

(No Model.)

2. Sheets—Sheet 1.

C. E. HEISS.

MECHANISM FOR TRIMMING THE LATERAL EDGES OF SHEET LEAD.

No. 362,621.

Patented May 10, 1887.

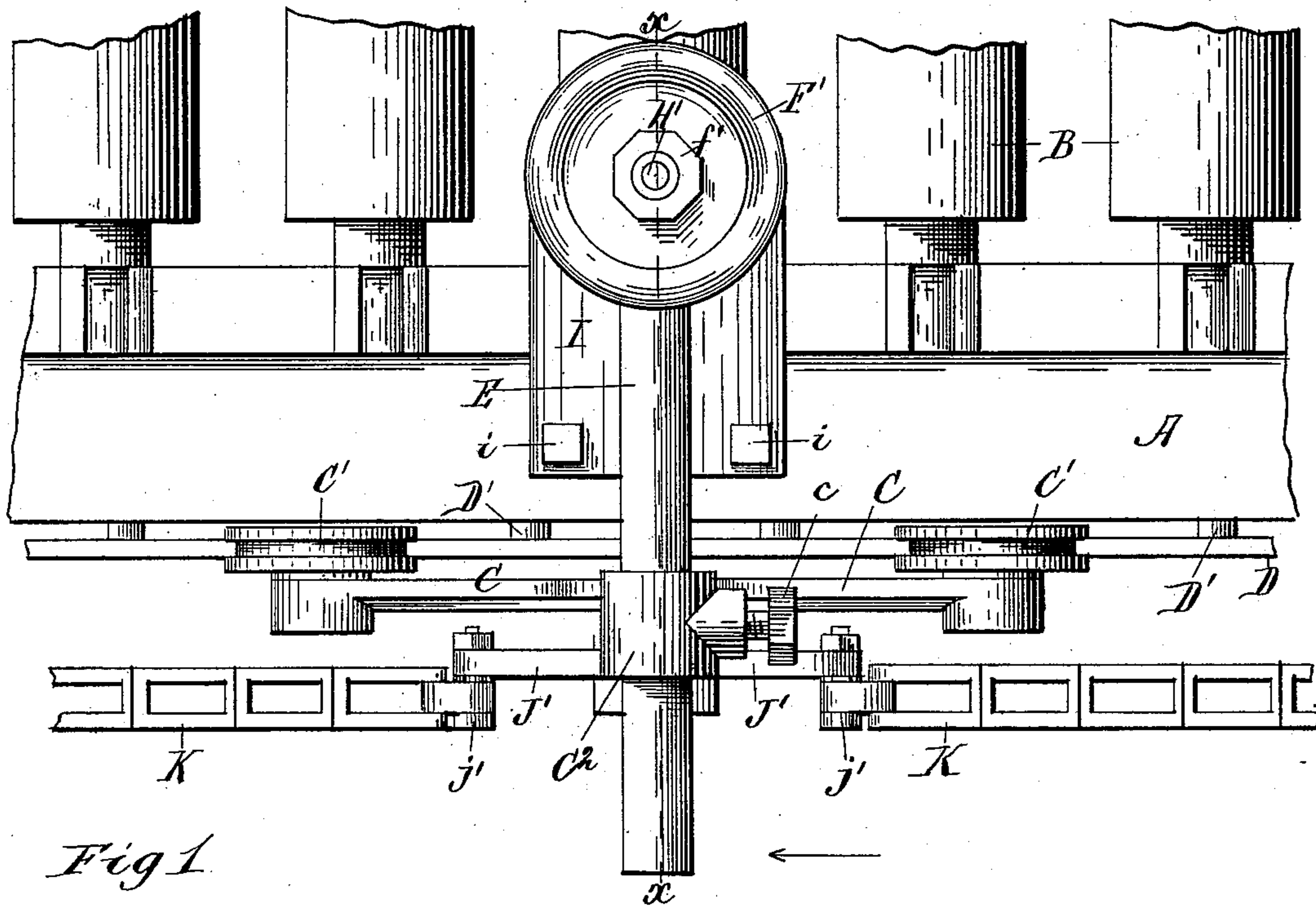


Fig 1

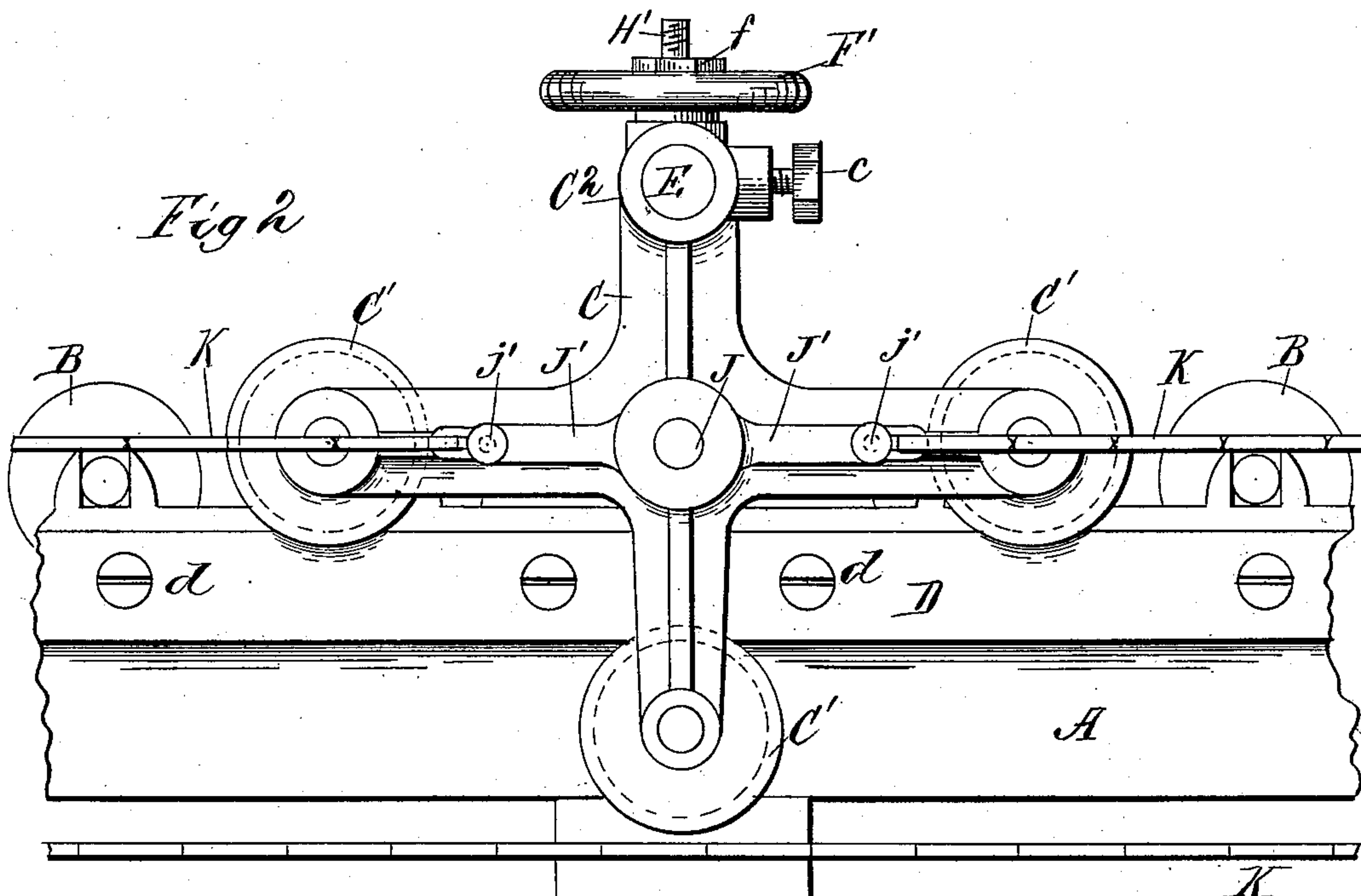


Fig 2

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(No Model.)

2 Sheets—Sheet 2.

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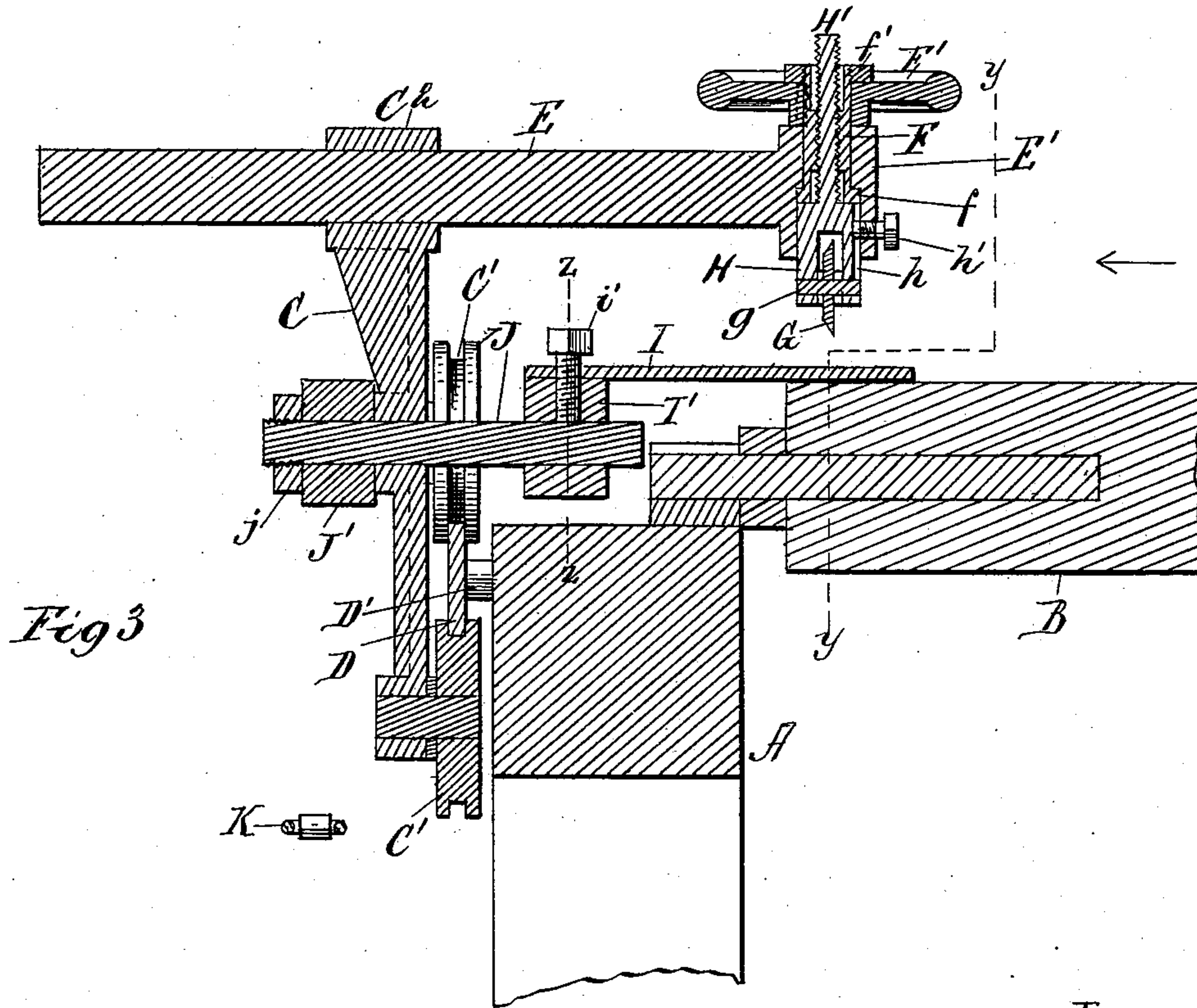


Fig 3

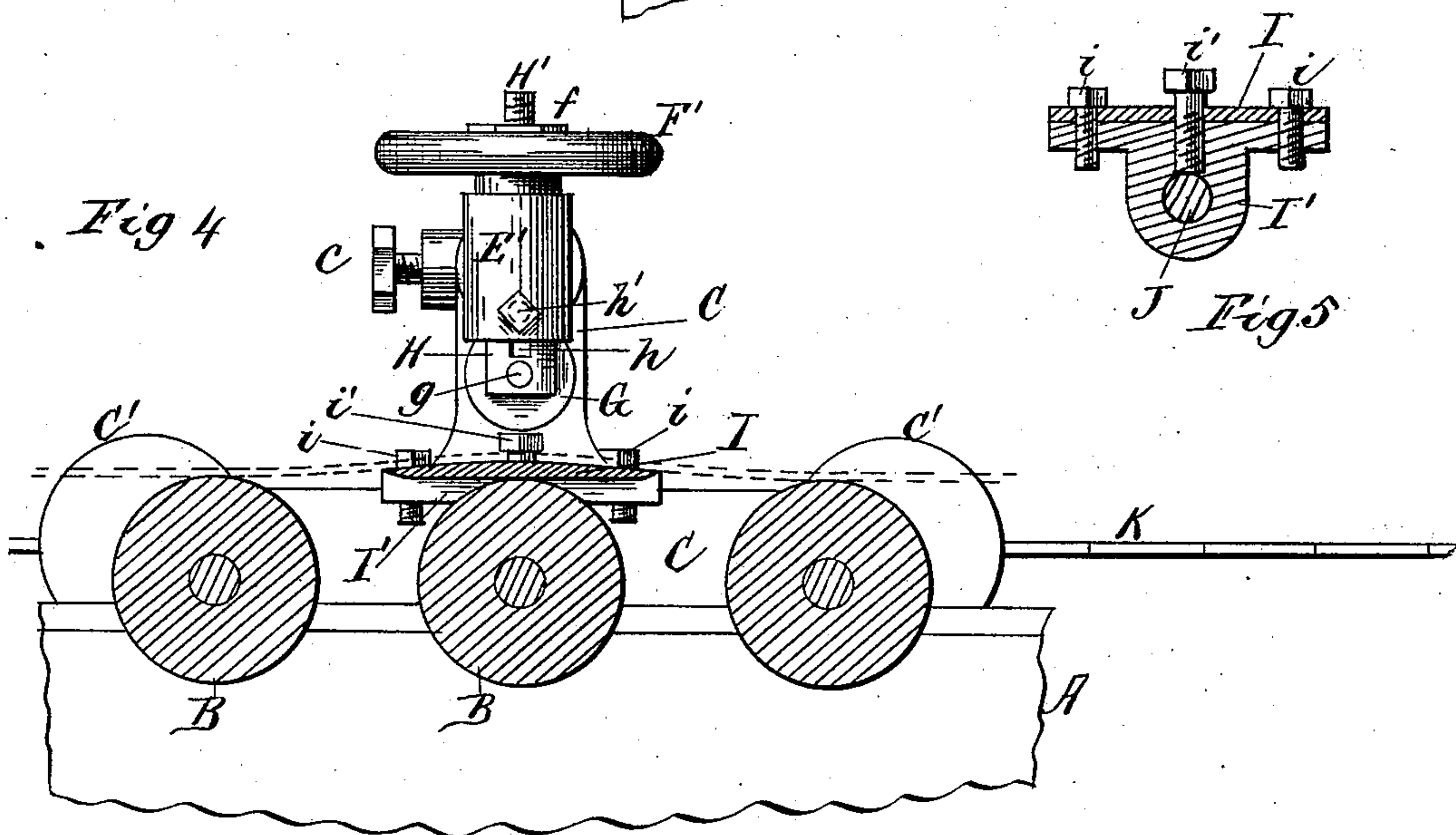


Fig 4

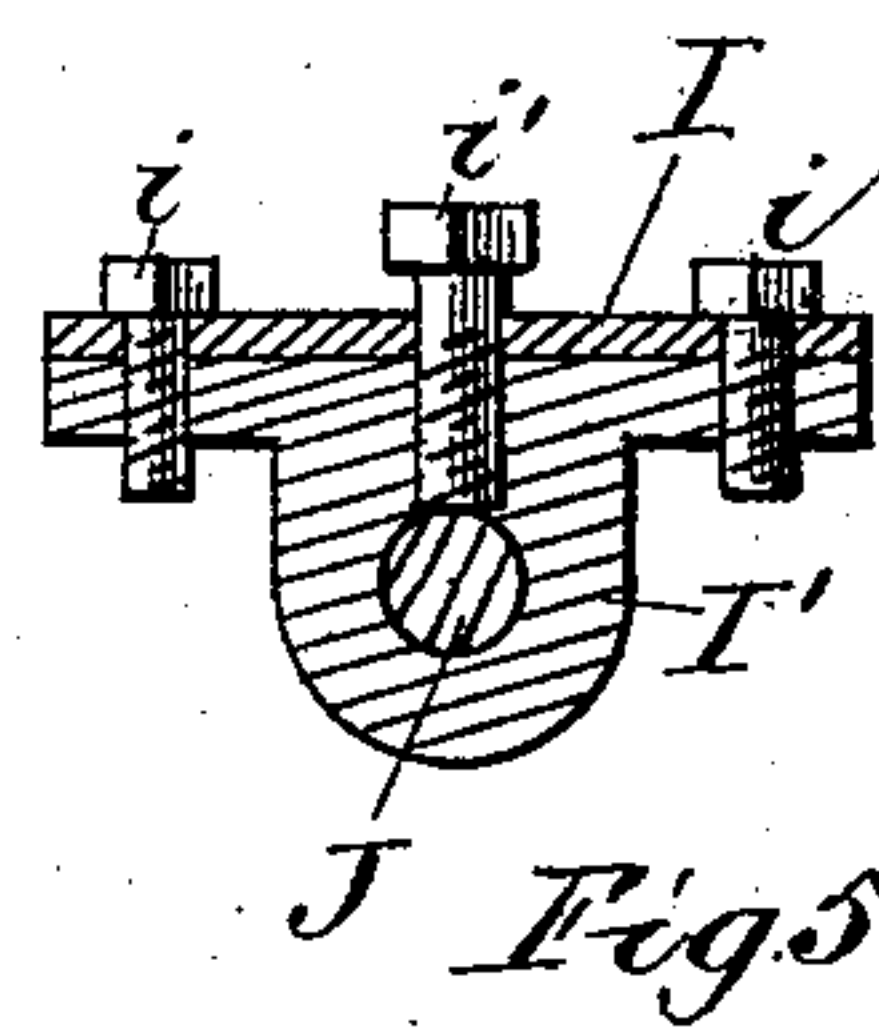


Fig 5

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UNITED STATES PATENT OFFICE.

CHARLES E. HEISS, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO
JAMES N. RAYMOND, OF SAME PLACE.

MECHANISM FOR TRIMMING THE LATERAL EDGES OF SHEET-LEAD.

SPECIFICATION forming part of Letters Patent No. 362,621, dated May 10, 1887.

Application filed January 8, 1887. Serial No. 223,835. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. HEISS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Machines for Cutting Sheet-Lead Laterally, which is fully set forth in the following specification, reference being had to the accompanying drawings, in which—
Figure 1 is a plan view of a machine embodying my invention; Fig. 2, a side elevation of the same; Fig. 3, a sectional view taken on the line *x x* of Fig. 1, and looking in the direction of the arrow; Fig. 4, a sectional view taken on the line *y y* of Fig. 3, and looking in the direction of the arrow; and Fig. 5, a detail sectional view taken on the line *z z* of Fig. 3.

Like letters refer to like parts in all the figures of the drawings.

My invention relates to machines for cutting sheet-lead laterally, its object being to produce a machine which will trim the edges of the sheet of lead as it comes from the rolls; and to this end my invention consists in certain novel features, which I will now proceed to describe, and will then particularly point out in the claims.

In the drawings, A represents a portion of the frame-work of the roller-bed, which receives the sheet-lead as it comes from the finishing-rolls of the sheet-lead-rolling machine. This frame-work is provided with a series of transverse rollers, B, which, as just stated, form a bed to receive the sheet-lead, upon which bed it rests when it has passed through the rolls.

C represents a carriage provided with a suitable cutter and mounted upon a suitable guiding way or ways. The form and construction of these parts which I prefer is that shown in the drawings, in which the carriage C is provided with three grooved wheels, C', arranged two above and one below the way D, so as to hold the said carriage firmly in position upon the said way. The way D is arranged to extend along the side of the bed upon which the sheet-lead rests, and is a straight way parallel with the lateral edge of said bed. The way D is preferably secured directly to the side of the frame A, being at-

tached by means of screw-bolts *d*, and sleeves or tubular washers D' being employed to set the said way out a sufficient distance from the frame A.

E represents a transverse arm, which carries the cutter, said arm being preferably cylindrical in form, and being mounted in a correspondingly-shaped sleeve or tubular bearing, C², formed on the upper part of the carriage C. The arm E is adjustable longitudinally and axially in the sleeve C², and is secured after adjustment by means of a set screw, *e*, or other suitable means. The arm E extends laterally inward over the bed, and is provided at its inner end with a suitable cutter. The form of cutter and the manner of mounting the same which I prefer are as follows: Upon the inner end of the arm E is formed a vertical sleeve, E', having an interior bore or aperture of greater diameter in its lower portion, the diameter of the bore in the upper portion being reduced, as shown in Fig. 3 of the drawings. Within this bore is arranged a revolvable sleeve-nut, F, the body portion of which fits and revolves within the reduced upper portion of the bore of the sleeve E', while at its lower end a flange or head, *f*, is provided of a diameter equal to that of the lower portion of said bore. A hand-wheel, F', is keyed or otherwise secured on the upper projecting end of the sleeve-nut F, and the whole is secured in position by means of a nut, *f'*, mounted on the externally-threaded upper extremity of the sleeve-nut F above the hand-wheel F'. By reason of this construction the sleeve-nut F may be revolved freely in the sleeve E', while at the same time it is prevented from moving longitudinally therein. It may, however, be readily removed from the said sleeve by detaching the nut *f'* and hand-wheel F'.

The cutter consists of a disk, G, of steel or other suitable material, mounted to revolve freely on an arbor or spindle, *g*, secured in a cutter-head, H. This cutter-head H is fitted to move longitudinally in the sleeve E', being prevented, however, from rotating therein by any suitable means—such, for example, as a groove, *h*, in the cutter-head and a screw, *h'*, passing through the sleeve and entering the said groove. The cutter-head H is provided

with an upwardly-extending screw-threaded extension, H', which passes through the sleeve-nut F, so that by rotating said sleeve-nut the cutter-head and cutter may be adjusted vertically in an obvious manner.

In case the machine be employed in conjunction with a roller-bed for the sheet-lead, as in the construction shown in the drawings, I provide a suitable anvil or support for operation in conjunction with the cutter, and attach the same to the carriage, so that it travels with the same. This anvil or support in its preferred form consists of a plate, I, reduced in thickness at each edge, as shown more particularly in Fig. 4 of the drawings, so as to pass more readily over the rollers and under the sheet-lead.

I' represents a yoke formed on said plate I, or secured thereto, as shown, by means of screw-bolts *i*. This yoke fits upon a cylindrical arm, J, extending inward from the carriage C, and is adjustable upon said arm both longitudinally and axially, being secured after adjustment by means of a set-screw, *i'*, or by any other suitable means. The arm J is secured to the carriage by forcing it through a suitable aperture in said carriage, in which it fits tightly. Its outer end projects beyond the carriage and receives a cross-piece, J', which is secured thereon by means of a nut, *j*, on the threaded extremity of said arm or by any other suitable means. To the ends of the cross-piece J' are attached, by means of screw-bolts *j'*, the ends of a sprocket chain or belt, K, which passes over a sprocket wheel or pulley at each end of the frame A, one of said sprocket wheels or pulleys receiving motion in either direction from any suitable source, so as to move the carriage positively in either direction. Although I have shown this device for actuating the carriage by power, any other suitable means may be employed; or, if preferred, the carriage may be operated by hand.

The operation of my machine is as follows:
The sheet-lead as it comes from the finishing-rolls of the sheet-lead-rolling machine passes out and rests upon the bed formed by the rollers B. Its lateral edges are in a rough and unfinished or untrimmed condition, the width of the sheet varying at different points. A carriage and guiding-way will, in practice, be arranged on each side of the bed, so that both edges of the sheet may be trimmed; but since the operation of both is the same, only so much thereof as relates to one of them will be described. The carriage is first moved to one end of the sheet, the plate I and arm E being adjusted laterally inward to an extent sufficient to remove all of the inequalities of the edge. The plate I is then passed under the sheet of lead, and the cutter G brought down into proper working position by means of the hand-wheel F'. The carriage is then moved along the guiding-way D either by hand or by the mechanism described, and the cutter will trim off the edge of the sheet, leaving the same with a straight true edge, the accuracy

of which is assured by reason of the guiding-way D, which causes the carriage to travel in a straight line and prevents any deviation of the cutter. The other edge is trimmed in a similar manner, thereby producing a finished sheet of equal dimensions throughout.

It is obvious that various modifications in the details of construction and arrangement of the parts may be made without departing from the principle of my invention, and I therefore do not wish to be understood as limiting myself strictly to the precise details hereinbefore described, and shown in the drawings.

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

1. In a machine for cutting sheet-lead, the combination, with a longitudinal bed to receive the sheet, of a guiding-way arranged adjacent thereto parallel with the side of the bed, a carriage mounted on the said way, and an arm extending over the bed, provided with a cutter at its inner end and having its other end adjustably mounted in the carriage, substantially as and for the purposes specified.

2. In a machine for cutting sheet-lead, the combination, with a longitudinal bed for the sheet, of a guiding-way arranged adjacent thereto parallel with the side of the bed, a carriage mounted on the said way, and an arm adjustably mounted in the said carriage, extending inward over the bed, and provided at its inner end with a vertically-adjustable cutter, substantially as and for the purposes specified.

3. In a machine for cutting sheet-lead, the combination, with a suitable bed, a guiding-way adjacent thereto, and a carriage mounted on said way and provided with a suitable cutter, of an anvil or bed-plate attached to and carried by said carriage, to co-operate with the cutter, substantially as and for the purposes specified.

4. In a machine for cutting sheet-lead, the combination, with the bed and its framing A, of the way D, attached to said framing, and the carriage C, provided with a suitable cutter and having the grooved wheels C', arranged two on one side and one on the other side of said way, substantially as and for the purposes specified.

5. In a machine for cutting sheet-lead, the combination, with a suitable bed, of the carriage C, mounted on a suitable guiding-way and provided with sleeve C² and set-screw *c*, and the cylindrical arm E, carrying the cutter and adjustable in said sleeve, substantially as and for the purposes specified.

6. In a machine for cutting sheet-lead, the combination, with the carriage C and arm E, having sleeve E', apertured as described, of the sleeve-nut F, having flange *f*, nut *f'*, and hand-wheel F', and the cutter-head H, having cutter G and threaded extension H', said cutter-head being constructed and arranged to slide but not rotate in sleeve E', substantially as and for the purposes specified.

7. In a machine for cutting sheet-lead, the combination, with the carriage C and fixed arm J, of the plate I, beveled at its edges and having yoke I' and set-screw i', by means of which it is adjustable on arm J, substantially as and for the purposes specified.

8. In a machine for cutting sheet-lead, the combination, with a bed for the sheet, consisting of a series of transverse rollers, of the carriage mounted on a guiding-way parallel to said bed and provided with a suitable cutter, and with an anvil or plate to co-operate therewith, said anvil or plate being adapted to travel between the sheet-lead and the rollers, substantially as and for the purposes specified.

9. In a machine for cutting sheet-lead, the combination, with a suitable bed, of a guiding-way arranged parallel thereto, a carriage mounted on said way and provided with a suitable cutter, and a sprocket chain or belt attached to said carriage and actuated to move the same in either direction, substantially as and for the purposes specified.

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Witnesses:

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