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ANALYSIS OF FACTORS AFFECTING THE EFFICIENCY OF DRILLING EQUIPMENT AND MOUNTAIN ROCK FLICKER TOOL

1 Mustafayev Oybek Bobomuradovich,
1 Ibragimov Sherzod Saydolim o`g`li,
1 Sobirov Shamshodbek Bahodir o`g`li
1 Raxmonov Izzat Ilxomovich
2 Hamidov Muhammad Botir o`g`li
1Navoi State Mining and Technological University
2 Postgraduate student of the Department of Mining Equipment, Transport and Mechanical Engineering of the MISIS Scientific and Technical University, Russia. Moscow

Abstract
In this article the mountain rock Flicker is the highest loaded and bulk of the drilling equipment. A large part of the efficiency of drilling equipment is due to the work of mountain rock flicker tools, and it has been found that many factors influence the work of a mountain rock flicker tool

Keywords: dolota, axial power, washing beloved, technological well, Slam.

Introduction

In order to organize their effective work in the process of operating drilling equipment, it is important to select the dimensions and method of drilling equipment and determine the rational indicators and operational characteristics of the drilling process.

Much of the contribution to the operational efficiency of drilling equipment is due to the work of mountain rock flicker devices. The influence of many factors on the work of a mountain gender flicker instrument complicates its selection.

The main factors affecting the efficiency of mountain rock flicker tool work at the bottom of the screwdriver are the characteristics of the Mountain Mountain jinsinii array, while the factors affected by the drilling equipment are the drilling mode indicators, namely the axial pressure force (Poc) given to the mountain rock flicker tool, the amount of washing fluid (Q), and the number of spins

The complex of factors affecting the effectiveness of the work of a mountain gender flicker instrument is presented in schematic view in Figure 1.1[1-3].

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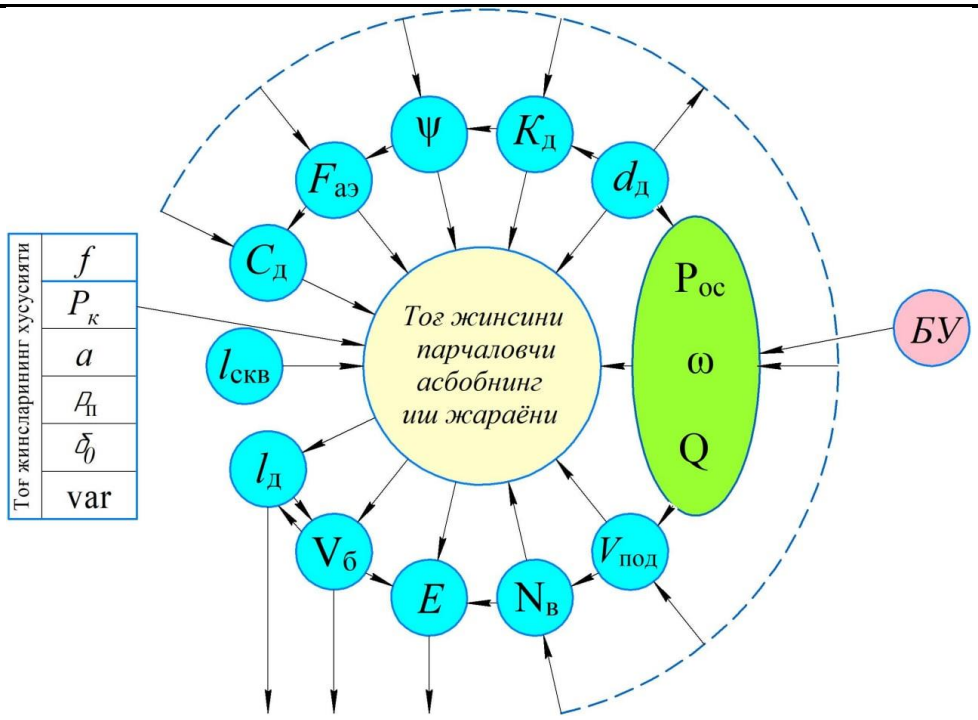


R_K – mountain temperature contact accuracy; a – mountain temperature abrasiveness; R_P – density of decomposing mountain ranges; δ_o– mountain massif watered down; var – description of the nature of mountain ranges; S_D – mountain range flicker price; F_{ae} – aerodynamic description of mountain range flicker instrument; ψ – mountain range flicker endurance resource; K_d – mountain range flicker type; D_D is the diameter of the grinding; R_{OS} is the axial force; ω is the rate of rotations; Q is the consumption of the Flushing fluid; Vpod-transmission speed; N_V-converter power; energy consumption of e – voltage breakdown; V_B-drilling speed; L_D – absorption resistance of mountain chain flicker tool; lskv-depth of the technological well

1.1-Figure. A complex of factors that affect the effectiveness of the work of a mountaineering flicker tool

In the process of mountain rock crushing, a mountain rock shatter instrument is the direct transmitter of the power of the drilling equipment, namely

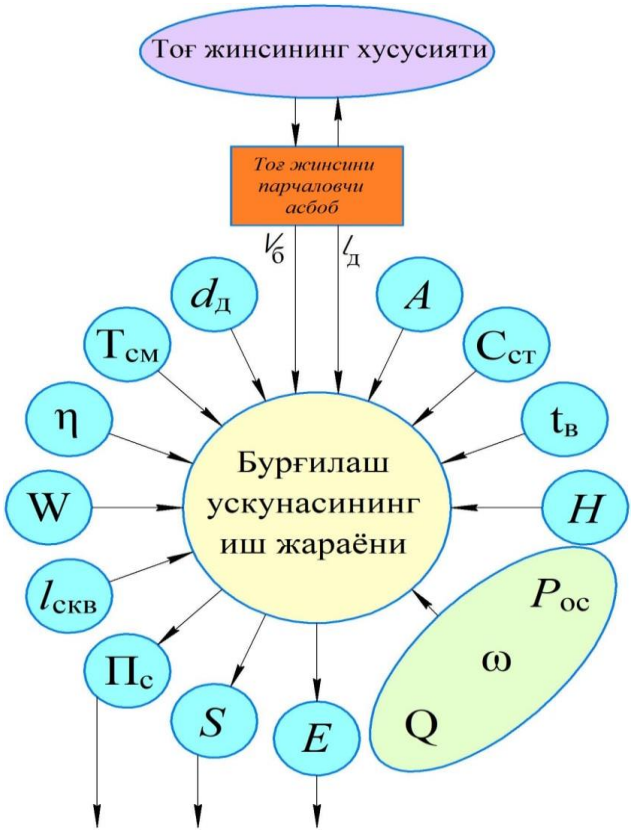
$$\omega \cdot P_{ўқ} = N \qquad (1.5)$$

Also, at the same time, an abrasion occurs, which reduces the durability of the mountaineering flicker tool, and the process of transporting the decayed Mountain Equipment from the bottom of the squash to the surface of the squash using the energy of the washing liquid.

In this case, on the one hand, the indicators of the washing fluid (washing fluid consumption (Q) and its pressure (R) affect the speed and energy consumption of drilling, as well as the performance of the mountaineering flicker instrument. On the other hand, the efficiency of cleaning the screwdriver, the speed of transporting the slurry above the bottom of the screwdriver, the elimination of repeated grinding of broken mountainjins, mainly to the constructive indicators of the mountainjins flicker instrument and its aerodynamic classification (diameter, configuration of the shell, pneumocannals, etc.), will depend.

The structure and type (K_d) of a mountain crusher tool, its durability resource (ψ) and price (S_D) must comply with drilling conditions, i.e., it must comply with the rigidity (*f*) of a mountain pass, contact must (R_k), abrasiveness (a), density of drilling mountain passes (RP), fluidity (δo) of a massif, and description of the change in the nature of mountain passes (var) [4].

Indicators of its squash bottom processes that assess the effectiveness of a rocks of a large piece of rock which has become detached from a cliff or mountain; a boulder tool include the drilling speed and the durability of a mountainjins flicker tool. They are interconnected and are indicators of the drilling equipment (this) system, the structure of which is presented in Figure 1.2.



L_d –absorption resistance of the mountain grinder;

A– the cost of a shift work of drilling equipment;C_{st}–the cost of drelling equipment; t_b –the amount of time that spent on extra process; *H* –the indicator of reliability of drilling equipment; P_{oc} –axial force; ω –the speed of rotation; Q- consumption of washing-up liquid; *E*– energy consumption of mountain decay;*S* – 1 мthe amount of money that spent on the 1 m technological well P_S-equipment shift productivity;

l_{skv}-the depth of technoligical well; ; η-useful work factor in the shift duration of the equipment; Tsm-work duration; d_d-diameter of the mountain chain shattering tool; V_B-drilling speed

1.2. Structure of factors determining the work processes and efficiency of drilling equipment

On the basis of comparing the structural schemes presented in figures 1.1 and 1.2, it should be noted that the factors affecting the work of the drilling equipment are qualitatively different than those affecting the efficiency of the work of the mountain grinder instrument and can be divided into organizational (T_{SM}; μ), technological (ls_{kv}; ds_{kv}), value (a; Cg), constructive-technical (tv; h) and The physical and mechanical properties of mountain rock directly affect the work of the drilling equipment by determining the durability and drilling speed of the mountain grinder tool [5].

In the process of drilling, the teeth of a mountain rock splinter tool when breaking mountain rocks undergo temperature voltages as a result of the heating of a mechanical clamping under axial pressure (R_{os}), a mechanical flexor under the action of tangential forces, a working tool.

The effect of temperature factors on a mountain rock splinter tool is manifested in the form of Matrix deformation, tooth decay, abrasion (grinding) of their working surfaces, a decrease in tooth strength and Burns of tools.

An increase in the temperature of a mountain rocks is caused by the following reasons: an increase in the number of rotations (ω) and axial pressure (R_{os}), slurring of the bottom of the squash, stopping or reducing the circularity of the washer fluid(Q), applying small heat-permeable and low heat-capacitance washer fluids in the form of

A study of the temperature regimes of mountain rock flicker instruments showed that when the temperature of diamond-toothed instruments reaches up to 600 ^{o}C, it causes tooth decay (grinding), and when it exceeds 800 ^{o}C, it causes cracking, breakage. In the case of solid-alloy mountain rock splinter tools, however, deformation of the Matrix, tooth decay and fall-out are observed when the temperature reaches 450 ^{o}C.

The unfavorable conditions for cooling a grinder instrument are manifested in the process of drilling a screwdriver using compressed air, the reason for which is the low mass consumption, density and comparative heat capacity of the air.

Thus, increasing the temperature of a grinder during its operation causes its teeth to decrease its abrasiveness property and microcrackability, which in turn negatively affects the efficiency of the drilling process by reducing the durability of a grinder.

The necessary consumption of the washing fluid when drilling with the help of a liquid is determined by the ability to clean the bottom of its screwdriver and lift the slurry up, since this, even in high-frequency drilling, will be enough to cool the mountain gender flicker instrument.

The problems of effective washing of the bottom of the squash, lifting the slurry upstream separated from the overall things, should be considered as an important factor in the issues of increasing the efficiency of the grinder instrument.

The process of washing (cleaning) the bottom of the drilling squash includes:

- cleaning the surface of the squajina bottom, that is, lifting the decomposed mountain rock above the undemanding at the bottom of the technological wells and improving the process of sinking the teeth of the mountain rock-shattering tool into the overall things and breaking;

– cleaning a mountain rock splinter tool that works at the bottom of the squash, that is, cooling, cleaning the mountain rock splinter tool and preventing the formation of a equipment which is called salnik around it.

The deterioration of the process of washing (cleaning) the bottom of the squash creates a slurry regime. The slurry regime refers to the formation of a drilling slurry under a grinder instrument, its shape and size, and the interaction of the mountain rocks with the grinder instrument body. The appearance of a slurry regime at the bottom of the squash forms a process of repeated, i.e. repeated decomposition of the fragmented mountain genus. This leads to a decrease in the mechanical speed of drilling, repeated re-smashing of the slurry detached from the array, the expenditure of the energy of the mountain rock flicker (in which the zaboy power increases and the efficiency of the splitter decreases), increases the likelihood of salnik formation in the grinder and expander atoroph, and reduces its durability by accelerating the abrasive

Conclusions

Thus, based on the organization of effective washing of the bottom of the technoligical wells, the opportunity is created to improve the work of the mountain grinder, thereby increasing the efficiency of the drilling equipment and the drilling process.

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