

(No Model.)

4 Sheets—Sheet 1.

M. COHN.
TYPE WRITING MACHINE.

No. 432,981

Patented July 29, 1890.

Fig. 2.

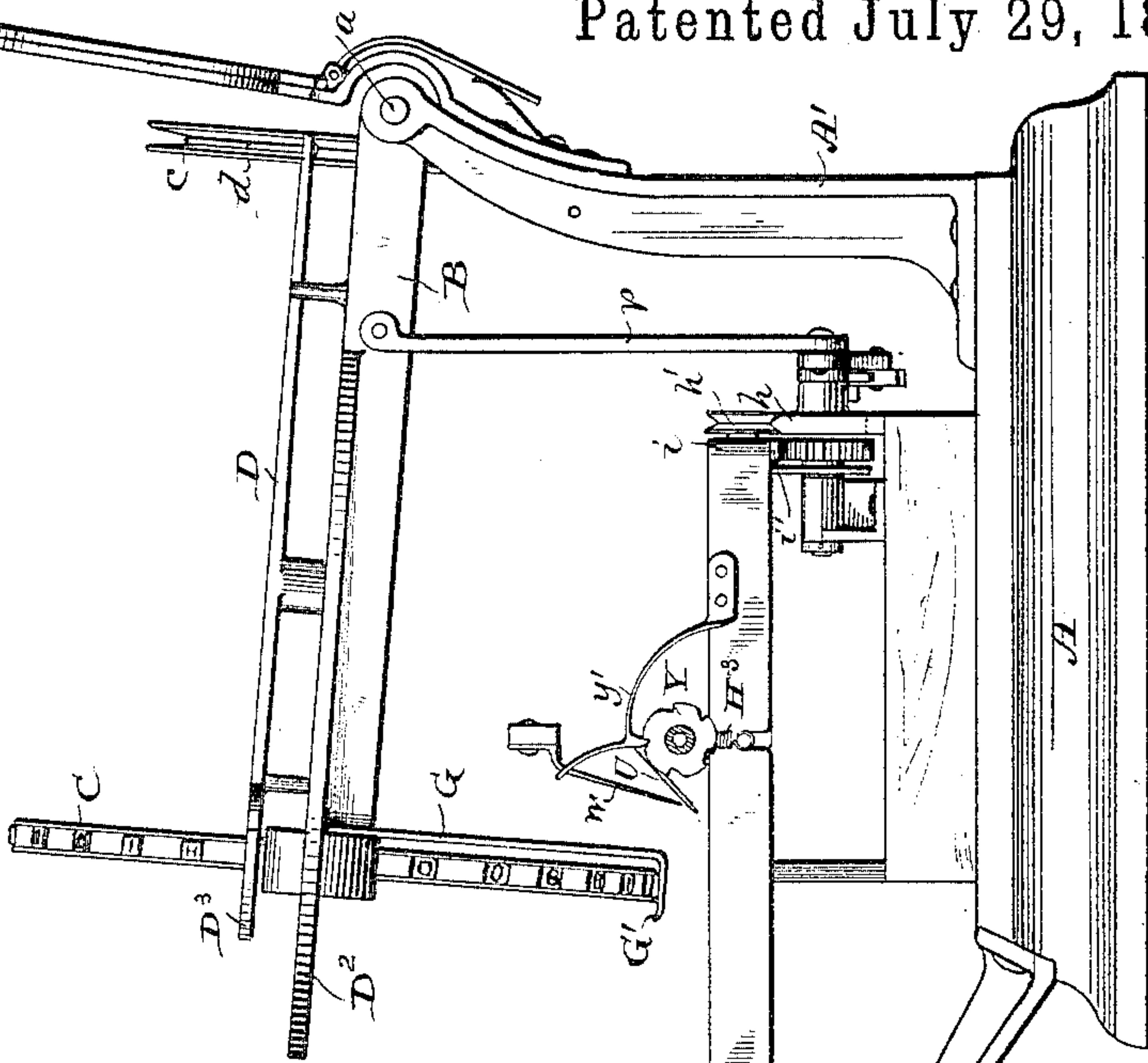
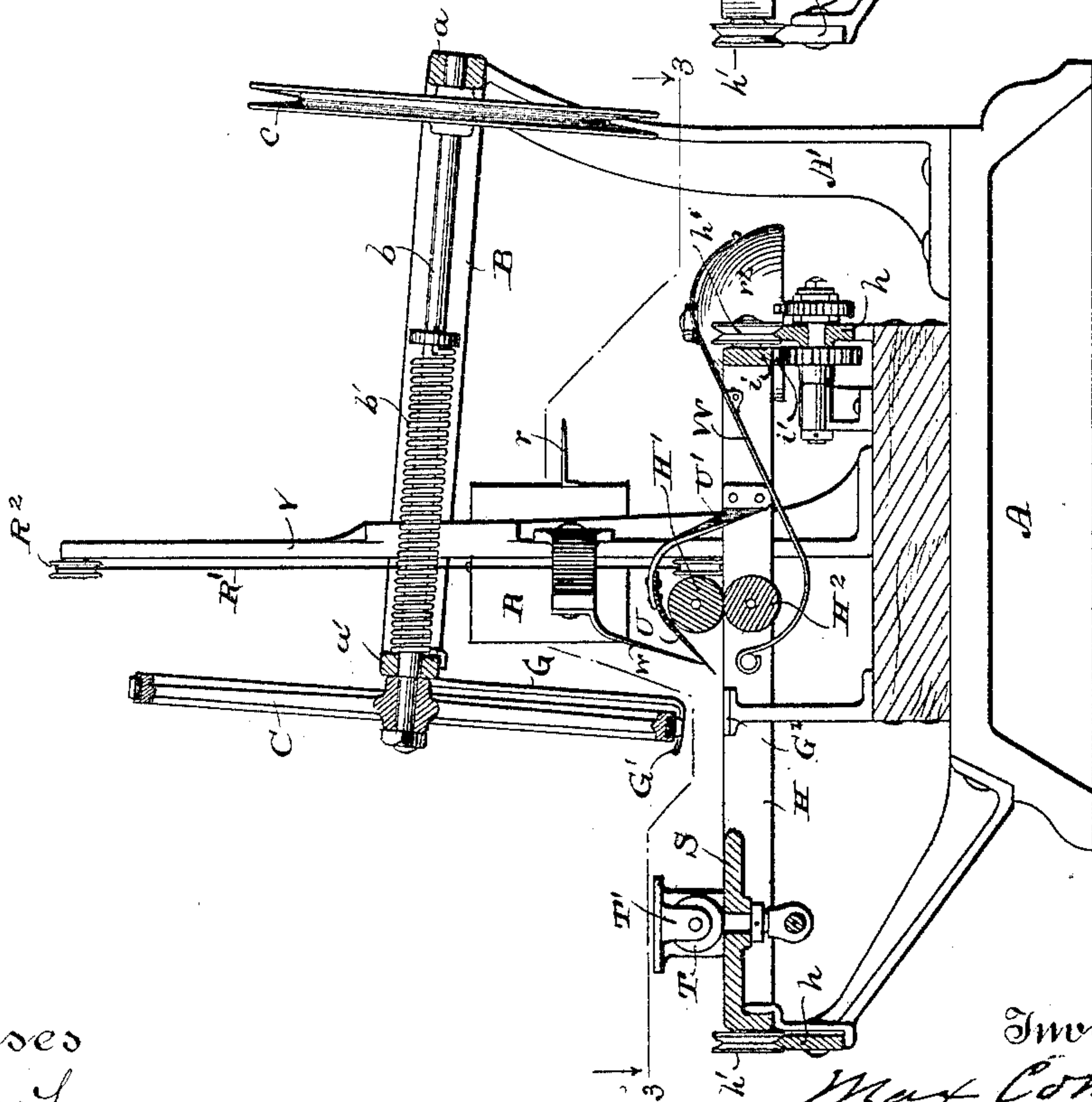


Fig. 1.



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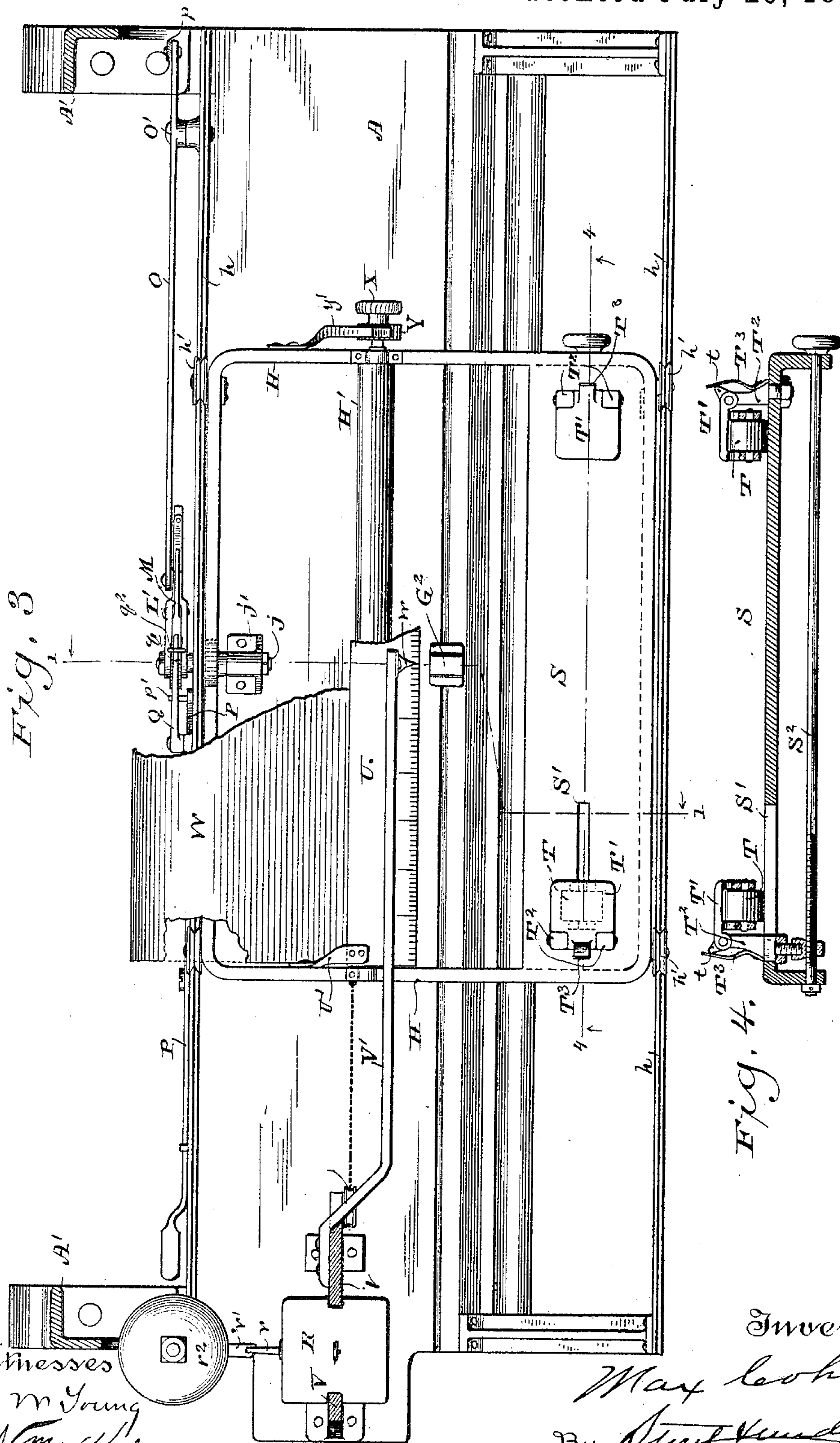
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4 Sheets—Sheet 3.

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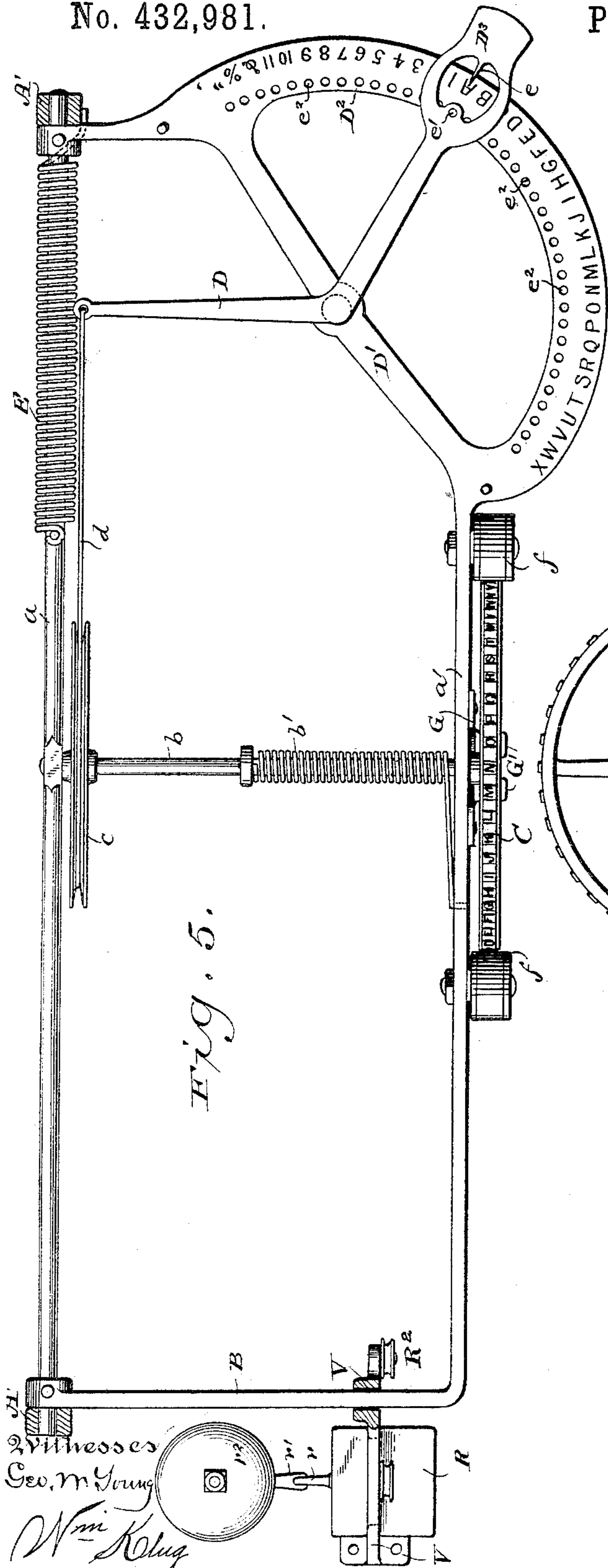


Fig. 5.

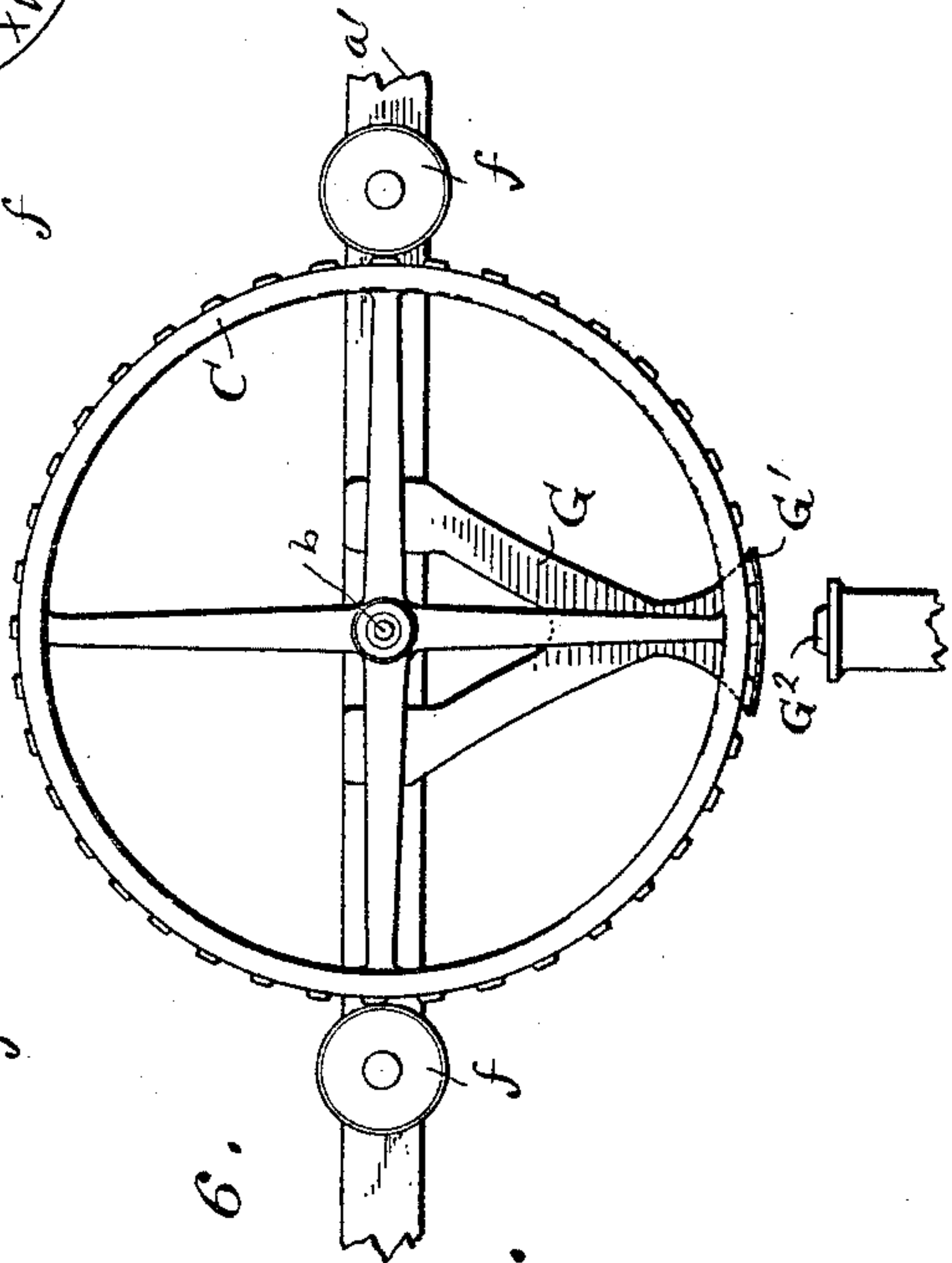


Fig. 6.

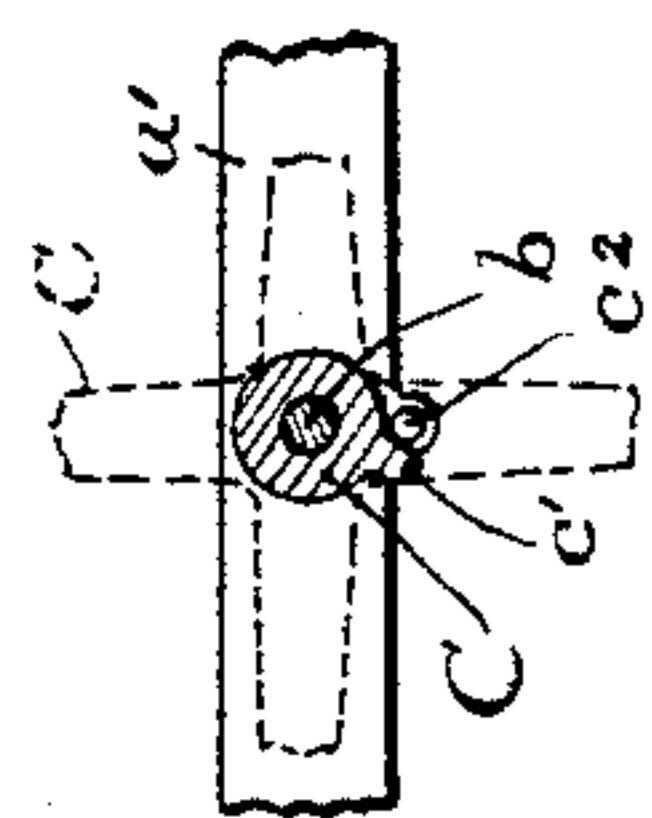


Fig. 11.

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4 Sheets—Sheet 4.

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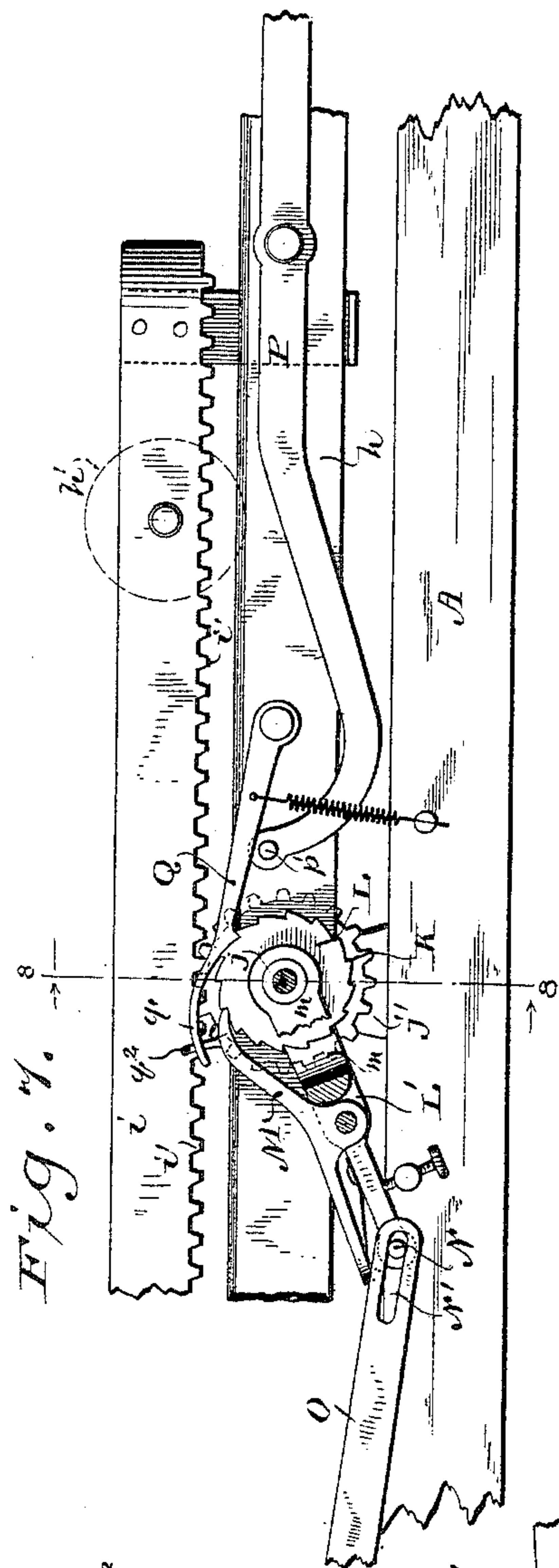


Fig. 7.

Fig. 8.

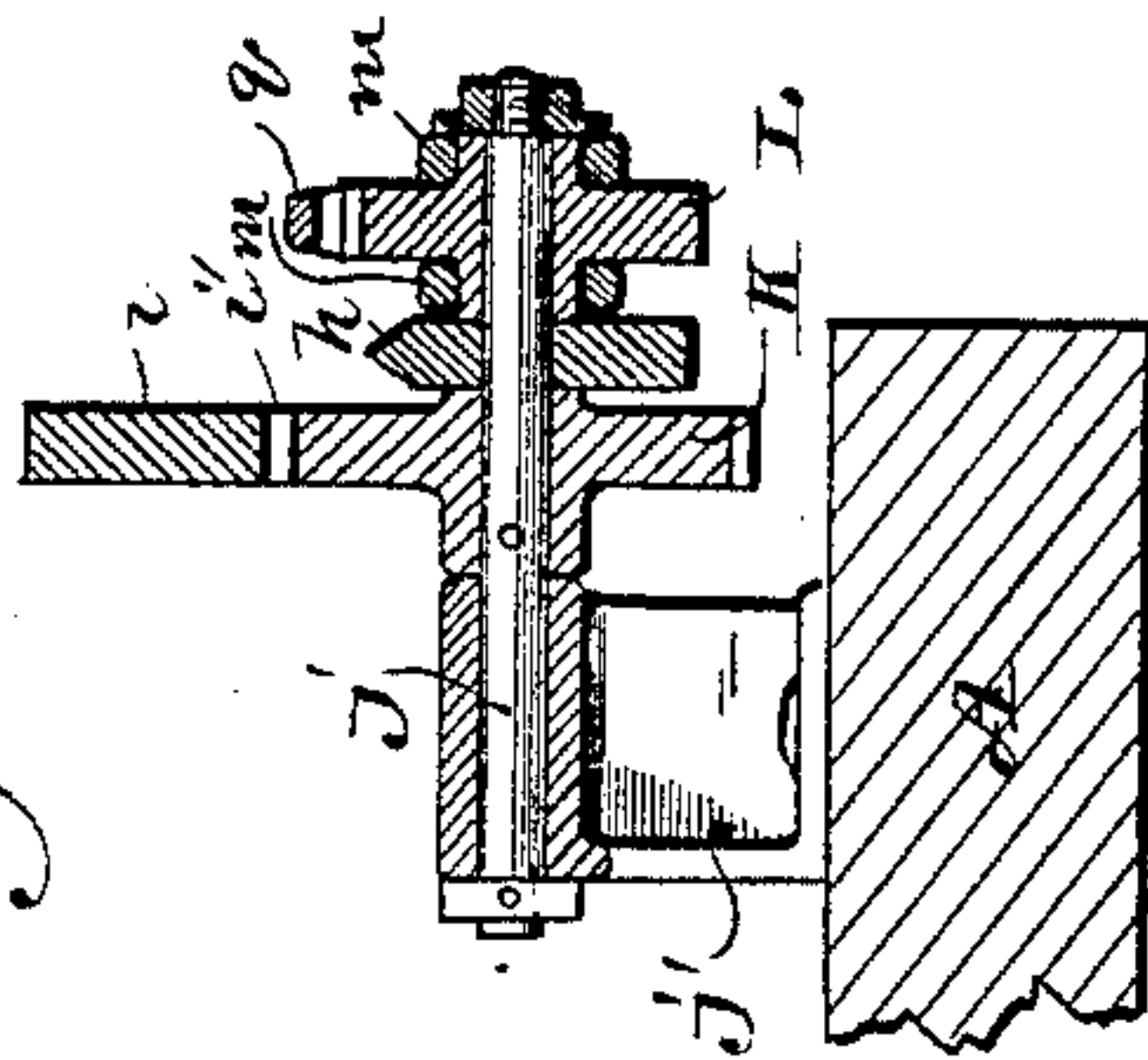


Fig. 9.

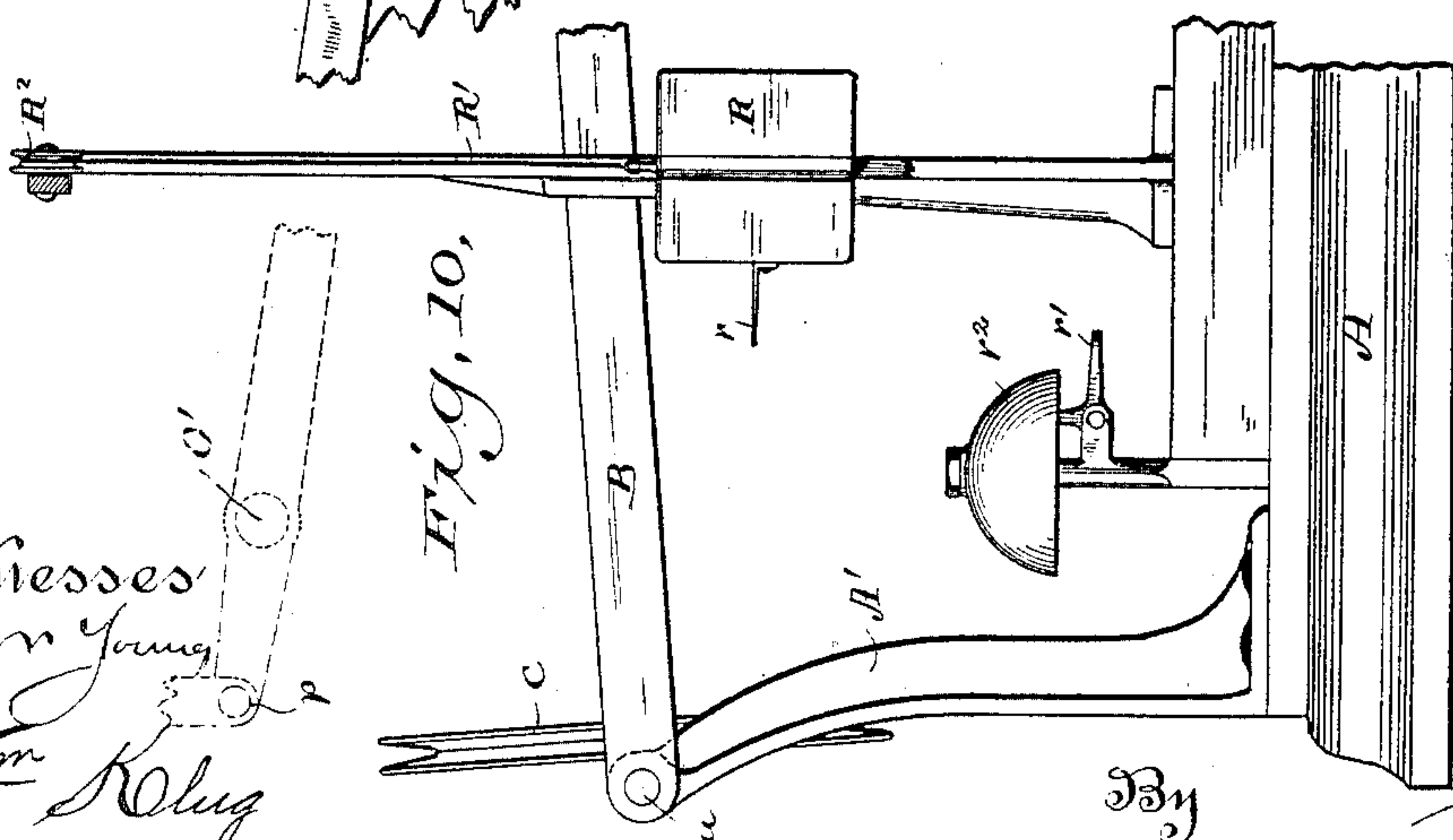
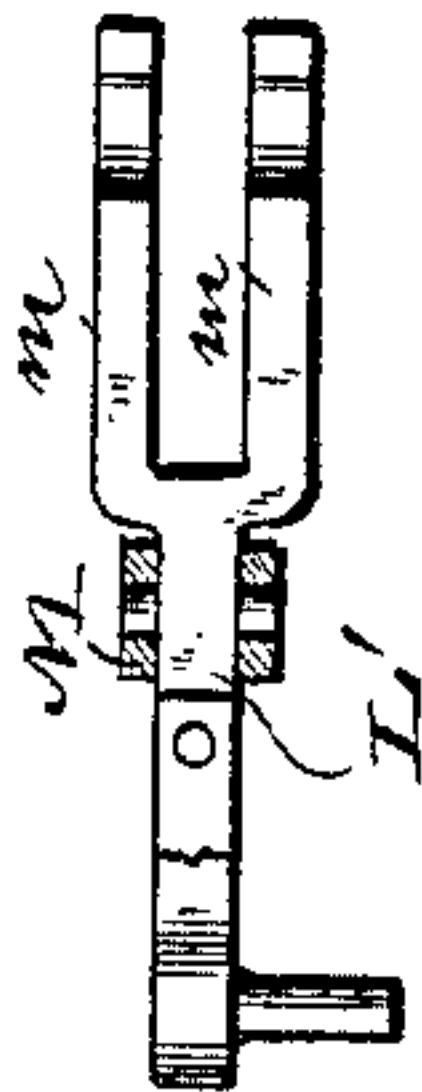


Fig. 10.

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UNITED STATES PATENT OFFICE.

MAX COHN, OF MILWAUKEE, WISCONSIN, ASSIGNOR OF ONE-THIRD TO
CHARLES COHN, OF SAME PLACE.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 432,981, dated July 29, 1890.

Application filed July 26, 1888. Serial No. 281,090. (No model.)

To all whom it may concern:

Be it known that I, MAX COHN, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Type-Writing Machines; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to type-writers, and will be fully described hereinafter.

In the drawings, Figure 1 is a vertical section of my device on line 1 1, Fig. 3. Fig. 2 is an elevation of the right-hand end. Fig. 3 is a section on line 3 3, Fig. 1. Fig. 4 is a section on line 4 4, Fig. 3. Fig. 5 is a plan view of the type-wheel and its supporting-frame. Fig. 6 is an elevation. Fig. 7 is an elevation of the carriage-driving mechanism. Fig. 8 is a section on line 8 8, Fig. 7. Figs. 9 and 11 are details, and Fig. 10 is a partial end view.

A is the base of my type-writer, which may set upon a table or any other suitable support. From the ends of this base project two arms A', and the upper ends of these arms form bearings for a shaft *a*, which shaft forms one side of the type-wheel frame B. The shaft *b* of the type-wheel C has one of its bearings in the shaft *a* and the other in the front side *a'* of the type-wheel frame. The shaft *b* carries a spiral spring *b'*, which is attached to it at one end and to the front side piece *a'*, and the other end of shaft *b* carries a sheave *c*, which is connected by a cord *d* with one end of an angle-lever D, that is pivoted to the center of the chord D' of a segment D², that is supported by the type-wheel frame at one corner, and may form part of said type-wheel frame. The front end D³ of angle-lever D carries a pointer *e* and a pin *e'*, which latter engages indentations *e'*² in the segment D², and the segment D² has engraved or otherwise marked upon it the letters and characters usually found upon the key-boards of type-writers, arranged in convenient relationship to each other. The shaft *a* carries a retracting-spring E, which engages one of the posts A' at one end and serves to lift the front end of the carrier-frame B after it has been depressed by pressure on the handle of lever D³, just as the spring *b'* serves to wind the shaft *b* in one direction after it has been drawn by the action of cord *d* against the tension of the spring in another direction.

f are the inking-rollers of the type-wheel. An arm G depends from the front side of the type-wheel frame, and has a flange G', which has a slot that is just large enough to freely admit an anvil G² to the letter immediately over it on the type-wheel, and this anvil should be covered with chamois skin or some soft material which will serve to cushion the type.

H is the paper-carriage, which has two rollers H' H², the journals of which have their bearings in the end pieces of the carriage, and the carriage is supported on rails *h*, which receive sheaves *h'*, that are pivoted on the carriage. The rear side piece *i* of the carriage has cog-teeth *i'* on its lower side. The short shaft *j*, that has its bearings in a standard *j'* and in the rear supporting-rail of the carriage, carries a cog-wheel K, that engages with the cog-teeth on the rail *i*. This shaft also carries a ratchet-wheel L, by which it is operated. Swung to the hub of the ratchet-wheel L are the arms *m* of a lever L', and to this lever is pivoted a spring-actuated pawl M. The outer end of lever L' is connected by a pin N and slot N' with a lever O, which is pivoted on a stud O', near the right end of the rear rail *h*, and connected by an upright link *p* to the right side of the type-wheel frame, so that when the type-wheel frame is depressed by an operator manipulating the handle of lever D the arm of lever L' will be lifted to cause the pawl M to jig the ratchet-wheel L one tooth. A stop-pawl Q is pivoted to the rail *h* on the opposite side of the ratchet-wheel to the pawl M, and normally serves to stop the ratchet and prevent a return movement of it; but when the carriage is to be retracted to begin a new line a lever P, which is pivoted to the left end of the supporting-rail *h*, may be brought into play. This lever has a pin *p'* on its inner end, which engages the under side of pawl Q, and pawl Q has a finger *q'*, that projects into a loop *q'*² on the upper side of pawl M, and therefore when the left end of the lever P is depressed the pin *p'* will lift pawl Q and pawl Q will lift pawl M, and these pawls will be then out of engagement with ratchet-wheel L and the carriage may be drawn back by hand. In addition to the pawl-and-ratchet mechanism for actuating the paper-carriage, I propose to use a weight R, which is suspended by a cord

R' over a pulley R². This weight takes up lost motion when the carriage is moved forward, and is provided with a projecting arm *r* for engagement with a handle *r'* of the clapper of a bell *r*² when a line is about to be completed. The carrier-frame H is provided with a table S for the paper, which is held down and guided by rollers T, the bearings of which are in arms T', that are hinged to standards T², and these arms are held down so as to press the rollers on the paper by springs T³, which act upon shoulders *t*. One of the standards is adapted for being adjusted in a slot S' in the table S, by means of a screw-shaft S², to accommodate the various sizes of paper.

A scale-plate U is suspended by arms U' over in front of the rollers, and an arm V', that is secured at one end to one of the standards V that guide the weight R, projects to the center and front of the machine, where it is provided with a pointer *w*, that indicates the position of the carriage with reference to the anvil.

The shaft of the lower paper-roller H² bears in the upper portion of a slot in the end pieces of the carriage H, and has an elastic connection H³ with the shaft of the roller H'. This may be a spiral or any other spring.

The operation of my device is as follows: The type-wheel is held up normally by the spring E, and when a letter or character is to be made the operator lifts the handle D³ until the point of pin *e'* is disengaged from an indentation *e*², and then moves the handle until the pointer *e* reaches the desired letter or character, when he depresses the handle, and with it the type-wheel and frame, to cause the type-wheel to come in contact with the paper and print a letter or character. This also, through lever O, jigs the paper-carriage once before the wheel reaches the anvil, and as each line is finished and a new one begun the paper is drawn in by turning the thumb-piece X, which is locked by a pawl *y'* and ratchet Y. During the forward travel of the roller-carriage the weight R and cord R' serve to take up lost motion and produce even spacing. The type-wheel frame may be guided and limited as well as cushioned in any suitable manner.

W is a shield for supporting and guiding the paper as it enters from the front.

Blank spaces are provided on the face of the type-wheel for the purpose of spacing, and these spaces are produced just as letters or characters are.

To prevent the type-wheel from making more than one revolution in case of the stretching or breaking of the cord, I provide the hub of wheel C with a shoulder *c'*, which engages a similar shoulder *c*² on the rail *a'*.

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

1. The combination of the arms A', the spring-controlled frame B, having its bearings in the arms and provided with the index-segment D², the spring-controlled shaft *b*, having its bearings in said frame, the type-wheel C and sheave *c*, fast on said shaft, the pivotal angle-lever D, arranged with relation to the index-segment and having a flexible connection *d* with said sheave, a reciprocative paper-carriage, and an anvil opposed to said type-wheel, substantially as set forth.

2. The combination of the rotary adjustable spring-controlled type-wheel C, having its hub provided with the shoulder *c'*, and the rail *a'*, provided with the shoulder *c*² in the path of the one on said hub, substantially as set forth.

3. The combination of the reciprocative paper-carriage provided with the rollers H' H², the table S and standards T², the shouldered arms T', hinged to the standards, the springs T³, arranged to impinge against the shoulders on said arms, and the rollers T, having bearings in said arms, substantially as set forth.

4. The paper-carriage H, having the rail *i*, provided with cog-teeth, the shaft *j*, having stationary bearings, the cog-wheel K, fast on the shaft and in mesh with the teeth on said rail, the ratchet-wheel L, also fast on said shaft, the lever L', having the arms *m*, loose on the hub of the ratchet-wheel, the spring-pawl M, pivoted to the lever, the pin N, projected from said lever, another lever O, having the slot N engaged by said pin, the hinged frame B, and the link *p*, connecting the latter lever and frame, substantially as set forth.

5. The paper-carriage H, having the rail *i*, provided with cog-teeth, the shaft *j*, having stationary bearings, the cog-wheel K, fast on the shaft and in mesh with the teeth on said rail, the ratchet-wheel L, also fast on said shaft, the lever L', having the arms *m*, loose on the hub of the ratchet-wheel, the spring-pawl M, pivoted to the lever and provided with the loop *q*², the pin N, projected from said lever, another lever O, having the slot N' engaged by said pin, the hinged frame B, the link *p*, connecting the latter lever and frame, the stop-pawl Q, engaged with a ratchet-wheel L and having the finger *q*² projected into said loop on pawl M, and the lever P, provided with the pin *p'*, arranged to impinge against the under side of said pawl, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

MAX COHN.

Witnesses:

JOE GRASS,
S. S. STOUT.