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SURFACE TREATING SECTION METAL

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Fig. 1

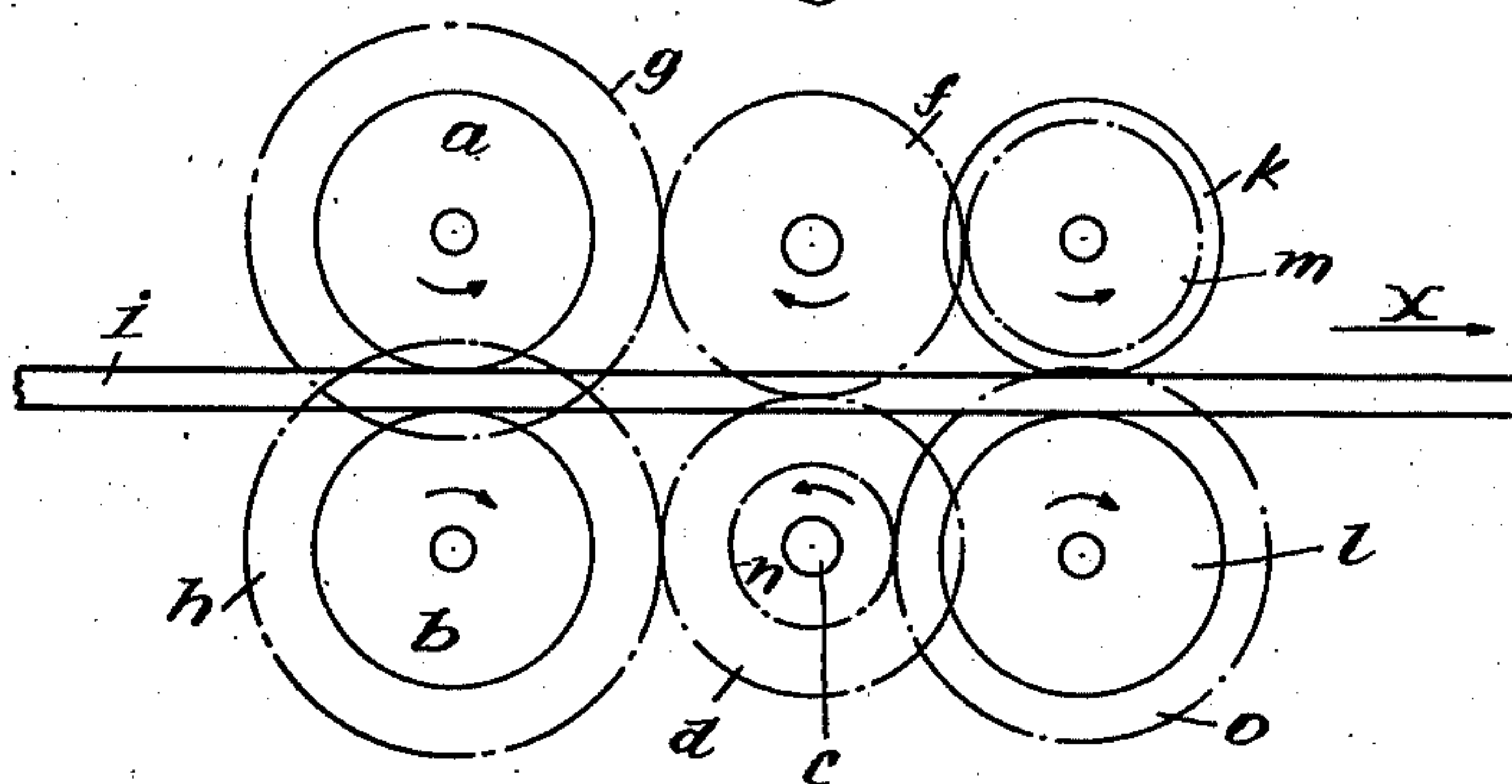
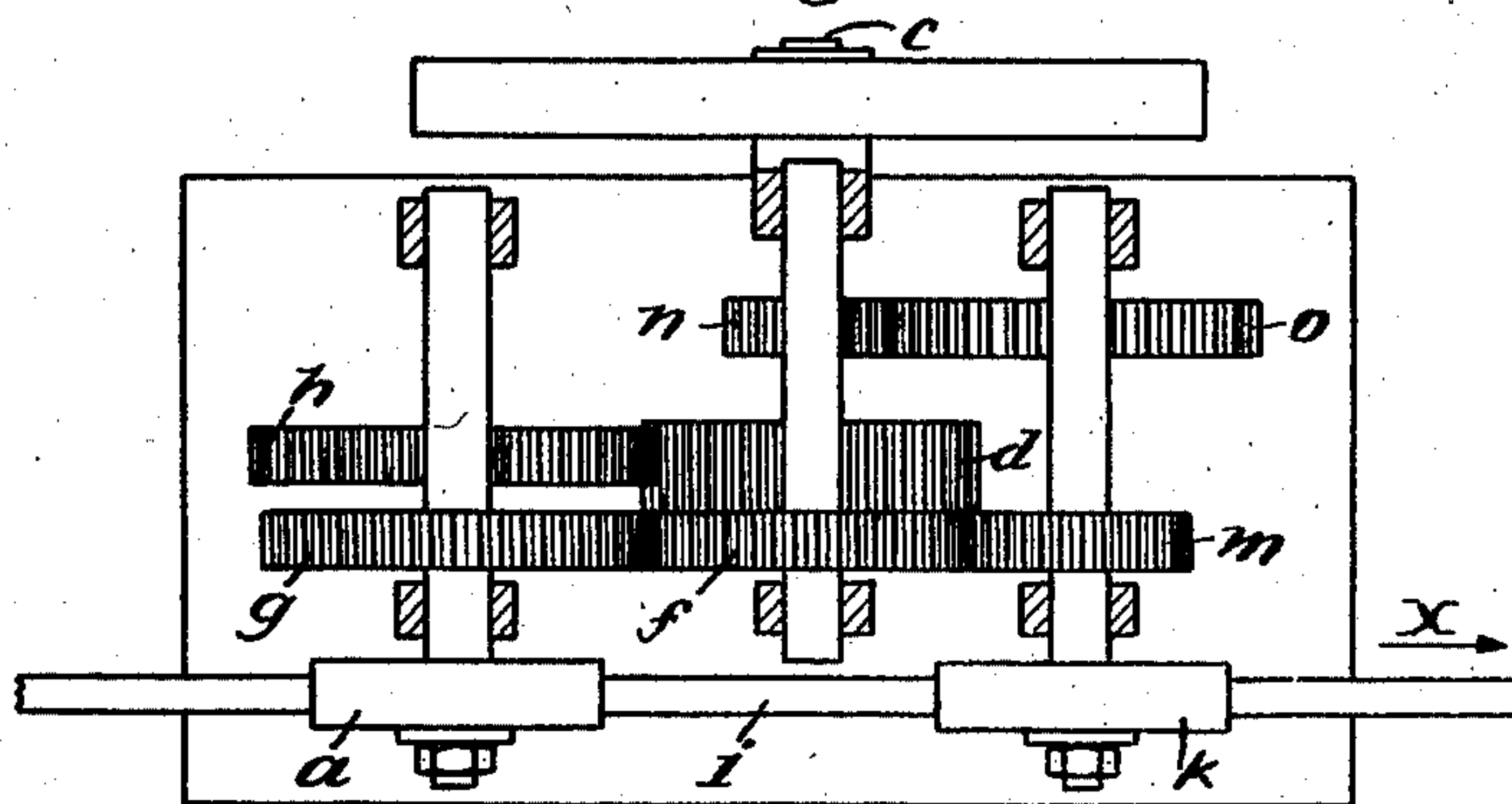


Fig. 2



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# UNITED STATES PATENT OFFICE

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## SURFACE TREATING SECTION METAL

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1 Claim. (Cl. 29—90)

This invention relates to the condensing and smoothing of section metal, more particularly of rods or rings of square or hexagonal section.

The treatment of profiled material in rods or rings for obtaining a smooth bright surface is generally done hitherto by polishing the surface by means of fast rotating wire brushes or metal discs. This treatment yields a surface which, also if uneven and porous, is satisfactorily polished but not uniformly equalized and condensed.

The invention has for its object to devise a method of surface treating material of the kind stated through which the surface of the material is considerably condensed or has its pores smeared up and a good smoothing and polishing is attained, the method essentially consisting in passing the section metal with regulable slip between rotating rolls acting on the surface with a certain pressure.

In order to allow of the invention to be more clearly understood, it will now be described with reference to the accompanying drawing which illustrates a device suited for carrying out the method according to the invention.

In the drawing Fig. 1 is a diagrammatic front elevation and Fig. 2 a plan view of this device.

The device shown comprises a pair of feed rolls *a* and *b* which are driven from a main driving shaft *c* through the intermediary of toothed gears *d f g h* in such a manner that the rod *i* of section metal engaged between the rolls *a b* is conveyed with a predetermined speed in the direction of the arrow *x* through between a pair of surface treating rolls *k* and *l*. The rolls *k l* are likewise driven from the main shaft *c* through the intermediary of toothed gears *d f m n o*. The ratio of transmission is chosen so that the working rolls *k l* revolve with a higher or lower peripheral speed than the feed rolls *a b*. With the rolls *k l* engaging the rod *i* under pres-

sure, this results in a constant uniform slip of these rolls relative to the rod. Due to this slip, the working rolls produce at the surface of the section rod a smearing up of the pores as well as an extraordinary compression and at the same time a satisfactory smoothing and polishing of the surface.

It is preferable to construct and operate the device in such a manner that the average peripheral speed of the two rolls *k* and *l* is equal or substantially equal to the feed speed of the section rod *i*. As an example, the peripheral speed in the direction of movement of the rod may be 3 m/sec. with the roll *k* and 1 m/sec. with the roll *l*. In this case, this pair of rolls has the tendency to advance the rod at the average roll speed of 2 m/sec., while there is at the same time a continuous relative slip between the rolls and the rod. If now the peripheral speed of each of the feed rolls *a b* is likewise 2 m/sec., it will suffice to have these rolls engage the rod with a comparatively low pressure in order to secure a regular forward movement of the section rod against casual reactions.

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

A method of treating section metal, consisting in imparting a regulable positive linear feed movement to the section metal through a pair of feed rolls driven with equal peripheral speed, and passing the metal thus advanced between a pair of cooperating polishing pressure rolls, with one of said rolls having a speed higher and the other a speed lower than the advance speed of the metal, and selecting the ratio of the different pressure roll speeds so as to cause their average peripheral speed to be substantially equal to the peripheral speed of the feed rolls.

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