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PNEUMATIC PROTECTION SHELL FOR THE CULTIVATOR-FUTURIZER.

Mamirov Yorkinbek Tursunalievich
Andijan State Technical Institute,
Senior Lecturer of the Department of "Technological Machines and Labor Protection

Abstract

This article describes the role of pneumatic protective sheaths for cultivator-feeder in cotton growing, its advantages. The shortcomings of the existing sheaths are shown. Information is provided on the structure and advantages of the proposed pneumatic protective sheath.

Key words: cultivator, cotton flower, cotton branches and stalks, pneumatic protective sheath.

The development of the agricultural sector is the primary factor and source of Uzbekistan's economic development. The share of agriculture in national income exceeds 35%, and in the volume of exports, it exceeds 60%. The agricultural sector accounts for a quarter of the country's gross domestic product, and more than half of the production and intellectual potential is directly linked to this sector. Therefore, the development of agriculture is of paramount importance today.

In agriculture, the problem of combating any losses and preserving crop yields has always occupied one of the central places. The fight against losses at all stages of cotton cultivation and harvesting is currently of particular relevance.

The most important link in the complex of agrotechnical measures aimed at obtaining high cotton yields and reducing labor costs is the technological processes of cotton cultivation. The high-quality implementation of these processes and the rational use of mechanization tools in cotton processing is an important national economic task that cannot be solved without in-depth scientific research aimed at improving technological processes.

It is known that during the growing season, when cotton plants develop and reach a certain period, the branches of plants in adjacent rows approach each other. Under these conditions, during the operation of the cotton inter-row cultivation unit, plant branches break and break, flowers, tubers, and bolls shed, and yields eventually decrease.

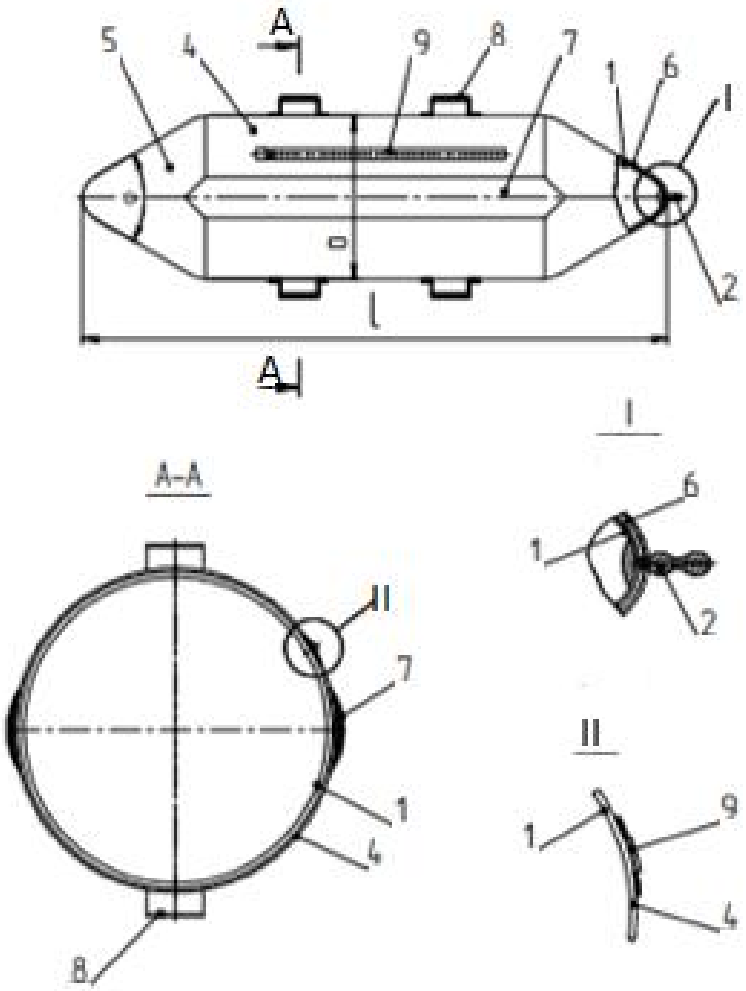
The agrotechnical requirements for a cultivator used for inter-row cultivation of cotton indicate the prevention of plant damage and fractures, as well as the shedding of tubers and bolls [2].

It is known that in the conditions of our Republic, when cultivating cotton inter-rows with cultivators, to avoid breaking cotton branches and damaging its productive elements, the cultivator sections are equipped with special, i.e., industrial and artificial protective barriers (cases). However, existing protective barriers cannot protect cotton branches and fruit elements from damage by cultivator sections at the required level, and when cultivating cotton inter-rows with a cultivator, a large number of cotton buds, flowers, and bolls are shed, and branches are broken. To prevent this, inter-row cultivation during the growing season is carried out at low speeds, which leads to a decrease in labor productivity and an increase in labor, working time, and other costs. It should also be noted that existing and artificial protective barriers have an unsightly appearance.

Based on the above, we have developed a pneumatic cover for the sections of cotton cultivators (see figure).

The proposed pneumatic casing comprises an internal cylindrical-conical shell made of an elastic material, such as rubber, equipped with a nipple 2 for air pumping. A cylindrical-conical protective case (cap) is located on top of the shell, the shape of which is identical to its shape. It

consists of a cylindrical part and the connected conical parts 4 and 5. Anti-erosion tires 6 made of ribbon rubber are located diametrically on both sides of the cylindrical part. A pair of perforated pockets is attached to its upper and lower parts to connect the casing to the cultivator section. To accommodate the protective cover of the casing, it has a longitudinal section equipped with a "Flash" type lock 9.



Proposed cover for cultivator-feeder

The inner shell can be manufactured from industrial rubber by vulcanization (heating films, sports ball chambers, and automobile chambers). The outer protective cover, consisting of a cylindrical part and conical parts 4 and 5, is made of rubberized technical fabric, such as nylon or trevira.

The protective case works as follows.

Before inter-row machining, the pneumatic protective covers are prepared for operation. To do this, the cylindrical-conical shell 1 is inserted into the protective cover through a longitudinal section, and the nipple 2 should protrude through the conical parts 5 or 6. The lock of the longitudinal section 9 is closed, and then the shell is filled with air to a pressure set at 1, so that the coating has the shape of a cylindrical cone. Then, through pockets 8, it is installed in the

cultivator section. After that, the inter-row processing begins.

During the movement of the cultivator, the protective covers move the cotton bushes sideways and upward without damaging the cotton bolls, flowers, bolls, or the entire bush.

Pneumatic protective covers can be used from the beginning of the growing season until harvest.

The proposed pneumatic protective casing has the following advantages over existing ones:

- does not use metal in parts other than the chest;
- several times lighter than metal cases;
- does not require special tools for installation;
- easy to produce;
- works for a long time.

Tests have shown that the use of the developed pneumatic cover reduces the fracture of cotton branches and the shedding of buds, flowers, and bolls by 3-4 times.

Literature.

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