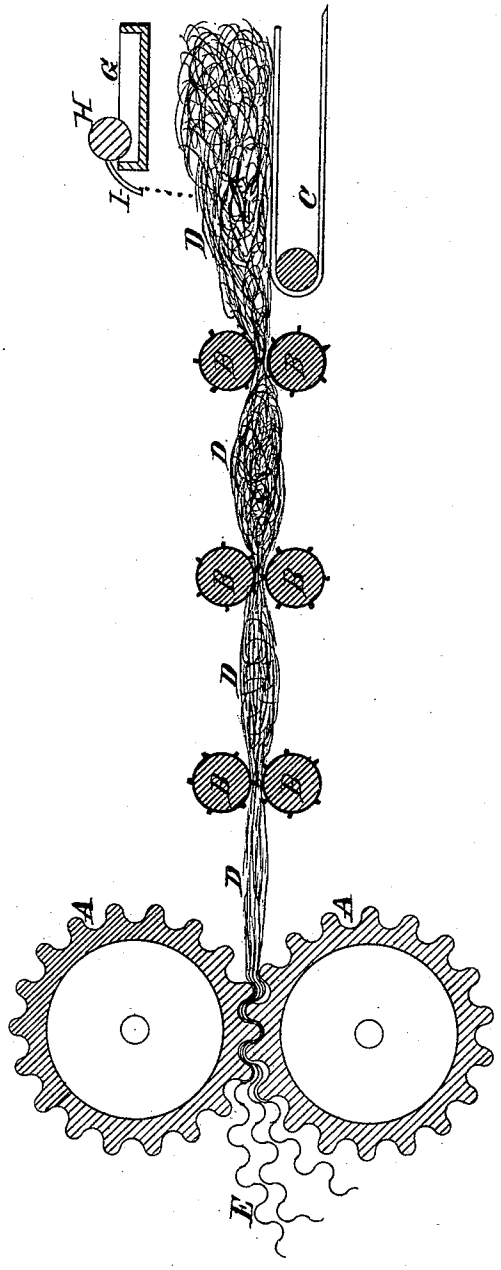
(No Model.)

J. G. STEPHENS.

ANIMAL FIBER FOR UPHOLSTERY PURPOSES.

No. 250,402. Patented Dec. 6, 1881.



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UNITED STATES PATENT OFFICE.

JOHN G. STEPHENS, OF JERSEY CITY, NEW JERSEY.

ANIMAL FIBER FOR UPHOLSTERY PURPOSES.

SPECIFICATION forming part of Letters Patent No. 250,402, dated December 6, 1881.

Application filed May 10, 1881. (No model.)

To all whom it may concern:

Be it known that I, JOHN GEORGE STEPHENS, of Jersey City, Hudson county, and State of New Jersey, have invented a new and useful Improvement in Animal Fiber for Upholstery Purposes, of which the following is a specification.

My invention consists of a new article of manufacture produced from animal-hair for use in upholstery purposes, as curled hair is now used, the same being crimped or corrugated hair, instead of twisted, and also being hardened and stiffened by heat, and thereby rendered more substantial and lasting than the curled hair. Curled hair lacks in rigidity, so that articles made of it soon condense and lose the elasticity on which their merit mainly depends, and require frequent refitting. The process of making it is slow and expensive and injures the natural strength and elasticity to some extent by long exposure of it to the wet condition in which it is twisted, whereas the effect of corrugating and heating the hair is increased rigidity and power of elasticity.

The method of curling hair by twisting consists of wetting it thoroughly in water, then twisting it into ropes of considerable size, and then laying it away in the wet and twisted state to allow the curls time to set, which generally takes six months or more, during which time the nature of the hair is more or less injured by the action of the water and the air. When thought to be well set and sufficiently dry to retain the curled form the ropes are picked apart by picking machinery, which also injures the hair by breaking it, and also wastes it considerably thereby.

In the preparation of my improved article of crimped or corrugated hair I first clean it thoroughly by washing it, preferably in a bath of borax and alum in water, then dry it and pass it through hot crimping-rolls, first oiling it sufficiently to enable it to yield to the teeth of the crimping-rolls without damage to the integrity of the fiber by cracking and crushing, and I supply it to the rolls by means of hackling-rolls, arranged to draw and lay the fibers parallel to each other, so as to pass lengthwise through the rolls at right angles to the corrugations. I prefer to use such oil for dressing the hair previous to passing through the rolls as will readily dry away afterward, and after passing through the rolls I let the kinked or corrugated hair remain at rest until thoroughly dry and set, and thus obtain the best results in respect of the rigidity and permanency of the corrugations.

The accompanying drawing represents a sectional elevation of a pair of crimping or corrugating rolls, also hackling-rolls, for drawing, straightening out, and feeding the fibers to said rolls; also, a portion of an endless belt or apron employed to deliver the material to said feeding and drawing rolls, and also a device for applying oil or other liquid substances to the fibers to facilitate the crimping of them.

A represents the corrugated rolls, which consist of ordinary grooved or fluted crimping-rolls, of brass or iron, with internal hollow spaces for the admission of steam through the journals, as is common with such machines.

B represents three sets of toothed drawing, straightening, and delivering or feeding rolls. C represents an endless apron, and D the fiber being delivered by said apron and feed-rolls to the corrugating or crimping rolls, from which the fiber is delivered in the crimped or corrugated state after passing through them, as seen at E.

G represents a tank containing oil or other dressing to be dripped upon the fibers by the roller H and drip-plate I. The plate scrapes the oil from the surface of the roll as the latter slowly turns round, and raises a thin film from the tank. The oil may be applied to the hair at any time and in any approved way before it arrives at the rolls.

It will be observed that hairs too short to be curled to advantage by roping may be corrugated equally as well as the longer ones, and a material advantage of corrugated fiber over the curled will be found in the shorter and consequently stiffer bends or curves that this possesses.

It will also be noticed that by the heat and also by the effect of the oil and other substances with which the hair may be treated in the corrugating process—for instance, gummy and resinous matters—the hair will be made stiffer than in the natural way. By these cor-

rugations or crimps my improved article will be readily distinguished from the curled hair of common use.

I desire it to be understood that I do not claim curled hair, for that is common and well known, and the article which I claim differs clearly from it in form and is much superior in quality.

I claim—

Animal-hair for upholstering purposes when crimped or corrugated, instead of curled and twisted, as a new article of manufacture.

JOHN GEORGE STEPHENS.

Witnesses:
S. H. MORGAN,
A. P. THAYER.