

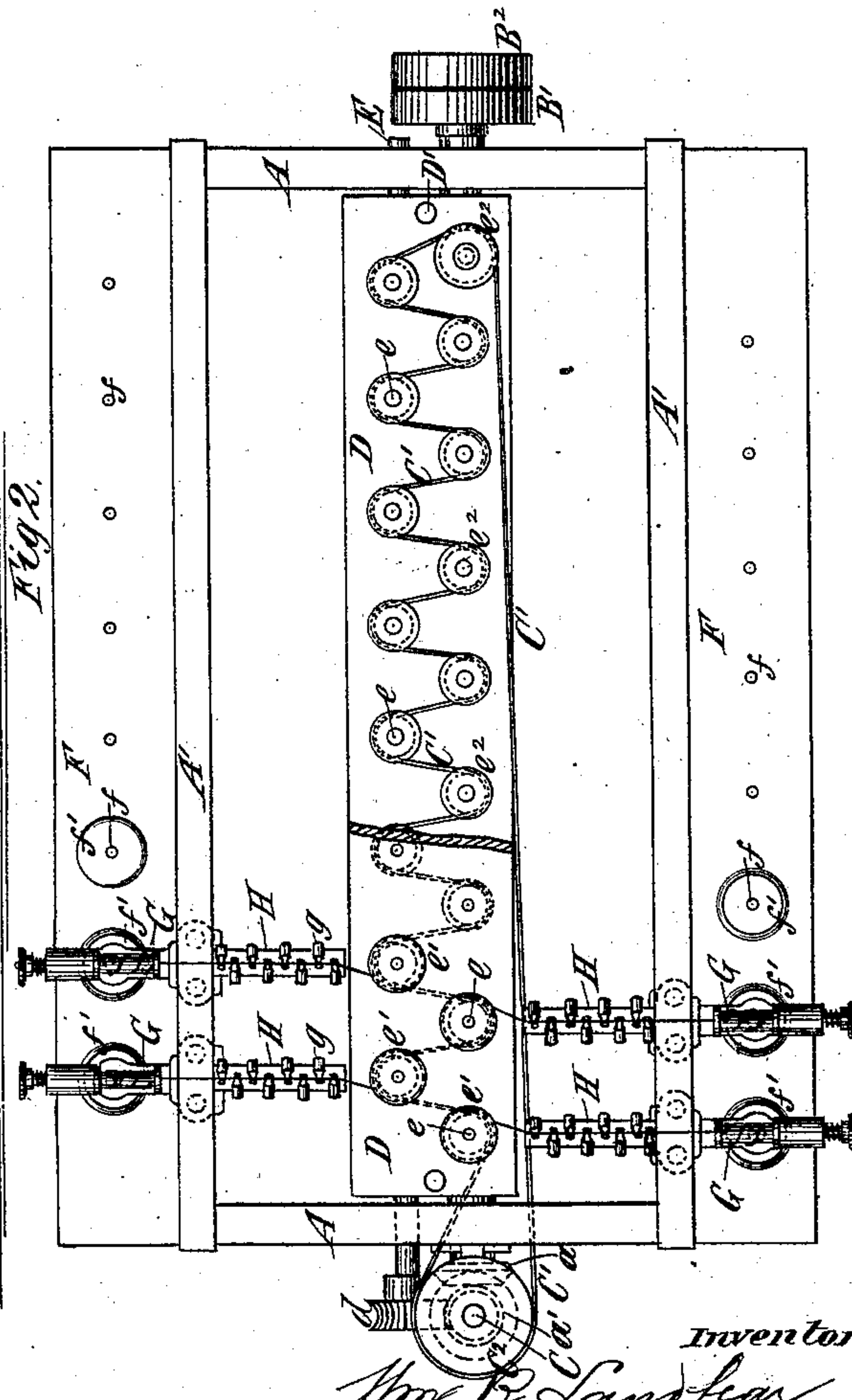
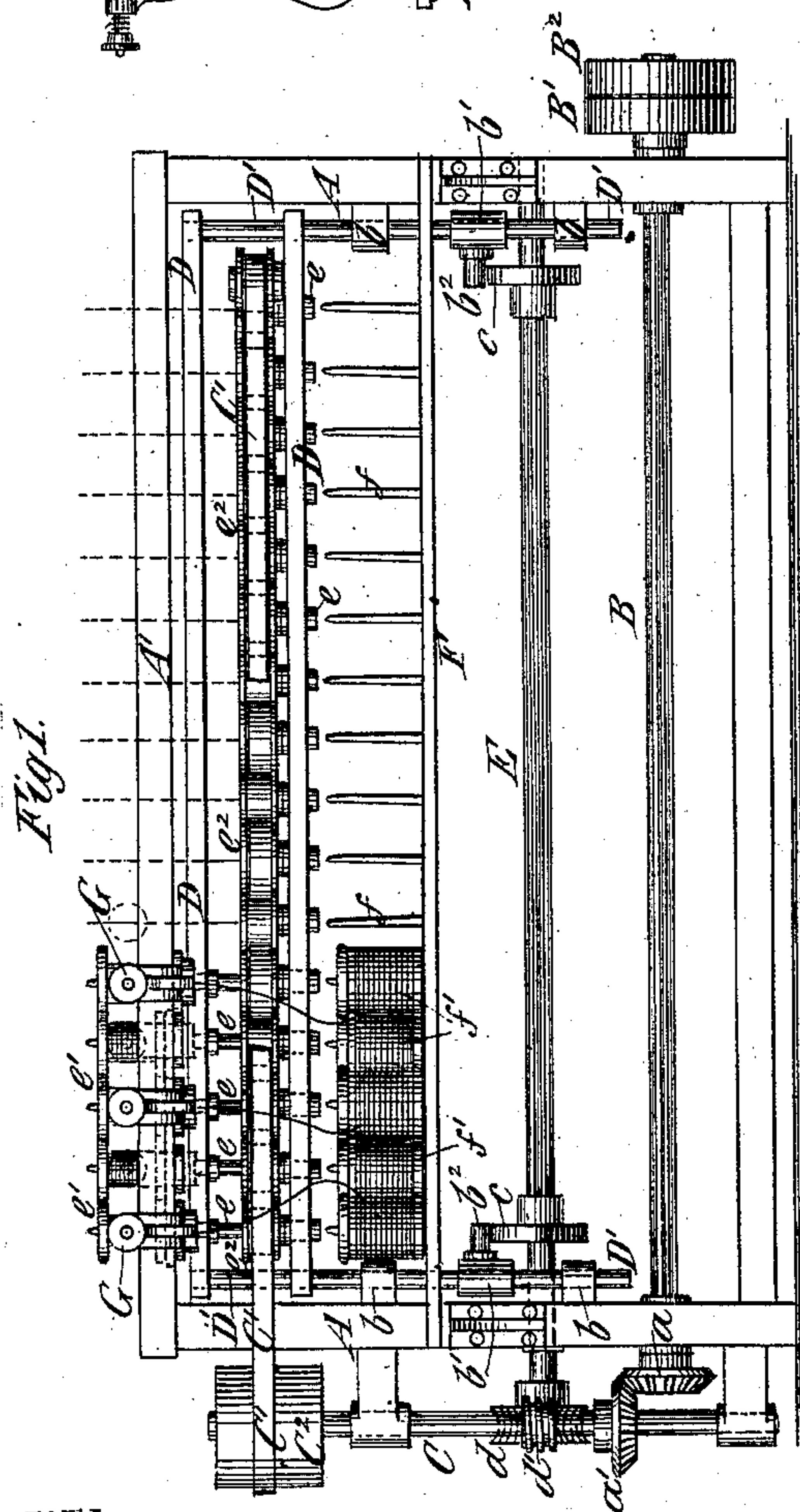
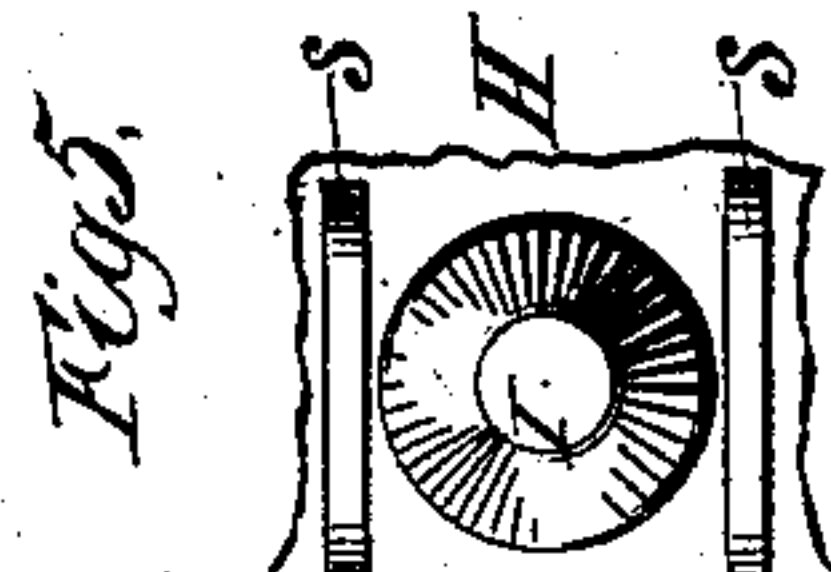
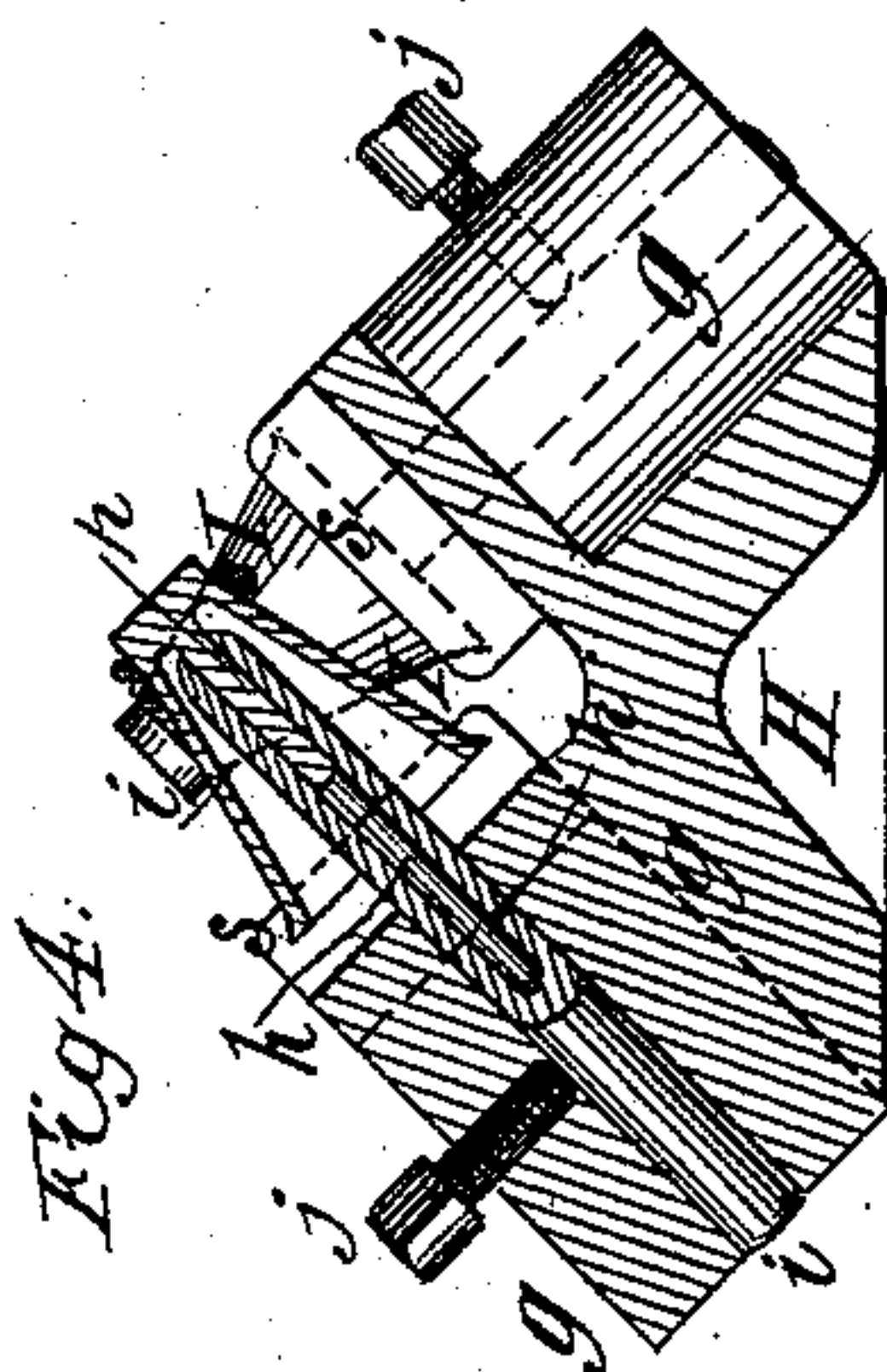
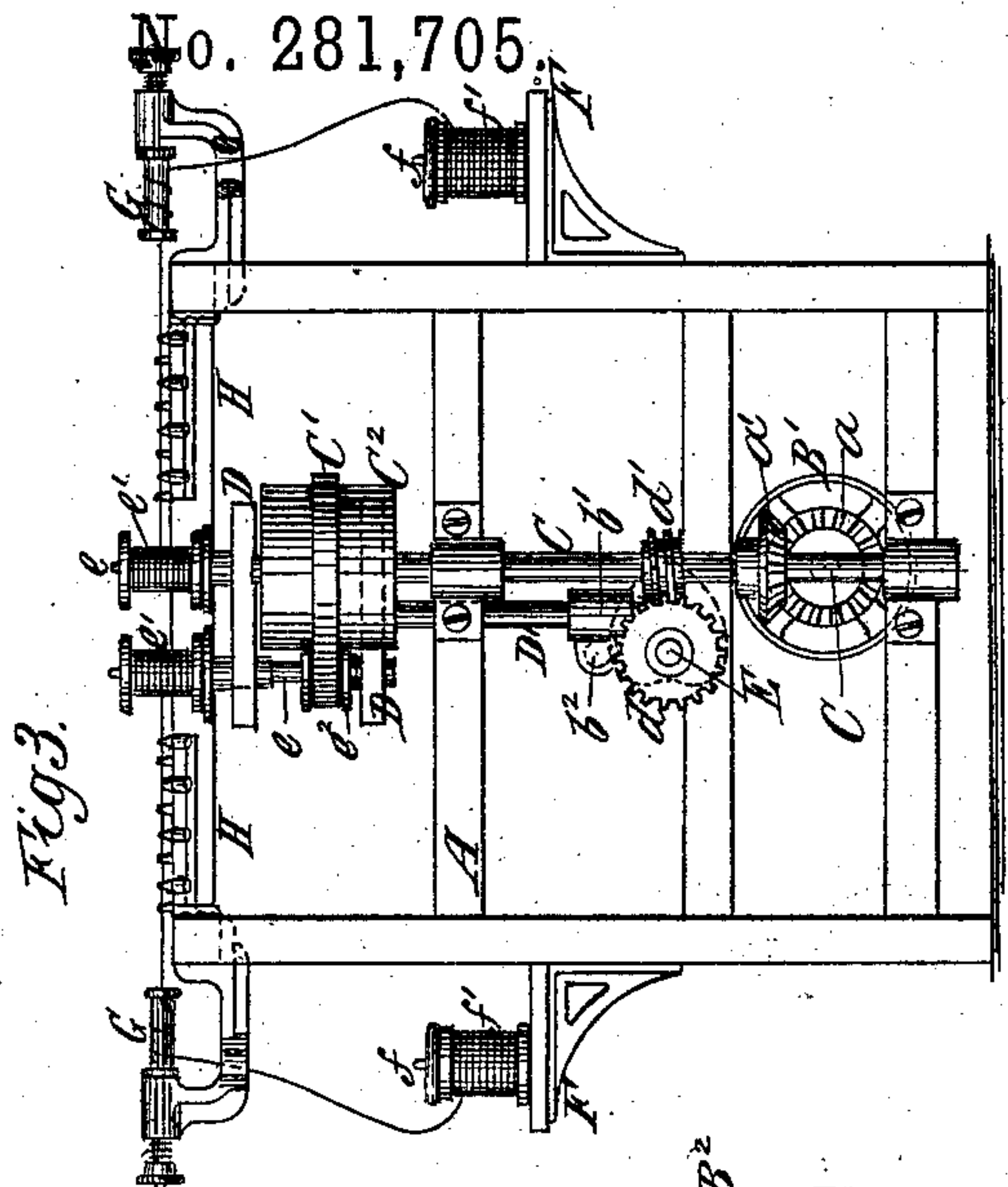
(No Model.)

W. R. LANDFEAR.

## SILK AND THREAD POLISHING MACHINE.

Patented July 24, 1883.

No. 281,705



***Witnesses***

Mr. Wynn  
@ Sundgren

Inventor

Wm R Landear  
by his Attorney  
Brent Brown



# UNITED STATES PATENT OFFICE.

WILLIAM R. LANDFEAR, OF BROOKLYN, NEW YORK, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, OF TWO-THIRDS TO BOTTUM & TRESCOTT, OF SPRINGFIELD, AND THE EUREKA SILK MANUFACTURING COMPANY, OF CANTON, MASSACHUSETTS.

## SILK AND THREAD POLISHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 281,705, dated July 24, 1883.

Application filed January 5, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM R. LANDFEAR, of the city of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Silk and Thread Polishing Machines, of which the following is a specification.

My invention relates to that class of silk and thread polishing machinery in which the silk or thread is wound one or more turns around each of a series of cones, which are supported on pivots, so that they are free to rotate, and which are rotated rapidly as the silk or thread is drawn forward and wound upon spools. In such machines the cleaning or polishing is effected by the rubbing of the silk or thread on itself as it passes around the cones.

The principal object of my invention is to provide a machine for cleaning and polishing thread or silk very thoroughly and rapidly; and my invention therefore consists in various novel details of construction and combinations of parts in machines of that class, hereinafter described and claimed.

The several features of my invention are illustrated in the accompanying drawings, in which Figure 1 represents a side elevation of a machine embodying my invention. Fig. 2 represents a plan thereof. Fig. 3 represents an end elevation thereof. Fig. 4 represents a detail sectional view upon a larger scale, showing the construction and relative arrangement of the cones and their bearings; and Fig. 5 represents a plan of the cone and a portion of one of the rails whereby the cones are supported.

Similar letters of reference designate corresponding parts in all the figures.

A designates the end frames of the machine, which are connected by stretchers or longitudinal rails A'.

B designates the driving or main shaft, which is here shown as having at one end fast and loose pulleys B' B<sup>2</sup>, for the reception of a driving-belt, and at the other end a bevel-wheel, *a*, gearing into a second wheel, *a'*, on an upright shaft, C.

D designates a carriage, supported at opposite ends by vertical rods D', which are fitted to bearings or guides *b* in such manner that they and the carriage are free to move vertically. Each of the rods D' is provided with a fixed sleeve or collar, *b'*, on which is a pin or roller, *b<sup>2</sup>*, and said pins or rollers rest upon and are acted upon by cams *c*, placed one near each end of a shaft, E, extending from end to end of the machine. The shaft E carries at one end a worm-wheel, *d*, which engages with and receives motion from a worm or screw, *d'*, upon the upright shaft C. The shaft E is thereby rotated slowly, compared with the shaft C, and as it rotates its cams *c* act upon the pins or rollers *b<sup>2</sup>* and impart to the carriage D the rising-and-falling movement necessary for a traverse.

The carriage D carries a number of spindles, *e*, on which are placed spools *e'*, and to which are secured whirls *e<sup>2</sup>*. These spindles are here arranged in two rows, as best shown in Fig. 2, the spindles in each row being opposite the spaces in the other row. In Fig. 1 only a few of the spindles are shown entire, and of the others only the lower portions and the whirls are shown. The spindles are all rotated by a single belt or band, C', which passes around and receives motion from a drum or pulley, C<sup>2</sup>, on the upright shaft C, as best shown in Fig. 1. In Fig. 2 I have represented the upper board or portion of the carriage D as removed for a part of its length, so as to show the driving-band C' in its passage around the spindles in the two rows.

At the opposite sides of the machine are horizontally-extending boards F, carrying skewers or pins *f*, on which are placed spools or bobbins *f'*, from which the threads or silk is conducted to the spools *e'*. The thread or silk, in its passage from each spool or bobbin *f'*, is carried to or through a tension device, G, here shown as consisting of a small cylinder or tube around which the thread or silk is wound one or more times, and which has a hole or opening in its head or end through which the thread or silk is carried. I make no claim to this particular form of tension



device, and in lieu thereof a tension device of any other form may be employed.

The cleaning or polishing of the thread or silk is performed between the tension device 5 G and the spools  $e'$ , and I will now describe the means employed for the purpose.

Extending transversely to the rails  $A'$ , and in line with each spool  $f'$  and its opposite spool,  $e'$ , is a bar or rail, H, which in reality 10 forms a part of the frame-work of the machine, and the transverse section of which is shown in Fig. 4. Upon each rail are a number of sockets,  $g$ , arranged alternately in two rows, the sockets in each row being opposite the 15 spaces between the sockets in the other row.

Referring now more particularly to Figs. 4 and 5, I designate one of the cones around which the thread or silk has one or more turns, and which is free to rotate by the pull on the 20 silk. The cone I is hollow and has a central pivot,  $h$ , which fits in a tube,  $i$ , secured in the socket by a set-screw,  $j$ . The tube  $i$  forms a bearing for the pivot  $h$ , and as the cone I is hollow said tube can extend up into it nearly 25 to its end.

Upon the rail H and adjacent to each socket  $g$  are projections or ribs  $s$ , which project beyond the lower edge of the cones, on opposite sides thereof, and prevent the thread or silk 30 from getting around the bearing-tube  $i$  below the cone. As here shown, the cones I in each row on each rail H are all arranged with their axes in the same inclined plane, and the axes of the cones in each row are inclined at a reverse angle to the axes of the cones in the opposite row. The thread or silk, as it rapidly 35 winds on and unwinds from the cones I, rubs and chafes on itself, and is thereby cleaned and polished, and the arrangement of the cones

at reverse angles effects the cleaning and polishing of the thread or silk all round, and preserves it in its round form. 40

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, with a spindle-carriage, 45 mechanism for imparting a rising-and-falling motion thereto, spindles in said carriage, and means for rotating them, of bars or rails arranged transversely to the length of said carriage, and series of loosely-pivoted cones carried by said bars or rails, and around which 50 the thread or silk is to be wound in its passage to said spindles, substantially as and for the purpose herein described.

2. The combination, with a spindle-carriage, 55 mechanism for imparting a rising-and-falling motion thereto, spindles in said carriage, and means for rotating them, of bars or rails arranged transversely to the length of said carriage, and two rows of loosely-pivoted cones 60 carried by each bar or rail, the cones in the two rows being arranged with their axes at angles to each other, substantially as and for the purpose herein described.

3. The combination of the carriage D, the 65 shaft E, and devices actuated thereby for giving said carriage its rising-and-falling movement, the spindles  $e$ , provided with whirles  $e'$ , with the vertical shaft C, the drum  $C'$ , and band or belt  $C'$ , mechanism for rotating the 70 shafts C and E, the tension devices G, the rails H, and loosely-pivoted cones I, substantially as and for the purpose herein described.

WILLIAM R. LANDFEAR.

Witnesses:

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ED. L. MORAN.