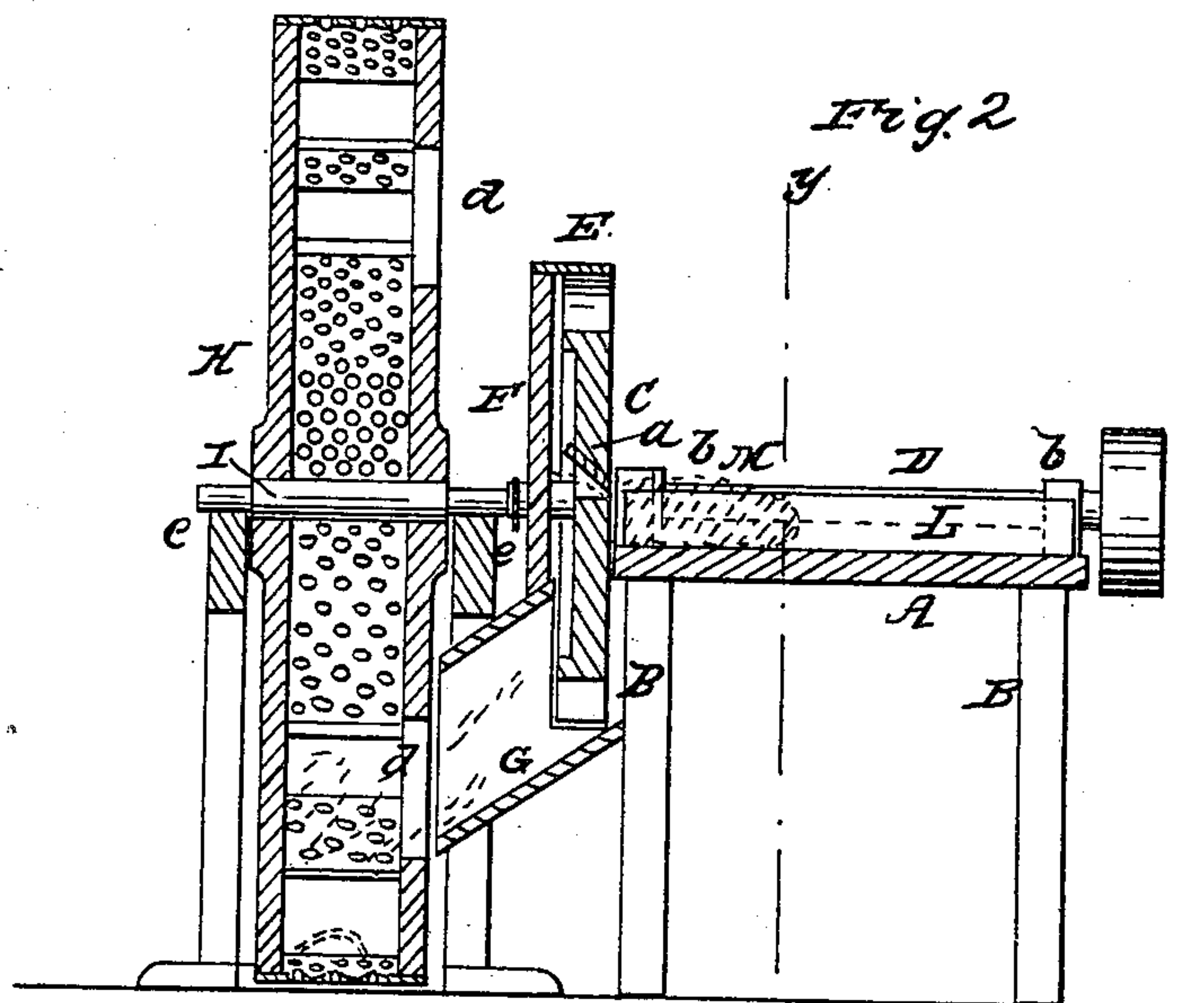
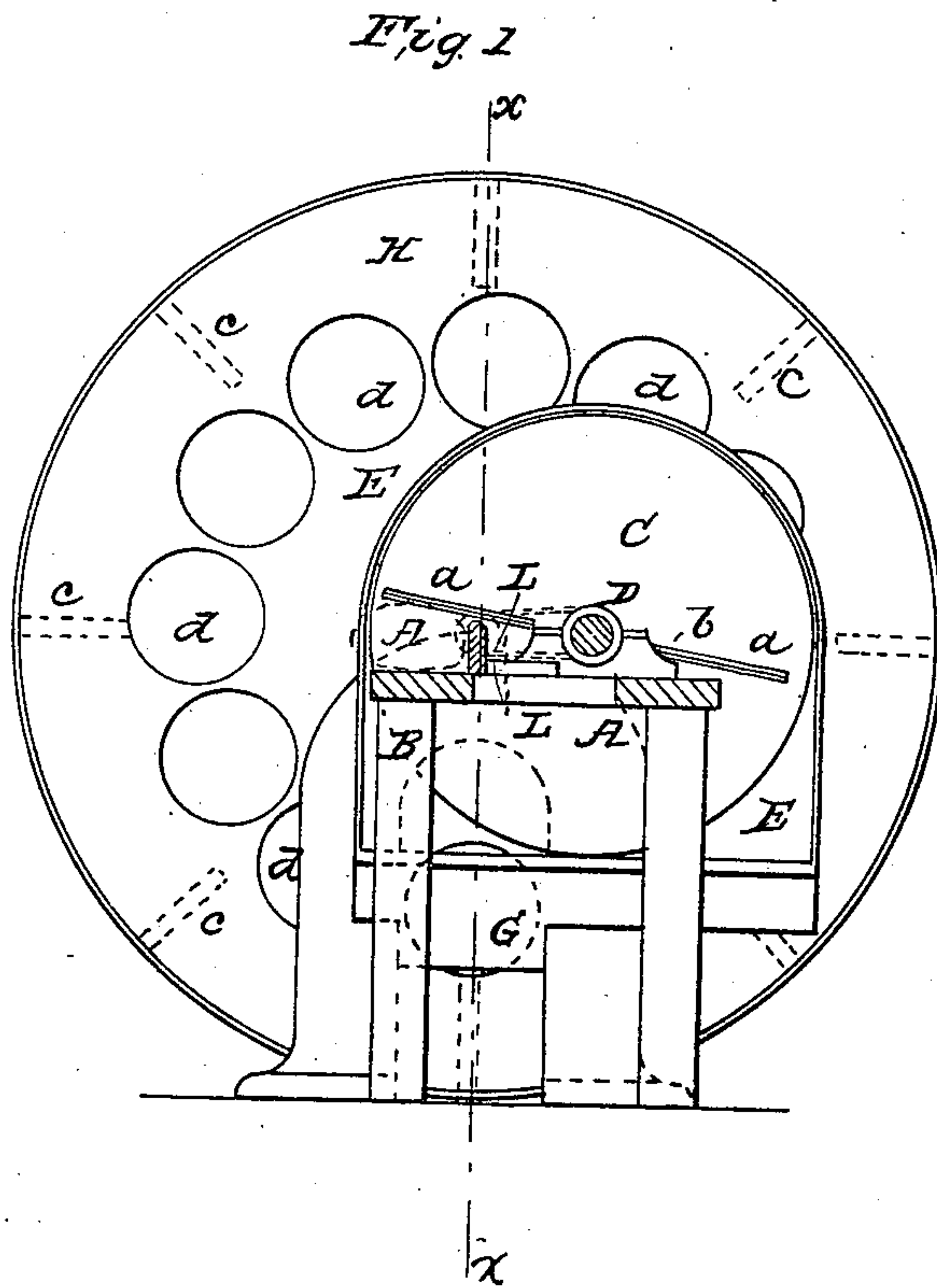


J. REYNOLDS.  
Extracting Bark from Rubber.

No. 14,972.

Patented May 27, 1856.





# UNITED STATES PATENT OFFICE.

JAMES REYNOLDS, OF NEW YORK, N. Y.

## APPARATUS FOR CLEANING GUTTA-PERCHA.

Specification of Letters Patent No. 14,972, dated May 27, 1856.

*To all whom it may concern:*

Be it known that I, JAMES REYNOLDS, of the city, county, and State of New York, have invented a new and Improved Method of Extracting the Bark and Foreign Substances from Gutta-Percha; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1, is a vertical section of the machinery by which the process is performed, in the line *y, y*, of Fig. 2; and Fig. 2, is a vertical section in the line *x, x*, of Fig. 1.

Similar letters of reference indicate corresponding parts in both figures.

Gutta percha in the raw state in which it is imported, contains large quantities of bark and foreign substances which, in the process of manufacture commonly practiced, has never been properly extracted, owing to the want of some efficient method of effecting its extraction. The only method heretofore employed of preventing the quality of the manufactured article being too much impaired by the presence in it of these substances has been, by long continued and tedious maceration to reduce them into fine particles and incorporate them with the gum.

The object of this invention, is to effect the entire extraction of the bark and other foreign substances and thus both to reduce the requisite amount of maceration and to improve, to a very great degree, the quality of the manufactured article.

The invention consists in the process hereinafter described of first cutting the gutta percha into extremely thin slices or sheets and then submitting it to a beating, rubbing and screening operation.

To enable others to make and use my invention, I will proceed to describe the machinery by which I generally perform the process, and the manner of conducting the process.

A, is a bench, supported upon standards, B, B, at a convenient height for an attendant to place upon it and feed by hand the block of raw gutta percha to a series of cutters, *a, a*, which are attached to a rotating disk or wheel, C, at one end of the said bench. The rotating cutter disk is secured to a shaft, D, which has journals fitted to bearings, *b, b*, upon the bench. The cutters

have the character of plane irons, and are fitted to throats in the disk and they have edges extending nearly from the center to the periphery of the disk; the length of the said edges being at least sufficient to cut through the greatest width of a block of gutta percha. On the top of the bench is secured a gage or guide, L, to guide the block (which is shown in red outline and indicated by M, in both figures), to the cutters in such a manner as to enable slices to be cut parallel with each other or of equal thickness throughout. It is desirable that the slices be cut as thin as practicable, which will be of a thickness about equal to that of stout wrapping paper. When cut in this way the bark and foreign substances may be extracted with little trouble, as they resemble somewhat a number of small "knots" in a thin shaving of wood, and drop out when the slices are beaten about, rubbed or doubled up and opened repeatedly. This cutting of the material into thin slices or sheets, differs from the usual mode of cutting it up, which is to cut it into chips or shreds without being very particular to cut it very thin; and a block can be cut more quickly into these large thin slices or sheets of the full area of the section of the block than into chips or shreds.

The cutter disk has its periphery inclosed snugly in a hood, E, which has a closed back, F, at a short distance from the back of the disk so that the slices after being cut, cannot escape from the hood except at a descending chute, G, which is at or near the bottom of the back, F, and directly under the operating position of the cutters. This chute, G, leads directly into the beating and screening apparatus.

The beating or rubbing and screening apparatus consists of a rotating circular screen, H, of large diameter, but of short length in the direction of the axis; said screen being attached to a shaft, I, which is arranged in suitable bearings, *e, e*, parallel with the shaft, D. The screen is provided internally with a number of radially arranged beaters or lifters, *c, c*. It is entirely closed at the back end; but at the front end which stands close to the rear and lower end or mouth of the chute, it is provided with a series of holes, *d, d*, which are severally of an area about equal to that of the mouth of the chute, and are so arranged in a circle that by the revolution of the screen



they are caused to pass the mouth of the chute, and thus to receive the slices or sheets of gutta percha as they slide down the chute after having fallen thereinto from the  
5 throats of the cutters. The slices or sheets dropping into the revolving screen are caught up by the beaters or lifters, *c, c,* and thus carried upward and thrown down again to the bottom and across the screen  
10 and violently beaten about, and thereby doubled up and opened again till all the "knots" are beaten or rubbed out. These "knots," being of small size, drop or are thrown out through the perforated periph-  
15 ery of the screen; while the slices of gutta percha, by reason of the tenacity of the material, remain almost entire and cannot escape through the screen till they are removed by some convenient means provided

for the purpose, as soon as the quantity 20 within the screen becomes too great for the perfect operation of the machine.

I do not confine myself to the employment of the particular machinery herein described, but

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What I claim as my invention, and desire to secure by Letters Patent, is,

The extraction of the bark and foreign substances from gutta percha by cutting the blocks of the raw material into extremely 30 thin slices or sheets and submitting the said slices or sheets to a beating or rubbing and screening operation, substantially as herein described.

JAMES REYNOLDS.

Witnesses:

WM. TUSCH,

JAMES F. BUCKLEY.