

1. Record Nr.	UNINA9910552741403321
Autore	Kotwica Krzysztof
Titolo	New mining tools and methods for roadheader mining heads // Krzysztof Kotwica
Pubbl/distr/stampa	Cham, Switzerland : , : Springer, , [2022] ©2022
ISBN	9783030963941 9783030963934
Descrizione fisica	1 online resource (141 pages)
Disciplina	622.0284
Soggetti	Mining machinery Rock splitters (Machines)
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Intro -- Preface -- Acknowledgements -- Contents -- 1 Introduction -- 1.1 Mining Methods of Hard Rock Mining -- 1.2 The Benefits of Mechanical Technology -- 1.3 Machines and Mining Tools Used in Mechanical Methods of Hard Rock Mining -- References -- 2 Problems of Hard Rock Mining Using Cutting Tools -- 2.1 The Theory of Mechanical Mining of Rocks by Cutting -- 2.2 Pick Edge Wear and Its Influence on the Efficiency of the Cutting Process -- 2.2.1 Possibilities of Increasing the Durability of Conical Picks -- References -- 3 The Hard Rock Mining Using Disk Tools -- 3.1 The Principle of Mining with a Smooth, Symmetrical Disk Tool -- 3.2 The Advantages and Disadvantages of Hard Rock Mining Using Symmetrical Disk Tool -- 3.3 Hard Rock Mining Using the Undercutting Method and Asymmetrical Disk Tool -- References -- 4 The Crown Pick as an Alternative for the Conical Pick -- 4.1 The Construction and Principle of Work of the New Solution of the Crown Pick -- 4.2 The Comparative Laboratory Stands Tests of a New Type of Crown Pick and Conical Pick -- 4.3 Laboratory Tests of Crown Pick Solutions in Order to Select the Most Advantageous Version -- 4.4 Field Tests of the New Solution of the Crown Pick -- 4.5 Industrial Tests of the New Solution of the Crown Pick -- References -- 5 Lubricated Holder for Conical Pick -- 5.1 Possibilities of Elimination or Reduction

of Hazards Occurring During Rock Mining with Conical Picks -- 5.2 The Construction and Principle of Work of the New Solution of the Lubricated Holder of Conical Pick -- 5.3 The Comparative Laboratory Tests of the Standard and Lubricated Conical Pick Holder -- 5.4 Laboratory Tests of Lubricated Holder Solutions of Conical Picks to Select the Most Advantageous Version -- 5.5 Field Tests of the New Solution of Lubricated Holder Solutions of Conical Picks. 5.6 Industrial Tests of the New Solution of Lubricated Holder Solutions of Conical Picks -- References -- 6 The Mining Head with Mini-Disk Tools with Complex Motion Trajectory -- 6.1 The Conception of a New Solution of Mining Head with Mini-Disk Tools -- 6.2 Laboratory Tests of the New Mining Head Solution and Mini-Disk Tools -- 6.2.1 Laboratory Tests of a Single Plate with Mini-Disk Tools with A straight-Motion Trajectory -- 6.2.2 Laboratory Tests of Pressing the Single Mini-Disk Tools into the Rock Sample -- 6.2.3 Laboratory Tests of a Single Plate with Mini-Disk Tools with A Complex-Motion Trajectory -- 6.3 Developing and Manufacturing of New Solution of the Mining Head with Mini-Disk Tools of Complex-Motion Trajectory -- 6.4 Field Tests of the New Solution of the Mining Head with Mini-Disk Tools of Complex-Motion Trajectory -- References -- 7 Summary and Final Comments -- 7.1 The Concept of New Lubricated Crown Tool -- 7.2 Proposal of the New Design of Four-Plate Mining Head with Disk Tools of Complex Trajectory -- 7.3 Proposal of the Concept of Single Drive for Mining Head with Disk Tools of Complex Trajectory -- 7.4 Proposal of New Materials and Manufacturing Technology of Asymmetrical Mini-Disk Tools -- 7.5 Summary -- References.
