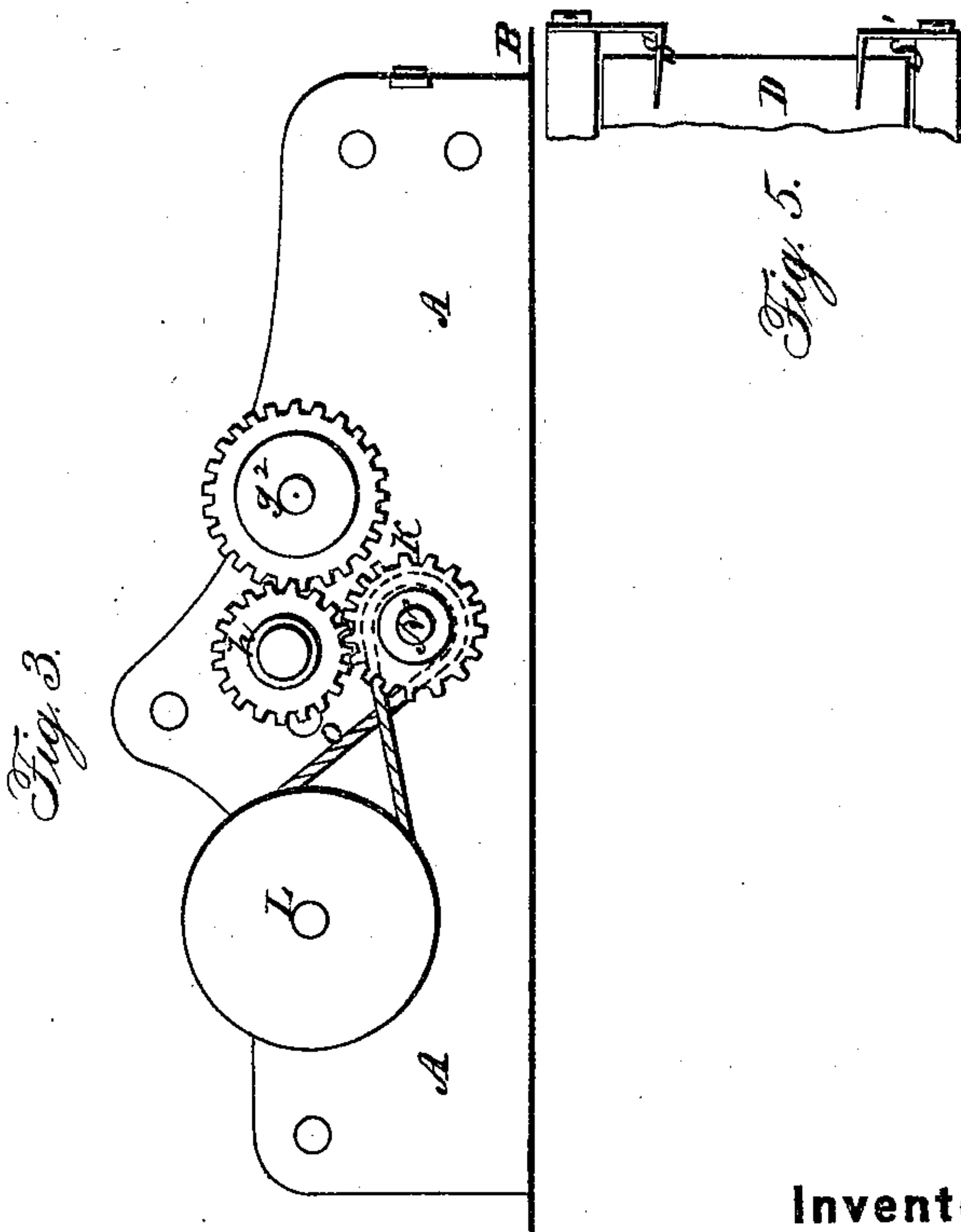
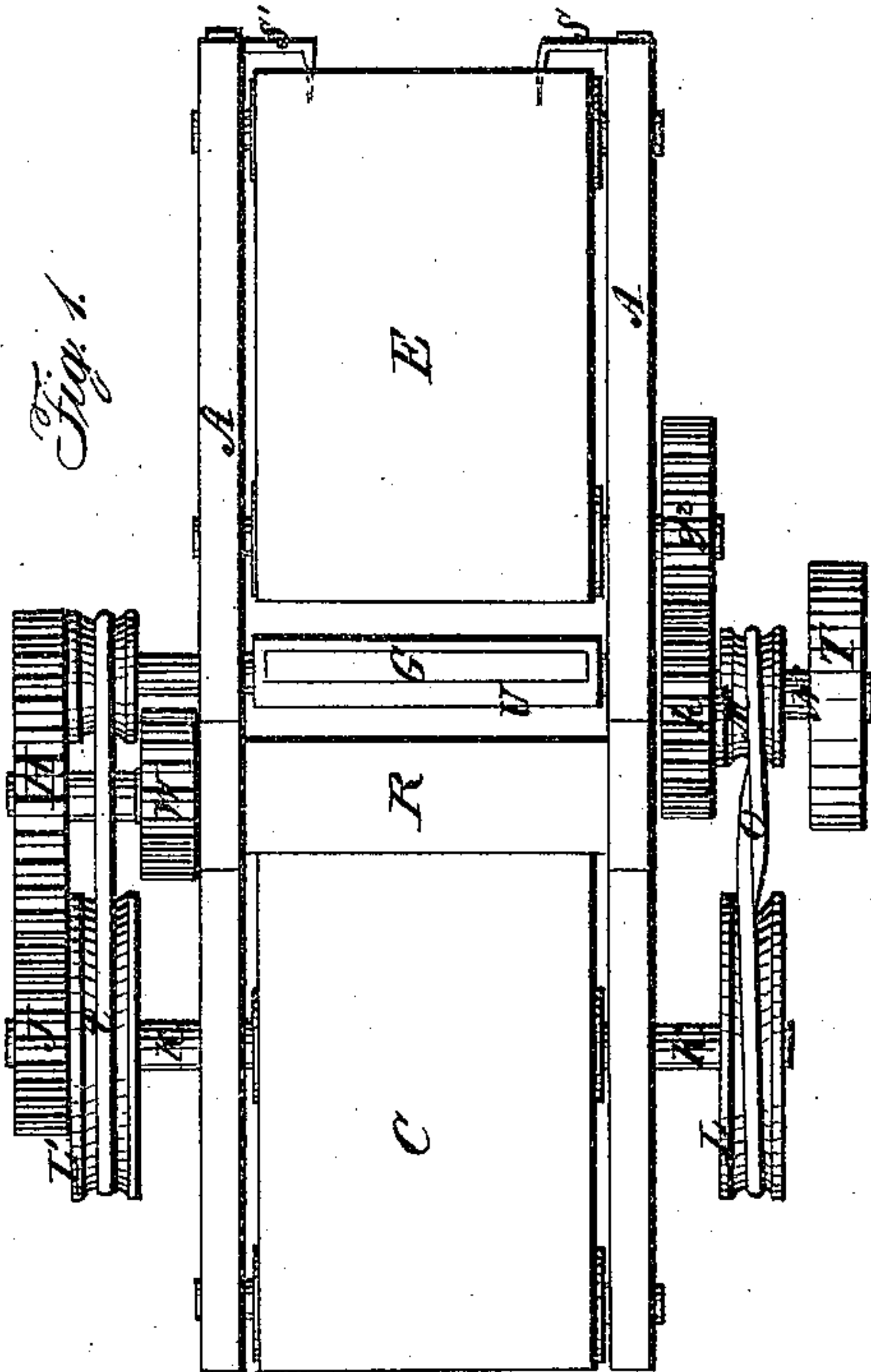
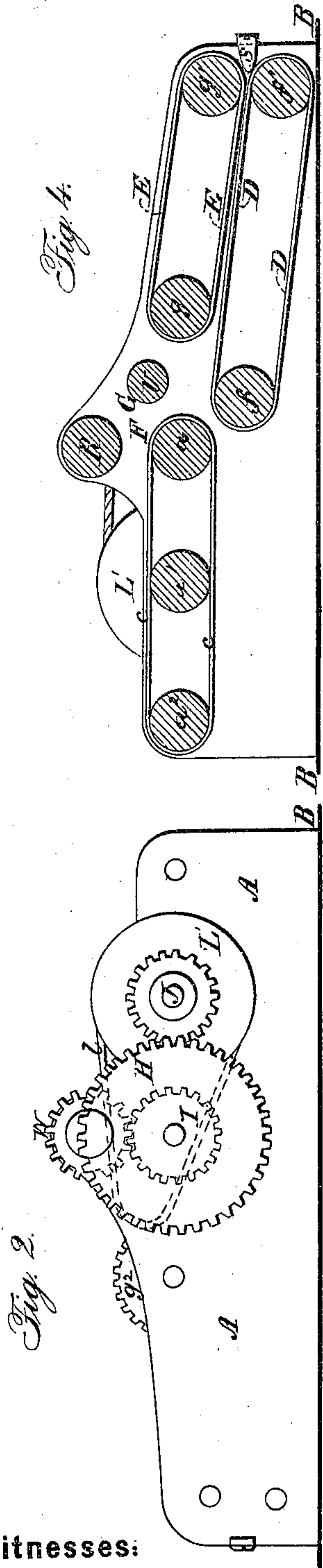


O. R. CHASE.
Making Confectionery.

No. 43,735.

Patented Aug. 2, 1864.



Witnesses:

L. E. Chase
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Inventor:

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UNITED STATES PATENT OFFICE.

OLIVER R. CHASE, OF BOSTON, ASSIGNOR TO HIMSELF AND LEWSON E. CHASE, OF CHARLESTOWN, MASSACHUSETTS.

IMPROVED MACHINE FOR MAKING CONFECTIONERS' PIPE.

Specification forming part of Letters Patent No. 43,735, dated August 2, 1864.

To all whom it may concern:

Be it known that I, OLIVER R. CHASE, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Machine for Making Confectioners' Pipe; and I do hereby declare the same to be fully described in the following specification and exhibited in the accompanying drawings, making a part thereof.

Of the said drawings, Figure 1 is a top view of my said machine. Figs. 2 and 3 are side elevations, the cranked wheel being removed to show the parts in rear of it; and Fig. 4 is a longitudinal central and vertical section of it. Fig. 5 is a top view of the knives for reducing the cylinder or pipe to its required length, and shows their positions with respect to the lower roller.

The object which I had in view in making my invention was to produce an automatic machine by which any suitable paste may be cut into strips, rolled, and made into cylinders of the required size and length, and finally be discharged from the machine into or upon any proper receptable or receiver. These cylinders, when made of sugar paste, are known to confectioners under the name of "pipe," and it is for the manufacture of this article that my invention is mainly intended. It is applicable, however, to the making of cylindrical pieces from flour paste or other plastic material.

The nature of my said invention consists, first, in the combination and arrangement of a series of endless bands or aprons with a revolving knife or cutting apparatus; second, in the combination and arrangement of two knives or cutters with the cylindering or "piping" aprons, in manner and for the purpose hereinafter set forth; third, in the combination and arrangement of a condensing or gage roller with a revolving knife or cutting apparatus and the series of endless aprons.

In the drawings, A A denote the frame for supporting the operative parts of the machine, the same consisting of two upright or vertical plates of wood or other suitable material, mounted upon or secured to a bed or base plate, B. Within the said frame or between the parts A A there is arranged a series of endless bands or aprons, C, D, and E. The apron C, I term

the "receiving" and "feeding" apron, as upon it the sheet of paste is laid and carried forward preparatory to being cut into strips. The said apron C is disposed at the rear part of the machine, and is supported by and travels around two or more rollers, $a a' a^2$, whose axes are in or about in the same horizontal plane, the journals of the said rollers being supported in boxes or bearings made in or through the frame A A. One of the journals of the said roller a extends through one side of the frame A and a short distance beyond it, and has two gear-wheels, H I, affixed to it, as shown in Fig. 2. The larger gear, H, engages with another gear, J, disposed on one end of a horizontal shaft, K, which extends entirely through the frame A A and projects on each side thereof, as seen in Fig. 1. The said apron C has its movement imparted to it from the shaft K by means of the pinion H and gear J, which engage with each other and are arranged, respectively, on the journal of the roller a , and on one end of the said shaft K, as seen in the drawings. The said shaft K also has two pulleys, L L', applied to it.

Around the pulley L, and another pulley, M, (arranged upon the driving-shaft N,) an endless crossed belt, O, travels, while around the pulley L' and a pulley, P, (arranged upon one of the journals of the cutter-stock or knife-carrier U,) another endless belt, t , is carried and serves to impart motion to the revolving knife to be hereinafter described. Just in advance of the said apron C there is a stationary bar, F, which extends transversely across the machine, and is suitably fastened to the parts A A, and has its top surface in or nearly in the same horizontal plane with the top surface of the endless apron C, and moreover the said bar is formed with a sharp edge on its front side to operate in conjunction with the rotary cutter or knife G. The said bar serves not only to support the sheet of paste while a piece of the proper size for being made into a "pipe" or cylinder is being severed therefrom, but aids the knife in smoothly severing such piece. The said knife-carrier U is disposed just in front of the said bar F, and has its journals so applied to the frame A A as to be capable of freely revolving therein. To the said carrier a cutter or knife, G, is affixed and extends

longitudinally thereof, as shown in Fig. 1, the said cutter being so adjusted that when put in revolution its edge shall be brought as closely as possible to the adjacent edge of the bar F before mentioned without touching the same, and when the machine is in operation and a sheet of paste is brought forward by the apron C it will sever a piece of suitable size to form a cylinder or pipe of the required diameter, the relative velocities of the cutter and the paste-carrying apron being such as to cause the former to make a complete revolution while the latter moves forward the sheet of paste a sufficient distance to constitute, when cut off, a portion of the required size to be formed into a cylinder or pipe. The said cutter-carrier and cutter receive rotary motion from the pulley L' by means of an endless band, *t*, which works around the said pulley and a pulley, P, as shown in Fig. 1.

The part of my machine which I shall next describe is the mechanism by which the severed pieces of paste is formed into a cylinder or pipe, the same consisting of the two endless aprons D E, which are arranged in the front part of the machine, as shown in Figs. 1 and 4. Each of these aprons is supported by and works around two rollers, *f f'* and *g g'*. The longer apron D is disposed underneath the apron E, and extends back a sufficient distance to receive the severed piece of paste as it falls from the cutter. The lower apron receives its motion from the roller *f*, which is arranged upon the driving-shaft N. The upper apron, E, also receives its movement from the said shaft by means of a train of gears, *g² h k*, the first of which (viz., *g²*) has a greater number of teeth than the latter, *k*, (the ratio being as four to three.) It is disposed upon the shaft of the roller *g*, and engages with the gear *h*, (supported on a pin projecting from the frame A, as shown in Fig. 1,) which in its turn engages with the pinion *k*, arranged upon the driving-shaft N. By this construction and arrangement of gears the working-faces of the aprons D E are not only caused to revolve in opposite directions, but the lower one, D, is made to travel with a greater velocity than the other, in order that after the piece of paste has been rolled into a cylinder or pipe it may be carried forward and discharged from between the aprons. Furthermore, to enable the pipe when formed to be more readily discharged, the aprons are arranged at an inclination to the horizon, the distance between the said aprons being equal to the diameter of the pipe to be made.

In order that the pipe or cylinders after having been rolled and formed by the aprons D E may as they are expelled from the machine be of uniform length, I arrange between the front ends of the said aprons two knives or cutters, S S', which, as shown in Fig. 5, consist of two rectangular pieces of metal fastened to the frame, as seen in Figs. 1 and 5, by means of

screws. These knives, if desirable, may be so constructed and applied as to be adjustable with respect to each other.

Over the front part of the apron C there is arranged a roller, R, the object of which is to condense and render the sheet of paste of an equal thickness, in order that the rotary cutter at each stroke or during each revolution may be able to sever therefrom a like amount or piece. The roller R, if desirable, may be so applied to the frame as to be adjustable with relation to the said apron C. Said roller R is driven by a gear, W, (arranged upon one of its journals, as seen in Fig. 1,) which engages with and receives its motion from the gear I, arranged upon the shaft of the roller *a'*, before mentioned. The two gears W I have the same number of teeth or cogs, and therefore the apron C and the roller R move with a like rate of speed.

The machine may be driven by any suitable power properly applied to the driving-shaft.

T is a cranked wheel, by means of which the machine may be set in action.

In the operation of my said machine, the sheet of paste from which the pipe is to be made, having been properly prepared, is to be placed in strips of proper width upon the apron C, which (if it be in revolution) will carry the paste forward under the condensing roller or evenner R, and next under the revolving knife or cutter, which at each revolution or stroke will cut off a sufficient quantity to make a roll or cylinder of pipe. The pieces as they are severed fall upon the apron D, by which they are carried under the apron E, which, as before stated, runs slower than and in an opposite direction from the apron D. By the action of these two aprons the severed pieces of paste are successively rolled or reduced to cylindrical sticks of pipe, which, being forced forward by the greater velocity of the apron D, will be first carried against the knives S S', by which the ends of the cylinders or pipe will be cut off, (and thereby made of uniform length,) and next discharged from the machine into any proper receptacle.

I claim—

1. The combination and arrangement of the series of endless aprons C D E, with a cutting apparatus or rotary knife, G.

2. The combination and arrangement of the knives or cutters S S', with the endless aprons or bands D E, substantially as and for the purposes set forth.

3. The combination and arrangement of the condensing or gage roller R, the series of endless aprons C D E, and the revolving cutter G, the same being substantially as and for the purpose specified.

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Witnesses:

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