

(No Model.)

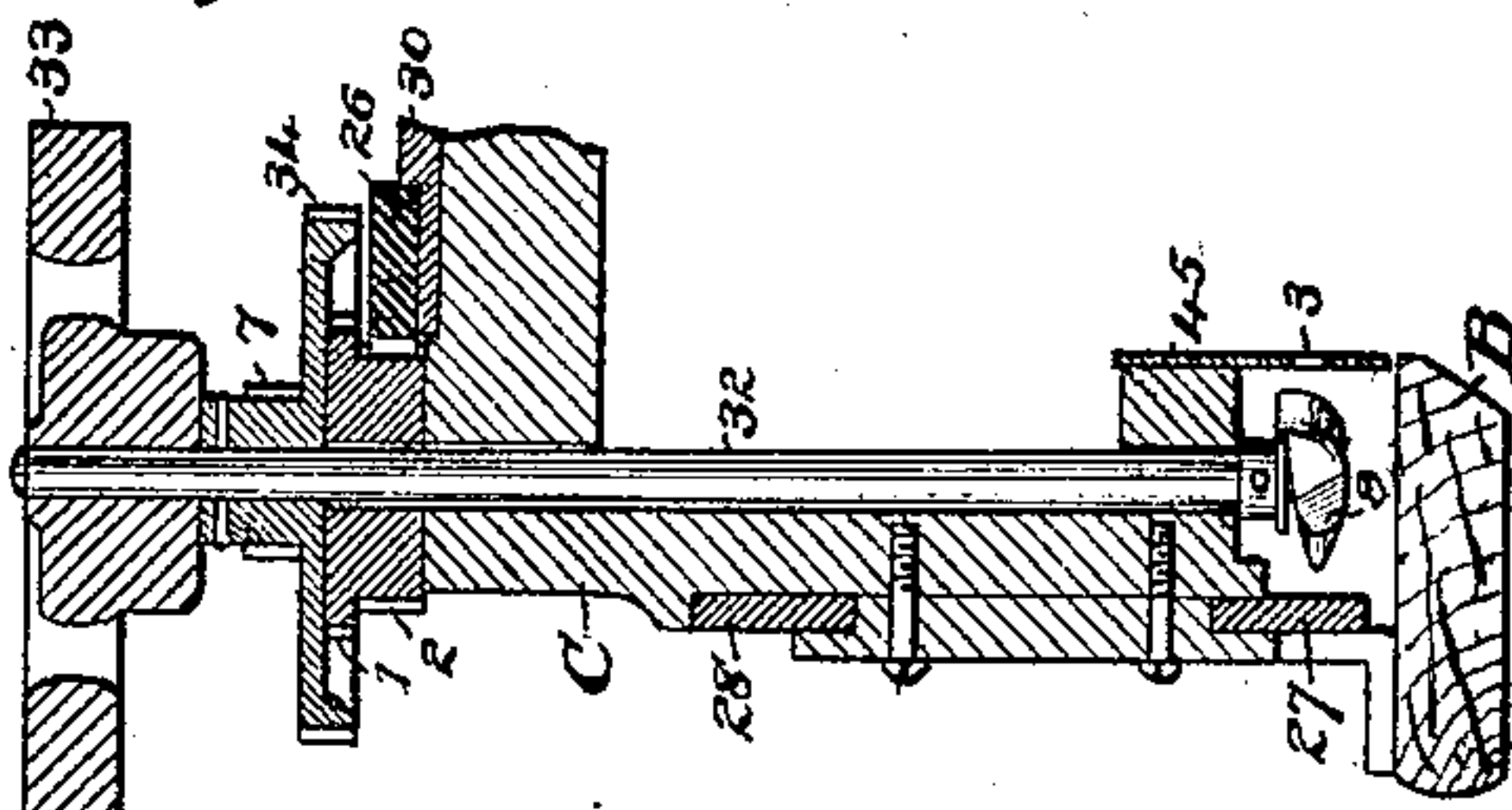
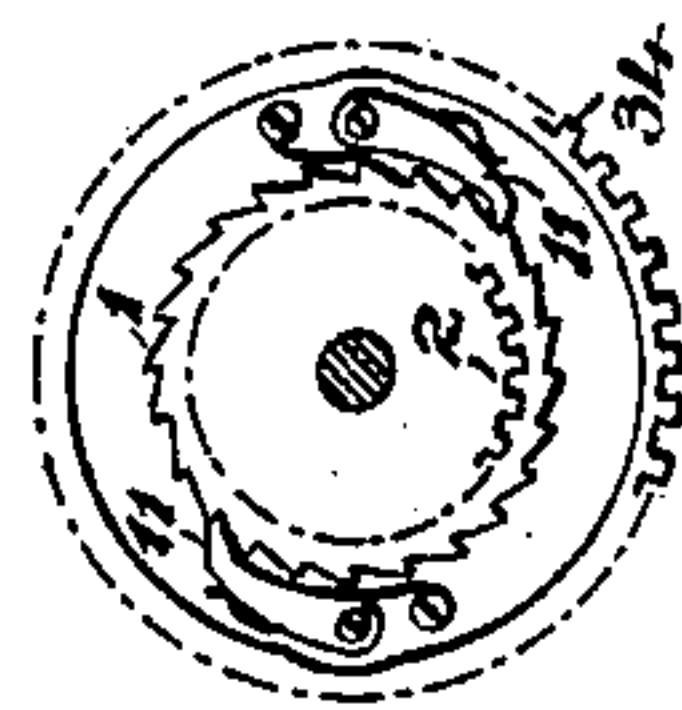
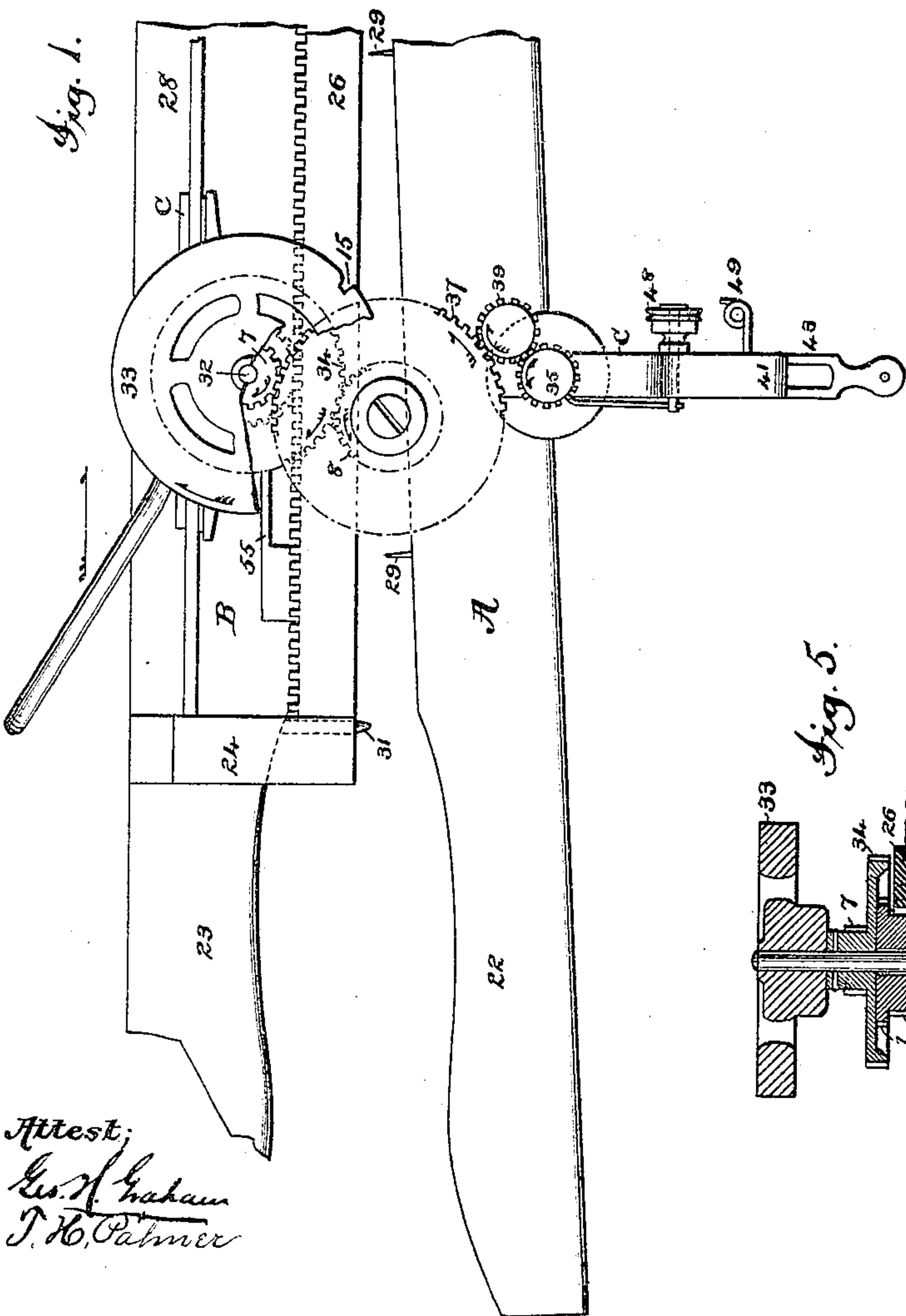
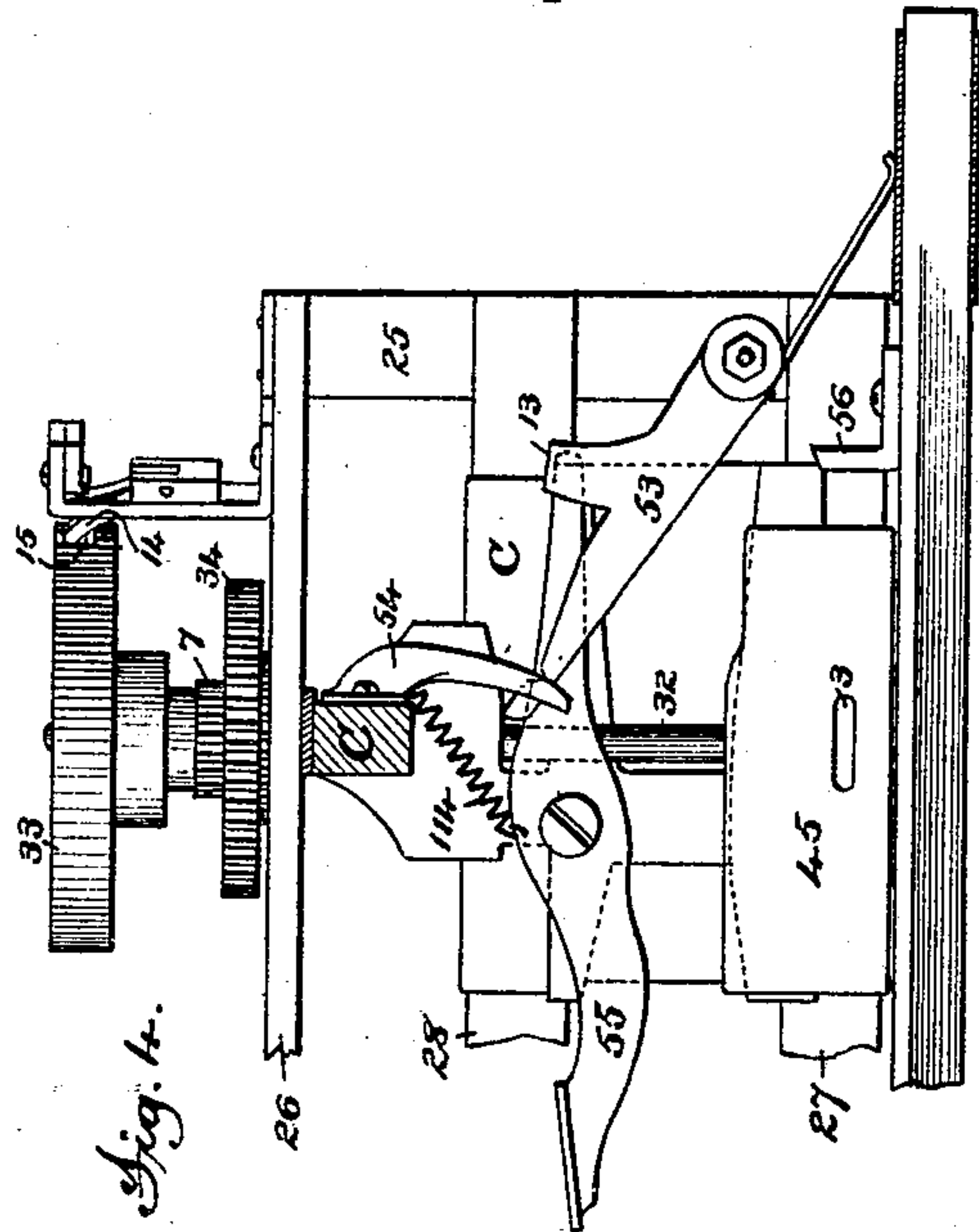
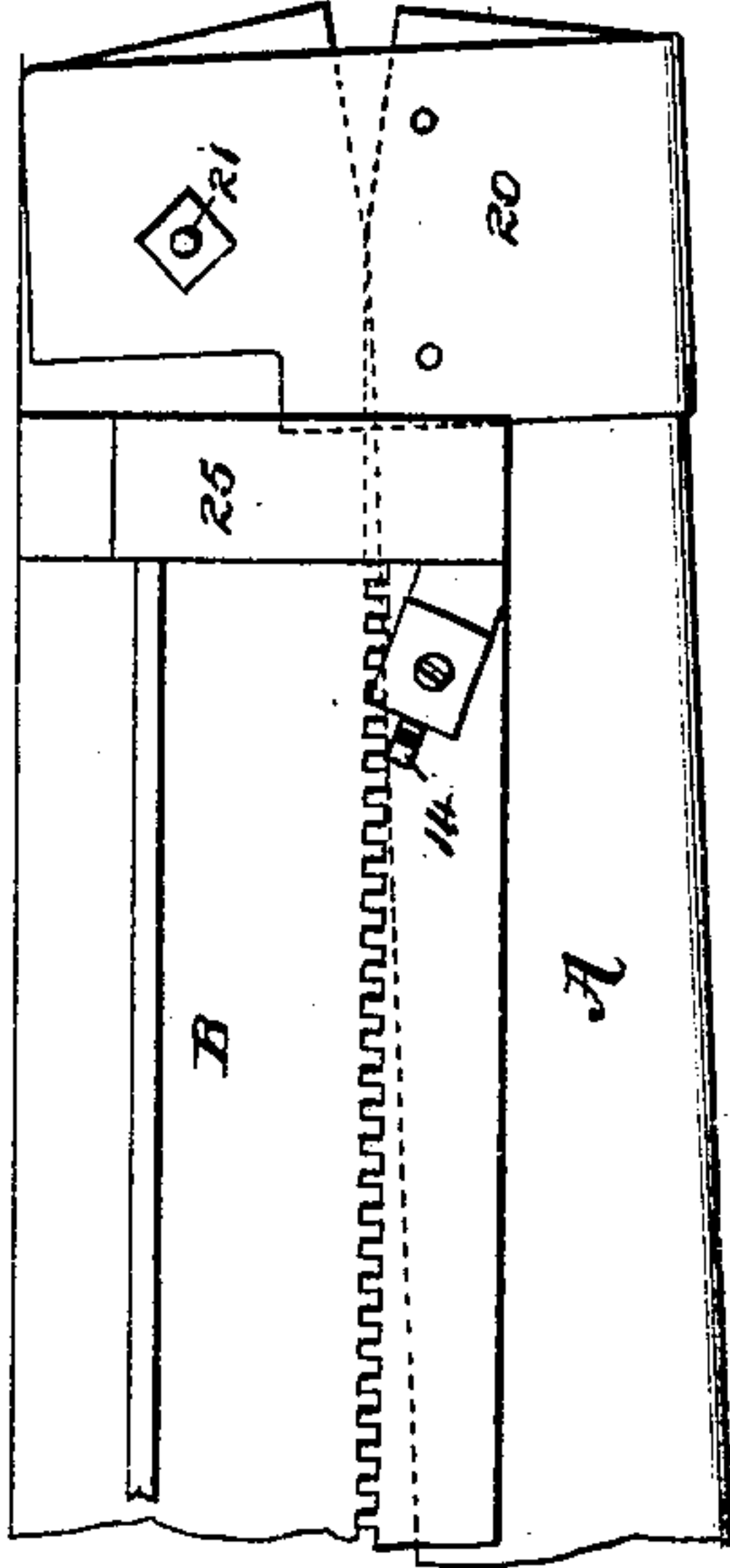
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O. R. VAN VECHTEN.

MACHINE FOR SEWING UP MOUTHS OF BAGS.

No. 246,644.

Patented Sept. 6, 1881.



Attest;  
Geo. H. Graham  
J. H. Palmer

Inventor,  
Orville R. Van Vechten,  
by *Mason & Phillips*  
Attys.

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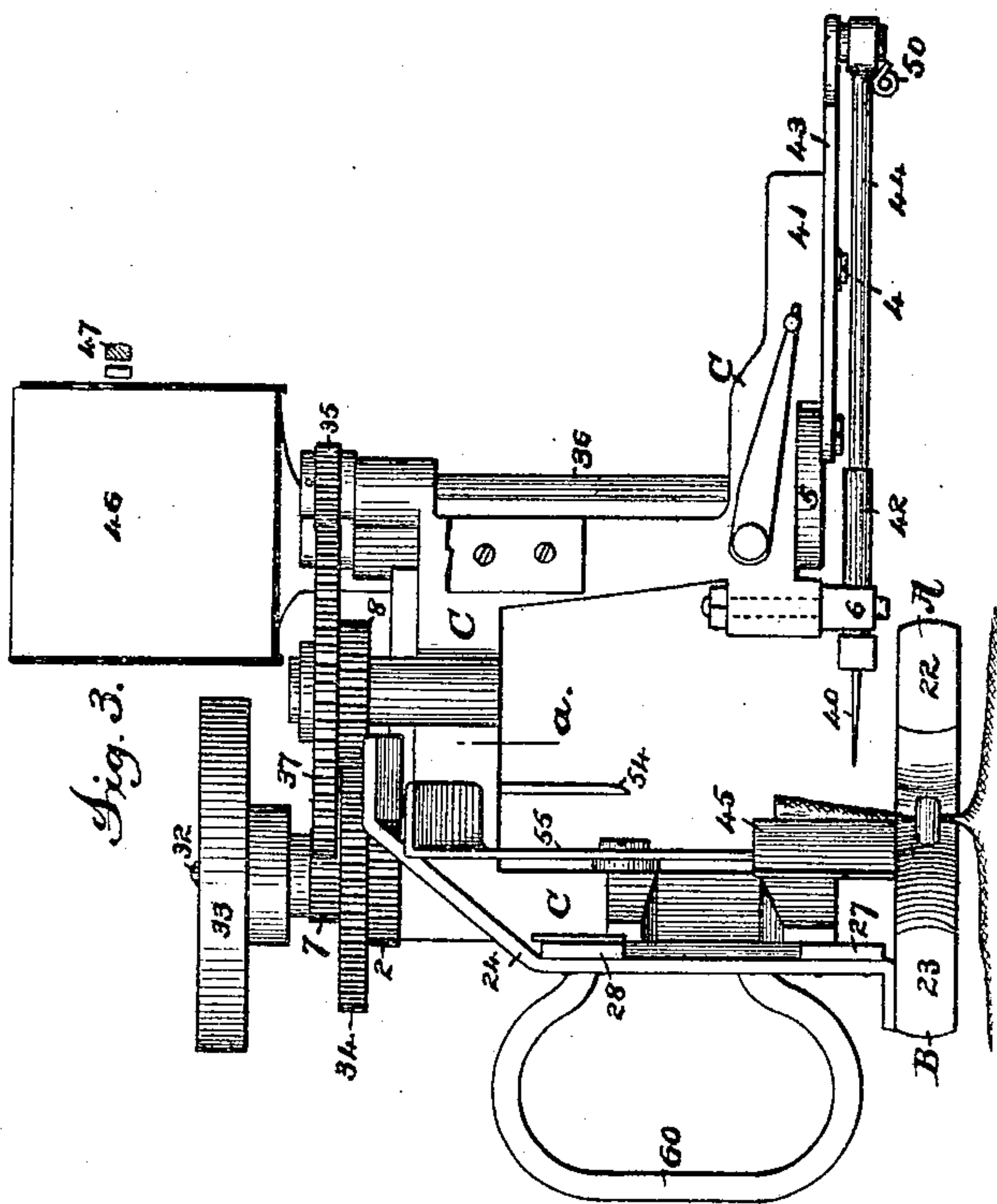
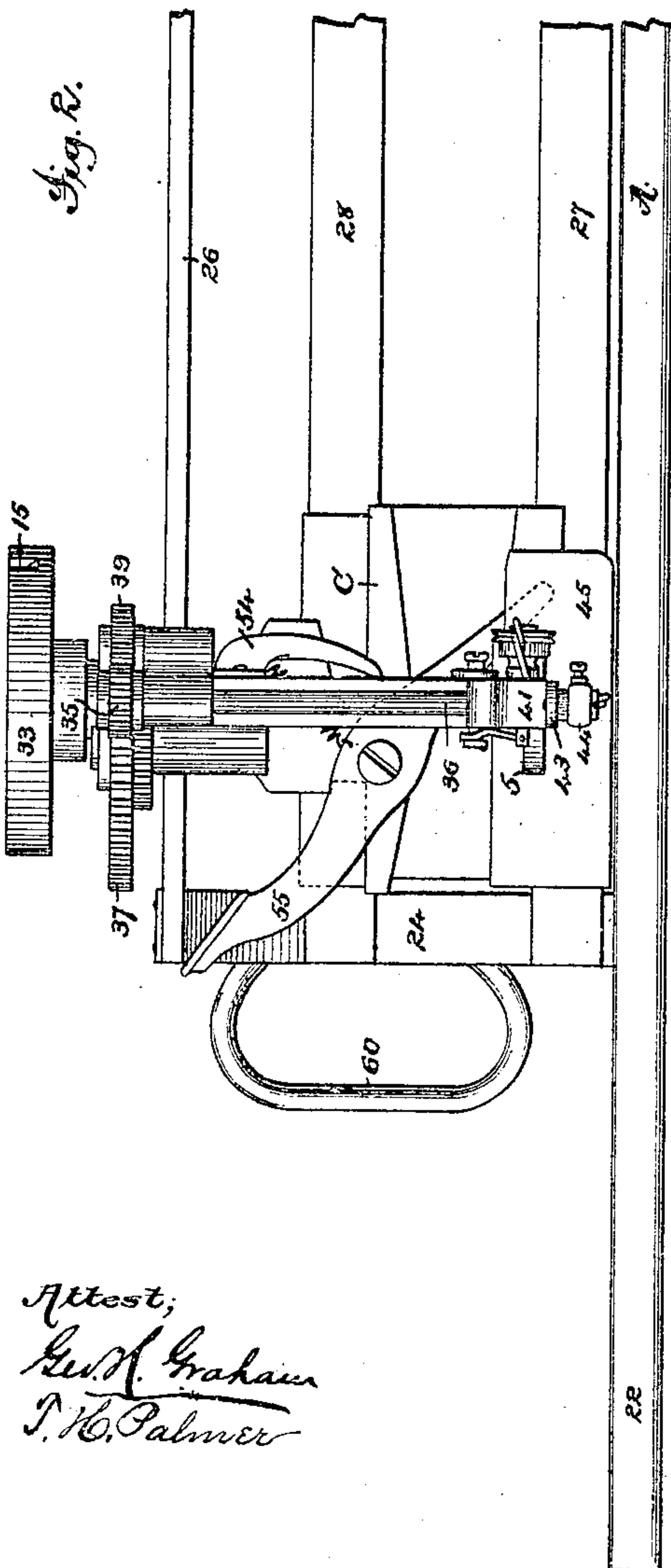
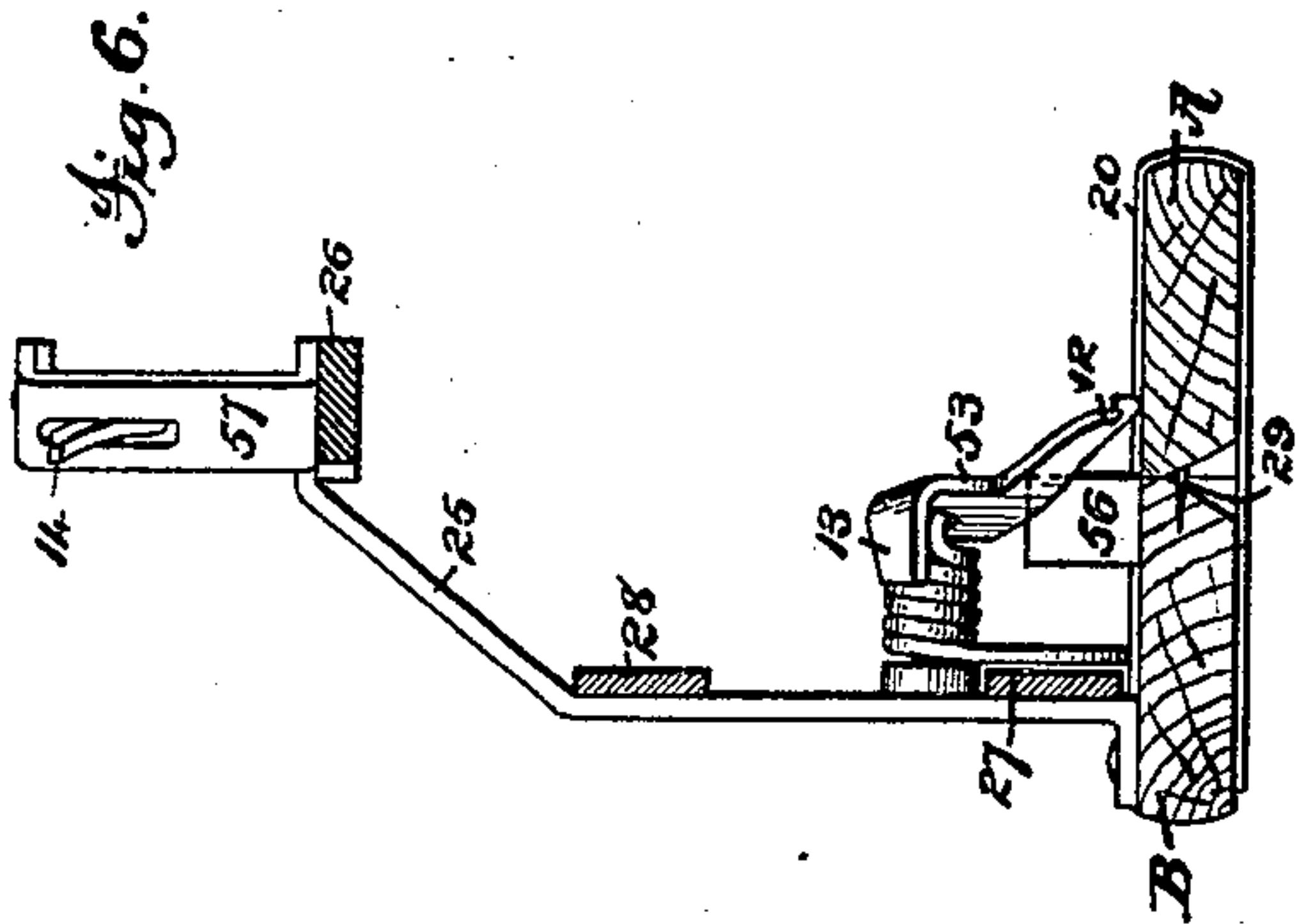
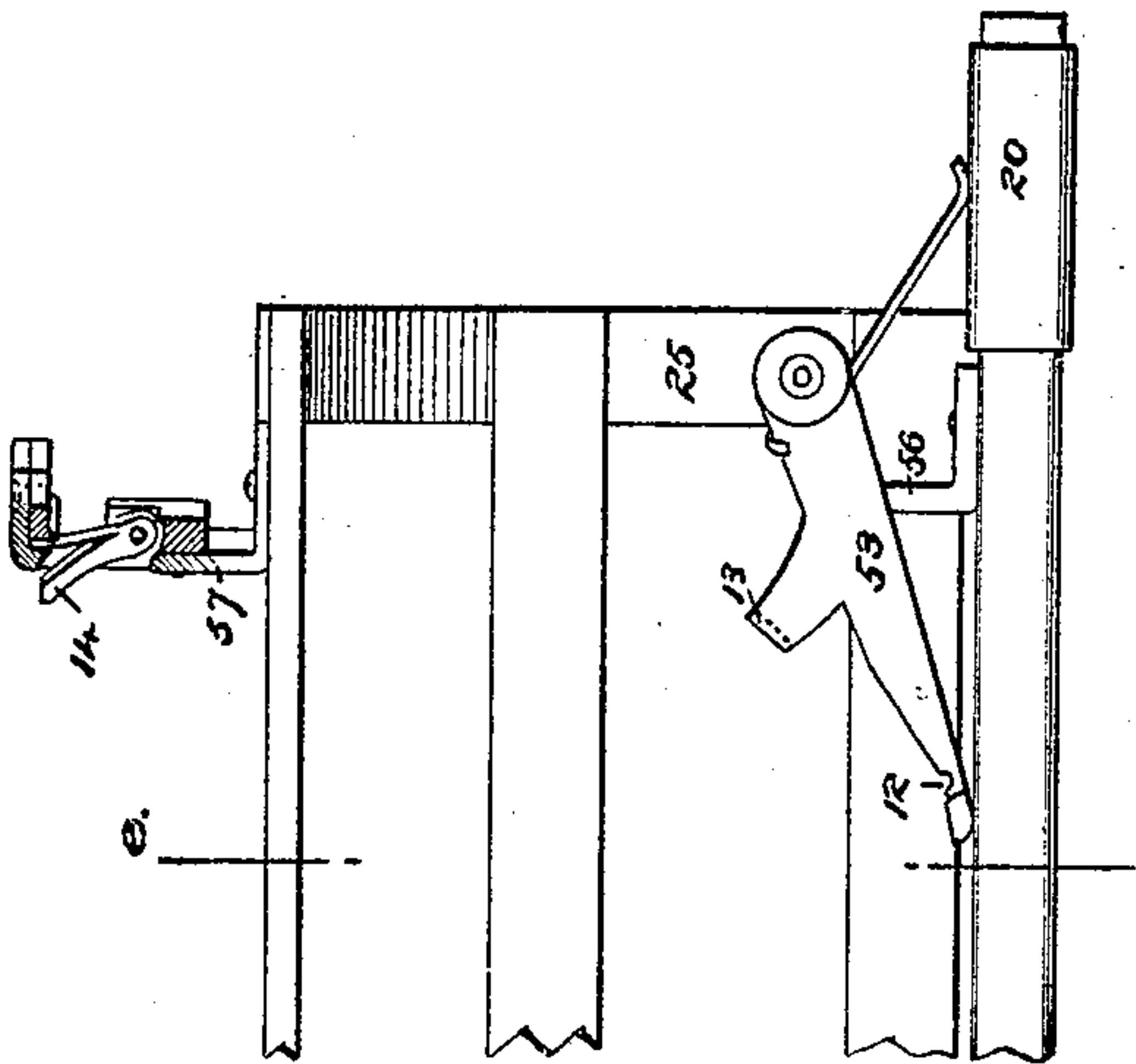
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# UNITED STATES PATENT OFFICE.

ORVILLE R. VAN VECHTEN, OF BROOKLYN, NEW YORK.

## MACHINE FOR SEWING UP MOUTHS OF BAGS.

SPECIFICATION forming part of Letters Patent No. 246,644, dated September 6, 1881.

Application filed February 12, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, ORVILLE R. VAN VECHTEN, a citizen of the United States, residing in the city of Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Machines for Sewing up Mouths of Bags, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

In said drawings, Figure 1 is a plan or top view; Fig. 2, a side elevation; Fig. 3, an end elevation; Fig. 4, a sectional side elevation taken on line *a* of Fig. 3, (the sewing-machine being at the forward end of its run;) Fig. 5, a vertical section taken through the main shaft. Fig. 6 is a cross-sectional elevation on line *e*, looking toward the end of the bag holding or clamping frame; Fig. 7, a bottom-plan view of needle and its appurtenances; Fig. 8, a bottom-plan view of clutch and driving-wheel.

In the packing and shipping of grain and other materials requiring to be contained in bags it has long been the practice to close the mouths of the filled bags by hand tying or sewing.

It is the object of this invention to provide a mechanism for sewing together the mouths of such filled bags, and thus to securely close the same with rapidity and at slight cost as compared with the hand operation.

The improvements effected consist, principally, in a bag-mouth-clamping frame, upon which a sewing-machine travels, and in various combinations of parts, fully hereinafter described and claimed.

The clamping-frame consists of two members, A B, hinged together at one end by a strap or straps, 20, and a pivot, 21, and having at the other end handles, as 22 23. The member B of this clamping-frame supports, by means of brackets 24 25, bolted to it, guide-bars 27 28, and an actuating rack-bar, 26. This clamping-frame is made of a length to suit the size of bags or a range of sizes of bags, the mouth of a bag being introduced between and clamped by its members A B, which may or may not have pins 29, that impale the bag to hold the plies of its mouth evenly, but will preferably be supplied with a steadying-pin, as 31, for holding the members A B in proper correlation when closed. The guide-bars 27 28

form ways, upon which a sewing-machine is arranged to travel from one end of the clamping-frame to the other, the frame C of said sewing-machine being recessed to form sockets that embrace or partially embrace said bars 27 28. (See Fig. 5.) A similar recess at the upper part of the sewing-machine frame also affords a bearing upon the rack-bar 26, as is seen in said figure. When the bars, as 26 27 28, are made of one metal, as steel, a bearing-seat, as 30, of brass or other suitable metal, may be provided.

The sewing-machine is in many respects of common construction, from which fact and the description of its purpose and use it will be apparent that other structures of sewing-machine may be used without departing from the invention.

The particular structure of sewing-machine made use of here will now be explained. It stands so that its needle operates in a horizontal plane. Its main shaft 32 is therefore vertical, and directly operates the loop-forming hook 9, as is not unusual. This shaft is provided with a fly-wheel, 33, and carries fast to it a driving toothed wheel, 34, that is geared to the driving-pinion 35 of the counter or needle shaft 36 by an intermediate pinion, 39, and an intermediate wheel, 37, and pinion 8, that turn upon a suitable stud. In order that the movements may be steady and uniform the toothed wheel 37 is geared with a pinion, 7, that is fast upon the main shaft 32.

The needle 40 is arranged to reciprocate and to oscillate in a pivoted guide, 6, that is supported by the head-stock 41 of the frame C, a bearing-sleeve, 42, that is adjustably secured upon the needle by a set-screw being employed. This sleeve slides in the guide 6, and the stud of the latter turns in a bearing formed in the stock 41. The reciprocating and oscillating movements are imparted to the needle by means of a crank-disk, 5, fast upon the outer end of the needle-shaft 36 and a connecting-rod, 43, pivoted to the end of the needle-bar 44, said rod 43 being slotted to slide and rock upon a stud, 4. This needle works through an elongated slot, 3, in a work-supporting bed-plate, 45, and coacts with the loop-forming hook 9 in forming the stitch, as will presently appear. No work-clamp is used, but one may be employed.



The sewing-thread is carried, preferably in the form of a ball or spool, in a box, 46, mounted on some convenient upper portion of the machine, and its end is passed through a guide, 47, thence through a guide, 49, thence between the spring-seated tension-disks 48, and thence through a guide, 50, carried by the needle-bar 44, and thence through a guide in the stud 6, and thence through the eye in the needle.

From this description it will be apparent to those skilled in the art of sewing-machines that a rotation of the main shaft will produce the movement necessary to produce stitches; but as this sewing-machine is constructed to travel over the work, in contradistinction to having the work fed to its mechanisms, it will be obvious that a forward movement of the sewing-machine on its guide-bars may be utilized to impart the necessary driving action to the machine. This is accomplished by means of a driving-pinion, 2, that engages with and is driven by the rack-bar 26, and as this pinion should drive only in the forward movement of the machine it is provided with a ratchet, 1, through which it is clutched to the wheel 34 by spring-seated pawls 11. (See Fig. 8.) Thus as the sewing-machine is moved forward the rotation of the driving-pinion 2 is imparted to the wheel 34, and the mechanisms are set into operation. In the return or rearward movement the pawls 11 will drag over the ratchet-teeth and the action of the sewing mechanisms will be suspended.

As it is desirable that at the farthest end of the run of the sewing-machine the sewing-thread should be severed from the work, an appliance is provided for that purpose. This consists of a spring-seated thread-carrier, 53, pivoted to the bracket 25 and arranged to rest upon a block, 56, independently of the member A of the clamping-frame. This carrier is provided near its free end with a thread-slot, 12, and near its middle with an arm, 13.

The frame C carries at a proper point a downwardly-projecting rigidly-secured cutter, 54, the forward end of which is adapted to enter beneath the arm 13 of the thread-carrier 53, its proper position with relation thereto being accomplished by its retracting-spring 114.

In order that the thread shall be carried into the slot 12 when the sewing-machine is at the forward end of its run, and the needle be surely raised so as to leave the thread free and at the same time provide for the unobstructed vibration of the thread-carrier 53, a means for arresting the needle at its highest point at this period of the operation is provided. This consists of a dog, 14, spring-seated in a bracket, 57, that is mounted upon the rack-bar 26, so that said dog shall be engaged at the proper time by the periphery of the wheel 33, which latter is provided with a socket, 15, in which said dog may enter. Thus when the sewing-machine has reached the proper point the dog pressed upon the periphery 33 by its spring will enter the socket 15 and arrest the driving-

shaft, so as to suspend the movement of the needle when in its highest position. This will leave the thread in the slot 12, and thereupon the lever 55 may be pressed to rock the thread-carrier 53 to carry the thread against the knife 54 and sever the thread from the work.

In order to a better appreciation of these improvements it should be stated that in the practical operation of closing bags each bag when filled has its contents settled down and the sides of its mouth brought together, so that the two plies lie flatly upon each other by a sort of longitudinal stretching. This preliminary treatment of the bag-mouth accomplished, or the sides of the same laid evenly upon each other in any other manner, the apparatus is put into operation as follows: The members A B of the clamping-frame are seized by their handles 22 23 and opened. The apparatus is then carried into proper relation to the bag by laying one side of the elongated bag-mouth against the edge of the member B of the clamping-frame, and by closing the other member, A, upon the opposite side of the bag-mouth. This causes the pins 29 to enter through the bag-mouth and secure the apparatus in place, while the pin 31 fixes the relation of the members A B. The bag-mouth is thus clamped in position to be operated upon, and rests properly against the bed-plate 45, as is shown in Fig. 3. While holding the clamping-frame with one hand the operator seizes the handle 60, attached to the sewing-machine frame C, with the other and forces the sewing-machine forward. This causes the pinion 2 to turn by running in the rack 26, and to set in motion the train of gearing whereby the sewing mechanism is actuated. The stitch-forming needle 40 and looper 9 thereby co-operate to form stitches, uniting the sides or plies of the bag-mouth. In this operation the feed is over the material, and this, as is apparent, is practically effected by the peculiar or walking motion of the needle, which, thus thrust through the material, is moved backward in unison with the forward movement of the sewing-machine, and then drawn out of the material and moved rapidly forward over it to re-enter the material and repeat its action, the looper concertedly forming the loop to receive the thread. At the end of its run the wheel 33 of the sewing-machine engages the spring-dog 14, which is entered into the recess 15 of said wheel, and arrests its rotation, and consequently suspends the sewing operation, leaving the needle 40 in its withdrawn position, as heretofore explained. The sewing-thread will now be formed to lie in the slot 12 of the guide 53. The lever 55 is now vibrated and swings the guide 53 upward and drags the thread against the edge of the knife 54, thus severing it. The sewing-machine is then drawn rearwardly, during which movement the pawls 11 run over the ratchet 1, thereby allowing the driving-pinion 2 to remain at rest and the sewing mechanisms to remain out of operation. The sewing-machine



is thus brought to a position to repeat the operation, with its needle 40 withdrawn from the plate 45, so as to freely admit the bag-mouth. The clamping-frame is then spread apart to  
 5 release the bag, and the apparatus is placed over a new bag to repeat its actions.

It is not essential to the successful action of this apparatus that the thread-cutting devices be applied, nor that the arresting-dog 14 be  
 10 used, as the detaching of the thread may be accomplished by hand and the sewing-machine adjusted by hand before the apparatus is placed over a bag; but, as is obvious, these arrangements are of peculiar advantage in rapidly  
 15 closing bag-mouths.

When a sewing-machine varying in construction from that herein shown is made use of slight variation of parts necessary to adapt it to travel over the work may be made by ordinary mechanical skill, and the advantageous  
 20 results accomplished by this invention be attained.

Although a swinging member, A, of the clamping-frame is especially adapted to the  
 25 work performed, it will be apparent that it may be omitted and other means be adapted for holding the bag-mouth while the sewing-machine travels over it to sew its parts together. Thus the member B may be provided with  
 30 hooked pins, that pass through the parts of the bag, and being turned press or hold the same against the edge of the member B over to its back side.

The rack 26 and driving-pinion may be omitted, and a simple band and pulley perform the  
 35 operation of driving the mechanisms.

It is not essential that the bag clamping or holding frame shall have means for driving the sewing mechanisms, for the sewing-machine  
 40 may have its own motor for driving its sewing mechanisms, and the same be provided with a controlling device for stopping and starting it.

The ratchet 1 might be omitted and the pinion be fast and an arrangement be made for  
 45 disengaging the pinion from the rack before the backward movement of the machine.

What is claimed is—

1. A bag-mouth-closing apparatus consisting, essentially, of the combination, with a clamp-  
 50 ing-frame adapted to receive and hold the plies

of the mouth end of a filled bag and to sustain and guide a sewing-machine, of a sewing-machine adapted to travel on said frame along the bag-mouth and unite the same by sewing,  
 55 substantially as described.

2. The combination, with a bag-holding clamping-frame, of the rack-bar it supports, the traveling sewing-machine, and its driving-pin-  
 60 ion or equivalent gearing adapted to be set into operation to actuate the sewing mechanism by the traveling movement of the sewing-machine with respect to said clamping-frame, substantially as described.

3. The combination, with a work-holding device acting to sustain the work stationary and  
 65 a sewing-machine constructed to travel bodily with respect to the work-holding device, of the sewing-needle 40 and mechanism for producing its walking movements, substantially as described.  
 70

4. The combination, with a work-holding device acting to sustain the work stationary and a sewing-machine constructed to travel bodily  
 75 with respect to the work-holding device, of the sewing-needle 40, mechanism for producing its walking movements, and a work-plate having an elongated needle-slot, substantially as described.

5. The combination, with the bag-holding clamping-frame and a sewing-machine guided  
 80 thereby over the work to be sewed, of a mechanism automatically acting to suspend the sewing operation and to arrest the needle free from the work, substantially as described.

6. The combination, with the bag-holding  
 85 clamping-frame and a sewing-machine guided thereby over the work to be sewed, of a mechanism to suspend the sewing operation with the needle raised and a mechanism to sever the sewing-thread at the termination of the  
 90 foremost travel of the machine, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

ORVILLE R. VAN VECHTEN.

Witnesses:

T. H. PALMER,  
 GEO. H. GRAHAM.