

(No Model.)

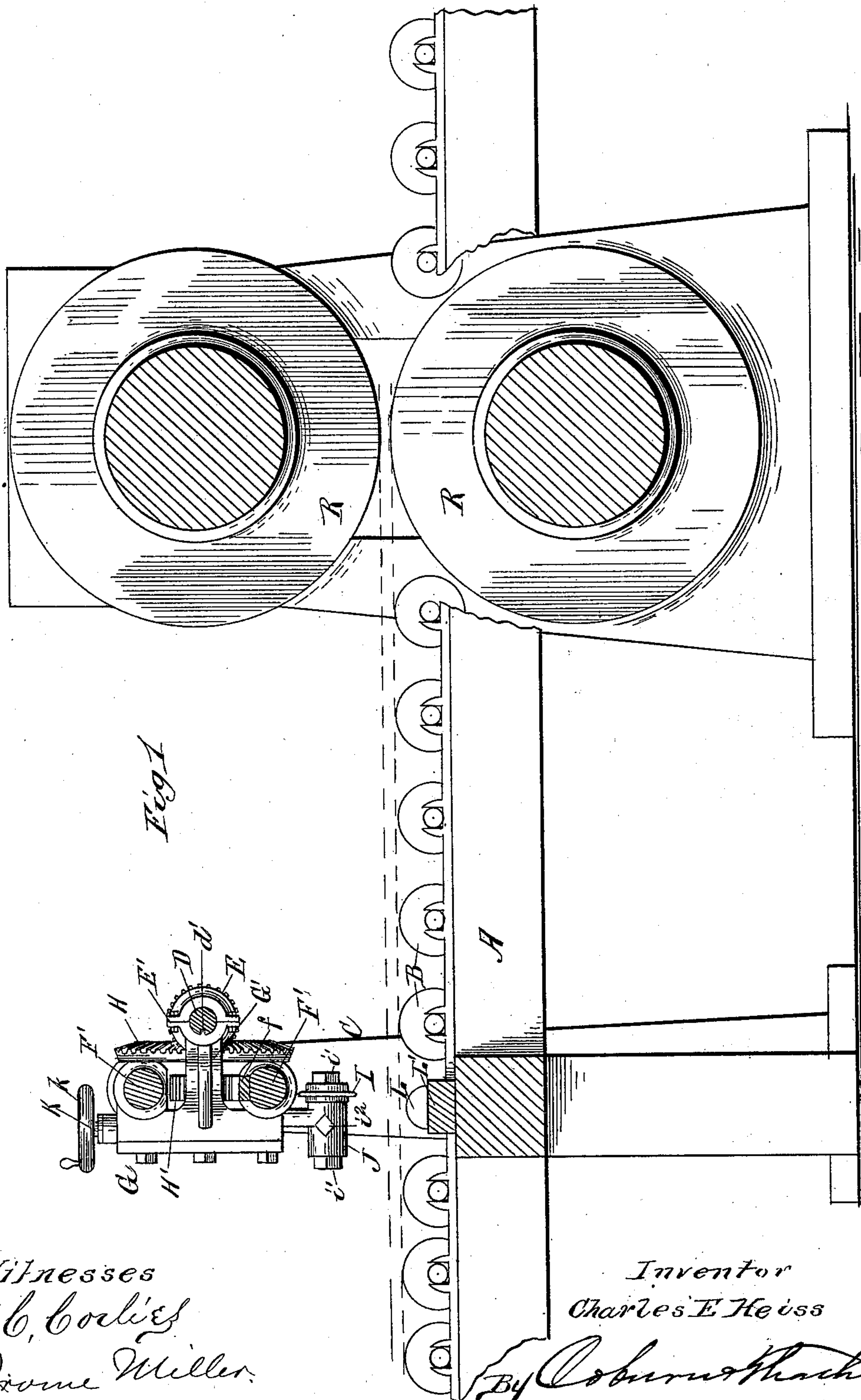
4 Sheets—Sheet 1.

C. E. HEISS.

MACHINE FOR CUTTING SHEET LEAD TRANSVERSELY.

No. 362,622.

Patented May 10, 1887.



Witnesses  
W. C. Corlies  
James Miller.

Inventor  
Charles E. Heiss

By *Coburn & Thacher*  
Attorneys

(No Model.)

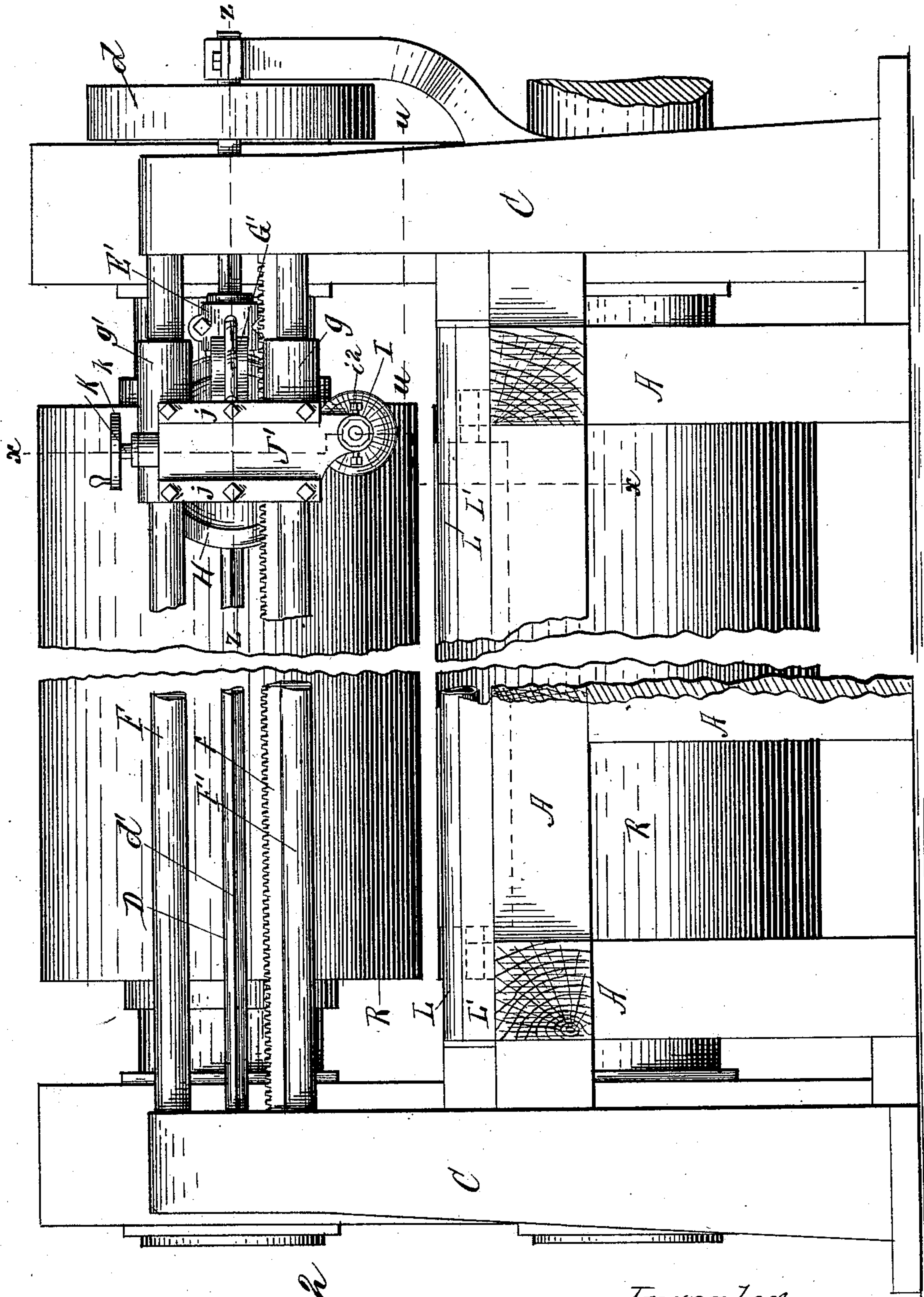
4 Sheets—Sheet 2.

C. E. HEISS.

MACHINE FOR CUTTING SHEET LEAD TRANSVERSELY.

No. 362,622.

Patented May 10, 1887.



Witnesses  
W. B. Bodley  
Irvine Miller

*Fig 2*

Inventor  
Charles E. Heiss

By *Colburn & Thacher*  
Attorneys



(No Model.)

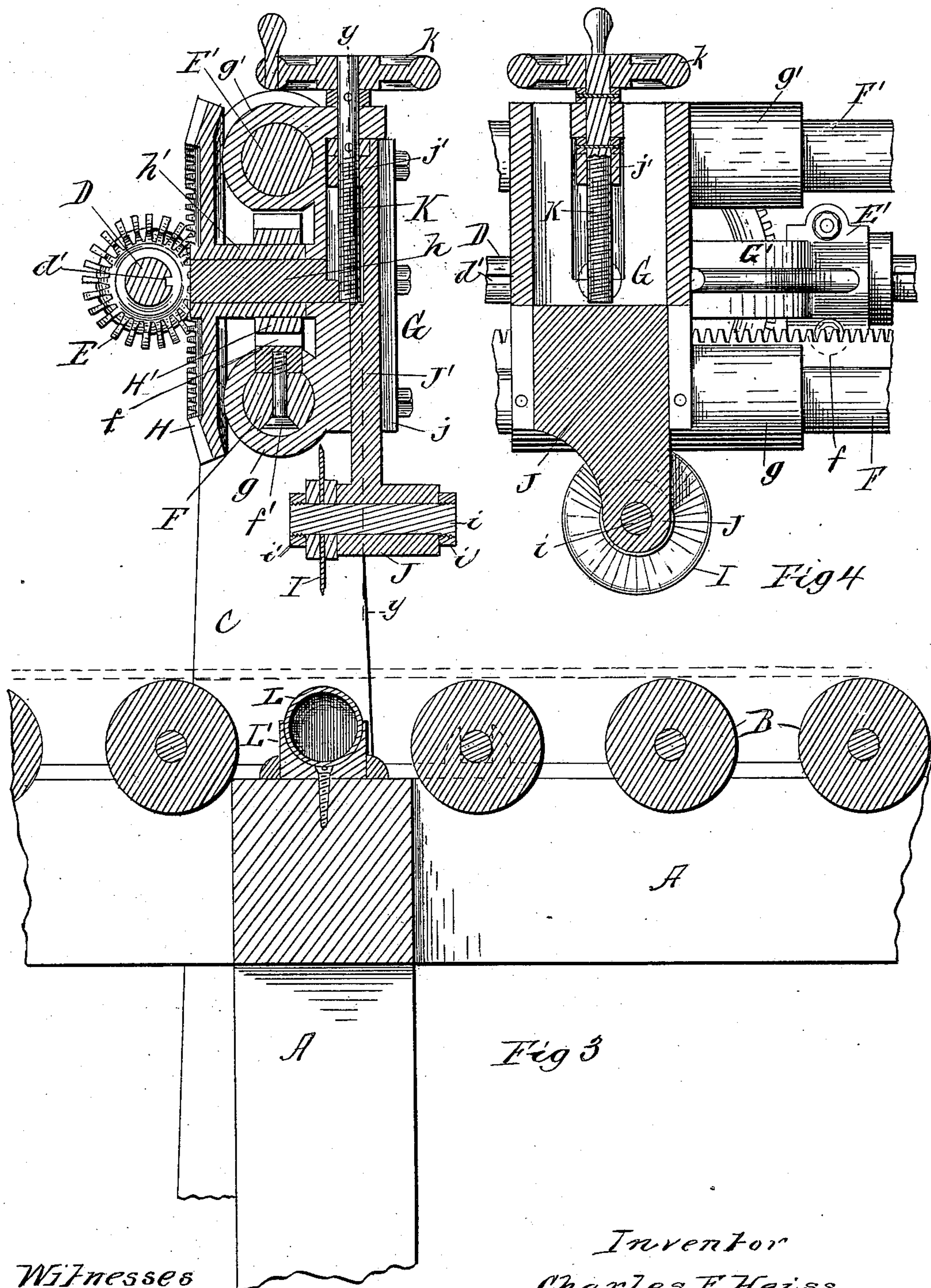
4 Sheets—Sheet 3.

C. E. HEISS.

MACHINE FOR CUTTING SHEET LEAD TRANSVERSELY.

No. 362,622.

Patented May 10, 1887.



Witnesses  
W. C. Corlies  
James Miller

Inventor  
Charles E. Heiss

By *Corbin & Thacher*  
Attorneys



(No Model.)

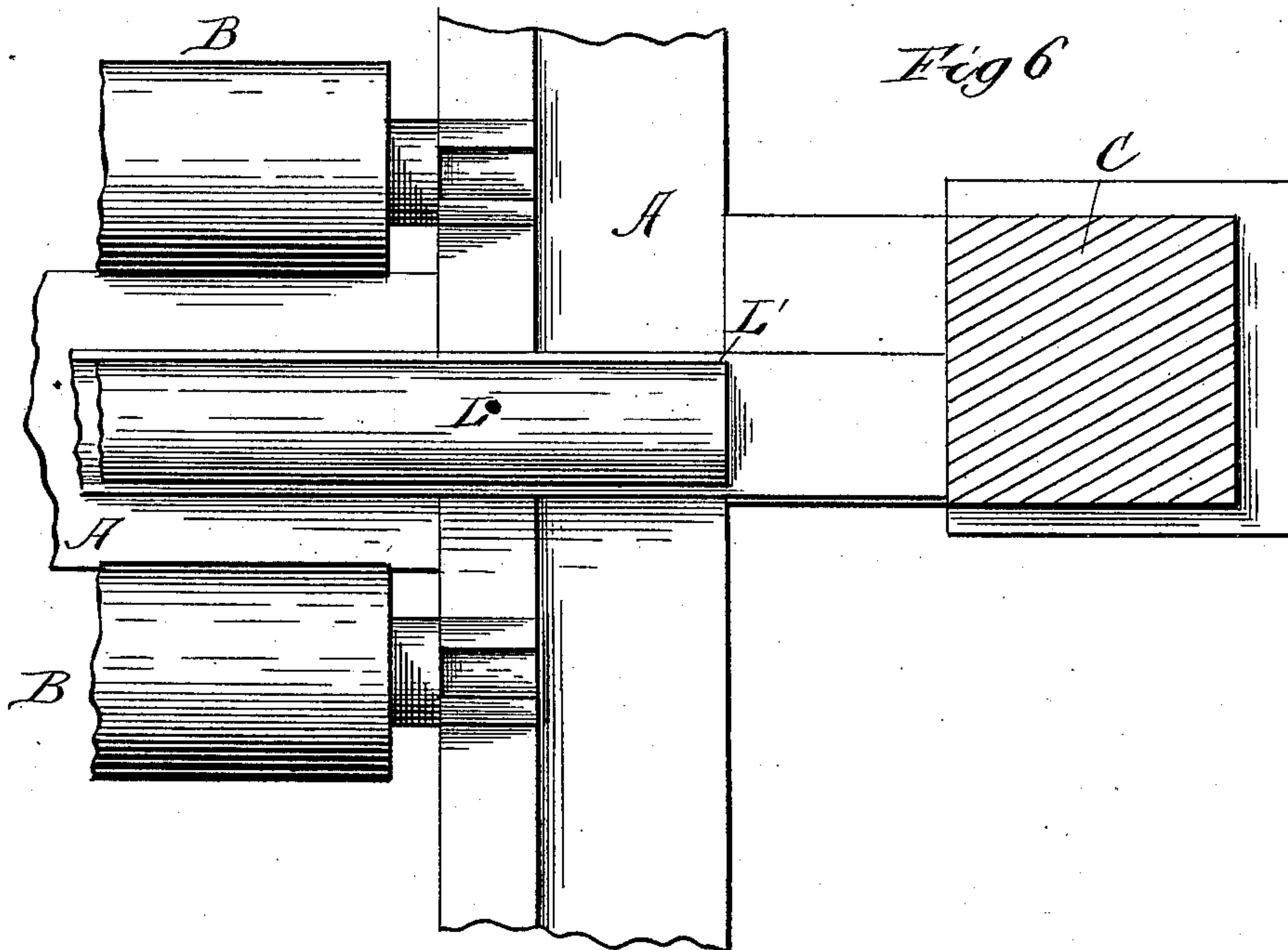
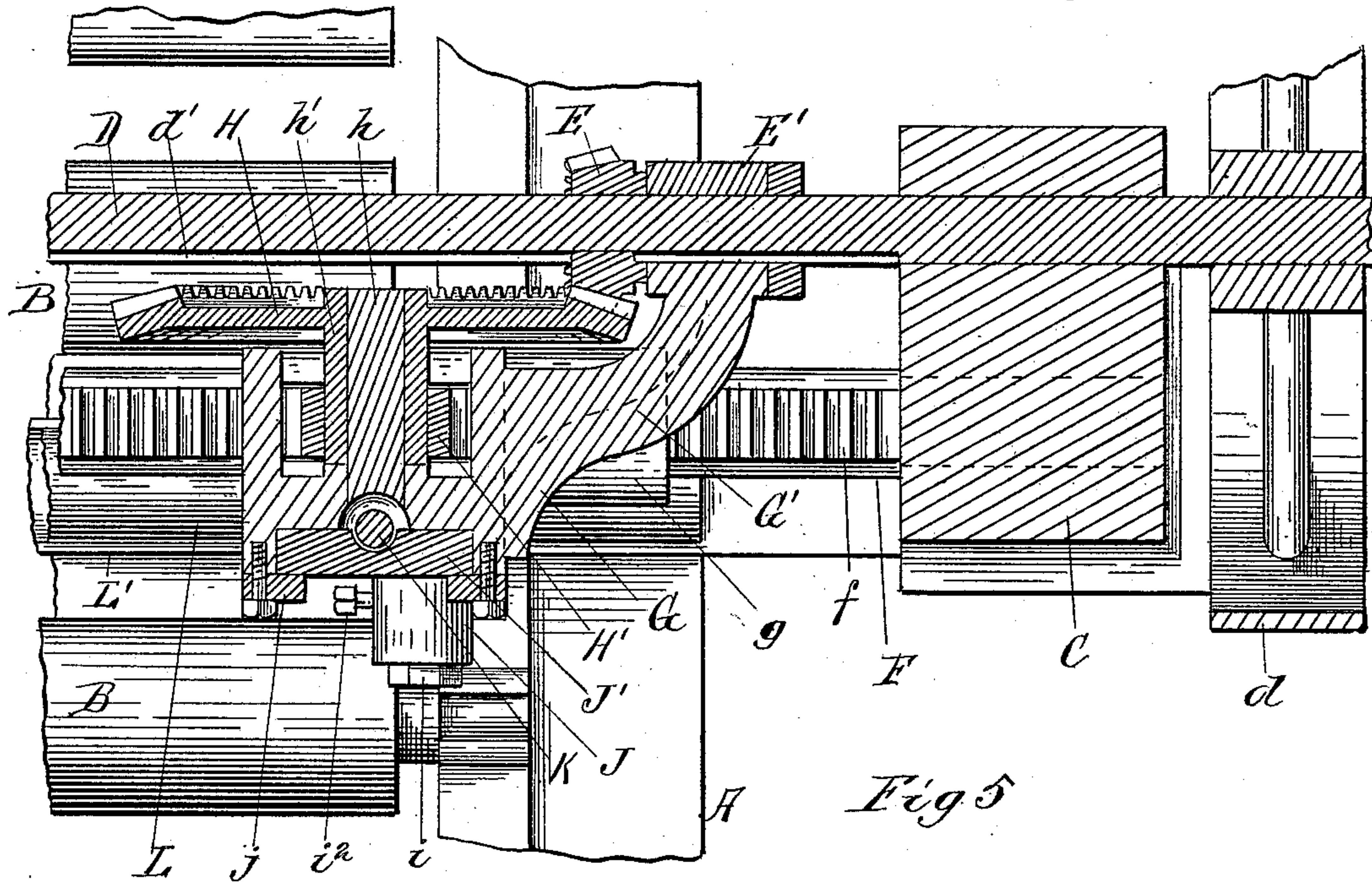
4 Sheets—Sheet 4.

C. E. HEISS.

MACHINE FOR CUTTING SHEET LEAD TRANSVERSELY.

No. 362,622.

Patented May 10, 1887.



Witnesses  
W. C. Corlies  
Irvine Miller

Inventor  
Charles E. Heiss  
By *Colman & Thacher*  
Attorneys



# UNITED STATES PATENT OFFICE.

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

## MACHINE FOR CUTTING SHEET-LEAD TRANSVERSELY.

SPECIFICATION forming part of Letters Patent No. 362,622, dated May 10, 1887.

Application filed January 8, 1887. Serial No. 223,836. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES E. HEISS, a citizen of the United States, and 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 Transversely, which is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of a machine embodying my invention, one side of the frame being removed; Fig. 2, a front elevation of the same; Fig. 3, a vertical sectional view of the same, taken on the line *xx* of Fig. 2; Fig. 4, a detail sectional view taken on the line *yy* of Fig. 3; Fig. 5, a detail plan section taken on the line *zz* of Fig. 2, and Fig. 6 a detail plan section taken on the line *uu* of Fig. 2.

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

My invention relates to machines for cutting lead transversely, it being intended more particularly to operate upon sheet-lead as it comes in sheets from the rolls of the sheet-lead-rolling machine; and it has for its object to produce a machine which shall automatically and effectively sever the sheet of lead by a transverse cut, so as to subdivide it into sections of any desired length.

I will now proceed to describe a construction in which I have practically carried out my invention in one form, and will then particularly point out in the claims those features which I deem to be new and desire to protect by Letters Patent.

In the drawings, A represents a suitable frame, in which a series of supporting-rollers, B, is mounted, which said rollers serve to receive the sheet-lead as it comes from the rolls R of the sheet-lead-rolling machine. On each side of said frame is arranged a standard, C, in suitable bearings, in which is mounted a transverse shaft, D, provided with a pulley, *d*, to receive a belt, by means of which motion is imparted to said shaft in either direction, as desired. The shaft D is provided with a spline-groove, *d'*, and a bevel-pinion, E, is mounted loosely on said shaft, so as to slide longitudinally thereon, being provided with a suitable key to fit within the spline-groove *d'*, to cause

said pinion to rotate along with said shaft. Two rods, F F', extend from standard to standard, forming ways upon which the cutter-head G is mounted and travels, said cutter-head being provided with sleeves *g g'*, which encircle the said rods, as shown. Mounted in the cutter-head G is an arbor, *h*, upon which is mounted a bevel-gear, H, which meshes with the bevel-pinion E, said pinion being mounted in a sleeve-bearing, E', attached to an arm, G', extending outward from the cutter-head G, as shown more particularly in Fig. 4 of the drawings. The bevel-gear H is provided with an extended or sleeve-like hub, *h'*, upon which is secured or formed a pinion, H', which meshes with a rack, *f*, attached to or formed upon one of the rods or ways F F'. In the present instance this rack *f* is shown attached by means of screw-bolts *f'* to the lower rod or way, F, the sleeve *g* being slotted to permit the rack to project.

The cutter-head G is provided with a suitable cutter, the form which I prefer being that shown, consisting of a disk, I, of steel, mounted to revolve freely on an arbor, *i*, secured in a sleeve-bearing, J. The cutter and its arbor are secured in position by means of nuts *i'*, mounted upon the threaded ends of the arbor, and the arbor is additionally held by means of set-screws *i''*, passing through the sleeve J from each side, as shown more particularly in Fig. 1 of the drawings. The sleeve J is attached to or formed on the lower end of a slide, J', mounted in suitable ways, *j*, on the face of the cutter-head G, and capable of vertical motion in said ways.

K indicates an adjusting-screw swiveled in the cutter-head G, provided with a hand-wheel, *k*, and passing through a suitably-threaded aperture in a lug, *j'*, on the slide J'. By means of this adjusting-screw the slide J and the cutter I may be moved up and down, in order to bring the cutter down to its work, or to withdraw it therefrom, as desired.

In order to provide a suitable bed for operating in conjunction with the cutter, I provide a cylinder, L, which rests in a correspondingly-grooved seat, L', extending from standard to standard. The cylinder L is preferably a tube of brass or other metal, arranged parallel with the line of travel of the cutter, and with its



top preferably slightly below the level of the tops of the rollers B. The cylinder is not secured in the seat L', being simply retained in position by its own weight.

5 The operation of the machine is as follows: The sheet-lead as it comes from the rolls R passes upon the rollers B and rests upon the bed formed by said rollers, in the position shown in dotted lines in Fig. 2 of the drawings. The said rolls act not only to finish the rolling of the sheet-lead, but also serve to feed the sheet-lead into proper position upon the bed formed by the rollers B. The cutter I is then brought down into proper position by means of the adjusting-screw K, rotary motion being imparted to the shaft D, and thence through the pinion E and H to the pinion H'. This latter, by reason of its engagement with the rack f, will cause the entire cutter-head G to traverse upon the ways F F'. This traversing movement of the cutter-head causes the cutter to cut the sheet-lead upon a transverse line, the cylinder L acting as a bed to co-operate with the said cutter. By reversing the direction of the motion of the shaft D the cutter-head and cutter may be retracted to their original position, when the sheet of lead may be moved into position for another cut, and the above-described operation repeated. The cutter may be adjusted as desired by means of the screw K, and may be readily removed and replaced. In case that portion of the cylinder I against which the cutter acts should become so worn as to materially affect the operation of said cutter, a new surface may be presented by rotating the said cylinder slightly within its bed or support L'.

It is obvious that various modifications in the details of construction and in the arrangement of the parts may be made without departing from the principle of my invention. For instance, although I have shown and described a revoluble disk-cutter, any other approved form of cutter may be substituted. It will be also seen that although I have described the part L as cylindrical, it may be polygonal in form, although I prefer the construction shown and described. Moreover, although I have shown and described my invention as applied to and used in conjunction with the rolls of a sheet-lead-rolling machine, it is obviously capable of independent use. I therefore do not wish to be understood as limiting myself 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—

60 1. In a machine for cutting sheet-lead, the combination, with a suitable bed, of the ways

F F', the cutter-head G, mounted on said ways and provided with a suitable cutter, the rack f, the shaft D, the bevel-pinion E, splined on said shaft and carried by the cutter-head, and the bevel-gear H, meshing with bevel-pinion E and having the pinion H' to mesh with the rack f, substantially as and for the purposes specified. 65

2. In a machine for cutting sheet-lead, the combination, with the traversing cutter-head G, of the slide J' and adjusting-screw K, the sleeve J on the slide, the arbor i, secured in said sleeve, and the disk-cutter I, mounted on said arbor, substantially as and for the purposes specified. 70 75

3. The combination, with the sleeve J, of the arbor i, mounted therein and threaded at its extremities, the disk-cutter I, mounted to revolve on said arbor, and the nuts i' and set-screws i'', for securing said cutter and arbor in position, substantially as and for the purposes specified. 80

4. In a machine for cutting sheet-lead, the combination, with the traversing cutter, of a cylinder or its described equivalent arranged parallel to the line of travel of said cutter to form a bed for operating in conjunction therewith, said cylinder being revoluble to present a new surface when worn, substantially as and for the purposes specified. 85 90

5. In a machine for cutting sheet-lead, the combination, with the traversing cutter, of the cylinder or tube L, arranged in the line of cut, and correspondingly-grooved bed L', in which said cylinder rests, substantially as and for the purposes specified. 95

6. In a machine for cutting sheet-lead, the combination, with a suitable traversing cutter, of a bed to receive the sheet-lead, said bed consisting of a series of transverse rollers, substantially as and for the purposes specified. 100

7. The combination, with a machine for rolling sheet-lead, of the transverse cutting-machine arranged to operate upon the lead as it comes from the rolls, whereby the said rolls serve as a feed mechanism to feed the sheet to the cutting-machine, substantially as and for the purposes specified. 105

8. The combination, with the rolls R of the sheet-lead-rolling machine, of the bed consisting of a series of rollers, B, to receive the sheet-lead as it comes from said rolls, and a suitable traversing cutter to operate on the lead as it rests on said bed, the said rolls serving to feed the sheet along the roller-bed to the cutter, substantially as and for the purposes specified. 110 115

CHARLES E. HEISS.

Witnesses:

IRVINE MILLER,  
W. C. CORLIES.