



ROBERT W RUSSELL, OF NEW YORK, N. Y.

Letters Patent No. 88,519, dated March 30, 1869.

**IMPROVEMENT IN THE MANUFACTURE OF PAPER FOR PROTECTING GOODS FROM
BEING INJURED BY MOTHS, &c.**

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern :

Be it known that I, ROBERT W. RUSSELL, of the city of New York, and State of New York, have discovered and invented certain new and useful Improvements and Processes in and for the Manufacture of Paper and Paper-Board for the Protection of Woollen and Fur Articles from Moths and other Insects; and also certain improvements in carpet-linings, carpet-protectors, and carpet-pads; and the new manufactures, the products of the said processes and improvements.

To enable others skilled in the art to make and use my invention, I will proceed to describe it.

I take the cane, or reeds of the cane-brakes of the Carolinas, and other southern States, sometimes used for fishing-poles, which have been disintegrated by the process for which a patent was granted by the United States to Azel S. Lyman, on the 3d of August, 1858, and, after such disintegration, bruised or picked open and washed.

This product I boil in a solution of lime, or in a solution of soda-ash, made caustic with lime.

This material is then beaten up or ground into pulp in an ordinary rag-engine. I prefer the boiling, as aforesaid, although the cane-fibre, disintegrated as aforesaid, may be beaten up or ground into pulp, and made into paper, without any boiling, and without the use of either lime, or soda-ash made caustic with lime, and without the use of any chemical.

The boiling may be either in an open or closed vessel. If in an open vessel, a boiling for five or six hours, or less, will suffice. If the boiling be under pressure, the time required will be considerably less, according to the steam-pressure used.

I also take tobacco-stalks, or stems, or tobacco-dust, or trash, or damaged or green tobacco, and boil the same in water, in an open or closed vessel, for about six or seven hours, and then beat or grind the product in an ordinary rag-engine, until it is reduced to pulp.

The boiling may be for a longer or shorter time than that above mentioned. It should be long enough to soften the material so that it can be readily beaten into pulp.

These two products, in the shape of paper-pulp, are then mixed together in a rag-engine, either with or without some hard stock, and made into paper in the usual way, with the following addition, that is to say :

After the tobacco-stems have been boiled, I take the liquor in which they have been boiled, and reduce it by evaporation, which may be done in an ordinary pot-ash-kettle until the liquor is strong.

This liquor is applied to the paper in the mode commonly used for applying size to paper by size-rollers.

The paper, being first made and dried, is run through the size-rollers, which feed the tobacco-juice to the paper, which is passed through press-rollers, and dried upon the driers of the paper-making machine. It may then be calendered, if desired. Or, the decoction of the

tobacco-stems, &c., may be applied to the fibre in the beating-engine, the liquor being saved, so as to be used again from time to time.

Tobacco-dust, or the tobacco-stems, &c., reduced to dust, may be strewn on or otherwise applied to the sheet of paper or felt, as it is being formed or made.

Any paper-pulp may be used in lieu of the cane-fibre, prepared as aforesaid, for mixture with the pulp made from the stems of tobacco, but I prefer the said cane paper-pulp.

The paper may be impregnated with tobacco-juice, as aforesaid, without the use of tobacco-stems as pulp, or the tobacco-stems may be worked up into pulp without the boiling aforesaid; but it is advantageous to use the tobacco-stems, and to prepare them as above mentioned, and also to impregnate the paper with the liquor obtained from the boiling of the tobacco-stems, as aforesaid. Such impregnation, however, is not indispensable.

The paper thus made, will serve as wrapping-paper, in which to wrap woollen and fur articles, to protect them from moths and other insects; also to line clothes-boxes and trunks, clothes-presses and chests and drawers; also to be placed under carpets, to protect them from moths.

Carpet-linings, or so called carpet-protectors, or carpet-pads, now commonly consist partly of sheets of paper or felt, made from old woollen rags, reduced to pulp without the use of caustic alkali, or other chemical, which would destroy the moths and moth-eggs which are in the said rags.

These sheets of paper or felt are soft, and in some respects adapted to the above purpose, when charged with tobacco-juice, or other vermifugal matter, or when the pulp of tobacco-stems, &c., prepared as aforesaid, is blended with the pulp from which such sheets are made.

A good carpet-protector, or carpet-lining, or pad, can be made by inserting fibrous material between layers, covers, or sheets of the paper, made of the paper, made partly of tobacco, as aforesaid, or impregnated, as aforesaid, with tobacco-juice, such sheets or covers being fastened together by strips of paper or cloth, pasted or sewed upon or around the edges of such covers; or only that part of the carpet-lining which is in contact with the carpet may be composed of the paper containing tobacco or tobacco-juice, the reverse side of the carpet-lining being ordinary paper, or paper composed of a mixture of animal and vegetable fibre. If the latter be used, it should be charged with antiseptic or vermifugal matter.

If paste be used to fasten the sheets together, it should be made vermifugal, which may be done by mixing corrosive sublimate with the paste. The corrosive sublimate may be dissolved in glycerine, which is a good solvent thereof.

The fibrous material which I prefer for filling for the

carpet-pad, is either a bat formed from the fibre of the cane, disintegrated, picked open, and washed, as aforesaid, and then carded, or a sheet, or two or more sheets, of soft unsized and uncalendered paper made from the cane-fibre, disintegrated as aforesaid.

If the said carded fibre be used, the sheets or covers enclosing it should be sewed together, so as to keep the fibre in its place; or, a coating of adhesive matter made antiseptic or vermifugal, as aforesaid, should be applied to one or both of the covers, to cause the fibre in contact with the same to adhere thereto. Either of the above methods may also be advantageously used when the filling of the pad consists of a sheet or sheets of paper, as aforesaid, especially when the pad is perforated.

If thick sheets of paper or pasteboard be used for the filling, they should be made soft, limber, pliable, and impressible, which may be effected by a crimping-process, or by putting them through fluted rollers, or by corrugating-machinery.

A further improvement in the carpet-protector, or pad, is effected by cutting slits or fissures, or making perforations through the same, whereby it is made more yielding and impressible, and the dust passes

from the carpet, through the holes or fissures in the carpet-protector, or pad, to the floor underneath.

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

1. The above-described processes for the manufacture of paper and paper-board from cane disintegrated by the explosive force of steam, or other similar fibre, mixed or charged with tobacco, or a decoction of tobacco, or both, as aforesaid.

2. The new articles of manufacture, viz, the different kinds of paper aforesaid, made by the said processes, and for the purposes above described.

3. The above-described improvements in the manufacture of carpet-linings, or protectors, or carpet-pads.

4. The new articles of manufacture, the different kinds of carpet-linings, carpet-protectors, or carpet-pads, made by the improved methods and processes, substantially as above described.

New York, June 10, 1868.

R. W. RUSSELL.

Witnesses:

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