на величину от 800 мм до 1500 мм. При этом, в нижней части бура предусмотрено крепление, которое обеспечивает не только перемещение, но и надежное крепление ножей *3* в радиальном направлении. Для сохранения внутреннего объема аккумулятора породы предлагается увеличить высоту бура до 5,8 м. Так при изменении диаметра проходки скважины необходимо на поверхности раскрепить ножи *3* , отрегулировать их вылет относительно оси бура и снова закрепить их. При этом, противоположные ножи для равномерного распределения усилий относительно забоя и равномерности его перекрытия выдвигаются на одну и ту же величину.

Использование предложенной модификации позволит уменьшить стоимость режущего инструмента, повысить его универсальность и даст возможность бурить практически весь спектр диаметров скважин в диапазоне от 800 мм до 1500 мм.

Библиографический список

1. Жиленко Н.П., Краснощек А. А. Справочное пособие по реактивно-турбинному бурению. - М.: Недра, 1987. - 309 с.

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HYDROMECHANICS IN PROCEEDINGS OF LEONARD EULER

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The big practical interest to learning mechanic of fluid was called by many object facts. At first, the presence in nature important store of fluids, which are so accessible for people. Secondly, shanties substances possess of many good attributes. This attributes make them comfortable work agents in practical activity of people.

Leonard the Euler- one of the produced scientist, who have rendered clout on progressing of physical and mathematical sciences in ХУШ century. In his creativity the great power of exploratory thought, universality of talent and huge bulk of the abandoned scientific heritage strikes.

Euler- is a founder of hydromechanics. He gave a essential equation of dynamic of ideal fluid; Euler made a foundation of theory of account the turbines. During 1751-1760 the Euler has prepared some large operation on hydromechanics. Maiden of them-“Beginnings of move of fluids”-was printed out in transaction of the Petersburg academy of sciences for 1756-1757. In it the general principles hydrostatics and aerostatics were sated, the equation of continuity for fluid with constant gravity was output. Other three monographs of the Euler-“The general Principles of balanced state of fluids”, “General principles of move of fluids” and “A Prolongation of studies under the theory of move of fluids”, published in the notes of the Berlin academy of sciences (1755-1757), have compounded the establishing

treatise on hydrodynamics. In second of them the differential partial equation of moves of incompressible fluid are maneuvered, and in third some problems of move of fluids and gases in narrow handsets of the arbitrary shape are reviewed. To all it connected mining by the Euler of receptions of a solution of partial equations meets now in problems about flow of gas transonic and hypersonic speeds.

During 1740-1750 Euler had more than once to interfere with problems hydromechanics and aeromechanics. Such problems rise, in particular, in field of ballistics. Then Euler has esteemed in “Mechanics” a problem on move of a body in environment, the resistance which one is proportional of this or that extent of speed. Euler has put a beginning of the theory and computational methods of hydraulic turbines.

On behalf of the Petersburg academy of sciences the Euler borrows by studies on a ship theory. In 1749 there was his monograph “Marine science” in two volumes. In the maiden volume the general theory of equal balance and stability of floating bodies is stated, in second- the theory applies to analysis of problems, bound with a construction and offloading of the vessels. This composition occupies an outstanding place as in progressing a theory of buckling and theory of small oscillating and in naval architecture.

In hydro mechanical- the equation of movement of ideal fluid in Euler variable. If the pressure p ,density r, projection of part speed of fluid u ,u ,w and projection of bulk vigour X, Y, Z to inspect as a function of coordinate x, y, z points in space and in time, so the Euler equation will have a new view in decart system:

$$\frac{\partial u}{\partial t}+u\frac{\partial u}{\partial x}+v\frac{\partial u}{\partial y}+\omega\frac{\partial u}{\partial z}=X-\frac{1}{p}\frac{\partial p}{\partial x}$$
$$\frac{\partial u}{\partial t}+u\frac{\partial u}{\partial x}+v\frac{\partial u}{\partial y}+\omega\frac{\partial u}{\partial z}=Y-\frac{1}{p}\frac{\partial p}{\partial y}$$
$$\frac{\partial u}{\partial t}+u\frac{\partial u}{\partial x}+v\frac{\partial u}{\partial y}+\omega\frac{\partial u}{\partial z}=X-\frac{1}{p}\frac{\partial p}{\partial y}$$

The solution of Euler equation is knowing X, Y, Z and also starting and final condition, to defit u,u,w,p,r as function x,y,z and t.

In the end I want to say that Euler made a lot of for learning the movement of fluids. And gave us very useful equation of movement of ideal fluids.

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РАЗРАБОТКА УСОВЕРШЕНСТВОВАННОЙ ТРУБОЛОВКИ С ОТВОДНЫМ КРЮКОМ

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