

UNITED STATES PATENT OFFICE.

EMIL GUSTAV STARK, OF ALTCHERNITZ, NEAR CHERNITZ, GERMANY.

PROCESS OF TREATING BRITTLE VEGETABLE FIBERS OF KAPOK AND OTHER PLANTS.

1,006,142.

Specification of Letters Patent.

Patented Oct. 17, 1911.

No Drawing. Original application filed March 14, 1910, Serial No. 549,232. Divided and this application filed February 27, 1911. Serial No. 611,289.

To all whom it may concern:

Be it known that I, EMIL GUSTAV STARK, a subject of the German Emperor, and residing at Altchemnitz, near Chemnitz, Germany, have invented a certain new and useful improved process of treating brittle vegetable fibers of kapok and other plants for uniformly dyeing, spinning, and working them into yarn and twine, of which the following is a specification.

My invention relates to processes of treating a number of vegetable fibers, particularly the down or hair of the seed, of kapok (*Eriodendron anfractuosum*), *Calotropis procera*, cotton silks, and, indeed, all the fibers, *i. e.* the hair of the seed, of the group of *Asclepias*, and the like, most of which are designated cotton silks, have a beautiful brilliant appearance, and are brittle in their natural condition, so that they cannot be spun.

The subject-matter of this invention is an improved process which enables these vegetable fibers, *i. e.* the hair of the seed, to be spun.

According to my process the smooth surface of the vegetable fibers, treated with a suitable solvent, is shrunk and converted into a rough surface. When treating the vegetable fibers with the solvent those substances are simultaneously removed from the vegetable fibers which cause the brittleness of the fibers. These are incrusting substances both of inorganic and organic nature. The solvent is caused to act on the fibers until the incrusting substances have for the most part passed into it. In my co-pending application, Serial No. 549,232, filed March 14, 1910, I have described how I can attain the same ends by employing a dilute aqueous solution of glue, and in my simultaneous divisional application I have disclosed a process in which a bleaching agent is employed.

A primary object of my present invention is to provide a cheaper process of treating fibers of the kind referred to for the described purposes.

According to my invention, when some what small demands are made on the strength and uniformity of the yarn, and particularly when the fibers are mixed for spinning with other fibrous materials, I expose the fibers to the action of hot or boiling

water until the fibers sink below the water-level. I use this treatment with hot or boiling water also when the vegetable fibers are to be spun with cotton. Obviously acids, *e. g.* hydrochloric acid or sulfuric acid, may be added to the water, without departing from the scope of my invention. The vegetable fibers liberated from the incrusting substances are dried at a moderate temperature. The same are then adapted to be uniformly dyed, spun and worked up by themselves or with other vegetable fibers into yarn and twine.

Obviously my improved process is not only applicable for the vegetable fibers named above, but also for those vegetable fibers which possess similar qualities as the fibers, *i. e.* the hair of the seed, of kapok (*Eriodendron anfractuosum*) and cotton silks generally.

I claim:—

1. The herein described process of treating brittle vegetable fibers, *i. e.* the down or hair of the seed, of kapok (*Eriodendron anfractuosum*), *Calotropis procera*, cotton-silks, and indeed all the fibers, *i. e.* the hair of the seed, of the group of *Asclepias* and the like, most of which are designated cotton silks, which consists in treating the fibers with hot water, thereby dissolving a portion of the incrusting substances within the single hair, extracting the same therefrom and thereby shrinking the smooth surface of the fibers and converting it into a rough surface.

2. The herein described process of treating brittle vegetable fibers, *i. e.* the down or hair of the seed, of kapok (*Eriodendron anfractuosum*), *Calotropis procera*, cotton silks, and indeed all the fibers, *i. e.* the hair of the seed, of the group of *Asclepias* and the like, most of which are designated cotton silks, which consists in treating the fibers with hot water containing an acid thereby dissolving a portion of the incrusting substances within the single hair, extracting the same therefrom and thereby shrinking the smooth surface of the fibers and converting it into a rough surface.

3. The herein described process of treating brittle vegetable fibers, *i. e.* the down or hair of the seed, of kapok (*Eriodendron anfractuosum*), *Calotropis procera*, cotton silks, and indeed all the fibers, *i. e.* the hair

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5 chloric acid, thereby dissolving a portion
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and thereby shrinking the smooth surface

of the fibers and converting it into a rough
surface. 10

In testimony whereof I affix my signature
in the presence of two witnesses.

EMIL GUSTAV STARK.

Witnesses:

O. A. HERRMANN,
KURT LUIGLY.