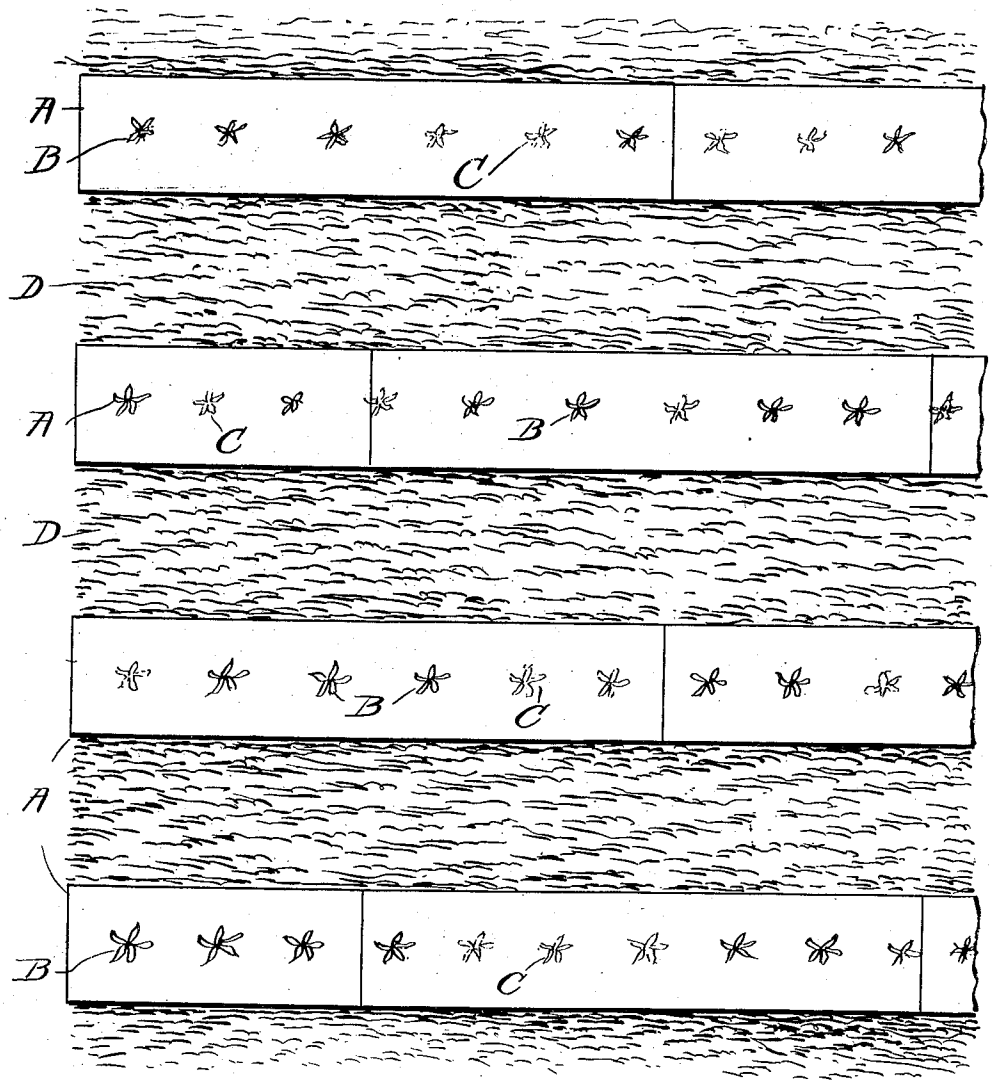
C. F. ECKART.

MULCH FOR SUGAR CANE AND THE LIKE.

APPLICATION FILED NOV. 15, 1917.

1,274,527. Patented Aug. 6, 1918.



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UNITED STATES PATENT OFFICE.

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MULCH FOR SUGAR-CANE AND THE LIKE.

1,274,527. Specification of Letters Patent. Patented Aug. 6, 1918.

Application filed November 15, 1917. Serial No. 202,149.

To all whom it may concern:

Be it known that I, CHARLES F. ECKART, a citizen of the United States, a resident of Olaa, Territory of Hawaii, and whose post-office address is Olaa, Hawaii, T. H., have invented certain new and useful Improvements in Mulches for Sugar-Cane and the like; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a mulch for sugar cane which is particularly adapted for use in carrying out the process described and claimed in my Patent No. 1,227,989, dated May 29, 1917.

In carrying out the process above referred to, the mulches have been formed of various materials and I have found that tar and asphalt felt papers have proved particularly successful. In using these and other similar commercial papers, however, it has been found that they vary to a considerable extent in their efficiency as mulches, since they are not at all times capable of being penetrated by the sugar cane shoots under the force exerted by the growing of the shoots.

It is therefore, an object of the present invention to so treat these commercial papers that a mulch will be produced which may always be penetrated by the growing shoots.

I have found that by treating the commercial papers, such as above referred to, with caustic soda, caustic potash or caustic lime, the desired mulch is produced.

The preferred method of producing the mulch consists in passing the strip or sheet of paper through a bath of caustic soda, caustic potash or caustic lime, the former being preferable. This solution may, of course, be of any desired strength and may be either cold or hot, according to the nature of the paper which is being treated. A hygroscopic or deliquescent salt, such as sodium chlorid or calcium chlorid, for instance, may be added to the caustic solution or applied to the paper by separate treatment, when desirable, to prevent the paper from becoming too dry on subsequent exposure, the salt referred to drawing moisture from the air. If a refractory paper is passed through the bath, it is preferably rolled immediately, that is to say, before it has an opportunity of drying. This permits the caustic soda, caustic potash or caustic lime, whichever is being used, to remain on the paper and to slowly penetrate the same. Of course, on the other hand, if a paper which will readily absorb the solution is being treated, there is no need for the rolling. This treatment will produce a mulch which is particularly adapted for the mulching of rows of sugar cane in carrying out the method claimed in the above referred to patent.

Assuming that caustic soda is used, it will be obvious that the mulch will be coated with a film of caustic soda on both its upper and lower surfaces. Upon being exposed to the air, as it is when placed over a row of sugar cane, the usual reaction takes place, changing the caustic soda to sodium carbonate. Whether the paper is first rolled, as above referred to, or merely passed through the solution without rolling, the caustic soda will persist for a sufficient length of time to permit it to accomplish the desired result, that is to say, render the covering penetrable to the cane shoots. Of course, where the paper is rolled, the carbonating action does not take place until after it is unrolled, due to the fact that the air is excluded. While both of the methods of making the article produce the desired results, much less caustic soda, caustic potash or caustic lime are used when the papers are rolled after being passed through the solutions, for reasons which are perfectly obvious. I merely explain these processes of making the article in order to emphasize the cheapness and simplicity of the treatment, and while the claims of this application are directed to the article, this description of these methods will serve to emphasize the value of the article.

When the covering is placed upon the rows of sugar cane, in the manner as set forth in the above referred to patent, the sunshine or drying conditions will render it substantially as tough as the untreated paper. However, when the paper is moistened even slightly, it becomes very much softer than the untreated paper and requires considerable less force to puncture it, and, of course, when the cover is applied to the sugar cane rows the rains will cause such a softening, and in fact the regular dews are effective to cause the desired softening of the paper so that the sugar cane shoots will

be permitted to puncture it. The covering does, however, require such force to puncture it that the weeds are at all times prevented from penetrating the same, so that the process claimed in my above referred to patent may be successfully carried out.

In the drawing I have illustrated mulches constructed in accordance with my invention, and which are indicated by the reference character A. At B the shoots which have attained sufficient growth to penetrate the coverings are indicated, while at C the shoots which have not attained such growth are shown in light lines. This covering is placed over the rows of cane in the manner as set forth in my patent above referred to, with the trash from the previous harvest located between the rows, as indicated at D.

From the foregoing description, it will be seen that I have produced a mulch which is particularly adapted for use in carrying out the process of my above referred to patent, which mulch is formed from various commercial papers, such as tar and asphalt felts and other similar papers, by passing the same through the desired caustic solution, and either permitting them to dry without rolling or rolling and permitting them to dry more slowly. I, of course, contemplate the production of the article by various and sundry methods and while numerous methods might be here enumerated, the above described methods will suffice to illustrate the manner in which the article is produced.

What I claim is:—

1. A mulch for sugar cane and the like, consisting of a body of fibrous material impregnated with the hydroxid of a metal.

2. A mulch for sugar cane and the like, consisting of a body of fibrous material impregnated with a substance which will render it pervious to the cane shoots and impervious to the weeds.

3. A mulch for sugar cane and the like, which consists of a tough material impregnated with a substance which, upon the application of moisture to the mulch, will render the latter pervious to the cane shoots.

4. A mulch for sugar cane and the like, consisting of a body of fibrous material impregnated with an alkali hydroxid.

5. A mulch for sugar cane and the like, consisting of a body of fibrous material impregnated with sodium hydroxid.

6. A mulch for sugar cane and the like, consisting of a body of fibrous material impregnated or coated with an alkali hydroxid and a hygroscopic or deliquescent salt.

7. A mulch for sugar cane and the like, consisting of a body of fibrous material impregnated or coated with a hygroscopic or deliquescent salt.

In testimony whereof I affix my signature.

CHARLES FRANKLIN ECKART.