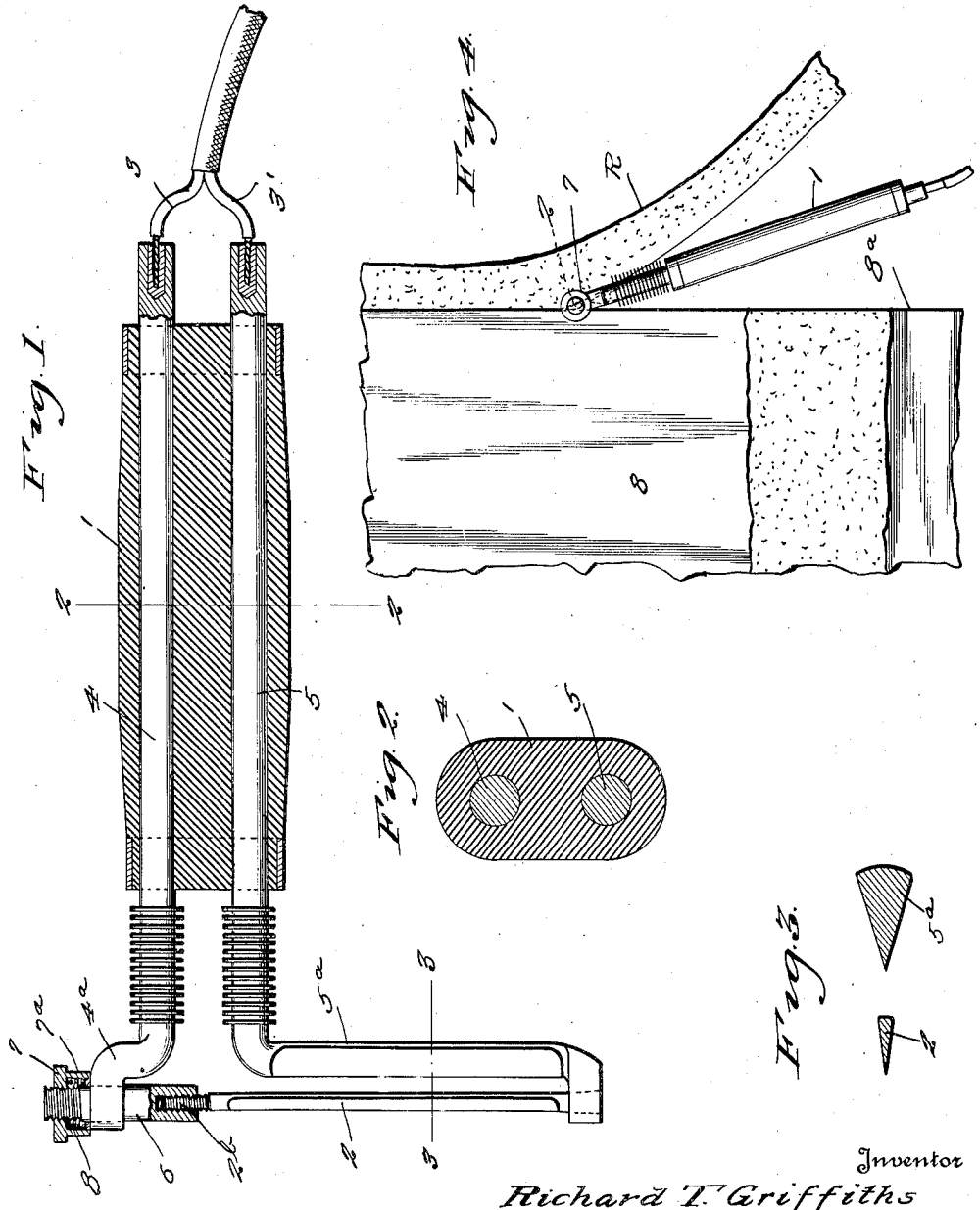
May 11, 1926. 1,584,371

R. T. GRIFFITHS

METHOD OF SEVERING RUBBER

Filed August 12, 1925



Inventor

Richard T. Griffiths

By Spear, Middleton, Donaldson & Hall

Attorneys

Patented May 11, 1926. 1,584,371

UNITED STATES PATENT OFFICE.

RICHARD T. GRIFFITHS, OF AKRON, OHIO, ASSIGNOR TO THE MILLER RUBBER COMPANY, OF AKRON, OHIO, A CORPORATION OF OHIO.

METHOD OF SEVERING RUBBER.

Application filed August 12, 1925. Serial No. 49,781.

My present invention relates to improvements in methods of cutting rubber. Heretofore this has been a difficult operation due to the tendency of the rubber to stick or adhere to the surface of the cutting implement.

I have discovered that if a severing element is heated to and maintained at a certain temperature and pressed against the rubber, the latter will be broken down or melted when it contacts with the heated element, which will pass readily through the rubber, analogous to a cutting action, but much more efficaciously, as the progressive melting or breaking down of the rubber results in the production of an oily substance which facilitates the passage of the severing element.

The invention includes the novel method hereinafter described, and particularly defined by the appended claims.

In order that the invention may be more readily understood, reference is made to accompanying drawings, in which:—

Figure 1 is an elevation (partly in section) showing what I at present consider the best form of severing instrument for carrying out my improved process.

Fig. 2 is a section on line 2—2 of Fig. 1.

Fig. 3 is a section on line 3—3 of Fig. 1.

Fig. 4 is diagrammatic of the device in operation.

Referring to this drawing, the numeral 1 designates a suitable handle of insulating material which supports the severing element. in the shape of a relatively thin blade 2 of electric resistance metal designed to be heated by the passage of electric current which is supplied thereto by the conductors 3, 3′ connected to a suitable source of current through a current controlling device or rheostat, whereby the temperature of the severing loop may be regulated.

The loop may conveniently be formed of nichrome wire, though it will be understood that I do not limit myself to this material. It will also be understood that by the term "wire" I do not mean to limit myself to any particular shape in cross section, though that shown is desirable.

In practice I prefer to support the blade in the manner shown in the drawings, in which the handle encompasses a frame comprising parallel members 4 and 5 having offset ends 4^a and 5^a, to which the ends of the knife blade are secured, preferably by tensioning means. The blade may have one end 2^a, rigidly secured to the offset frame end 5^a by any suitable means, and its other end secured as by means of a threaded connection 2^b to a member 6 slidably supported in the offset frame end 4^a and having a threaded outer end engaged by a tension nut 7.

A compression spring 8 is confined between the nut and frame end and encircles the member 6, the nut being provided with a spring enclosing skirt 7^a.

In carrying out the process the current is turned on till the resistance element is heated to the desired degree, preferably a cherry red, and one side of the knife is pressed against the edge or side of the rubber to be cut, whereupon it quickly penetrates and passes through the rubber. I have found that the action will be facilitated if the instrument is reciprocated during such pressing as this tends to keep the temperature of the resistance element even, due to the portions thereof which pass into and out of the rubber.

A specific example of cutting is illustrated in Fig. 2, wherein I have shown at R a plurality of rubber sheets confined between pattern plates 8 and 8^a, an edge or the edges of which serve as a guide for the severing device. Such pattern plates I make of heat resisting material such for example as asbestos board, which will not be injured by the heat or reduce the temperature of the severing element, as the latter contacts with the edge of the pattern and follows the contour thereof.

Having thus described my invention, what I claim is:—

1. The hereindescribed method of cutting rubber which consists in pressing thereagainst at the point to be severed a relatively narrow severing element and maintaining said element at a temperature which will break down the rubber without burning the same.

2. The hereindescribed method of cutting rubber which consists in pressing thereagainst at the point to be severed, a severing element of wire like shape which is maintained at a cherry red heat during the severing operation.

3. The hereindescribed method of cutting or severing rubber, which consists in apply-

ing to a surface of the rubber a pattern of heat resisting material, and pressing against the rubber and in contact with and guided by said edge, a severing element heated to a temperature sufficient to melt the rubber.

4. The hereindescribed method of cutting rubber sheets, which consists in confining the sheets between pattern plates of heat resisting material and pressing a severing element against the rubber and in contact with an edge of the pattern while maintaining said severing element at a temperature sufficient to melt the rubber.

In testimony whereof, I affix my signature.

RICHARD T. GRIFFITHS.