UNANYAN, Yu.M. [deceased]; SOIN, S.G.


1. Kafedra ikhtiologii Moskovskogo universiteta.
SOIN, S.C.

Reproduction and development of the grayling Thymallus baerii
baicalensis Dybowsk, Poel 1962, 25 nuclei, 1502-1842 MAP
(INHA 1187)

1. Choir of Ichthyology, The State University of Missouri.
SOIN, S.G.

Adaptive characteristics of the structure and development of fish roe and embryos contributing to the improvement of respiration. Vest. Mosk.un.Ser.6: Biol., pochv. 19 no.1:9-31 Ja-F '64. (MIRA 17:4)

1. Kafedra ikhtiologii Moskovskogo universiteta.
Soin, S.G.

Annual scientific report conference of the Department of Biology
no.3:79 My-Je '64.

(MIRA 17:12)
SOIN, S.G.; UNANYAN, Yu.M. [deceased]

Characteristics of the structure and the adaptive role of the secondary egg membranes of true smelts (Osmeridae). Dokl. AN SSSR 154 no.5:1238-1239 F'64. (MIRA 17:2)

SOIN, Yu.S., inzhener

Dissertation on the subject "Studying ways for the technical redesign of small peat briquette plants." Torf.pom.32 no.6: 29-31 '55. (MIRA 8:12)

(peat industry)
FAYERMAN, I. S.; BONGARD, E. M.; ZHALNINA, L. V.; SHAPKINA, T. G.;
SOINA, A. Ya. (Gor'kiy i Volgograd)

Some characteristics of the clinical course of acute mercaptophos
intoxication. Gig. truda i prof. zab. no.12:45-47  '61.
(MIRA 14:12)

1. Gor'kovskiy institut gigiyeny truda i proboleznей, Volgogradskaya
bol'nitsa No. 13.

(MERCAPTOPHOS—TOXICOLOGY) (POISONING)
PILATOV, Nikolay Aleksandrovich; BAYZALOV, V.A., prof.; doktor sel’khoz. nauk, retnenzent; SOINA, L.S., retnenzent; DAGAYEVA, T.S., red.; KOVALENKO, V.L., tekhn. red.


1. Prepodavatel’ sredney shkoly No.1. goroda Ozery Moskovskoy oblasti (for Soina).
   (Vegetable gardening)
The relatively narrow frequency passband of tuned parametric amplifiers is not a fundamental deficiency and can be overcome by the use of coupled tuned circuits. This article investigates the possibility of widening the passband by two coupled circuits. The amplifier is represented as two identical coupled circuits tuned to the same frequency $\omega_0$, but the capacity of one circuit is varied at a frequency $\omega_H = 2\omega_0$. The differential equations for such a driven oscillatory circuit may be written as

$$\frac{d^2q_1}{dt^2} + 2h \frac{dq_1}{dt} + q_1 \omega_0^2 |1 + \nu \cos\omega_H t| + \gamma \frac{d^2q_2}{dt^2} = e^{j\omega t} + e^{-j\omega t};$$

$$\frac{d^2q_2}{dt^2} + 2h \frac{dq_2}{dt} + q_2 \omega_0^2 |1 + \nu \cos\omega_H t| + \gamma \frac{d^2q_1}{dt^2} = 0;$$
Widening the passband ...

where \( \eta = M/L \) - the coupling coefficient; \( 2h = R/L \); \( \omega_0^2 = 1/LC_0 \); \( L, R \) being the self-inductance and resistance of each circuit, \( M \) the mutual inductance, \( C_0 \) the constant capacity of the tuned circuit. The variable capacity \( C_1 \) is related to \( C_0 \) by \( C_1 = C_0^{-1}(1 + m \cos \omega_H t) \). The solution depends on the degree of coupling. It is shown that:

1) if the coupling is less than, or equal to, critical (\( \eta Q \leq 1 \)) then the amplifier is excited only at the frequency \( \omega_H/2 \) and the critical modulation depth increases \( (1 + \eta^2) \) times in comparison with a single tuned circuit; 
2) if the coupling is greater than critical (\( \eta Q > 1 \)) then the amplifier is excited at three frequencies: \( \omega_1 = \omega_H/2, \omega_2 \) and \( \omega_3 \) which correspond to detuning \( \eta = \pm \sqrt{\eta^2 - 1}/Q \) (\( \omega_2 \) and \( \omega_3 \) approximately the same as for the frequencies of the normal oscillatory system). As far as the passband widening is concerned, the frequency response curve is double humped with a deep drop in the middle.

The gain \( k \) and the passband \( \Delta f/\Delta f \) are found next.
Widening the passband

\[ k = \frac{Q^2}{Q_{\text{ext}}^2 n^2} \frac{1}{(1 + x^2)^2} \]  

(8)

where \( Q_{\text{ext}} = 1/2\omega_0 C_0 \), \( n = 1 - m^2/m_{\text{cr}}^2 \)

\( Z \) is the wave impedance of the supply line to the amplifier;

\( m_{\text{cr}} \) is the critical modulation. For \( n \ll 1 \), the passband equals

\[ \frac{\Delta f}{f} \approx n \frac{1 + x^2}{Q (1 - x^2)} \]  

(9)

and hence

\[ \frac{\Delta f}{f} \sqrt{k} = \frac{1}{Q_{\text{ext}}} \frac{1}{1 - x^2} \]  

(10)

If \( x \ll 1 \), reduction in the gain is accompanied by increase in the passband and the product \((\Delta f/f) \sqrt{k}\) can be significantly greater than for a single circuit. The phase change introduced into the Card 3/5
Widening the passband signal is given by

\[ \tan \varphi = -\frac{a_1 Q}{n} \frac{1 - x^2}{1 + x^2} \]

(12)

where \( a_1 = 1 - \left( \omega^2/\omega_0^2 \right) \). The frequency response curves are illustrated. The theoretical results were confirmed on an experimental model at 4.5 Mc/s frequency. For the single-circuit amplifier, the passband was 50 kc/s and the gain 20 dB; for the coupled circuit case, the passband was 150 Mc/s. Thus \( (\Delta f/f) \sqrt{k} \) was increased from 1/9 to 1/3. The use of coupled circuits leads to a similar widening at uhf, e.g. for a single circuit amplifier with \( k = 20 \) db, bandwidth = 15 Mc/s; for a double circuit amplifier with \( k = 20 \) db, the bandwidth is 45 to 50 Mc/s. There are 3 figures and 8 references: 5 Soviet-bloc and 3 non-Soviet-bloc. The three references to English language publications read as follows: H.Heffner, G.Wade, J.Appl.Phys., 29, 1262 (1958); H.Heffner, K.Kotzebue, Proc.IRE, 46, 1301 (1958); G.F.Herrmann, M.Uenohara, A.Uhlir, Proc.IRE, 46, 1301 (1958).
Widening the passband...

ASSOCIATION: Moskovskiy pedagogicheskii institut im. V.I.Lenina
(Moscow Pedagogical Institute imeni V.I.Lenin)

SUBMITTED: July 7, 1960
SOINA, N.V.

Studying the oscillations in a system of two coupled circuits, one of which has a variable capacitance. Izv. vys. ucheb. zav.; radiofiz. 5 no.2:411-413 '62. (MIRA 15:5)

1. Moskovskiy gosudarstvennyy pedagogicheskiy institut imeni Lenina. (Electric circuits) (Oscillations)
SMIRNOVA, L.A.; SOINA, N.V.

Frequency characteristics of a system of two coupled stages, one of which contains a variable capacitance. Izv. Vys. Ucheb. Zav.; Radiotekh. 6 no.3:301-302 My-Je '63. (MIRA 16:9)

1. Rekomendovana kafedry eksperimental'noy fiziki Moskovskogo pedagogicheskogo instituta imeni Lenina. (Parametric amplifiers)
ETKIN, Valentin Semenovich; GERSHENZON, Yevgeniy Mikhaylovich.
STRUKOV, I.A.; VISTAVKIN, A.N., reitzenent; ARONOV, V.L.,
reitzenent; NASHAHOVA, V.G., red.

[Superhigh-frequency parametric systems using semiconductor
diodes] Parametricheškie sistemy SVCh na poluprovodnikovykh
   (KIRA 17:11)
Length of testing for creep and the creep-rupture strength of metals and alloys. Rev. HP-1863, Nov. 1963. Note: 651°F (344°C)
267 Kyna-181 (KINRA 176)
AUTHORS: Vladimirov, N. F.; Galkin, M. P.; Sointsev, Yu. P.

TITLE: Development of programmed electrical operating conditions for the smelting of steel in an arc furnace in connection with automation of the process

SOURCE: Ref. zh. Metallurgiya, Abs. 12V347


TOPIC TAGS: steel, steel industry, arc furnace, smelting furnace, computer programming, computer/ VU-5086 computer

ABSTRACT: A technique is presented for formulating a computer program based on the electrical operating conditions corresponding to the most economical conversion of 1 ton of steel. On the basis of the characteristics of 400 smeltings of various steel types in a furnace of 3-ton nominal capacity, the correlation dependences of the furnace operation characteristics—the specific smelting period $\tau$ and the specific electrical power consumption $W$—on the mean active power $P$ were found in the form

$$\tau = A_1 + B_1 P + C_1 P^2,$$

$$W = A_2 + B_2 P + C_2 P^2,$$

where $A_1, B_1, C_1, A_2, B_2, \text{ and } C_2$ are the coefficients of the regression equation.

Calculations of the most economical power permit values to be determined for the duration and mean active power for particular stages of the smelting period.
1) $t_1 = 8\text{ min}, P_1 = 1360\text{ kw}$; 2) $t_2 = 40\text{ min}, P_2 = 1750\text{ kw}$; 3) $t_3 = 15\text{ min}, P_3 = 1500\text{ kw}$. The calculated values can be specified as program data for the computer VU-5086. It is found that, for oxidized carbon content of 0.30--0.50% and more, the economical power is independent (with sufficient accuracy) of the oxidized carbon content. 5 figures, 1 table. (Iz RZh Elektrotekhnik.) (Translation of abstract)
Diosi, P.; Simionescu, V.; Hentziu, L.; Lazar, L.; Soiu, J.; Companetz, V.; Rusu, G.


(DYSENTERY BACILLARY epidemio)
SOJA, Jozef, mgr inż.

Method of coal mining with applied dry blasted packing.
Wiadom gorn 15 no.12:330-333 D '64.
SOJAK, P.

Immanuel Kant and natural sciences; two-hundredth anniversary of Kant's cosmogony.
p. 278

Vol. 61, no. 4, 1955
Sbornik
Praha, Czechoslovakia

So: Eastern European Accession Vol. 5 No. 4, April 1956
AUTHOR: Soják, František

TITLE: Work with a self-made sextant

PERIODICAL: Referativny zhurnal, Astronomiya, no. 1, 1963, 8,
abstract 1.51.71. ("Říše hvězd", 1962, v. 43, no. 5, 86 - 89,
Czech)

TEXT: The author describes in detail the manufacturing, in amateur way,
of a sextant out of veneer and celluloid with a limb divided with an accuracy up to 0.5°. The sextant radius is 125 mm. It is possible to measure with this sextant not only angular altitude and azimuth, but also relative angular distances between luminaries.

I. A.

[Abstracter's note: Complete translation]

Card 1/1
SOJAK, Jiri

Notes on our spurge in the eastern Carpathian Mountains. Biologia 15 no.12:920-925 '60.

1. Ceskoslovenska botanicka spolecnost, Praha. (CZECHOSLOVAKIA--EUPHORBIA)
SOJAK, L.; HYBL, C.


SOJAK, L.; MASARYK, S.; GALFY, K.; MOZOLA, A.

Separation of the cracking products of higher linear n-alkanes by gas chromatography with programmed temperature. Ropa a uhlie 5 no.7:195–201 1969.

SOJAK, L.; GREGORIAK, M.; KURCOVA, A.

Separating light petro!s by gas chromatography. Ropa i uhlie
5 n°10:289-293 0 '63.

1. Slovnaft, n.p., Vyskumný ustav pre ropu a uhlovodikove plyny,
Bratislava.
SOJAK, L.; SKALÁK, P.

Chromatographic separation of dehydrogenation products of C₅ hydrocarbon mixtures. Ropná uhlie 6 no. 4: 111-112 Apr '64.

1. Slovnaft National Enterprise, Research Institute of Crude Oil and Hydrocarbon Gases, Bratislava.
SOJAT, J.


1. Kirurski odjel Opce bolnice u Banja Luci (Sej dr J. Sojat).
(PENIS neopl)
SOJAT, J.; KESTULOVIC, B.

On rare primary malignant tumors of the gallbladder. Acta chir. Iugosl. 11 no.1:49-57 0 '64.

1. Kirurski odjel Opce bolnice Dr. J. Kaifes u Zagrebu (Sef prim. dr Z. Seiwerth) i Zavod za patologiju i patologsku anatomiju Medicinskog fakulteta u Zagrebu (Predstojnik prof. dr A. Zimolo).
BENINI, Nevenka, inz.; SOJAT, Zdenka

Determination of chromium, manganese, and phosphorus in ferrosilicon by means of a single weighing. Kem ind 13 no. 2: 77-78 F '64.

SOJCEK, Karol, inż.

Chemical control of mazut heating. Energetika Cz 14 no.12: 608-610 D '64.

SOJCEK, Karol, inż.

Feed water demineralization. Energjika 12 no.1:38-40 Ja '62.
SOJCEK, Karol, inż.

Operation of high-pressure boilers with mazut fueling.
Energetika Cz 13 no.7:355-358 J1 '63.

SOJCEK, Karol

Heating steam boilers with mazut. Ropa a uhlie 6 no. 6.
181-182 Je '64.

1. Slovnaft National Enterprise.
SOJČEK, Karol, Jr.

Few points of main objective. guests: liacik@14, 9978
322-329 JUHA.


APPROVED FOR RELEASE: 08/25/2000   CIA-RDP86-00513R001651920010-6
SOJBR, Jan

Textbooks for secondary industrial schools for chemistry. Chem
prum 13 no.10 542-543 0 '63.

1. Prumyslova skola chemicka, Gottwaldov.
B. T. R.
Vol. 3 No. 3
March 1954
Chemistry - Physical.


For measuring electrode potential with accuracy not exceeding concentrations not lower than 0.001 N. ref.
SOJECKI, WOJCIECH

POLAND/Physical Chemistry - Kinetics, Combustion, Explosions, Topochemistry, Catalysis.

Abs Jour : Ref Zhur - Khimiya, No 7, 1958, 20717
Author  : Wojciech Sojecki
Inst    : Warsaw Polytechnical Institute.
Title   : Potentiometrical Study of Cobalt-Thorium Contacts at Fischer-Tropsch Synthesis.

Abstract : A series of Co - Th contacts as well as of their carriers was studied by the potentiometrical method described earlier (RZhKhim, 1954, 42741; 1956, 430). Potential magnitudes of corresponding electrode powders characteristic of the studied contacts were obtained.
SOJIC, Stanko R.

Printed materials as a category of letter mail. PTT Zajed 5
no.2:i-4 Mr-Ap '63.
SOLIC, Stanke

New regulations on postal services. Pt. 3. PTT Zajed 6 no.4:
Jul-20 JL-Ag '64.
SOMO, Tanks:

New regulations on postal services. PTT başı no. 6/612-19
3-D '64.
2/5200

AUTHOR: Sojka, B.

TITLE: Sensitive Amplitude Analyser With Constant Relative Channel Width

PERIODICAL: Československý časopis pro fyziku, 1961, No. 4, pp. 307-313

TEXT: Using a scintillation counter, a γ-spectrum can, in principle, be measured by two different methods: either with constant absolute channel width or with constant relative channel width. The two methods do not lead to identical results. The method of constant relative channel width appears to be somewhat more advantageous. In this method, the channel width ΔV is readjusted for each discriminator voltage setting V, so that ΔV/V = const. Advantages of reduced cost, reduced distortion and increased stability can be gained by constructing such an instrument without an amplifier stage. The apparatus described in the present paper consists of the following parts: the scintillation counter is followed by an attenuator and a single-channel sensitive analyser; the system is completed by a scaler and an HT supply for the counter. The pulses arriving from the detector are always larger than the fixed level of the discriminator. The amplitude Card 1/3
Sensitive Amplitude ... 

is, therefore, measured by the setting of the attenuator, which is a highly stable passive quadropole, Tesla 12XU023. Its frequency response is 0 to 2 Mc/sec and the attenuation is adjustable in steps of 0.01 Nep from zero to 15.21 Nep. The terminal resistance of the attenuator is 150 ohms. The scintillation counter is NaI(Tl), 1.5 x 2 in. The photomultiplier is type EMI 6097B. The discriminator uses circuits described in Ref. 3 (Simhi, M., Birk, M.: RSI 29 (1958), No. 9, 766), Ref. 4 (Kandiah, K.: Proc. Inst. Elec. Eng. 101 (1954), (2), 239) and Ref. 5 (Barabaschi, S., Cottini, C., Gatti, E.: Nuovo cimento 2 (1955), 1042). For each setting of the attenuator, the number of pulses is counted during a fixed time-interval. The number of counts is a function of the attenuation b. The unknown energy E is found from the relation

\[ E = K (\exp b - 1) + E_1 \]

where

\[ K = \frac{E_2 - E_1}{\exp b_1 - 1} \]

Card 2/3
$\varepsilon_2$ and $\varepsilon_1$ are known (calibration) energies, $b_1$ is the attenuation between them, $b$ is the attenuation between $\varepsilon$ and $\varepsilon_1$. Though the system can be used with $V = \text{const}$ (constant absolute channel width), it gives better results if used in the manner described above, i.e., $\Delta V/V = \text{const}$. The spectrum of $\text{Cs}^{137}$ was measured with the instrument and the result was better than that reported in Ref. 2 (Tove, P.A.; Nuclear instruments 2 (1958), 1). The stability of the instrument is better than $(1.5 \times 10^{-2})/2$ hours. There are 8 figures and 5 references: all non-Soviet-bloc. The four references to English-language publications read as follows: Björn Aström: Nuclear instruments 1 (1957), 143; Tove, P.A.; Nuclear instruments 2 (1958), 1; Simhi, M., Birk M.: RSI 29 (1958), No. 9, 766; Kandiah, K.; Proc. Inst. Elec. Eng. 101 (1954), (2), 239.

ASSOCIATION: Ústav jaderného výzkumu ČSAV, Praha
(Institute of Nuclear Research, ČSAV, Prague)

SUBMITTED: December 1, 1960

Card 3/3.
SOJKA, Bohumil

Fast amplitude discriminator with tunnel diodes. Jaderna energia
10 no.7:259-261 Jl't64

1. Institute of Nuclear Research, Czechoslovak Academy of
Sciences, Rez.
GRZESIUK, Stanislaw; SOJKA, Eugeniusz

Studies on the physiology of maturing small field bean seeds (Vicia faba L. SSP. minor). Rocznik nauk rolniczych 83 no.4:735-770 '61.

1. Wyższa Szkoła Rolnicza, Olsztyn, Katedra Fizjologii Roślin.
GZHESTUK, S. [Grzesiuk, S.]; MEZHVINSKAYA, T. [Mierzwinska, T.];
SUYKA, Ye. [Sojka, E.]

Physiology and biochemistry of the development of seeds in
forage beans. Fiziol. rast. 9 no.6:682-692 '62. (MIRA 15:12)

1. Department of Plant Physiology of Higher Agricultural
School of Olshan, Poland.
   (Broad bean)
   (Seeds)
SOJKA, H.

"Cold-Pressing of Bolts." (To be contd.) p. 150, Brno, Vol. 9, no. 3, Mar. 1954.

So: East European Accessions List, Vol. 3, No. 9, September 1954, Lib. of Congress
Production of screw bolts by cold pressing. H. Böksa (Hainich
Lust, 1934, p. 223-228). Advantages of production of screw bolts
by cold pressing and the properties of steels used for their manu-
facture by this method in Czechoslovakia and Western Germany are
reviewed. Main causes of the occurrence of flaws are discussed
with the view to extending this method to production of other
articles manufactured so far by machining. S. N. Lachowicz.
CZESCHOSLOVAKIA / Farm Animals. Wild Animals.

Abs Jour : Raf Zhur - Biol., No 10, 1958, No 45259

Author : Sojka, J.
Inst : Not given
Title : New Methods in Raising Nutrias

Orig Pub : Chovatel, 1957, No. 6, 108

Abstract : In order to increase the quality and to reduce the production cost of the nutria pelts, it is recommended to mate the females at the age of not less than 8 months. It is expedient to plan litters to begin in October. For breeding purposes, the best animals from the 3rd or 4th litter should be selected. Attention should be paid to the body build, health, skin quality and fertility of the breeding males. The killing of nutrias for pelts should be effected in winter.
Production of nitric oxide by continuous decomposition of ammonium nitrate. Janek Jaroslav, Chem. Prumysl 6, 1935, 793-794. The best method of a continuous decompo. of NH_4NO_3 uses a protective film of a mixt. of KNO_3 and NaNO_3. The decompo. is performed in a retort at 270-310°. The gas contains approx. N_2 0.6, N_2O 3.2, O_2 0.7, NO 0.05, and NO_2 0.03% by vol. The losses of NH_3, NO, and NO_2 by entrainment with gas are about 18%. L. A. H.
CZECHOSLOVAKIA/ Chemical Technology. Chemical Products and Their Application - Chemico-Technological Problems of Nuclear Techniques

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 12321

Author : Sojka Jaroslav
Title : Production of Heavy Water

Orig Pub : Vyroba tezke vody. Chem. prumysl, 1956, 6, No 4, 170-172 (Czech)

Abstract : A comparison is presented of the physicochemical constants of H₂O and D₂O and a review of the procedures and schemes of preparation of D₂O: a) by distillation of water; b) by the exchange reaction: H₂O + HD ⇌ HDO + H₂; HDO + D₂ ⇌ D₂O + HD in the presence of Pt- or CrNi-catalyst, in the course of which the deuterium of hydrogen is concentrated in the water from which it is then recovered electrolytically; c) by distillation of hydrogen.

Card 1/1

- 3 -
SOJKA, Jaroslav, inz.; MICHNA, Josef

Modernization of intermediate storage. Podnik organizace
17 no. 3:113-115 Mr ’63.

1. Kralovopolska strojírna, zavody chemickych zarizeni, n.p.,
Brno.
SOJKA, Jaroslav

Great distance control of contactors and relays. Elektrotechnik
18 no.1:4-6 Ja '63.

1. Elektromontazni zavody, Praha.
SOJKA, Jaroslav

Long-distance control of contactors and relays. Elektrotechnik 18 no. 5:148-149 My '63.
SOJKA, K.

SOJKA, K.; SZUL, J.; ZYTKA, J.

Geophysical service of the petroleum industry.

p. 270 (Nafta) Vol. 13, No. 10, Oct. 1957, Krakow, Poland

S0: MONTHLY INDEX OF EAST EUROPEAN ACCESSIONS (EJAI) LC, VOL. 7, NO. 1, JAN. 1958
SOJKA, Krzysztof, mgr inż.; ROKOSZ, Tadeusz, mgr inż.


1. Przedsiębiorstwo Geofizyki Przemysłu Naftowego, Karków.
SOJKA, S.

Advanced course for parachute instructors in Hadawiec. p. 228. (SKRZYDLATA POLSKA, Vol. 10, No. 15, Apr. 1954, Warszawa, Poland)

PERZYNA, Tadeusz, BOWIELSKA, Irena, SOJKA, Stanisław

Effect of hypothermia on the behavior of electrophoretic fractions of
blood proteins in rabbit. Polski przegląd chir. 30 no.2:103-110
Mr '58

A.M.

(BLOOD PROTEINS, determ.
electrophoresis, eff. of hypothermia in rabbits (Pol))

(HYPTHERMIA, eff.
on blood protein electrophoresis in rabbit (Pol))
M AZUROWA, Aleksandra; SOJKA, Stanislaw

Changes in the coronary vessels of the heart in atherosclerosis obliterans. Poznan. tow. przyjaciol nauk, wydz. lek. 18 no. 4:127–133 '60.

(CORONARY DISEASES pathol.)
SOJKA, T.

Practical distribution of lights in a dark room. Elektronik 19 no. 7:209 Jl '64.

1. Severografia, Liberec.
SOJKA, Tomas

Operational experience with contactors. Elektrotechnik 18
no.10:296 0 '63.

1. Severografia Ol, Liberec.
During the past years several automatic and semiautomatic build-up welding methods have been developed, among others by the Soviet NIAT Institute. The Soviet method provides the automatic build-up welding of metals using liquid; this method saves metal and electric energy. Based on relative studies, the Výzkumní ústav svařovacích strojů a technologie svařování (Research Institute of Welding Machines and Welding Technology) in Chotěboř started the development of an automatic equipment adjustable to every lathe. The work piece rotates while the electrode moves and vibrates, contacting the surface and welding it. The welded area is continuously submitted to the flux of the cooling agent. The very moment the electrode contacts the machined part, 30 % of the heat is developed and upon removing the electrode 70 %. In the latter case the voltage of the electric arc fluctuates and drops to the value being proportional to the voltage of the source (generator or selenium) at no-load. The electric arc lasts for 0.003
Welding by means of vibration electrode in liquid - 0.0038 seconds, the no-load takes 0.006 - 0.007 seconds. The period of shorting and of breaking is 30 - 32 % and the no-load running takes 62 - 70 %. A stabilization and lowering of losses is obtained by the insertion of an inductive resistance. The losses caused by spraying of metal decrease from 30 - 35 % to 6 - 8 %. Layers of 1.4 - 2.5 mm and more may be achieved. The welding takes place at a low voltage of 10 - 12 v, 100 - 200 amp; a-c or d-c, or a combination of both systems. The equipment consists of the welding head, the dividing panel, the transformer, the damper, the steering panel, and the cooling agent container. The welding head has two independent motors located in the casing of the adjusting column, by means of which the angle between the electrode and the axis of the unwinding of the endless electrode (diameter 1.6 mm, Fe 0.1 C). A selenium rectifier is used as current source, and an adjustable speed variator drives the shaft of the lathe motor through a gear. The variator makes possible the transmission of slow revolutions to the sliding-gear drive of the lathe. The liquid used has the following composition: water and 3 - 4 % soda with 5 % oil-additive, or water and 20 - 30 % glycerine. The protrusion of the electrode from the nozzle during ignition and welding is 5 - 10 mm. The weld is cooled down at a distance card 2/3
Welding by means of vibration electrode in liquid of 30 mm from the electrode. Utilizing the feed of the support, the revolution of the object makes possible the application of a continuous and equal spirally rolled weld; the new welding bead covers only 2/3 of the previous one. By means of the water a hardening of the welding beads takes place. The following welding bead anneals the previous one. Changing the speed or the feed, a weld thickness varying between 0.5 to 2 mm is obtainable. The layer thickness is achieved by several consecutive weldings. The hardness of the welds depends on the carbon content in the electrode and corresponds to 60 - 80 kg/mm². In the design of the new machine several elements of the SUM 1000 automatic welding machine could be used. The technical data given are: number of revolutions of the mandrel 0.3 to 25 rpm, welding speed 0.3 to 2 m/min, thickness of welded layer 0.5 to 3 mm, diameter of welded parts 25 to 250 mm, feeding speed of the head 0.5 to 3 mm/rev, diameter of electrode 1.6 or 2 mm, number of vibrations of the electrode 100 per second, content of the liquid container 100 liter, angle of electrode adjustment: in vertical plane 35 to 45° and in horizontal plane 70 to 90°. The vibration welding makes possible the regeneration of inner and outer revolving surfaces of steel parts. There are 8 figures.

SOJKÁ, Václav


1. Automatizované zavody Klementa Gottwalda, Praha.
Electroplating by hand electrodes. Stroj vyr 12 no. 16:
720-734 0 '62.

1. Automobilove zavody Klementa Gottwalda National Enterprise,
Prague.
SOJKA, W.

SOJKA, W. A voice in the discussion on technological progress. p. 76.

Vol. 29, no. 2, 1956
MECHANIK
TECHNOLOGY
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