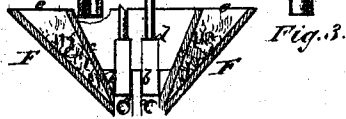
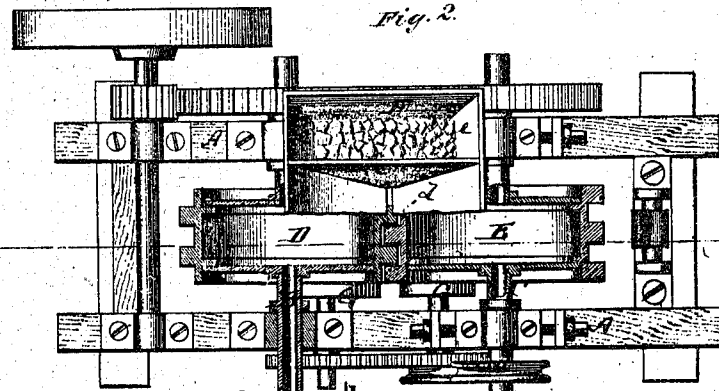
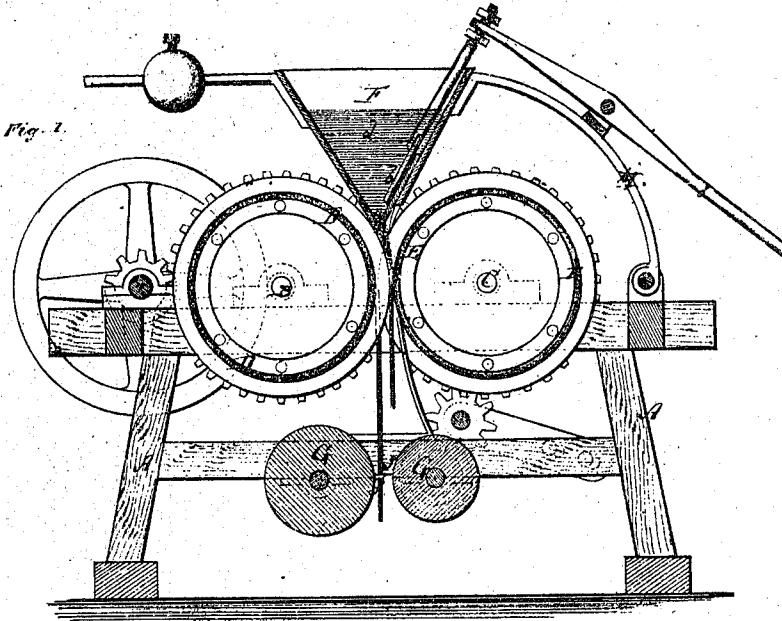


K.M. Kees,

Cutting Printers Leads.

No. 105463.

Patented July 19, 1870.



Witnesses:
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Geo. W. Mabee

Inventor:
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United States Patent Office.

KARL M. KLEES, OF NEW YORK, N. Y.

Letters Patent No. 105,463, dated July 19, 1870.

IMPROVEMENT IN MACHINES FOR MAKING PRINTERS' LEADS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, KARL M. KLEES, of the city of New York, in the county and State of New York, have invented a new and improved Machine for Making Printers' Leads; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

Figure 1 represents a vertical longitudinal section of my improved machine.

Figure 2 is a plan or top view, partly in section, of the same.

Figure 3 is a vertical transverse section of the hopper.

Similar letters of reference indicate corresponding parts.

The object of this invention is to construct a machine by means of which printers' leads of the requisite width, length, and thickness, can be made in a continuous process.

The invention consists chiefly in the general arrangement and use of a pair of grooved and ribbed rollers, between which one or more continuous strings of heated metal are pressed and rolled into the requisite form.

The invention consists, also, in the application to the said rollers of a peculiar hopper, which has as many discharge openings and slides as there are grooves for the formation of different strips of metal.

A, in the drawing, represents the frame of my machine. It is made of wood or other suitable material, of suitable size and form, strong enough for all practical purposes.

In the frame are hung two transverse horizontal shafts, B and C, carrying drums or rollers D and E, respectively. The shafts B C are hollow, and so are the drums they carry, so that water may be forced into them to keep them from becoming overheated by friction. The edges of the drums are close together, and are, respectively, grooved and ribbed, the ribs of one fitting into the grooves of the other.

Above the rollers D E is arranged a hopper, F. This hopper contains, at or near its lower end, as

many apertures *a* as there are grooves in the roller E, one such aperture above each groove.

The apertures *a* are controlled by slides or gates *b*, which regulate the amount of matter passing through the same.

Partitions *c c*, in the hopper, divide the middle chamber *d* of the same from a pair of end chambers, *e e*, in which coal for heating the middle chamber may be contained.

Under the drums D E is hung, in the frame A, a pair of rollers, G G, which carries cutters *f g*, for reducing the length of strip coming from said rollers.

The hopper is preferably secured to a pivoted frame, H, so that it can be swung clear of the rollers, for permitting inspection, cleaning, repairing, &c.

The operation is as follows:

The metal to be used for the leads is, in a liquid or semi-liquid state, put into the hopper, and is kept heated by the coal in the chambers *e*. It is gradually fed out into the grooves of the wheel E, in which the ribs of D press it into strips of the requisite width and thickness.

The rollers D E are kept cool by the water passing through them, and will, therefore, not be overheated by the hot metal.

The strips issue from the rollers in a continuous course, and are, by the knives *f g*, cut into leads of proper length.

Rotary motion is imparted to the rollers by suitable mechanism.

Having thus described my invention,

I claim as new and desire to secure by Letters Patent—

1. The rolls D E, hollow, ribbed, and grooved, as shown and described, combined with a vessel having slides *b* and apertures *a*, to supply the plastic metal thereto.

2. The hollow, ribbed, and grooved rolls D E, and the rotary cutters *f g* G G, all relatively arranged as set forth, combined with a suitable vessel to supply the plastic metal thereto.

KARL M. KLEES.

Witnesses:

GEO. W. MABEE,
ALEX. F. ROBERTS.