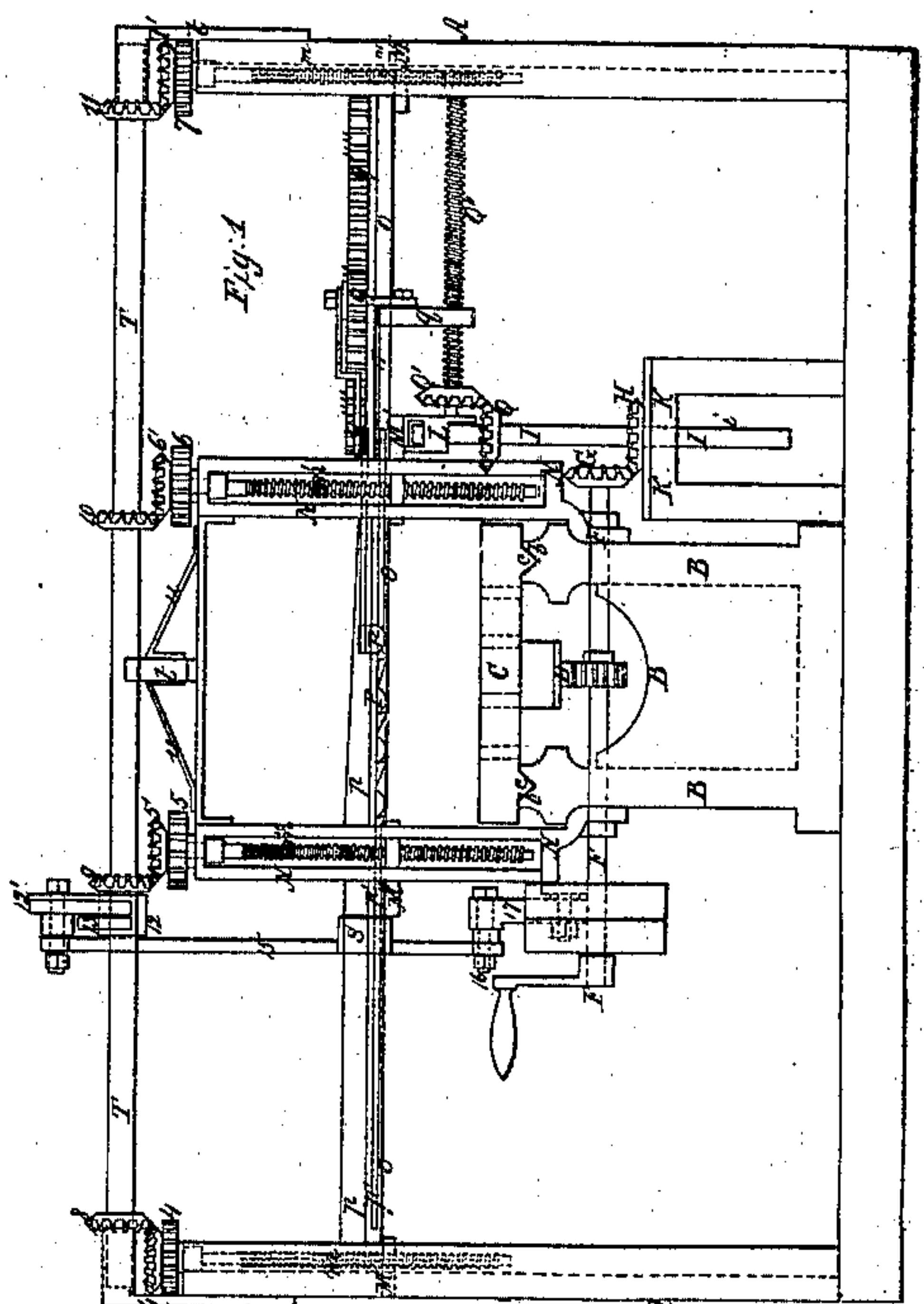
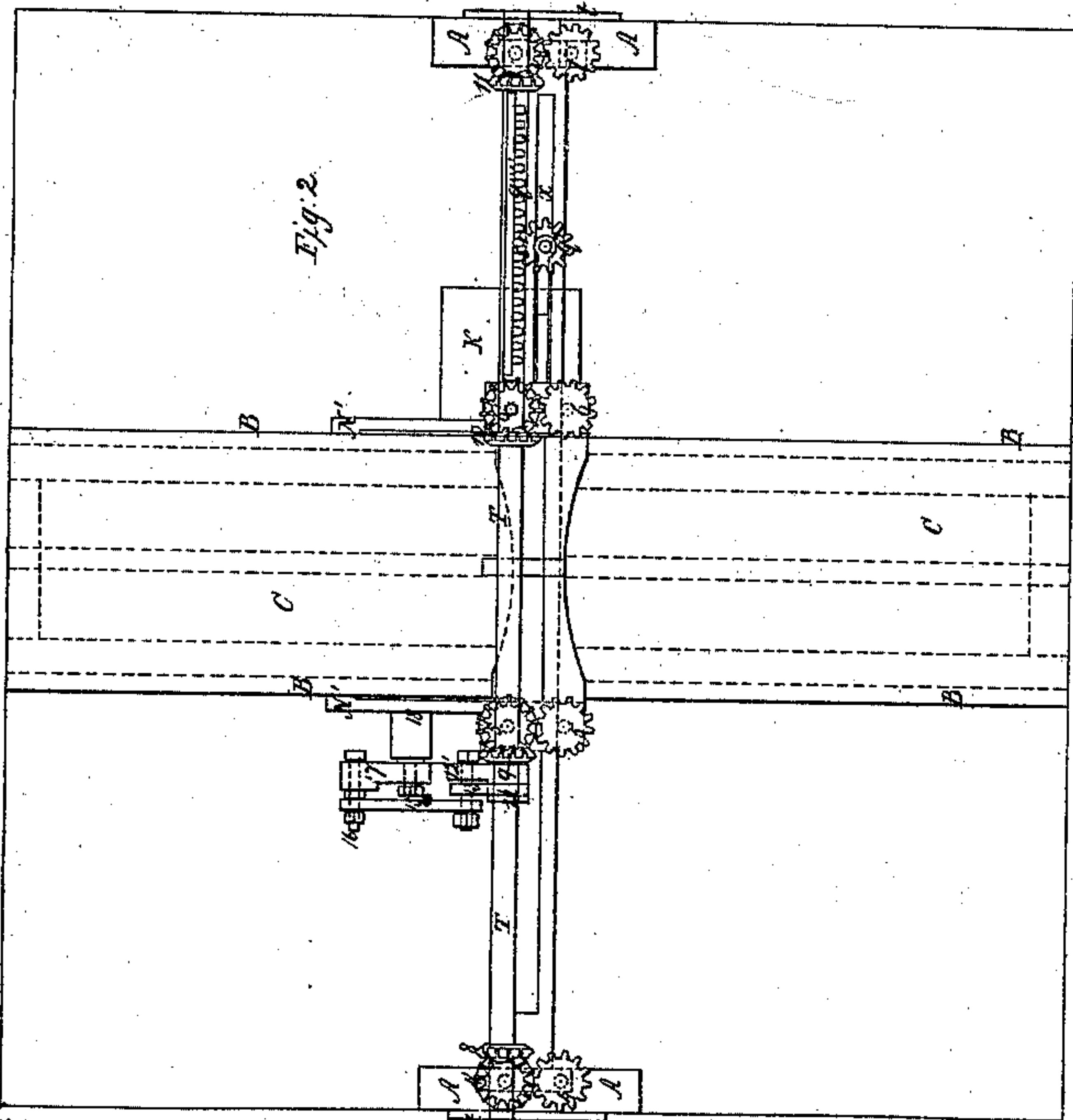
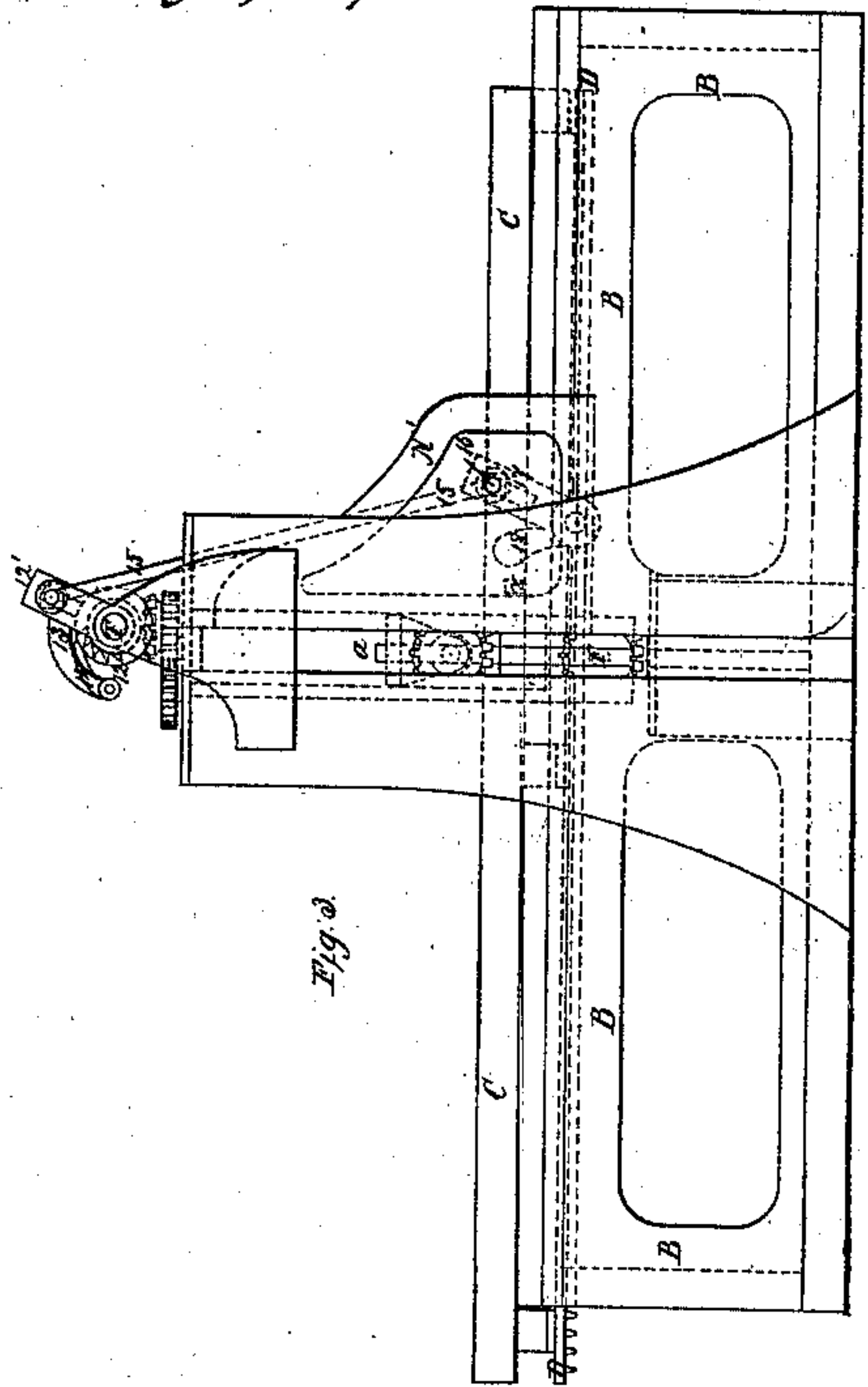
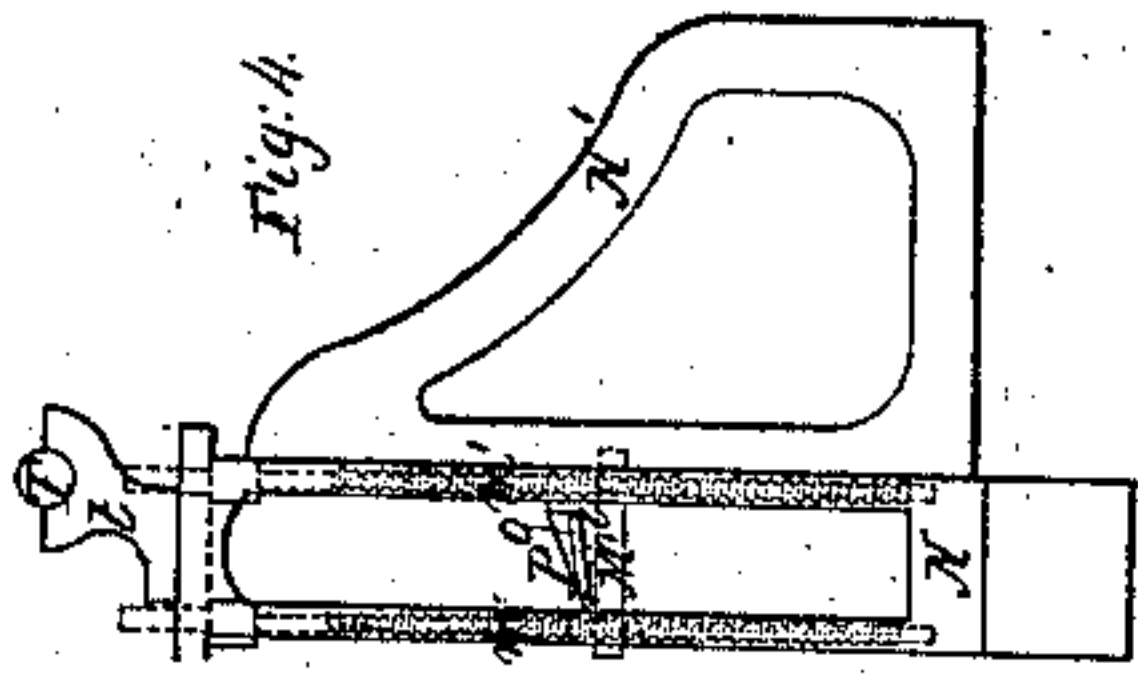


G. Bishop.
Cutting Veneer.

Nº 17,190.

Patented May 5, 1857.



Witnesses
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UNITED STATES PATENT OFFICE.

GILBERT BISHOP, OF NEW YORK, N. Y.

MACHINE FOR CUTTING VENEERS.

Specification of Letters Patent No. 17,190, dated May 5, 1857.

To all whom it may concern:

Be it known that I, GILBERT BISHOP, of the city of New York, State of New York, mechanical engineer, have invented a new and useful Machine for Cutting Veneers; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, forming part of this my specification.

In the drawings, Figure I, is a front view or elevation. Fig. II, is a top view or plan. Fig. III, is an end elevation looking from the right. Fig. IV, represents a vertical cross section through the cutting knife, two of the feed screws and part of the frame.

In all the figures like letters and numerals represent like parts.

The nature of my invention consists in so arranging the log and its carriage, the knife and its bearings and gearing, and the driving and feed machinery, that any sized log may be cut, and the position of the log easily adapted and changed as required to the grain of the wood, and giving to the knife a long continuous rectilinear cut or draw presenting a new edge to the wood so as to cut the veneers smoothly and uniformly clear through the log, and in sharpening and giving a fresh edge to the knife, by its own movement at each stroke or cut of the knife.

A A are a pair of upright frame pieces, a pair being erected at each end of the machine, and are firmly fixed at top and bottom, and each space is so placed as to leave an open space between them *a, a*, with parallel sides from top to bottom.

Midway between the pairs of frames A A is a rectangular frame B, B. Upon the upper surfaces of the two parallel sides of B, B, are grooves or channels *b, b*. Upon them the sliding table or plate C is supported, and upon the under side of C are projections *c, c*, corresponding to the grooves or channels *b, b*, and in which they slide.

The table is provided with perforations or slots in the usual manner of the sliding tables of metallic planing machines, for the purpose of securing to it a log of any size in any required position. Upon the under surface of table C, midway between the projections *c, c*, is a rack D, running the whole length of the table. The teeth of the rack project downward, and gear into a pinion *d*, upon the driving shaft F, and which driving shaft is sustained upon

suitable bearings, upon the sides of the frame B through which it passes.

Upon the end of shaft F projecting through one of the sides of B is a bevel pinion G, which gears into the corresponding bevel pinion H upon the vertical shaft I. The pinion H slides up or down upon the vertical shaft I, and it turns the shaft by the feather *i* projecting into a slot in the pinion. The vertical shaft I and pinion H are held in position by the raised platform K through which the vertical shaft passes and by which its lower end is held in its bearings. The upper end of vertical shaft I has its bearings in an arm or bracket L attached to the sliding plate M' hereinafter described.

Upon the outer sides of table B, B, are firmly fixed the uprights N, N, and which are strengthened by the additional frame pieces N', N'. The uprights N, N, are provided with open spaces of equal width of and corresponding with the spaces between the frame pieces B, B, and in line with them. There are also openings through N, N, at right angles to those just described and having also their sides parallel and spaces equal. Between the openings in the upright frame pieces B, B, and the corresponding openings in N, N is placed horizontally and suspended, the long narrow plate or knife bed O, having its upper surface inclined slightly or beveled. The plate O is fixed to the four sliding plates M, M'', M', M'', which fit into the sides of the openings between B, B, and N, N, and with projections to meet corresponding recesses in the frame pieces B, B, and N, N, by which when sliding they are kept accurately in the required position, and are also held firm and steady while the cutting stroke is performed. Through the sliding plates M, M'', M', M'' are pairs of circular holes having screw threads for receiving the pairs of vertical screws *m, m, m', m''*. The upper ends of these pairs of screws pass through plates or bearings on the heads of B, B and N respectively, by which they are screwed. These screws suspend the plate O, and the knife attached to it, and feed the knife to the log, in cutting, by the means hereinafter described.

Upon the plate O is placed at a slight angle the long flat and beveled knife P, its edge projecting a little in front of the plate. To strengthen and hold the knife

steady or stiff when performing the cut a groove p' in the upper surface of plate O, admits a corresponding projection on the under surface of the knife; and for a similar purpose the back edge of the knife runs in a groove in an upright plate p , fixed to plate O at the back of it. This knife is made to slide or travel its whole length across the log upon the table underneath, by the means now to be described. Upon the vertical shaft I before described is fixed the horizontal beveled pinion Q geared into a corresponding pinion q' fast to horizontal screw shaft Q'' , the opposite end of which has its bearings in a vertical plate attached to sliding plate M''' . The screw Q'' works into a corresponding bevel screw in the vertical arm q , which passing through a long slot x in the plate O, and along which slot it slides, is fixed at the upper end to the rod q' , which is attached to the end of the knife. The thread of the screw Q'' should have a bold pitch proportioned to the degree of speed to be given to the knife; but with so long a knife and so long a cut, it is not necessary that the speed should be as great as where a knife is used no longer than the width of the log. The knife shown in the drawing is a compound knife composed of a row of blades, which in cutting very hard wood or crutches, it is desirable to vibrate at the same time that the rectilinear drawing cut is given to the knife. To produce this vibration of the blades, a toothed wheel q'' is attached to the upper end of the arm q' turning upon a swivel, the teeth of the pinion gearing into the teeth of the horizontal rack q''' ; a connecting rod connected at one end with a pin placed as an eccentric upon the toothed wheel q'' , and at the other with the series of blades, (which are made also to turn upon a pin at their centers) will, when the toothed wheel q'' , is moved by passing along the rack q''' , give the vibratory motion to the series of blades.

The feed of the knife to the log at each successive cut of a veneer is effected and regulated as follows. Each of the pairs of the vertical screws m, m, m', m'' have upon their heads pinions 4, 4, 5, 5, 6, 6, 7, 7, each pair geared together. One of each of these pairs has upon it a concentric horizontal bevel pinion 4', 5', 6', 7'. A shaft T extending across the top of the machine, works in bearings in bracket plates t, t , at its ends, firmly fixed upon the frame, and supported also in the middle by a bearing and block t' resting upon a cross plate upon the heads of the uprights N, N, and supported by side braces u, u . Upon the shaft T are fixed the beveled pinions 8, 9, 10, 11, geared into 4', 5', 6', 7'. Upon shaft T is fixed the ratchet wheel 12; by the side of this ratchet is placed a slotted bar or arm, the lower end of which embraces and turns

loose upon shaft T, and held in place by the ratchet on one side and the beveled pinion q on the other; by means of a pin passing through the slot at the other part of the arm and a nut, this arm is attached to the vibratory bent lever 13, fixed at the other end to the spring pawl 14 working into the ratchet. To the other end of the pin which holds together 12' and 13 is hung a connecting rod 15, the other end of which works on a pin 16 attached to a crank 17 through a slot in the crank by a screw nut. The other end of the crank 17 is fixed to the axle of a finger or star wheel 18 and which axle turns on bearings firmly fixed to the side of the frame B. Upon the side face of the sliding table C midway between the ends, is a cam or projecting round pointed plate or finger; when the log begins to move toward the knife, the cam strikes against the finger and carries it around a short distance, which also moves the crank 17, which draws down the connecting rod 15, which through the bent lever and spring pawl catching in the ratchet, turn the ratchet fast upon shaft T, turning shaft T, and through it all the screws by which the plate O is suspended upon which the knife travels, and thus dropping the plate and knife the exact distance of the thickness of the veneer to be cut. The slots in the crank 17 and arm 12', and pins and screw nuts thereon, serve to adjust the distance which the bent lever is to carry the ratchet wheel, governing the feed of the knife.

Having thus described my machine and its construction, what I claim therein as my invention and for which I claim Letters Patent is:

1. The arrangement of the knife suspended between the upright frame pieces A A and N N at right angles to the log, and the giving it a long continuous drawing cut across the log, whatever may be the width of the log by means of screw Q'' operated in the manner and by the means described.

2. The horizontal, grooved and slotted plate or knife bed O, attached to the sliding plates M, M', M'', M''' held and guided between the uprights above named, and carrying supporting and strengthening the knife in its whole length and at the same time allowing it a vertical movement for feeding it to the log, as required.

3. I claim the arrangement of shaft T, the ratchet wheel 12, the slotted bar and connecting rod, the vibratory bent lever and star wheel, operating and connected together as described, for the purpose of giving motion to the feed screws m, m, m', m'' , as described.

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Witnesses:

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