

No. 754,434.

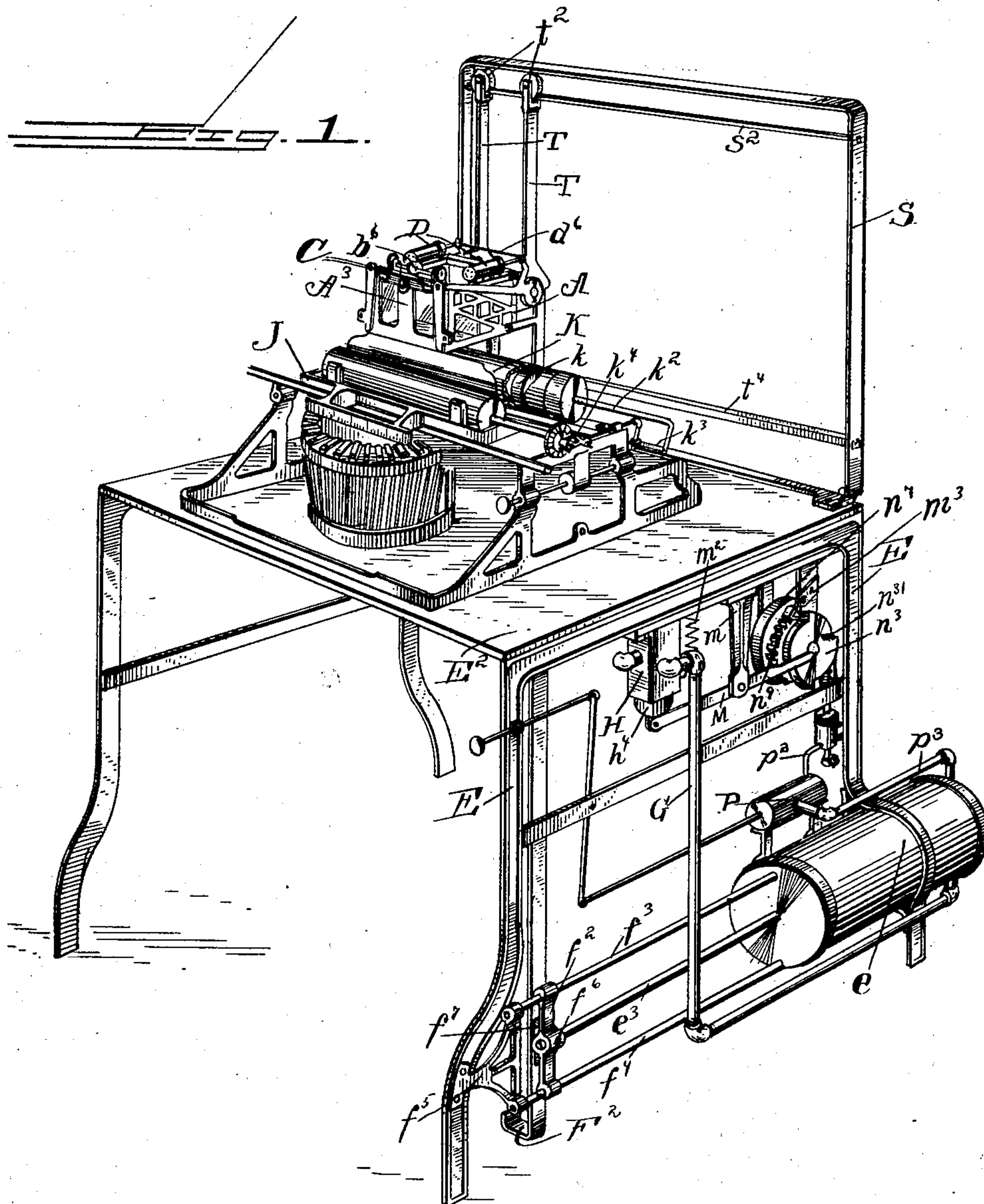
PATENTED MAR. 15, 1904.

D. S. DUFUR.
ENVELOP OR CARD FEEDING DEVICE.

APPLICATION FILED APR. 20, 1903.

NO MODEL.

5 SHEETS—SHEET 1.



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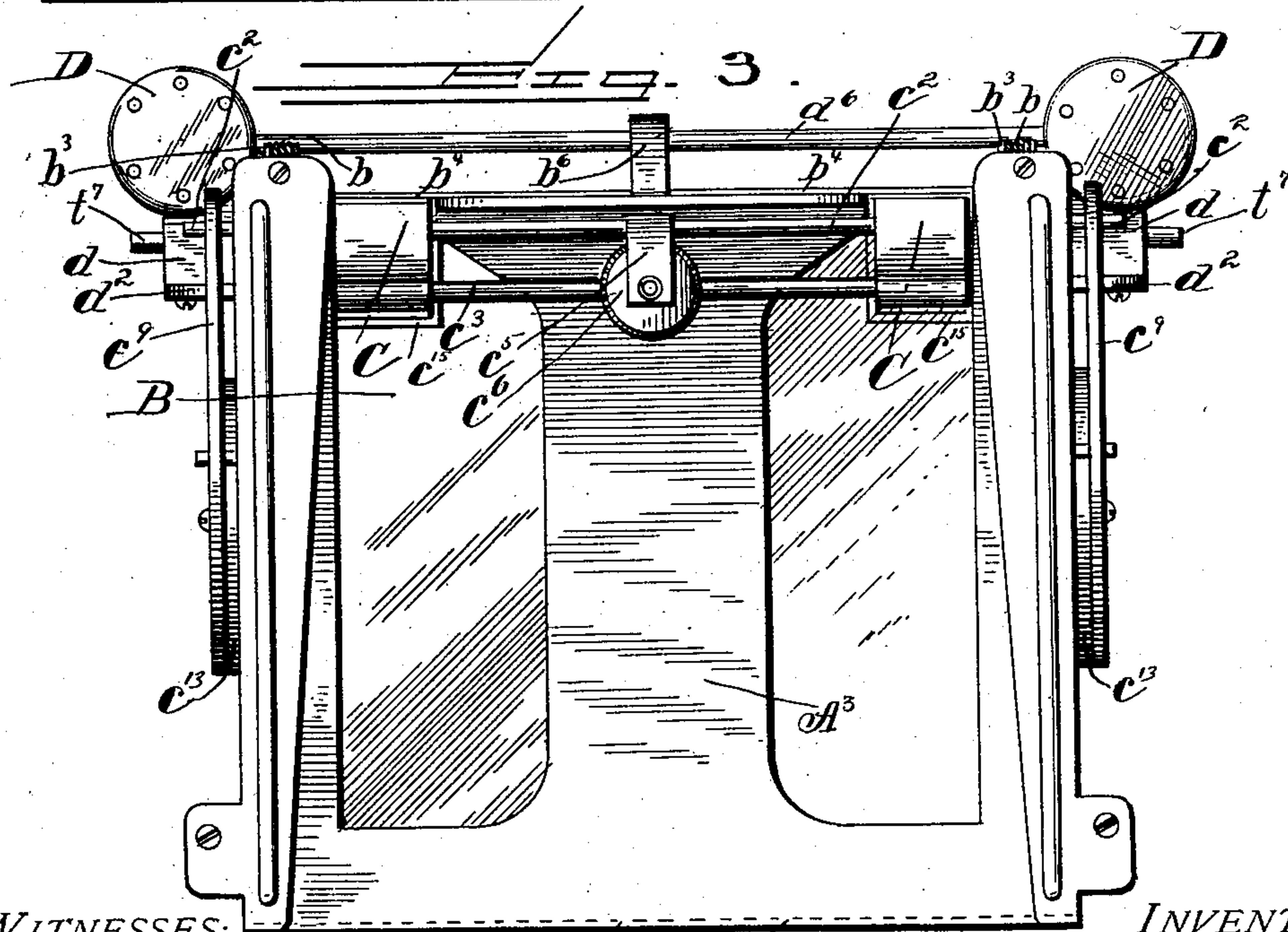
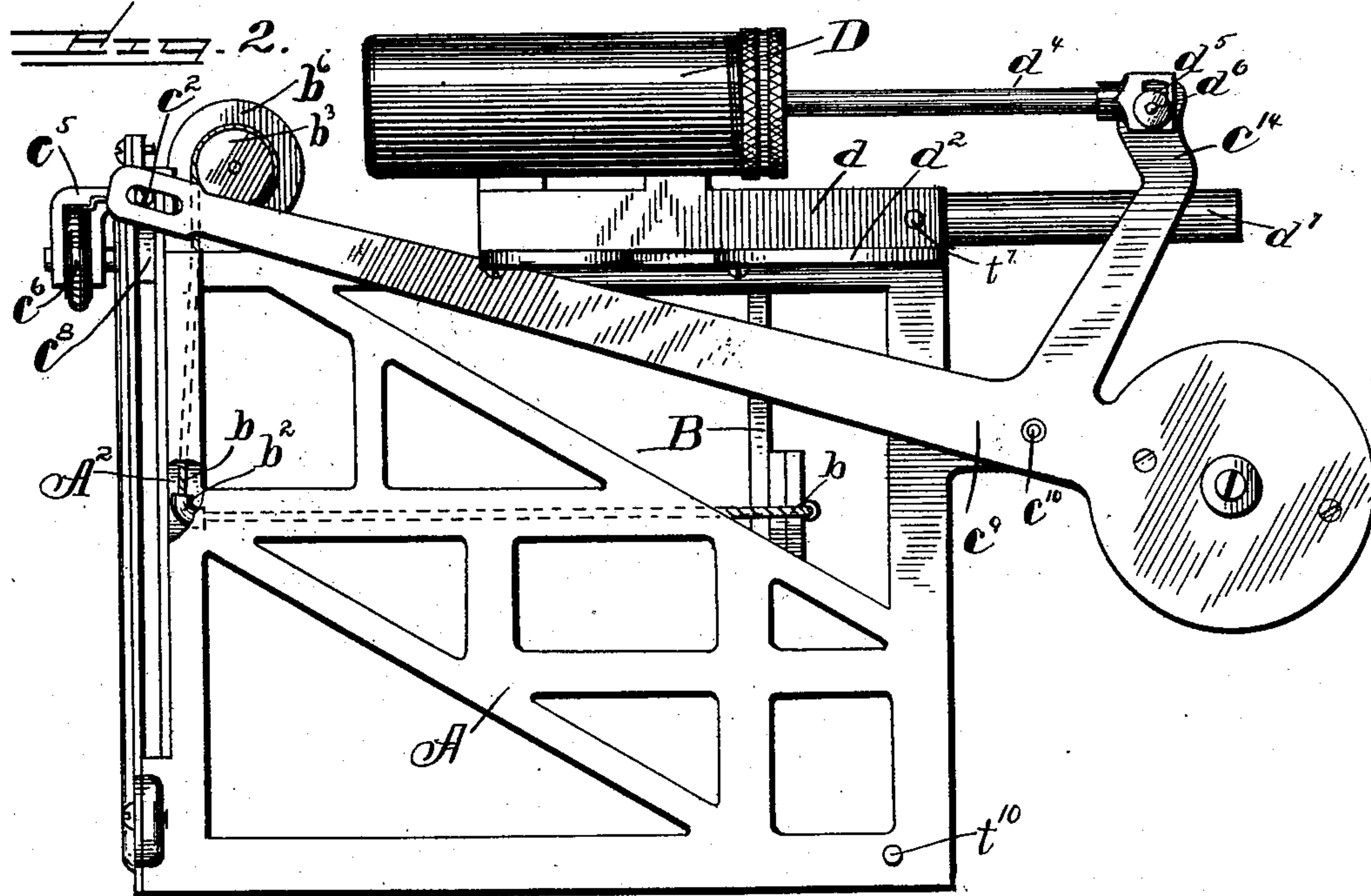
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5 SHEETS—SHEET 2.



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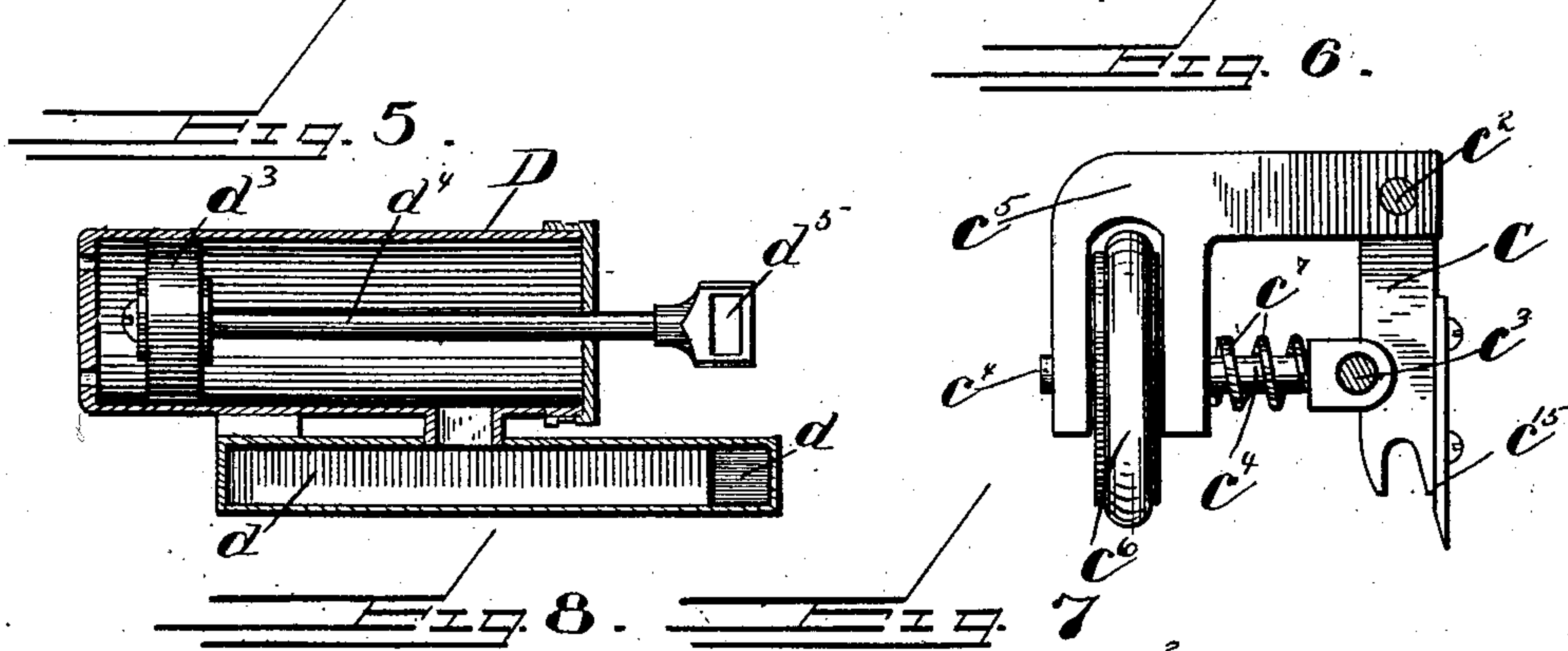
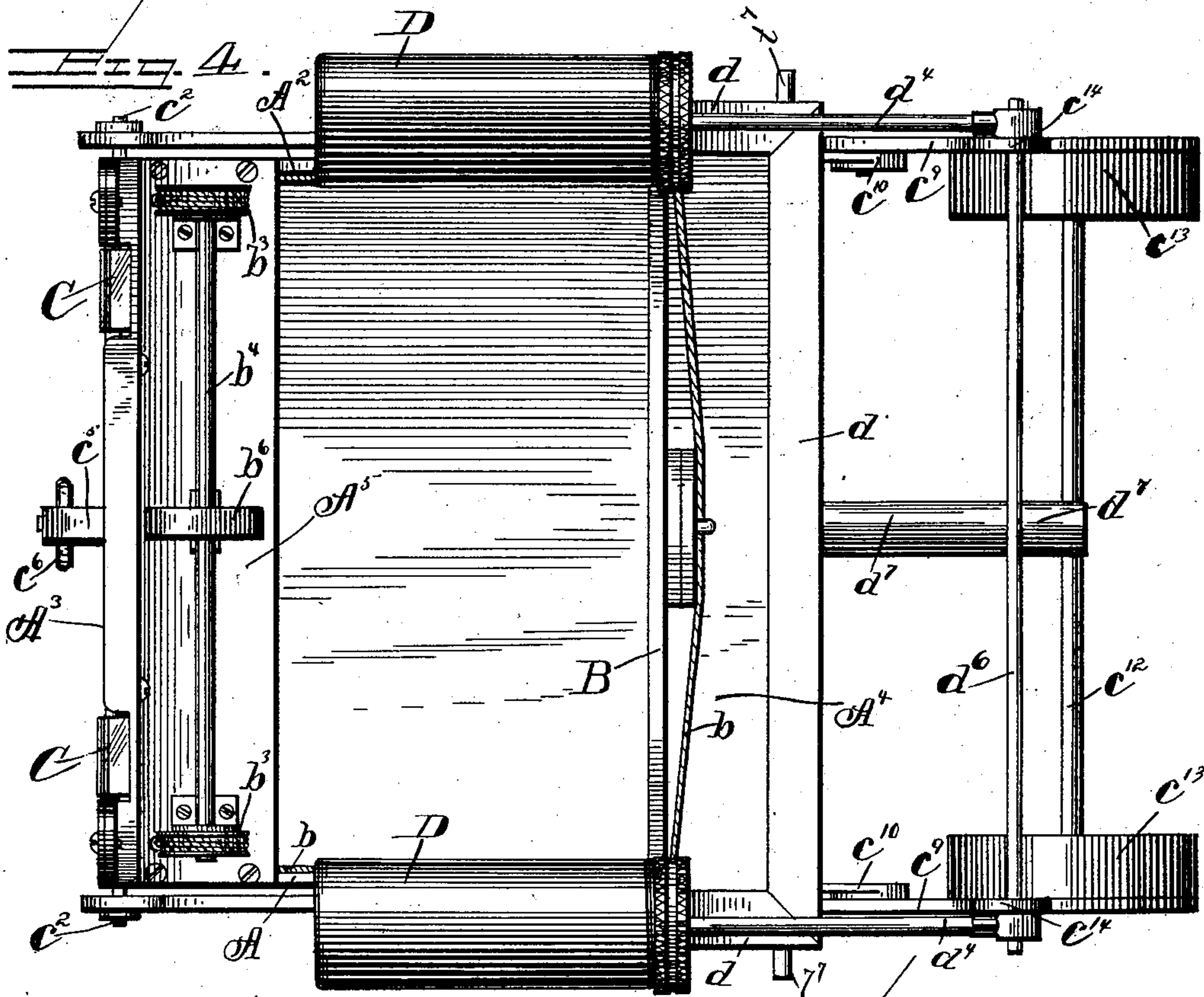
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5 SHEETS—SHEET 3.



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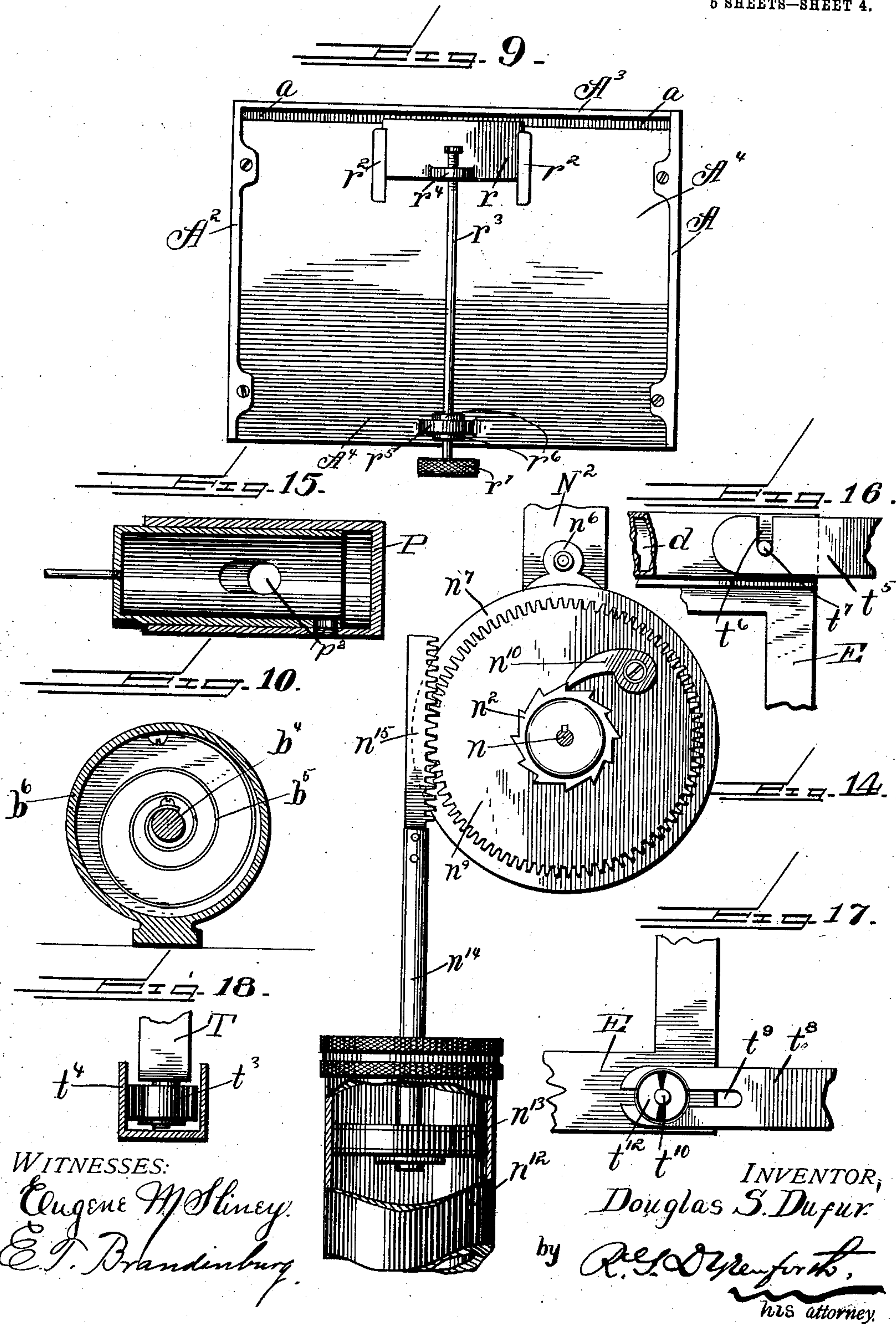
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6 SHEETS—SHEET 4.



No. 754,434.

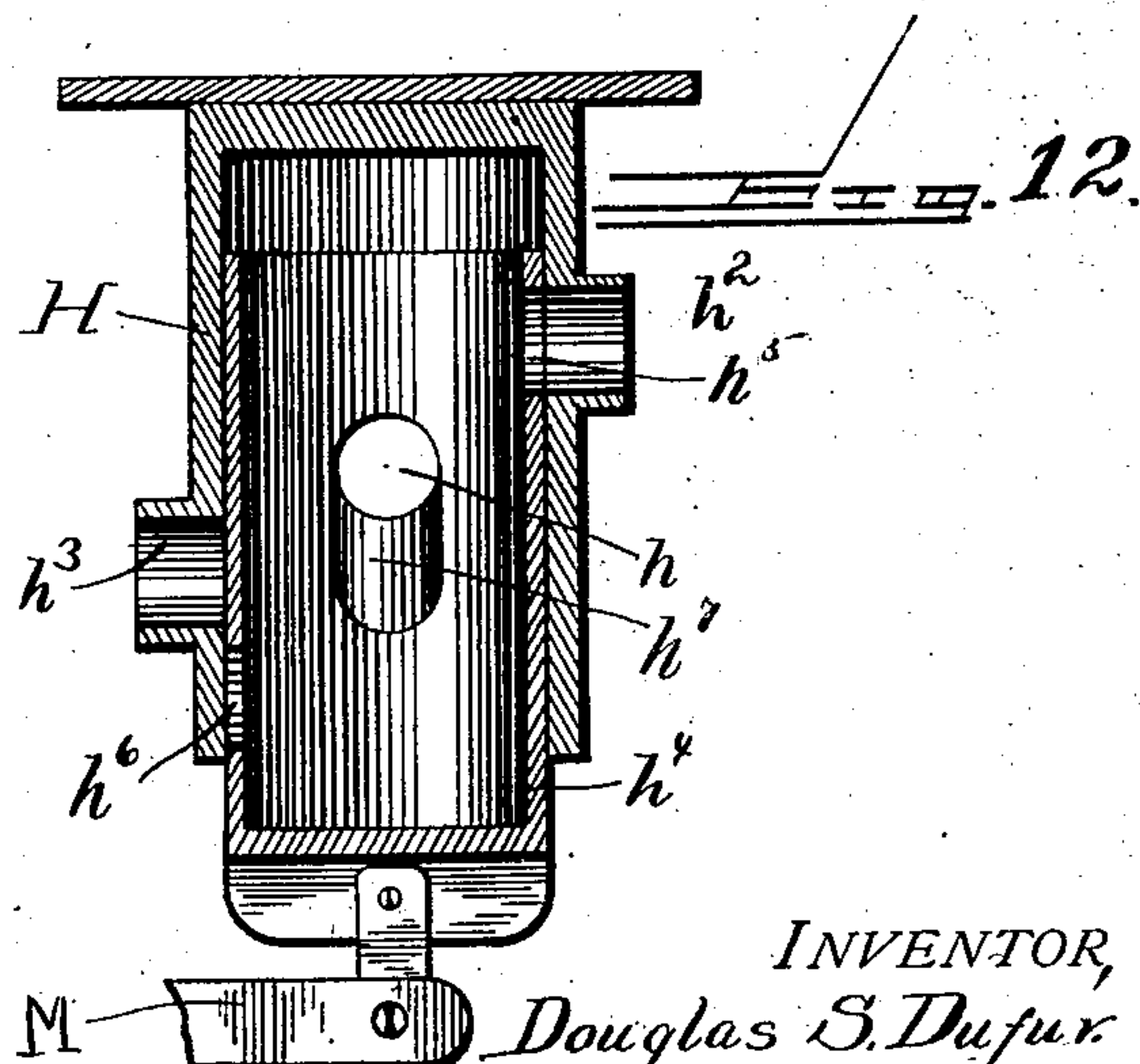
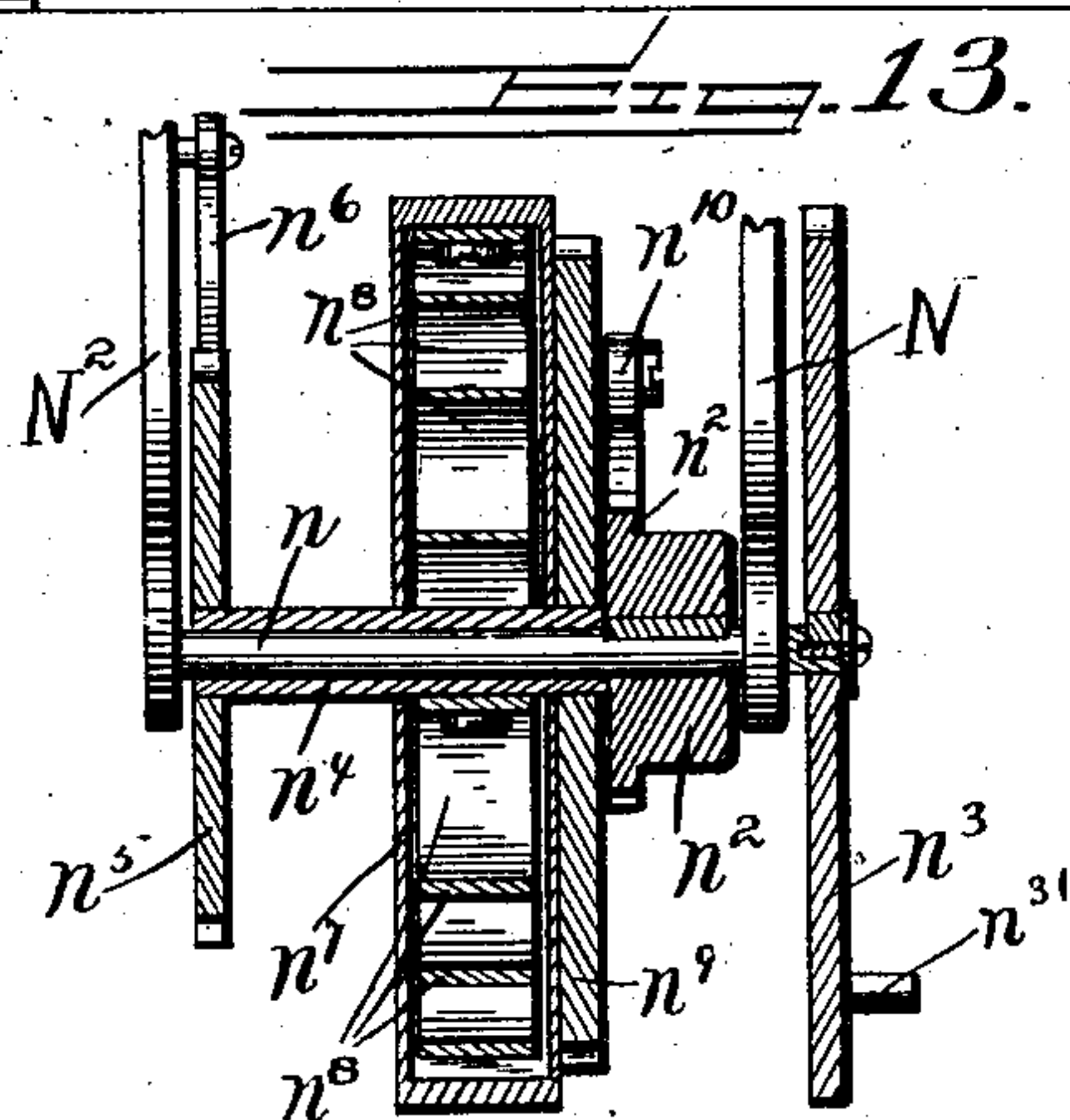
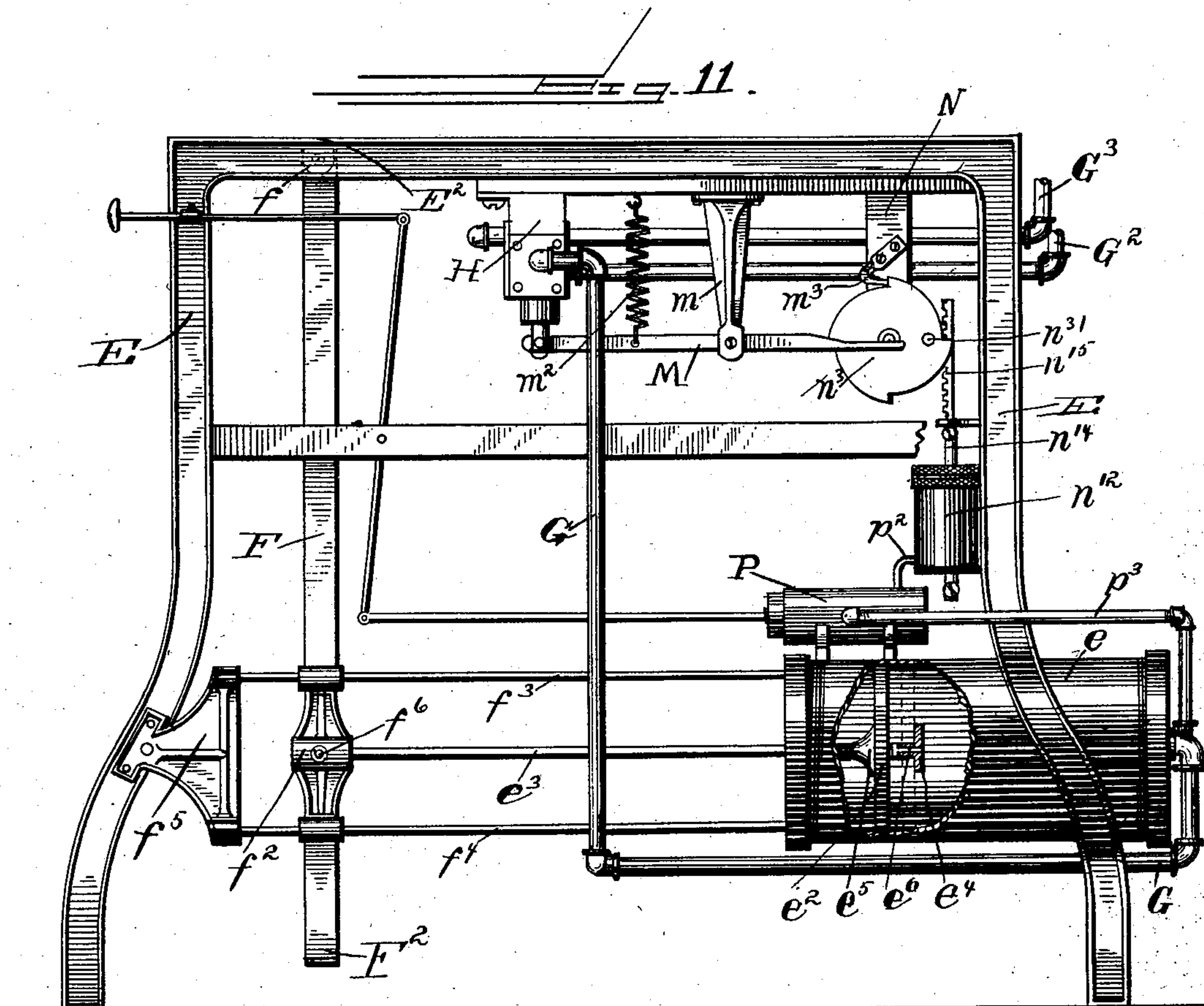
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APPLICATION FILED APR. 20, 1903.

NO MODEL.

5 SHEETS—SHEET 5.



WITNESSES:
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UNITED STATES PATENT OFFICE.

DOUGLAS S. DUFUR, OF THE DALLES, OREGON.

ENVELOP OR CARD FEEDING DEVICE.

SPECIFICATION forming part of Letters Patent No. 754,434, dated March 15, 1904.

Application filed April 20, 1903. Serial No. 153,536. (No model.)

To all whom it may concern:

Be it known that I, DOUGLAS S. DUFUR, a citizen of the United States, residing at The Dalles, in the county of Wasco and State of Oregon, have invented certain new and useful Improvements in Envelop or Card Feeding Devices; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The object of this invention is to provide an improved form of apparatus for feeding writing material—such as envelopes, postal cards, and the like—from a suitable receptacle to any desired place for writing or printing, especially into the platen or other writing-surface of a type-writing machine.

A further object is to provide such a device that can be operated by and in conjunction with the apparatus for returning the carriage of a type-writer that forms the subject-matter of an application for United States Letters Patent filed by me on the 28th day of February, 1903, and bearing Serial No. 145,607.

With these objects in view and others my invention comprehends the construction, arrangement, and combination of parts, as hereinafter described and claimed.

In the accompanying drawings, representing an apparatus embodying my invention in my preferred form, Figure 1 is a perspective view of a type-writer stand having a type-writer thereon with my invention applied to the stand and type-writer. Fig. 2 is a side elevation of the receptacle for holding the writing articles. Fig. 3 is a front elevation of the same. Fig. 4 is a plan view of the receptacle. Fig. 5 is a horizontal section through one of the operating-cylinders of the receptacle. Fig. 6 is a detail of the adjustment on the feeding means. Fig. 7 shows in elevation the ejector-plate. Fig. 8 shows the latter in section. Fig. 9 is a view of the bottom of the receptacle. Fig. 10 shows in section the follower-plate-operating means. Fig. 11 shows in side elevation the several pressure devices connected with the stand. Fig. 12 shows the switch-valve. Fig. 13 shows the valve-operating means. Fig. 14 shows the

valve-operating pressure device. Fig. 15 shows a valve for switching the air from the main valve-operating device. Fig. 16 shows a detail of the support attachment of the receptacle at the top. Fig. 17 shows the receptacle-support at the bottom, and Fig. 18 is a detail of the receptacle-supporting member.

In the drawings, in which the characters of reference indicate the same parts, the receptacle or box for the envelopes, cards, &c., comprises two side members $A A^2$ and a front member A^3 , the top and back being left open. The bottom of the box A^4 has a slot a at the front end, as shown in Fig. 9. The envelopes or cards are placed in the box and are advanced toward the front to register with the said slot by a follower-plate B , that is operated by a cord b , secured at its middle portion to the plate and having its end portions passed forward through elbows b^2 , thence around drums b^3 , secured on a shaft b^4 . This shaft is retained under tension by the evolute spring b^5 , having one end secured to the shaft and its other end to the casing b^6 , that is mounted on a shelf A^5 on top of the receptacle. When the follower-plate is pulled back from the front of the box, this spring is put under tension, and that will tend to move the envelopes up to the front and opposite the slot as fast as they are fed from the receptacle through the slot.

The envelop or card lying against the front plate A^3 is fed downward and through the slot by a pair of ejectors C , that are pivotally mounted on a rod c^2 . A rod c^3 is secured to each of the ejectors and is pivotally connected with a pin c^4 . A block c^5 is rigidly secured to the rod c^2 and has a forked portion through which passes the pin c^4 . The latter pin has a threaded portion engaging a nut c^6 , located in said forks. A coiled spring c^7 surrounds the pin c^4 between the forks and its hinged end. Consequently when the nut c^6 is turned the ejectors will be rocked one way or the other with respect to the rod c^2 .

Each end of the rod c^2 has secured thereto a guide-block c^8 , that slides in a slot formed between each side plate and the front. The extremities of the rod c^2 project slightly beyond these blocks c^8 and are engaged by the slotted

extremities of bent levers c^9 , that are pivoted on lugs c^{10} , projecting from the sides of the receptacle. The levers are connected at their rear extremities by a bar c^{12} , on which may be
 5 placed counterbalancing-weights c^{13} , if desired, to compensate for the weight of the levers and the ejector mechanism.

A pair of cylinders D is carried by the bent extremities of the tube d , located on top of the
 10 receptacle and supported by brackets d^2 . Each of these cylinders contains a piston d^3 and piston-rod d^4 . The outer ends of the piston-rod d^4 contain slot d^5 of a rod d^6 , which rod passes through apertures in the
 15 arm c^{14} , integral with the levers c^9 . Consequently when pressure from any suitable source is admitted to the pipe or tube d through its branch d^7 it will pass into each cylinder through a suitable aperture in the
 20 bottom and move the pistons forward, the air beyond the pistons escaping through suitable apertures in their forward ends. This movement of the piston-rods will rock the levers c^9 and move the ejector mechanism downward,
 25 and when the pressure is relieved the counterweights, preferably assisted by exhaustion in the pipe d , will return the piston and piston-rods to their former positions, thereby raising the ejectors.

Each of the ejectors is preferably grooved at its engaging end, as shown in Fig. 8, and also contains a sharp selecting-blade c^{15} , whose
 30 function is to separate the first envelop or card from the adjacent one and cause it to be engaged by the walls of the groove. The further movement of the ejectors after engaging with the upper edge of the envelop near
 35 each extremity will move the same downward through the slot a as desired. The envelop or card having been delivered, the follower-plate B will cause the remaining envelops to move toward the front, and the
 40 next envelop will be brought into position to be engaged by the ejectors when next moved downward by the said pressure devices.

Referring now to Fig. 9, showing the bottom of the box, I provide means for reducing the available area of the slot a in the receptacle through which the envelops or cards are
 50 fed, comprising a plate r , slidable in guide-ways r^2 . A rod r^3 has its threaded extremity tapped into a lug r^4 , secured to the plate r . The other end of the rod r^3 passes through a
 55 lug r^5 , secured to the bottom plate A^4 , and on either side of this lug collars r^6 r^6 are secured to the rod. When the rod is rotated by a fixed milled head r^7 , since it is not movable endwise, its threaded engagement with the
 60 plate r will cause the latter to move back or forth to reduce the available area of the slot a . My preferred means for operating the said pressure devices that cause the ejectors to be reciprocated comprise a cylinder having
 65 a piston therein that is operated from a treadle swung back and forth by the foot of the op-

erator, which is substantially the same as that set forth in my pending application for patent hereinbefore mentioned.

Referring now particularly to Fig. 11, on the frame E of the stand is secured a compression-cylinder e , in which operates a piston e^2
 70 and piston-rod e^3 . A lever F is pivoted at f to the top E^2 of the table. A cross-head f^2 is secured to the end of the piston-rod e^3 and slides on guide-rods f^3 f^4 , that are held at one
 75 end by a bracket f^5 and are secured to the cylinder at their other ends. A pin f^6 projects from the cross-head f^2 and engages the walls of a slot f^7 in the lever F. Hence when the bent portion F^2 of the lever is engaged by
 80 the foot of the operator and the lever thereby rocked the cross-head and piston will be reciprocated. The piston e^2 is slidably mounted on the piston-rod e^3 and has a movement thereon limited by abutments e^4 e^5 on the piston-
 85 rod. When these parts are in the positions shown and the lever F is moved forward, the piston will serve to drive the air out of the cylinder through a pipe G; but when the lever F is moved in the opposite direction by
 90 the foot the piston will remain stationary in the cylinder until the piston-rod brings its abutment e^4 against the piston, whereupon the piston will be retracted. When the piston is
 95 in this latter position, (indicated in dotted lines in Fig. 11,) the air on each side of the piston will have communication through an aperture e^6 . Consequently as the piston travels
 100 the air in advance of it will pass through the aperture e^6 and the pressure in the pipe G will not be disturbed thereby. The pipe G leads to a valve-box H and enters it at a port
 105 h . This valve-box has two outlet-ports h^2 h^3 . In the valve-box slides a hollow valve h^4 , having apertures h^5 h^6 and also a slot h^7 . When
 110 the valve is in the position shown in Fig. 12, the aperture h^5 registers with the port h^2 , while when the valve is moved upward by mechanism hereinafter described the aperture
 115 h^6 will register with the port h^3 . In either position of the valve the slot h^7 registers with the port h . Hence the pipe G has communication with either of the ports h^2 or h^3 , according to the position of the valve. The pipe
 120 G is connected, through the port h^3 , with the pipe d^7 by a flexible tube, preferably of rubber. Consequently when the foot causes pressure in the pipe G by advancing the piston in the large
 125 cylinder the pressure thereby generated will become effective on the pistons d^3 of the envelop-feeding device and the ejectors will be caused to feed an envelop or card from the box, and when the piston in the power-cylinder e is retracted by the foot the counterbalancing-weights will return the ejectors and
 130 their operating mechanism.

The carriage J of the type-writer is returned by a pressure device connected with the power-cylinder e , the same comprising a cylinder K, having a piston k and piston-rod k^2
 130

working therein. The piston-rod is connected, through bars h^3 h^4 , with the carriage of the type-writer, all of which mechanisms are specifically described in the aforesaid application and need not be further described herein. The cylinder K is connected by a pipe G^3 with the port h^2 in the valve-box. Consequently when the valve h^4 is in the position shown the operation of the power-cylinder will cause the carriage to be returned; but when the valve is moved to close the port h^2 and open the port h^3 the power-cylinder e will operate the envelop-feeding mechanism.

In addressing envelops there are usually but three lines written thereon. Hence it is advisable to cause the carriage-operating mechanism and platen-revolving means that operate simultaneously therewith, as set forth in said pending application of mine, to be operated three times and then the valves shifted so that the carriage-operating pressure devices are cut out by the switch-valve h^4 and the envelop-feeding pressure device is cut in, thereby to cause another envelop to be fed from the receptacle. In order to accomplish such result, I provide a lever M, pivoted on a bracket m , one end of the lever being pivoted to the valve h^4 . On a pair of arms NN^2 is loosely carried a shaft n , to which is secured a ratchet-wheel n^2 and a toothed wheel n^3 . On the shaft n is loosely mounted a sleeve n^4 , to which is secured a ratchet-wheel n^5 , and the latter engages an anchor-escapement n^6 , secured to the arm N^2 . A drum n^7 is loosely mounted on the sleeve n^4 and contains an evolute spring n^8 , one end of the spring being secured to the drum and the other end to the sleeve n^4 . A spur-wheel n^9 is secured to the drum n^7 and has pivoted thereon a pawl n^{10} , that engages the ratchet-wheel n^2 . By turning the ratchet-wheel n^5 the tension of the spring n^8 may be adjusted, and said wheel n^5 is held securely by the anchor n^6 . A cylinder n^{12} is secured to one leg of the stand and has a piston n^{13} and piston-rod n^{14} . A rack n^{15} is secured to the piston-rod n^{14} and engages the gear-wheel n^9 . The cylinder n^{12} is connected with the power-cylinder e through a valve-box P and pipes p^2 p^3 . The pressure from the power-cylinder will raise the piston n^{13} and cause its rack to rotate the gear-wheel n^9 ; but the pawl on the gear-wheel n^9 will ride over the ratchet-wheel n^2 without moving it or the shaft n ; but as soon as the pressure is relieved in the said cylinders the spring n^8 , that has just been put under tension, will rotate the gear-wheel n^9 in the opposite direction and the pawl n^{10} , engaging the gear-wheel n^2 , will rotate the latter and with it the toothed wheel n^3 . This latter wheel has a pin n^{31} , that will strike the under side of the lever M at a certain portion of its revolution and move the latter to shift the valve h^4 . The above parts are so proportioned and arranged that the toothed wheel n^3 will be moved through a quadrant at each

reciprocation of the piston n^{13} , and the said parts are so timed that at the end of each third forward stroke of the lever F the pin will be brought under this lever M, and thereupon when the lever F is withdrawn the pin n^{31} will raise the lever M and shift the valve, holding it in its shifted position during the next forward stroke of the foot. This will result in the air from the power-cylinder being shifted from the pipe G^3 , leading to the carriage-operating cylinder, to the pipe G^2 , leading to the envelop-feeding device. The next return of the foot-lever will cause the pin to pass beyond the end of the lever M, thus tripping the valve-lever, which will be returned to its former position and there retained by a coiled spring m^2 . A spring m^3 engages the teeth on the wheel n^3 and serves to prevent backward movement of this wheel.

A frame S is secured to the top of the table and carries a bar s^2 near its upper member. A pair of braces T T carry rollers t^2 at their upper forked extremities, through which extremities passes the rod s^2 , engaging the bottom of the rollers t^2 . The lower ends of the bars T each have a roller t^3 , that slides in a U-shaped guide t^4 , carried by the frame S. This latter means serves to prevent lateral movement of the bars T. Each of the bars T has an arm t^5 , containing a vertical slot t^6 , in which rests a pin t^7 , secured to the receptacle. Each of the bars also has an arm t^8 , containing a slot t^9 , in which rests a threaded pin t^{10} , secured to the box. A nut t^{12} is threaded on each of the pins t^{10} and serves to secure the box to each of the arms t^8 .

It may be added that after the first envelop has been engaged between the platen-roller and the feed-roller and has been drawn through the rollers until the bottom of the envelop is yet against the paper-guide the second envelop is then dropped in front of the first one, which puts it in a lapped position for feeding through the machine, and in this manner a continuous belt is formed by the envelops themselves, which insures the correct feeding of them through the machine. Another object of having the envelops go through the machine lapped is to save any extra travel of the platen to put the second envelop and those following it in position for the first line of writing thereon.

Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of a receptacle, a member constructed to feed writing articles therefrom in succession, means constructed to adjust said member to varying thicknesses of writing articles, a pneumatic device arranged to operate the said member, and pneumatically-operated means constructed and arranged to actuate said pneumatic device, substantially as described.

2. The combination of a receptacle, a mem-

ber constructed to feed writing articles therefrom in succession, means constructed to adjust said member to varying thicknesses of writing articles, a pneumatic device arranged to operate the said member, and pneumatically-operated means under the control of the operator and constructed and arranged to actuate said pneumatic device, substantially as described.

3. In a type-writing machine having the usual carriage and platen, the combination of a receptacle, a member constructed to feed writing articles therefrom in succession, a device arranged to operate said member, a device arranged to effect the return of the type-writer carriage, a common actuating means constructed and arranged for actuating both of said devices, and means constructed to shift said common actuating means to position for operating either of said devices independently of the other, substantially as described.

4. In a type-writing machine having the usual carriage and platen, the combination of a receptacle, a member constructed to feed writing articles therefrom in succession, a device arranged to operate said member, a device arranged to effect the return of the type-writer carriage, a common actuating means constructed and arranged for actuating both of said devices, and means constructed to shift said common actuating means to position for operating either of said devices independently of the other, substantially as described.

5. In a type-writing machine having the usual carriage and platen, the combination of a receptacle, a member constructed to feed writing articles therefrom in succession, a pneumatic device arranged to operate said member, a pneumatic device arranged to effect the return of the type-writer carriage, a common pneumatic actuating means constructed and arranged for actuating both of said pneumatic devices, and means arranged to shift said common pneumatic actuating means in operative connection with either of said pneumatic devices, substantially as described.

6. The combination, in a type-writer, of a reciprocable member, a pressure device arranged to move said member in one direction, a second pressure device, means of communication between the said pressure devices, the said second pressure device being arranged to cause the first pressure device to move said member, means for actuating said second pressure device by the operator, a receptacle, a member arranged to feed writing material from the receptacle, a third pressure device arranged to operate said feeding member, means of communication between the second pressure device and the third pressure device, and means for closing either of said means of communication, substantially as described.

7. The combination, in a type-writer, of a reciprocable member, a pressure device arranged to move said member in one direction,

a second pressure device arranged to cause the first pressure device to move said member, and means for actuating the second pressure device by the operator, a receptacle, a member arranged to feed the writing material from the receptacle, a third pressure device arranged to operate the feed member, means of communication between the second pressure device and the third pressure device, a valve arranged to close the means of communication between the second and third pressure devices when in one position, and to close means of communication between the second and first pressure devices when in another position, and means for automatically shifting said valve at predetermined intervals, substantially as described.

8. The combination, in a type-writer, of a receptacle, a member arranged to feed writing articles therefrom in succession, operating means arranged to be actuated by the leg of the operator, means for causing the operating means to return the carriage of the type-writer, means for causing said operating means to operate the feeding means, and means for shifting the operating means from each of said means to the other, substantially as described.

9. The combination, in a type-writer, of a receptacle, a member arranged to feed writing articles therefrom in succession, operating means arranged to be actuated by the leg of the operator, means for causing the operating means to return the carriage of the type-writer, means for causing said operating means to operate said feeding means, a power device arranged to accumulate power from the movement of the operating device to actuate either of said means, the power device being arranged to shift the operating means from each of said means to the other at the latter part of the return stroke of said operating device, substantially as described.

10. The combination, in a type-writer, of a reciprocable member, a pressure device arranged to move said member in one direction, a second pressure device arranged to cause the first pressure device to move said member, and means for actuating the second pressure device by the operator, a receptacle, a member arranged to feed the writing material from the receptacle, a third pressure device arranged to operate the feed member, means of communication between the second pressure device and the third pressure device, a valve arranged to close the means of communication between the second and third pressure devices when in one position, and to close means of communication between the second and first pressure devices when in another position, means for automatically shifting said valve at predetermined intervals, said means comprising a valve, a spring arranged to operate said valve when put under tension, a fourth pressure device having means of communication with the second pressure device and arranged to put said spring under tension when the second

pressure device is operated, substantially as described.

11. The combination of a receptacle having a slot therein, a reciprocable bar having a grooved edge and arranged to deliver writing articles from the receptacle at said slot, a lever having one end connected with said bar, a cylinder, a piston in said cylinder and connected with said lever, and a pressure device arranged to advance and retract said piston, substantially as described.

12. The combination of a receptacle having a slot therein, a reciprocable bar on each side of the receptacle arranged to feed writing articles therefrom at said slot, each said bar having a lever connected therewith, a pair of cylinders, a piston in each cylinder connected with one of said levers, respectively, a counterweight on each of said levers, and a pressure device connected with the cylinders and arranged to advance and retract the pistons and connected parts, substantially as described.

13. The combination of a receptacle, a movable member arranged to deliver articles therefrom in succession, a device on said member arranged to engage the articles, a device on said latter device arranged to move said articles into position for engagement with said engaging device, and means on said member ar-

30 ranged to adjust said devices relative to the path of movement of said delivery member, substantially as described.

14. The combination of a receptacle provided with a slot, a reciprocable member, an ejector pivotally secured to said reciprocable member and provided with a grooved end and selecting-blade arranged to engage writing articles in the receptacle and deliver them at said slot, and means constructed to adjust said ejector about its pivot, substantially as described.

15. In a type-writing machine having the usual carriage, the combination of a receptacle carried by the type-writer carriage and having a slot therein, a reciprocable bar having a grooved edge and arranged to deliver writing articles from the receptacle at said slot, a lever having one end connected with said bar, a cylinder, a piston in said cylinder and connected with said lever, and a pressure device arranged to advance and retract said piston, substantially as described.

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

DOUGLAS S. DUFUR.

Witnesses:

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E. T. BRANDENBURG.