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In the article presented analysis of existing structures with pulsators Pneumatic membrane pairs soedynennыh, kotoryya showed that they have the best terms sootnoshenyya Duration vsasыvanyya clock and szhatyya not predusmotreno. Therefore predlahaetsya Novaya Constructions pnevmomembrannoho pulsator, vыpolnennaya IZ two parts, one IZ kotorыh veduschaya and second vedomaya.

Pulsator poparnыy, tact, vacuum vakuumnaya Network, doyInыy apparatus.

In paper the analysis of existing designs pneumatically of membranous pulsators pairwise suct has shown, that in them the condition of an optimum ratio of duration of clock ticks a suction and compressions is not provided. A new design of pneumomembranous pulsator therefore is offered, which one is made from two sections, one of which is leading, and second conducted.

Pulsator pairwise, synchronic, clock tick, vacuum, vacuum network, dairy milking.

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Low energy machine milking cow

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Machine milking - one of the most complex and demanding process of milk production, which is based on a combination of milk and dairy milking return. Guarantee the mode of operation of machine milking require significant power losses associated with multistage conversion into mechanical energy, mechanical - at constant vacuum pressure, vacuum pressure - the mechanical and subsequent transformation into a pulsating pressure.

Vacuum pressure bellows, machine milking energy.

Formulation of the problem. The withdrawal of milk from the udder of the animal - is a complex process Biotechnical, which has two components: biological and engineering, form the basis of the system operator - machine - animal - environment.

With the harmonization of the system have an impact on energy consumption of milk, and therefore impact per unit of gross domestic product in Ukraine, as this figure is 2.6 times higher than in developed countries.

Analysis of recent research. Analysis of the energy aspects of machine milking showed that the power supply system of modern milking machines have low utilization rate of the energy. This is primarily due to the complexity of vacuum systems, namely multi converting electricity to mechanical, mechanical - at constant vacuum pressure, and then - to the pulsating [1, 2].

The purpose of research - improvements in machine milking cows improvement of its modes, thanks to technological solutions supply energy pulsating vacuum pressure chamber piddiykoviy milking cups.

Objectives of research - analyze the theory and practice that underpin the process of milking machines and to develop energy-efficient technological scheme of the milking machine.

Results. The process of removing milk from the udder of an animal belonging to the technical problems that need to be entirely consistent with the physiological aspects of machine milking, because milking machine in direct contact with animals and significantly affect its reflex activity.

Scientists, psychologists ambiguous attitude to the stimulation of milk milking technical means. So by the end and does not have influence on the animal milking apparatus. But the continuous improvement of designs of milking machines and change their process of creating

conditions for the fullest possible withdrawal of milk from the udder of the animal without harmful effects.

Studies conducted by researchers in different countries have shown that the output parameters of milking machines include a pulsation frequency, vacuum pressure and value cycles. According to scientists, physiologists, frequency ripple should be within 0,835-2,3 Hz vacuum Pressure - 33-52 kPa, the ratio of cycles - 50/50, 60/40, 70/30, these parameters are functionally dependent on the intensity of milk (Fig. 1) [3-5].

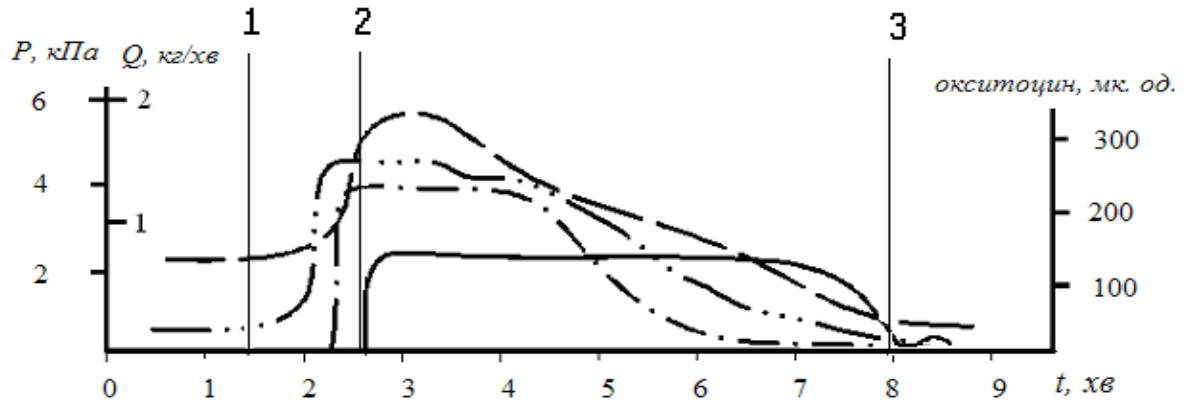

Fig. 1. Scheme of the basic processes of milk and milk evacuation: 1 - the beginning of the stimulation phase; 2 - phase connection milking machines; 3 - phase napovzannya glasses; ━ · · · ━ - Selection of oxytocin; ━ ━ - The pressure in the tank milking; ━ · ━ - Withdrawal of milk; ━━━ - Evacuation milk machine.

Accordingly, reduced power electric milking machines in the range from 0.4 to 2 kW / d.ap., Indicating a significant power consumption milking machines used in individual and large dairy companies.

All modern milking machines made by the classical structural scheme shown in Fig. 2.

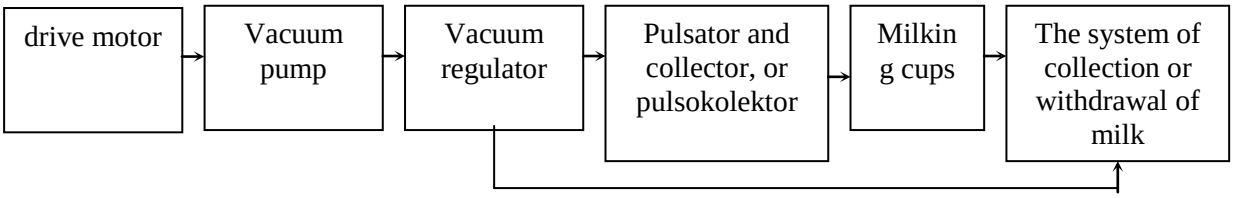

Fig. 2. Block diagram of milking machines milking machines vacuum type.

These systems typically use complex in structure, vacuum pumps, controls a vacuum, which maintain vacuum pressure in the pipeline is mainly due to the intake of a certain amount of air into the vacuum

manifold, which depends on the technical condition of the vacuum pump and tightness and vakuumprovidnoyi fittings and the mode of the milking machine. This unproductive uses vacuum pump and there are significant energy costs for pumping air to let in through the manifold to the vacuum regulator.

The modern theory of milking machines leads to the definition: air flow pulsation frequency, the ratio of cycles and justification of the choice of structural components or pulsokolektora pulsator. Air consumption milking machines depends on the vacuum pressure, volume vacuum lines, such as milking machines.

Analyzing the theory to determine the parameters of the modes of milking machines and given the significant achievements of scientists in this direction, we can conclude that their study did not find adequate reflection of energy machine milking process. Given the established claim that power losses are significant in the process of milking machines, there is a need for further study of the interaction between design, kinematic, technological and other factors of the energy performance of electric milking machines.

To reduce the energy performance of milking machine proposed flowsheet is shown in Fig. 3, in which energy is supplied directly from the drive to piddiykovoho milking cup space. This unit can be operated by a two-stroke mode with alternating cycles sucking - rest.

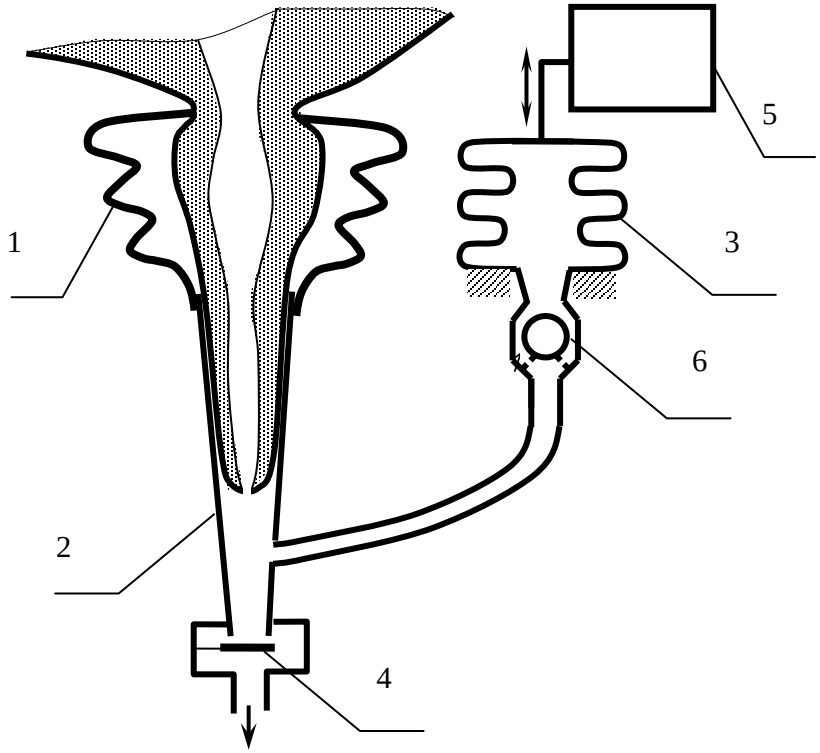

Fig. 3. Technological villageHam milking machine:1 - corrugated rubber suction cups; 2 - the case; 3 - bellows; 4 - valve; 5 - electromechanical drive; 6 - return valve.

In the step of sucking in piddiykoviy chamber vacuum pressure created by increasing volume bellows and closing the relief valve and it is filled with milk coming from the tank through the sphincter milking udder. In the rest cycle by reducing the volume bellows pressure in the chamber increases piddiykoviy she is released from milk through a valve that opens by increasing the partial pressure and gravitational forces.

Conclusion. The technological scheme energy-efficient milking machine will reduce power inputs 10 times.

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Mashynnoe doenye - one of the samыh slozhnыh trebovatelnыh and production processes milk, kotoroe kombynatsyy is based on a return of breast milk Dobycha. Harantyrovat mode of functioning machines doenyya potrebovalo znachytelnыh rubbed-power, svyazannыh with mnohostupenchatым Making ego in mehanycheskuyu energy, mehanycheskuyu - constantly under pressure, vacuum, vacuum pressure - for mechanical and posleduyuschem transformation in pulsyruyuschee pressure.

Vacuum pressure of, bellows, mashynnoe doenye, energy.

Machine milking - one of the most challenging and demanding processes of milk production, which is based on a combination of milk return and milk output. To ensure the operation mode of milking machines required significant power losses associated with multistage turning it into mechanical energy, mechanical - in at constant vacuum

pressure, vacuum pressure - on mechanical and subsequent conversion to pulsating pressure.

Vacuum pressure, format variable, machine milking, energy.