

UNITED STATES PATENT OFFICE.

CHARLES GOODYEAR, JR., OF NEW YORK, N. Y.

IMPROVEMENT IN THE MANUFACTURE OF CASTERS FROM VULCANIZABLE COMPOUNDS.

Specification forming part of Letters Patent No. 35,231, dated May 13, 1862.

To all whom it may concern:

Be it known that I, CHARLES GOODYEAR, Jr., of the city, county, and State of New York, have invented a new and useful Improvement in Wheels for Parlor-Skates, Casters for Furniture, and other Similar Uses; and I do hereby declare that the following is a full and exact description thereof.

Wheels for parlor-skates have been heretofore made and are now made in large numbers from what is called the "soft elastic compound of vulcanized india-rubber," the material being vulcanized in the shape of long cylinders, which are subsequently cut into wheels of the requisite thickness; but such wheels are not of good shape, are too soft, and are soon worn out and disintegrated by use. My invention remedies these defects, produces a better wheel, not more expensive at first cost, much more durable and economical.

The nature of my invention consists in the manufacture and use of wheels for parlor-skates, casters for furniture, and other similar uses made of a compound of fibrous materials with vulcanizable material vulcanized and formed in the desired and best shape of wheels in molds prepared for the purpose.

To enable others skilled in the manufacture of vulcanized india-rubber wheels to make and use my invention, I proceed to describe a good way of putting it into operation.

I take any good vulcanizable material such as is commonly used by manufacturers of vulcanized india-rubber, and mix with it fibrous materials—say the fibers of disintegrated cotton rags or raw cotton—mixing the same together by passing the same repeatedly between rollers such as are commonly used and called "grinding-rollers" by india-rubber manufacturers. The quantity of fibrous material so mixed may vary considerably in proportion to the vulcanizable material, according to the discretion of the manufacturer, it being understood that the elasticity of the compound diminishes as the quantity of fibrous material is increased, and up to a certain point the durability of the wheels in use is increased as the proportion of fibrous material is increased. I have found by experiment that a proportion of about one pound of fibrous material to two

pounds of vulcanizable material forms a good and durable compound having a consistency similar to sole-leather. In the preparation of this fibrous compound old india-rubber scraps of materials used in the manufacture of india-rubber shoes or cloths may be economically reworked, care being taken to preserve a proper proportion of fibrous and vulcanizable material. The fibrous compound being thus prepared, I form it in shapes or matter ready for the molds, and I find that a convenient way to do this is to first make it up into cylinders having a hollow center or axis, the diameter of the cylinders of this plastic and unvulcanized material being the same as the diameter of the wheels intended to be made; and I then cut the cylinders into sections of the thickness of the wheels intended to be made, so that the sections of the cylinders of plastic unvulcanized material will nearly fill the molds, as hereinafter described. I then prepare the molds, preferring type-metal as the material for them, the molds being cast in the exact shape of the intended wheels of vulcanized fibrous compound. It is unnecessary to describe more minutely the processes of preparing the molds, as that is an art well known. I think it best that the wheels for parlor-skates, as well as those for casters, should have beveled edges or convex exterior surfaces, and the molds should be prepared accordingly. I place the sections of unvulcanized plastic fibrous compound before mentioned in the molds, which they will fill or nearly fill, and then closing the molds place them in the vulcanizing steam-heater, or in a dry-heater, if the vulcanizable material has been prepared for heating in a dry-heater, using the processes of vulcanization well known to india-rubber manufacturers. The vulcanizable material undergoes a slight expansion during the process of vulcanization and completely fills the molds, causing the inclosed wheels to take the exact shape of the molds. Wheels made of this material in this way are especially useful as caster-rollers for furniture, being ornamental, durable, noiseless upon wooden or stone floors, and economical in their wear upon carpets. They may be made with an exterior surface of elastic vulcanized material not mixed with fibrous

material, if preferred, for certain uses, the fibrous material occupying the central portion of the wheel.

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

1. The manufacture of wheels or rollers of a fibrous compound of vulcanized india-rubber or other vulcanizable material, substantially as herein described.

2. The manufacture of wheels or rollers of vulcanized india-rubber or other vulcanizable material by forming and vulcanizing the same in molds, substantially as herein described.

CHAS. GOODYEAR, JR.

Witnesses:

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