

L. HIRSCHFELD.
CUTTING MACHINE.

APPLICATION FILED MAR. 18, 1909.

Patented Jan. 10, 1911.

981,425.

3 SHEETS-SHEET 1.

Fig. 1.

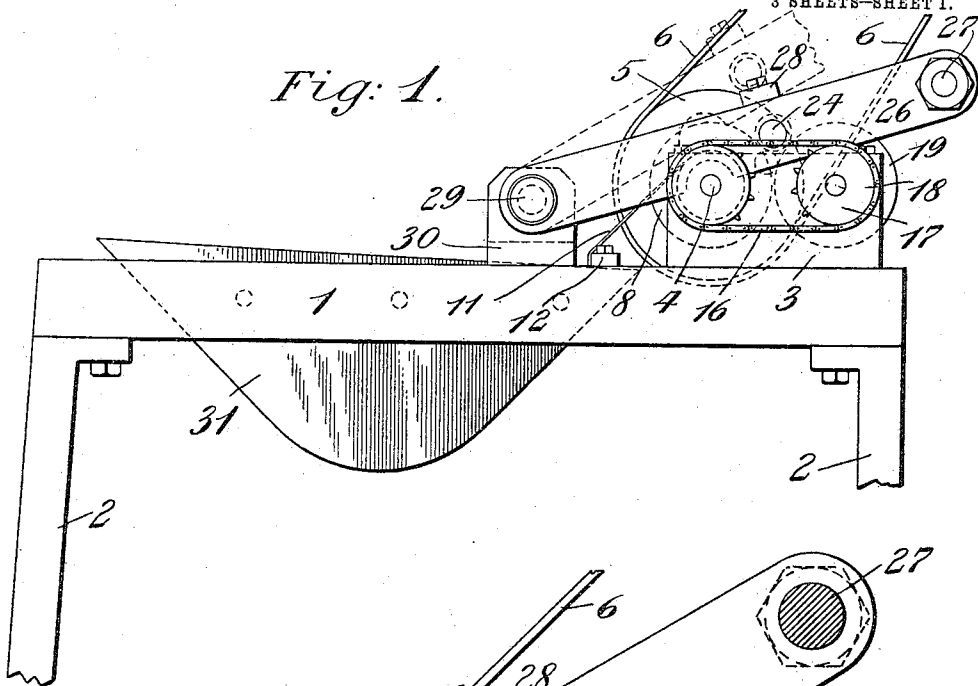
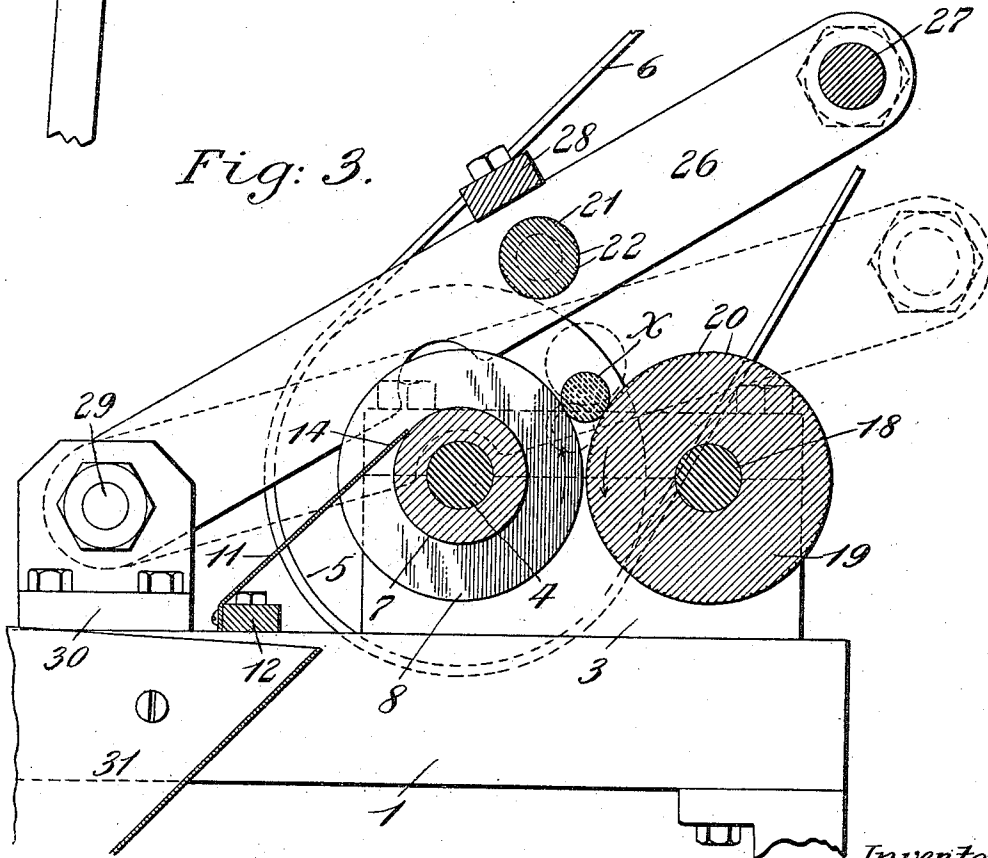


Fig. 3.



Witnesses:
A. P. Leonard
E. W. Bischoff

Inventor:
Leo Hirschfeld.
By
J. E. Dunning
his Attorney.

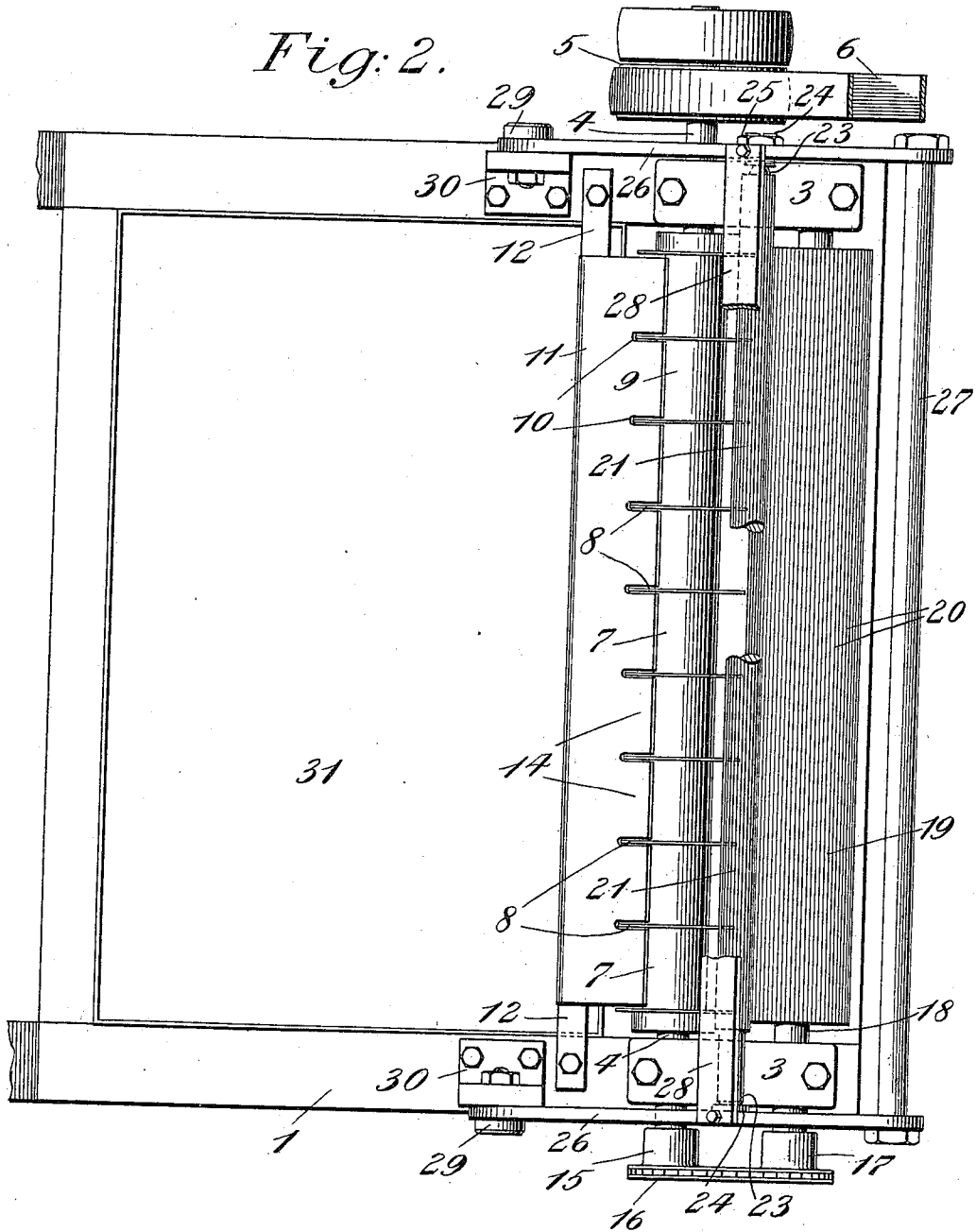
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3 SHEETS-SHEET 2.

Fig. 2.



Witnesses:
A. F. Cornell
E. F. Cichoff

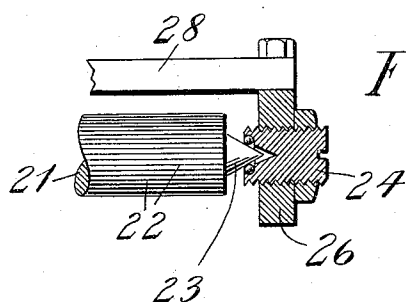
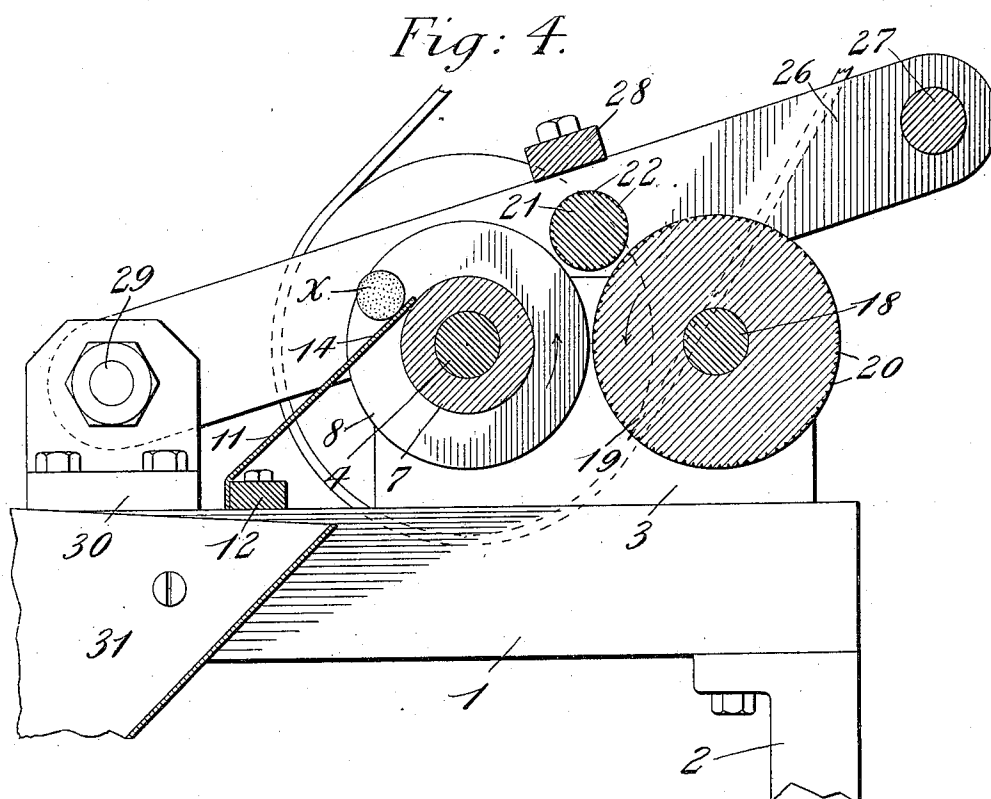
Inventor:
L. Hirschfeld,
By
[Signature]
his Attorney.

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3 SHEETS—SHEET 3.



WITNESSES
Geo. C. Bohring
A. F. Kenned

INVENTOR
L. Hirschfeld
BY *J. C. Bohring*
ATTORNEY

UNITED STATES PATENT OFFICE.

LEO HIRSCHFELD, OF NEW YORK, N. Y.

CUTTING-MACHINE.

981,425.

Specification of Letters Patent. Patented Jan. 10, 1911.

Application filed March 18, 1909. Serial No. 484,327.

To all whom it may concern:

Be it known that I, LEO HIRSCHFELD, a citizen of the United States, and a resident of the city, county, and State of New York, have invented certain Improvements in Cutting-Machines, of which the following is a specification.

This invention relates to certain improvements in cutting machines, and more particularly in that class of such machines which are especially designed and adapted for employment in cutting or severing elongated rods or strips into shorter lengths or sections, and the object of the invention is to provide a machine of this general character of a simple and comparatively inexpensive nature and of a strong and compact construction, which shall permit of convenient and effective use for severing such rods or strips into desirable lengths with great rapidity and without requiring any special skill or attention upon the part of the attendant.

The invention consists in certain novel features of the construction, and combinations and arrangements of the several parts of the improved cutting machine, whereby certain important advantages are attained, and the device is rendered simpler, less expensive, and otherwise better adapted and more convenient for use, all as will be hereinafter fully set forth.

The novel features of the invention will be carefully defined in the claims.

In order that my invention may be the better understood, I will now proceed to describe the same with reference to the accompanying drawings, wherein—

Figure 1 is a side elevation showing a cutting machine embodying my invention, the same being constructed in a form particularly adapted for use in severing long sticks or rods of candy into short lengths or sections; Fig. 2 is a plan view of the machine constructed as shown in Fig. 1; Fig. 3 is an enlarged sectional view taken vertically through the cutting devices of the machine in the plane indicated by line *a—**a*, in Fig. 2; Fig. 4 is a view similar to Fig. 3, but showing the operation of the guiding means in preventing clogging of the machine, and Fig. 5 is a fragmentary sectional view showing a feature of construction to be hereinafter referred to.

As shown in these views the cutting ma-

chine embodying my invention is mounted upon a rectangular frame or table 1, having a central space or opening, and supported upon legs 2, at a convenient height above the floor, there being alined bearing pieces 3, 3 erected at opposite sides of one end of said frame or table, in which bearing pieces is held a transversely extended shaft 4, one end of which carries, outside said frame or table, a pulley 5, over which is passed a belt or band 6, by means of which rotatory movement may be imparted to said shaft from any convenient source of power for the operation of the improved cutting machine.

7 represents a cutting drum or cylinder, which is held upon the shaft 4 between the sides of the frame or table 1 in such a manner as to turn in unison with said shaft, and this drum or cylinder 7 carries a plurality of circular or disk like cutters 8, 8, which may be conveniently formed from thin sheet or plate metal of such diameters that their perimetral portions are caused to project in annular form around the perimetral surface of said drum or cylinder. The said drum or cylinder 7 may, if desired, be produced from a plurality of sections 9, 9 alined end to end, and adapted to receive the cutting disks 8, 8 between them in such a manner as to operate to hold said disks spaced apart upon the shaft 4 at such distances as may be proper according to the lengths or sections which are to be cut. When the machine is constructed as herein shown, particularly for cutting or severing candy rods or sticks, the peripheral edges of the cutting disks 8, 8 need not be sharpened, but will preferably be made smooth and blunt.

The projecting parts of the cutting disks 8, 8 at one side of the drum or cylinder 4 play through slotted apertures 10, 10 produced in the adjacent edge portion of a guide plate 11, which is extended transversely across the central opening of the frame or table 1 parallel with the shaft 4, and is supported at its lower edge portion by a transverse brace 12, being thence extended in an upwardly inclined direction toward said drum or cylinder 7, and having its upper edge portion divided by the slotted openings 10, 10 into spaced inclined guide tongues 14, 14 which are extended between the cutting disks 8, 8 and have engagement at their free edges upon the peripheral parts

of said drum or cylinder 7 which intervenes between said cutting disks 8, 8, as clearly shown in Figs. 3 and 4 of the drawings.

At the side of the frame or table opposite 5 to the pulley 5, the shaft 4 which carries the drum or cylinder 7, is provided with a sprocket wheel 15, over which is passed a chain or link belt 16, extended thence around a similar sprocket wheel 17 upon the adjacent 10 end of a shaft 18 which is extended across the frame or table parallel with the shaft 4 and at the side of drum or cylinder 7 opposite to the guide plate 11, and is journaled in the bearing pieces 3, 3 at opposite 15 sides of the table or frame 1, the construction and arrangement of the parts herein shown being such that said shaft 18 is continuously driven in unison with the movement of shaft 4, but in a direction reverse 20 to that in which said shaft 4 is driven.

The shaft 18 carries, at its central part and opposite the central opening of the frame or table, a drum or cylindrical feed member 19, which is secured to turn with 25 said shaft and has its perimetral surface arranged to move in close proximity to the peripheral edge portions of the cutting disks 8, 8 upon the drum or cylinder 7, but preferably out of contact therewith, and said 30 perimetral surface of said cylindrical feed member 19 is herein shown as provided with longitudinally extended grooves or kerfs 20, 20, spaced apart in such a way as to impart to said surface of said feed member a fluted 35 or roughened formation such as is particularly well adapted to insure such engagement upon the candy rod or stick, indicated at *x*, when the same is placed in the bight of said member 19 with the cutting disks 8, 8, as shown in Fig. 3 of the drawings, as 40 is needful to impart a certain rotatory or rolling movement to said rod or stick whereby the cutting disks are caused to operate evenly around the entire circumference of 45 said rod or stick, to sever the same into the desired lengths without liability of splintering or cracking of the candy, or clogging of the machine due to adhesion of the candy to the operative parts.

21 represents an auxiliary feed roll or 50 member having a lesser diameter than the feed member 19, and also grooved or fluted upon its peripheral surface as shown at 22, and said auxiliary feed member is extended 55 across the frame or table 1 parallel with the shafts 4 and 18, and has its extremities provided with conical parts 23 which are supported in bearing pieces 24, carried by the arms 26, 26 of a yoke, comprising a handle 60 bar 27 joining the upper ends of said arms 26 and adapted to be grasped by the hand of the attendant, as will be hereinafter explained, and a brace bar 28 extended between said arms 26 above said auxiliary feed 65 roll or member 21, the lower ends of said

yoke arms 26 being pivoted as shown at 29 upon brackets 30, 30 secured at opposite sides of the frame or table 1, and the parts being so proportioned and arranged that 70 when said yoke is grasped by the handle bar 27 and pivotally moved downward, as shown in dotted lines in Fig. 3, said auxiliary feed roll or member 21 is caused to contact upon the candy rod or stick *x*, rested in the bight 75 of the member 19 and disks 8, 8, with such moderate and graduated pressure as is desirable to hold the candy in accurate contact with said disks 8, 8 during cutting thereof. The auxiliary feed member 21 80 being mounted for turning movement in its bearings, and being fitted upon its perimenter, is capable of being driven from contact of the candy rod or stick *x* therewith, so that flattening of the candy, interference 85 with the rolling movement thereof, and clogging of the machine are effectively avoided. One of the bearing pieces 24 has screw adjustment in the corresponding yoke arm 26, as shown in Fig. 5, so that wear may 90 be taken up when necessary, and said adjustable bearing piece has a lock nut 25 for holding it in adjusted position.

In the use of the machine constructed as above described, the candy will usually be 95 supplied in the form of elongated rods or sticks of cylindrical cross section, and then are successively inserted at the bight of the member 19 with the cutting disks 8, 8, the engagement of such parts being such as to 100 operate, in connection with their reverse rotatory movement, to impart a rolling movement to the candy, whereby the edge portions of the cutting disks are caused to contact with the candy rod or stick around its 105 entire peripheral surface. After the insertion of each rod or stick *x* in the bight of member 19 and disks 8, 8, the operator grasping the handle bar 27 of the pivoted yoke, which is normally elevated, as shown 110 in full lines in Fig. 3 to permit the convenient introduction of the candy, will draw said yoke downward with a graduated pressure, whereby the auxiliary feed roll or 115 member 21 is caused to press upon the candy rod or stick so as to force the same downward to the position shown in dotted lines in Fig. 3, without interfering with the rolling movement of said candy. In this way, the cutting disks 8, 8 are caused to sink into 120 the candy rod or stick at proper intervals along the length thereof, and the rolling movement of the candy will insure that the cuts produced by said disks 8, 8 will be extended uniformly around the rod or stick *x* so that splintering or deformation of the 125 candy is prevented, and the same is evenly and neatly severed into lengths or sections of the size desired. The candy being severed or cut into the desired lengths, will lodge between the disks 8, 8 and by the up- 130

ward movement of the said disks, as indicated by the arrow in Fig. 3, will be moved toward the perimeter of the drum or cylinder 7 so as to pass from beneath the auxiliary feed roll or member 21, and by the continued movement of said disks 8, 8 the lengths or sections of candy will be presented as shown in Fig. 4 upon the inclined upper surfaces of the guide tongues 14, 14 which will operate to withdraw said lengths or sections from between said disks 8, 8 without cracking or flattening of the candy, after which the lengths or sections will roll freely down the inclined guide plate 11, and fall into a receptacle 31 suitably arranged to receive them.

From the above description it will be evident that the machine embodying my improvements is of an extremely simple and comparatively inexpensive nature, and is particularly well adapted for use by reason of the facility and rapidity with which candy and similar substances may be severed or cut into desired lengths or sections, and of the assurance against breakage or deformation of the severed lengths afforded by it, and it will also be obvious from the above description that the machine is susceptible of considerable modification without material departure from the principles and spirit of my invention, and for this reason I do not desire to be understood as limiting myself to the precise formation and arrangement of the several parts herein set forth in carrying out my invention in practice.

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

1. A device of the character described having a feed member provided with a surface adapted for superficial contact upon an article to be cut, a guide member spaced apart from the feed member, and a plurality of rotatory cutters spaced apart and interposed between said feed member and the guide member and adapted for simultaneous engagement with the article to be cut and said feed member to cut the same into sections, and capable of operation to convey such sections away from the feed member and to deliver them to said guide member.

2. A device of the character described having a rotatable part provided with a surface whereon an article to be cut is adapted for rolling contact, cutting means engageable with said article during rolling movement thereof and a driven rotatable feed member having a cylindrical peripheral surface adapted for superficial contact with said article and adapted to impart rolling movement thereto.

3. A device of the character described hav-

ing three parts, two of which are rotatable and have cylindrical peripheral surfaces whereon an article to be cut is adapted for rolling contact at different sides, and the other of which is cutting means capable of engagement with said article to cut the same for driving one of said parts, and means for moving one part toward the others for controlling cutting engagement of the cutting means with the article.

4. A device of the character described having a rotatable feed member having a cylindrical peripheral surface, adapted for superficial contact with an article to be cut, and adapted to impart rolling movement thereto, a rotatable cutting means engageable with said article during rolling movement thereof, and a rotatable part provided with a surface whereon an article is adapted for rolling contact.

5. A device of the character described having a rotatable feed member having a cylindrical peripheral surface, adapted for superficial contact with an article to be cut, and adapted to impart rolling movement thereto, a rotatable cutting means engageable with said article during rolling movement thereof, and a rotatable part provided with a surface whereon an article is adapted for rolling contact capable of movement toward or from the feed member.

6. A device of the character described having a rotatable feed member having a cylindrical peripheral surface, adapted for superficial contact with an article, and adapted to impart rolling movement thereto, a rotatable cutting means engageable with said article during rolling movement thereof and a rotatable part provided with a surface whereon an article to be cut is adapted for rolling contact, and means for driving the feeding means and cutting means in unison.

7. A device of the character described having a driven rotatable feed member having a cylindrical peripheral surface adapted for superficial contact with an article to be cut, and adapted to impart rolling movement thereto, cutting means engageable with said article during rolling movement thereof, a yoke mounted for pivotal movement and a part rotatably mounted in the yoke and capable of rolling contact with the article to be cut.

In witness whereof I have hereunto signed my name this 25th day of February, 1909, in the presence of two subscribing witnesses.

LEO HIRSCHFELD.

Witnesses:

J. D. CAPLINGER,

A. F. CONNETT.