and Stapling Machines, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to the class of machines to which a plurality of sheets are fed simultaneously and which gathers, binds, and folds said sheets in pamphlet form; and said invention has special reference to my prior application for Letters Patent, Serial No. 624,465, filed February 24, 1897. In the operation of a machine constructed as described and shown in said prior application it has been found very difficult to feed the cover-sheet into the machine owing to the fact that said sheets were placed with their glazed sides upward in the feeding-machine and in passing from said machine to the assembling-gage the cover-sheet had to travel around a drum in order to turn the sheet over and cause the glazed side thereof to be on the outside of the pamphlet formed of the plurality of sheets. The difficulty arose from the want of the requisite hold of the feeding devices upon the glazed surface of the top sheet for feeding said sheet from the pile.

The objects of my present invention are to overcome the aforesaid difficulty and also to provide more positive and reliable means for automatically arresting the operation of the stitching or stapling machine in case one or more of the required component sheets of the pamphlet to be formed fail to be fed into the machine; and to that end the invention consists in the improved means for feeding the cover-sheet into the machine and improved devices for controlling the operation of the stitching or stapling machine, as hereinafter described, and set forth in the claims.

In the accompanying drawings, Figures 1 and 2 are side elevations of two successive sections of a paper assembling and stapling machine embodying my present invention. Fig. 3 is a plan view of that portion of the machine which contains the sheet-ejecting switch, sheet-assembling gage, stitching or stapling machines, sheet-severing cutter, and

parts adjacent thereto. Figs. 4 and 5 are enlarged side views showing in different operative positions the improved means for conveying the cover-sheet to the assembling-gage without inverting the sheet, minor parts being broken away to better illustrate the sheet-switching devices. Fig. 6 is a plan view of the devices shown in Fig. 4. Fig. 7 is a side elevation of the mechanism for automatically controlling the stapling-machines. Fig. 8 is an enlarged vertical transverse section of the machine, showing the mechanism for transmitting motion to the stapling-machines. Fig. 9 is a side elevation of said mechanism. Fig. 10 is a vertical transverse sectional view of the clutch devices of said mechanism. Fig. 11 is a detached side view of the cam which controls said clutch devices. Fig. 12 is an enlarged plan view of the tripping devices which are located in the paths of the sheets in transit to the assembling-gage and which primarily control the action of the stitching or stapling machines. Fig. 13 is a transverse section on line Y Y in Fig. 12, and Figs. 14 and 15 are diagrammatic side views of the sheet-shifting switch shown in different operative positions.

Similar letters and numerals of reference indicate corresponding parts.

A denotes the main supporting-frame of the machine.

The feeding-machines which supply, respectively, the main sheet, insert-sheet, and cover-sheet to be assembled, stitched or stapled, and folded are placed in about the same relative positions shown in my prior application for Letters Patent hereinbefore mentioned. The main sheet is carried by means of tapes *c* from the feeding-machine (not shown) to the folding-rollers N N, where it is folded, and is from thence conveyed by means of tapes *b* to the gage *a*, which assembles the three sheets supplied from the three feeding-machines. The insert-sheet passes from the feeding-machine B to the folding-rollers K K, which fold said sheet, and from thence the folded sheet is carried by tapes *b'* to the aforesaid assembling-gage *a*. The cover-sheet is supplied from the feeding-machine B', which is located at the delivery end of the machine.

In order to obviate the necessity of inverting the cover-sheet in its passage to the as-

sembling-gage *a*, as shown in my aforesaid prior application for patent, I now place the cover-sheets, with their glazed sides downward, in the feeding-machine *B'* and employ  
 5 the following-described means for carrying said sheets to the assembling-gage *a*, to wit: The sheet-conveying tapes *d*, which run on the roller *D* at the delivery end of the feeding-machine *B'*, are extended part way toward  
 10 the opposite end of the main machine, and run thence around a roller *D'* back to the roller *D*. From the roller *D'* extend farther on another set of tapes *d'* to a roller *D*<sup>2</sup> sufficiently distant to obtain a sheet-carrying portion of said tapes somewhat longer than the  
 15 length of one of the cover-sheets.

Adjacent to the roller *D*<sup>2</sup> is the sheet-arresting gage *C*, which is adjustably secured in its position by means of screws *C'*, jour-  
 20 naled in bearings on the gage and working in screw-threaded boxes mounted on a cross-bar *C*<sup>2</sup>, which is secured at opposite ends to the main frame *A*. Said gage is provided with notches in its bottom edge for the passage of  
 25 the tapes *d'*.

Between the rollers *D'* and *D*<sup>2</sup> is a series of pulleys *d*<sup>2</sup>, rigidly mounted on a shaft *d*<sup>3</sup>, which extends across the machine and is jour-  
 30 naled in suitable bearings on the frame *A*. Said pulleys are disposed a short distance beneath the normal plane of the tapes *d'* and directly under the spaces between the tapes. At a suitable distance back of the said series of pulleys is a roller *D*<sup>3</sup>, extending across the  
 35 machine immediately under the tapes *d'* to prevent said tapes from sagging and to support them in a plane above the peripheries of the pulleys *d*<sup>2</sup>, so as to allow the sheet to freely pass from the feeding-machine *B'* to  
 40 the gage *C* without coming in contact with the pulleys *d*<sup>2</sup>. Said pulleys rotate with the upper portions of the peripheries toward the feeding-machine *B'*, and thus move reversely from the travel of the tapes. Im-  
 45 mediately at the rear of the pulleys and over the tapes *d'* I place a switch, which by aid of the pulleys *d*<sup>2</sup> takes the sheet from the said tapes and conducts said sheet to another set of tapes *g*<sup>2</sup>, which carry it to the assem-  
 50 bling-gage *a*. This switch consists of fingers *e*, formed of brass or other suitable material and fastened to a shaft *e'*, extending across the machine above the tapes *d'* and mounted in bearings on the sides of the frame *A*. Said  
 55 fingers are disposed lengthwise over the respective tapes *d'* and have their free ends in proximity to the pulleys *d*<sup>2</sup> and sustained normally out of contact with the tapes by means of an arm *e*<sup>2</sup>, fastened to the end of the shaft  
 60 *e'* and coupled to a rock-arm *e*<sup>3</sup> by a link *e*<sup>4</sup>. Said rock-arm, with a similar arm fastened to the same shaft at the opposite side of the machine, carries the shaft of the drop-rollers *e*<sup>5</sup>, which are directly over the pulleys *d*<sup>2</sup>. The  
 65 described connection of the shaft *e'* with the rock-arm *e*<sup>3</sup> causes the switch-fingers *e* to rock to and from the tapes *d'* synchronously with

the movement of the drop-rollers *e*<sup>5</sup> to and from the pulleys *d*<sup>2</sup>. Said movement is de-  
 rived from an arm *f*, attached to the shaft of  
 70 the rock-arms *e*<sup>3</sup> and having on its free end a roller, by which it bears on a rotary cam *f'*. The pulleys *d*<sup>2</sup> receive continuous rotary motion by means of suitable gearing *f*<sup>2</sup>, which  
 75 may be driven by a gear *f*<sup>3</sup> on the shaft of the cam *f'*, as indicated by dotted lines in Fig. 1 of the drawings.

At the rear ends of the fingers *e* and parallel with the shaft *e'* is another shaft *g*, on  
 80 which are mounted the tape-rollers *g'*, carrying tapes *g*<sup>2</sup>, which run around the geared roller *g*<sup>3</sup> adjacent to the assembling-gage *a*, by which latter roller the tapes *g*<sup>2</sup> receive longitudinal movement to carry the sheet from the  
 85 aforesaid switch to the assembling-gage, where said sheet receives upon it the insert-sheet from the tapes *b'* and the main sheet from the tapes *b*.

To insure the movement of the cover-sheet with the tapes *g*<sup>2</sup>, said tapes are drawn taut  
 90 over an intermediate roller *g*<sup>4</sup>, which is located above a straight line passing from rollers *g*<sup>3</sup>. Over the portions of the tapes carried between the rollers *g'* and *g*<sup>4</sup> is another  
 95 set of tapes *h*, running on rollers *h'* and *h*<sup>2</sup>, which carry said tapes in positions to bear on the sheet riding on the tapes *g*<sup>2</sup>. Under the upper run of the tapes *h* is a tightening-roller  
 100 *h*<sup>3</sup>, pivoted to arms *h*<sup>4</sup>, fixed to a shaft *h*<sup>5</sup>, which is mounted in suitable bearings on the sides of the frame *A* and has projecting from it a weighted arm *h*<sup>6</sup>, which causes the arms  
 105 *h*<sup>4</sup> to draw the tapes *h* taut by means of the roller *h*<sup>3</sup>.

*i* denotes guide-rods which are over the  
 105 tapes *d'* and switch-fingers *e* and are supported at one end by passing through holes in the gage *C* and confined there by nuts *i'* on the protruding ends of the rods. The oppo-  
 110 site ends of said rods are fastened to the under side of a cross-bar *i*<sup>2</sup>, supported on the main frame *A*.

In the operation of the machine the cover-sheet is carried from the feeding-machine *B'* by means of the tapes *d* and *d'* and is stopped  
 115 in its movement by contact with the gage *C*. During said movement the drop-rollers *e*<sup>5</sup> and switch-fingers *e* are lifted to permit the sheet to pass freely under them. When the sheet is arrested by the gage *C*, the tail or rear end  
 120 of said sheet is slightly beyond the switch-fingers *e*. Then the switch-fingers descend and depress the tapes *d* below the tops of the pulleys *d*<sup>2</sup>, and thus cause the sheet to ride upon said pulleys, which rotate with their up-  
 125 per surfaces toward the switch-fingers. Simultaneously with said action of the switch-fingers the drop-rollers *e*<sup>5</sup> descend and press the sheet into more intimate contact with the pulleys *d*<sup>2</sup>, which draw the sheet back and  
 130 force it upon the switch-fingers, which guide the sheet to the tapes *g*<sup>2</sup>, by which it is conveyed to the assembling-gage *a*. A short distance beyond the tape-roller *g*<sup>3</sup> is another tape-

roller *j*, upon which are carried the main tapes *l*, which extend to the delivery end of the machine and are supported on a roller *j'* thereat. Said main tapes receive the three sheets assembled at the gage *a*. Each of the aforesaid sheets contains two signatures, and in the passage of the assembled sheets upon the tapes *l* they are subjected to the operation of two wire stapling or stitching machines *J*, which bind the sheets along the two lines in the centers of the signatures. By means of intermittently-operating gages *k* and *k'* the sheets are brought to rest at proper periods to allow the stitching or stapling machines *J* to apply the stitches or staples to the sheets at proper intervals. Said gages are secured to rock-shafts 3 and 4, which receive motion by means of arms 5 on the ends of the said shaft and pitman 6, connected to said arms and actuated, respectively, by cams 7 and 7<sup>a</sup>. A slitter *F* beyond the stitching-machines severs the duplicate signatures, which pass from thence to two pairs of folding-rollers *I I*, which fold said bound signatures and drop them into a sub-jacent packing-box *H* in the manner described more fully in my prior application for patent hereinbefore referred to.

One of the important features of my present invention relates to the means for automatically arresting the action of the stitching-machines in case one or more of the required component sheets are misfed or fail to be fed to the machine. To accomplish this in a positive and reliable manner, I employ the following stop mechanisms, to wit: The actuating mechanisms of the stitching-machines *J J*, as shown in the annexed drawings, are substantially the same as shown and described in my aforesaid prior application for patent. I wish it, however, understood that I do not limit my present invention to the exact construction of said actuating mechanisms. The essential features are a clutch for throwing said mechanisms in and out of action in combination with my improved mechanism for controlling said clutch.

The actuating mechanism of the stitching-machines, as shown, consists of a counter-shaft 17, which is parallel with the shafts 18 of the stitching-machines and mounted in bearings on the frame *A*. On said counter-shaft is loosely mounted a gear-wheel 19, which by means of a train of gears 26, 27, 7<sup>c</sup>, 9, and 10 receives rotary motion from one of the principal shafts 11 of the main machine. To the counter-shaft 17 are rigidly secured two gear-wheels 28, which transmit motion to the two gear-wheels 29 on the shafts 18 of the two stitching-machines *J J*. The loose gear-wheel 19 has integral with it a clutch-collar 30, which is provided with a notch in its periphery. At the side of said collar is a companion collar 32, provided with a similar notch 31. A dog 33 is pivoted to the fixed collar 32 and formed at one end with a tooth 34, which is suitably shaped to engage simultaneously both notches of the two collars and

lock them together, so as to cause them to rotate the gears which transmit motion to the stitching-machines. The opposite end or heel 35 of the dog has connected to it a spring-actuated rod 36, which tends to force the dog into engagement with the aforesaid notches. The release of the clutch-collars from said dog and the resultant stoppages of the stitching-machines are effected automatically by the pressure of a roller 47, pivoted to the end of an arm 45, attached to a rock-shaft 42, which extends across the machine and receives a rocking motion, as hereinafter described. During the rotation of the collar 32 the heel 35 of the dog traverses the roller 47, which by pressure on said heel throws the tooth of the dog out of engagement, and thus the stitching-machines are deprived of action. A weight 46, suspended from the arm 45 on the shaft 42, serves to hold in constant contact with the cam 41 the other arm 43, secured to said shaft, and at the same time hold the roller 47 normally out of contact with the dog 33. To cause said roller to press on the dog, the arm 43 is attached to the shaft 42 and has pivoted to its free end a roller 44, by which it bears on the cam 41, mounted loosely on the shaft 17. To the side of this cam is fastened a pinion 40, which engages a rack 48, supported on the side of and parallel with a pitman 49 and movable longitudinally thereon. Said pitman receives reciprocating motion from a rotary cam 51, forcing it upward, and a weight 52, drawing it down. A pin *x'*, projecting from the pitman and engaging the top of the rack, causes the latter to be pushed down to its normal position by the downward movement of the pitman. To the pitman is pivoted a pawl 56 in such a manner as to cause said pawl to fall by gravity into engagement with a shoulder on the rack. A stop-pin *x* on the pitman prevents the pawl from being thrown past the center of gravity by action of the bell-crank *t*. When said pawl is thus engaged with the rack, the latter is forced upward with the upward movement of the pitman and by said movement of the rack the pinion 40 and cam 41, attached thereto, are turned on the shaft 17. This turning of the cam pries up the arm 43, and thereby turns the shaft 42 in a direction which causes the other arm 45 to press with its roller 47 on the dog 33, so as to cause it to release the clutch-collars 30 and 32, and thus stop the action of the stitching-machines *J J*, as hereinbefore described. In the subsequent downward movement of the pitman 49 the rack 48 is pushed down by the pin *x'*, and thereby caused to turn the pinion 40 and cam 41 back to their original position.

To control the action of the pawl 56 automatically by the sheets in transit to the machine, I now employ the following mechanisms, to wit: Over each set of tapes *b, b'*, and *g<sup>2</sup>* and out of contact therewith is a cross-bar *m*, which is supported at its ends on the main frame *A*. On each of said bars is hinged

a finger  $n$ , which normally rests with its free end on a bar  $o$  immediately below the plane of the tapes, which bar extends across the machine and is supported on the main frame

5 A. Each of said fingers is thus disposed with its free end in the path of the sheet carried on the adjacent tapes and in position to be lifted by the sheet passing under the finger. Each finger has fixed to it or integral with it a prop

10 or detent  $n'$ , over which is the free end of a rock-arm  $o'$ , fastened to a shaft  $o^2$ , which is extended to one side of the machine and is pivoted in brackets  $o^3$ , secured to the cross-bar  $m$ . To the outer ends of the three shafts

15  $o^2$  are rigidly secured arms  $o^4$ , which are pivotally coupled together by a vertical strap or link  $o^5$ , connected to the free ends of said arms and compelling them to operate in unison. To the lower portion of the frame A is

20 pivoted a lever  $p$ , which extends in opposite directions from the pivot and has pivoted to one end a roller  $p'$ , the periphery of which faces a cam  $q$ , secured to the main cam-shaft L. To the opposite end of said lever is con-

25 nected a spring-actuated rod  $q'$ , which causes the lever to press with its roller on the cam  $q$ . An arm  $p^2$  projects laterally from the said lever at the pivot thereof, and the free end of said arm is connected by a rod  $p^3$  to the strap

30 or link  $o^5$ . To a bracket R, secured to the frame A, is pivoted a bell-crank  $t$ , one arm of which has its free end under a finger  $t'$ , projecting laterally from the pivoted end of the pawl 56. The other arm of the lever  $t$  is con-

35 nected to an extension of the spring-actuated rod  $q'$ . This spring-and-cam-actuated rod  $q'$ , with the bell-crank  $t$ , I designate the "tripping mechanism," which actuates the afore-

40 said stop mechanism and is controlled by shifting mechanism consisting of the rod  $p^3$  and link  $o^5$ , connecting said rod to the three rock-arms  $o^4$ , which in turn are controlled by the action of the fingers  $n$ .

The operation of the aforesaid automatic

45 stop mechanism is as follows: When the machine is in proper working condition and the three sheets are regularly fed to the machine, said sheets in passing to the assembling-gage  $a$  lift the fingers  $n$  and cause them to hold

50 their props or detents  $n'$  away from under the rock-arms  $o'$  and thus allow said arms to be rocked by their connection with the oscillating lever  $p$ , which is actuated by the cam  $q$ . Said lever imparts an intermittent recipro-

55 cating motion to the rod  $q'$ , which transmits oscillatory motion to the bell-crank  $t$  and causes the same to throw the pawl 56 at regular intervals into a position to prevent its en-

60 gagement with the shoulder on the rack 48 during the reciprocating motion of the pitman 49. Said rack remaining in its lowered position causes the pinion 40 to hold the cam 41, with the arm 43 resting thereon, in such a position as to allow the arm 45 to be held out

65 of contact with the dog 33 by the weight 46. This permits said dog to be held in engagement with the two clutch-collars 30 and 32 by the

spring-actuated rod 36, and thus said collars are locked together and cause motion to be transmitted to the stitching-machines J J. 70

Hence said machines continue to operate so long as the three component sheets are carried simultaneously to the assembling-gage  $a$ . If, however, one or more of said sheets fails to pass to said gage, the finger over the bare 75 tapes drops onto the subjacent bar  $o$ , and thereby throws the detent  $n'$  of said finger into a position directly under the rock-arm  $o'$ , which is thereby prevented from rocking and is retained in a position which causes the rod  $p^3$  80 to hold the lever  $p$  out of operative contact with the cam  $q$ . Said lever is thus held at rest and in a position which causes the spring-actuated rod  $q'$  to hold the bell-crank  $t$  out of the path of the finger  $t'$  of the pawl 56, which 85 is thus allowed to engage the shoulder on the rack 48 in the upward movement of the pitman 49. This causes the rack to move with said pitman and turn the pinion 40 sufficiently to carry the cam 41 to a position which 90 causes the arm 43 to force the arm 45 toward the dog 33 and throw the same out of engagement with the clutch-collars 30 and 32. The loosely-mounted collar 30, with its gear 19, is thereby deprived of motion, and conse- 95 quently the action of the stitching-machine is arrested.

In order to prevent an incomplete set of sheets from passing to the stitching-machines, I employ immediately in front of the assembling-gage  $a$  a suitable switch, which auto- 100 matically ejects the said sheets from the machine. The form of the switch herein shown is similar to that shown in my hereinbefore-mentioned prior application for patent, and 105 consists of a shaft  $u$ , extending across the machine beneath the plane of the main tapes  $l$  and mounted in suitable bearings on the sides of the frame A. Said shaft has projecting from it a series of fingers  $u'$ , which normally 110 bridge the space between the tape-rollers  $g^3$  and  $j$  sufficiently to carry complete sets of sheets across said space and onto the main tapes  $l$ . By a slight turn of the shaft  $u$  the fingers  $u'$  are caused to rise with their free 115 ends above the plane of the tapes and thus cause an incomplete set of sheets to pass under said fingers and out of the path to the main tapes  $l$ . To throw the ejecting-fingers into the last-described position simultane- 120 ously with the stoppage of the stitching-machines, I attach to the shaft of one of said machines an eccentric  $v$ , the eccentric-rod  $v'$  of which is connected to an arm  $v^2$ , attached to the end of the shaft  $u$ , which is turned by 125 its said connection with the eccentric, so as to project the free ends of the fingers  $u'$  above the plane of the tapes  $l$  simultaneously with the stoppage of the action of the stitching-machines incident to the failure of the de- 130 livery of one or more of the required sheets to the machine, as hereinbefore described.

$rr$  denote rollers which rest by gravity upon the two outer tapes of each of the three sets

$b$ ,  $b'$ , and  $g^2$ , and by bearing on the sheets carried on said tapes said rollers check the movements of the sheets sufficiently to prevent their rebounding from the assembling-gage  $a$ . Said rollers are pivoted to free ends of arms which are hinged to suitable supports secured to the frame A.

What I claim as my invention is—

1. In combination with a paper-feeding machine and a machine designed to receive the paper from said feeding-machine, a set of tapes conveying the sheets in one direction from the feeding-machine, a gage arresting the sheet upon said tapes, a second set of tapes disposed to receive the tail of the arrested sheet and leading in reverse direction from the first set of tapes toward the aforesaid receiving-machine, and mechanisms transferring the sheet from the first set of tapes direct to the second set of tapes without inverting the sheet in transit as set forth.

2. The combination of paper-conveying tapes extending from the source of supply of paper, a gage arresting the movement of the sheet upon said tapes, pulleys fixed to a rotary shaft beneath said tapes and disposed with their peripheries between the tapes and normally slightly beneath the plane thereof, means imparting to said pulleys rotary motion reverse from the travel of the tapes, drop-rollers over said pulleys, and a switch depressing the tapes to allow the delivered sheet to rest upon the pulleys which force the sheet back onto the switch, as set forth.

3. The combination of paper-conveying tapes extending from the source of supply of paper, a gage arresting the movement of the sheet upon said tapes, pulleys fixed to a rotary shaft beneath the tapes and disposed with their peripheries between the tapes and normally slightly beneath the plane thereof, means imparting to the pulleys rotary motion reverse from the travel of the tapes, drop-rollers over said pulleys, a rock-shaft over the tapes back of the pulleys, and fingers projecting from said shaft toward the pulleys and disposed directly over the respective tapes to intermittently depress the latter and allow the rear portion of the sheet to rest upon the pulleys and to be forced thereby back upon the aforesaid fingers, as set forth.

4. The combination of paper-conveying tapes extending from the source of supply of paper, a gage arresting the movement of the sheet upon said tapes, pulleys fixed to a rotary shaft beneath the tapes and disposed with their peripheries between the tapes and normally slightly beneath the plane thereof, drop-rollers over said pulleys, means imparting to the pulleys rotary motion reverse from the travel of the tapes, a rock-shaft over the tapes back of the pulleys, fingers projecting from said rock-shaft toward the pulleys and disposed directly over the respective tapes, an arm on said rock-shaft, and a link connecting said arm to one of the supporting-arms of the drop-roller shaft to actuate said

rock-shaft in unison with the drop-rollers, as set forth.

5. In combination with a paper stapling or stitching machine and a plurality of sets of tapes designed to deliver a corresponding plurality of sheets simultaneously to said machine, fingers disposed yieldingly independent of each other in the paths of the respective sets of tapes to be actuated by the sheets in transit, stop mechanism arresting the motion of the aforesaid stapling or stitching machine, tripping mechanism actuating said stop mechanism, rock-arms controlled by the action of the aforesaid fingers and shifting mechanism controlling the tripping mechanism and connected to each of said rock-arms to be actuated by the united action of said arms as set forth.

6. The combination with a machine designed to operate on sheets of paper fed successively thereto, mechanism for starting and stopping said machine and a plurality of sets of tapes designed to deliver a corresponding plurality of sheets simultaneously to the machine, of mechanical fingers disposed yieldingly across the planes of the respective sets of tapes and actuated by the sheets in transit, detents attached to the respective fingers and actuated thereby, rock-arms controlled in their action by the respective detents and a link coupling the rock-arms together and controlling the aforesaid starting and stopping mechanisms, as set forth.

7. The combination with a machine designed to operate on sheets of paper fed successively thereto, mechanism for starting and stopping said machine and a plurality of sets of tapes designed to deliver a corresponding plurality of sheets simultaneously to the machine, of bars extending across the machine over the respective sets of tapes and supported on the main supporting-frame, fingers pivoted to said bars and supported at their free ends normally beneath the planes of the aforesaid tapes, detents projecting upward from the pivoted ends of said fingers, shafts pivotally supported respectively on the aforesaid bars, arms projecting from said shafts and having their free ends over the detents, arms attached to the ends of said shafts, a link connecting together said end arms, and a lever actuating the starting and stopping mechanism and connected to the aforesaid link and controlled thereby in its action, as set forth.

8. The combination with a machine designed to operate on sheets of paper fed successively thereto, a clutch for starting and stopping said machine, means for operating said clutch, a rack and pinion actuating said means, a reciprocating pitman disposed parallel with said rack, and a pawl pivoted to said pitman and normally engaging the rack, of a bell-crank movable to and from a position to throw the pawl out of engagement, a rotary cam, a lever pivoted to the main frame, a spring forcing said lever into engagement

with the cam, a rod connecting said lever with  
the aforesaid bell-crank, a finger in the path  
of the sheet in transit to the machine and ac-  
tuated by said sheet, a detent actuated by  
5 said finger, and a rock-arm actuated by the  
aforesaid spring-forced lever and controlled  
by the detent, as set forth and shown.

In testimony whereof I have hereunto  
signed my name this 16th day of September,  
1897.

TALBOT C. DEXTER. [L. S.]

Witnesses:

JOHN K. KNOX,  
V. E. MARSH.