5

1981



# POLISH TECHNICAL REVIEW



### **5**



## POLISH TECHNICAL REVIEW

### **X** SIGMA

PUBLISHERS OF TECHNICAL PERIODICALS AND BOOKS FOR THE CENTRAL TECHNICAL ORGANIZATION (NOT) 00-950 Warsaw, ul. Czackiego 3/5, P.O.B. 1004, Tel.: 39 11 34, Issued in English, French, German and Russian

#### CONTENTS

#### FOREIGN TRADE

Consistent action – a way out of the crisis	2
MACHINE TOOLS	
An automatic line for sharpening threading dies	5
Toolroom milling machine	7
A semi-automatic copying lathe	8
METAL TREATMENT	
Ferritic, sulphurising thermo-chemical treatment	9
Container-type planishing machines	10
Quality inspection of surfacee subjected to passivation	
(patent)	13
ELECTRIC ENGINEERING	
High-current bus bars for up to 30 kV	13
Protection of electric machines against overloading	
(patent)	18
CHEMOTRONICS	
Electrocapillary elements	19
Electrochemical micro-coulometers	22
CONTROL-AND-MEASUREMENT EQUIPMENT	
Dynamic capacitor for the measurement of the contact	
potential difference	24
A selsyns testing station	27
Halogen control of the tightness of heat exchangers A circuit for measuring very small resistance changes	29
(patent)	30
PATENTS Floating bearing	31
Planet gear cage	31
A pumping set	32
IN BRIEF 6. ECONOMIC SURVEY cover pages (1 st & 2 nd)	
ECONOMIC SONVET COVER pages (1 St & 2 nd)	17

#### Container-type planishing machine

One of the cheapest methods of preparing the surface of small objects to be coated with electrodeposits is to work them by means of special shapes in container-type planishing machines. The article on p. 10 discusses the results of comparative tests carried by the Institute of Fine Mechanics in Warsaw on the suitability of many types of Polish container-type planishing machines for working the surface of objects to be coated with electrodeposits. The results of these tests point to the advantages connected with the use of planishing machines.

#### High-current bus bars for up to 30 kV

High-current enclosed bus bars of a new ELPO design developed by ELEKTROBUDOWA in Katowice are provided with a self-supporting tubular enclosure and kept in position by means of resin-made supporting insulators. They are highly reliable and in principle require no maintenance. The article on p. 13 brings details of design solutions, advantages, possibilities and examples of application of the ELPO bus bars.

#### Chemotronics

Chemotronics – one of the newest domains of technology on the border of chemistry and electronics deal with chemotrons i.e. elements whose operation is based on electrochemical phenomena and which can be used in measurement technology and automatics. The article on p. 19 discusses electrocapillary elements (converters, oscillators and resonators) and the article on p. 22 – electrochemical micro-coulometers (integrators). All the designs have been developed at Warsaw University.

Programmatic Council: K. Badźmirowski, S. Grużewski (President), J. Gwiaździński, S. Okoń, L. Olejarz, J. Rudnik, T. Wąsak

Editorial staff: J. L. Toeplitz (editor-in-chief), I. Chmielewska (assistant editor), S. Hilscher (managing editor), E. Karska, Z. Schellenberg, A. Witkowski, J. Wolf

English version: E. Karska

Graphic layout: F. Barącz

Production manager: A. Dziewulska-Kijas, B. Słowińska

Advertising section: T. Cupryś

Cover photo: TCE Heavy-duty lathe made at PONAR-ZAWIERCIE Heavy-duty Lathes Works

Photos in the issue: S. Bałuk, Photo-Service WHZ

Subscription orders should be addressed to Ars-Polona, 00-950 Warsaw, P.O.B. 1001, Krakowskie Przedmieście 7 or to one of the representatives of this company abroad. The annual subscription rate (12 issues) amount to \$ 24.- or the equivalent in other currencies. In the socialist countries, catalogue prices of the local distribution centres apply.

Photocomposition – Wydawnictwo NOT – SIGMA, Warszawa

Printing office: LDA - Zakład 1 - offset, zam. 1592/81

INDEX No. 36915