ARTobolevskii, I.I.

motions or trajectories generated) can hardly be related to its structure in any useful manner because of the high order of the algebraic equations involved, and the large number of parameters appearing in their coefficients (it seems that the four-bar curves still offer more possibilities than we can utilize now). Let us then assume that the problem has purely cognitive importance, and that the main purpose of a classification is to define classes to whose elements the same formula for maximum (normal) mobility applies (singular conditions can always increase mobility).

Assur [Izv. Sankt-Peterburg. Politekh. Inst. 20, 329–385 (1912); 21, 581–635 (1913)] wrote 112 earnest pages on the subject, most reverently referred to in Soviet literature but little read or utilized. Assur recognized the dependence of his problem on the unsolved problem of the classification of topological graphs, and never claimed that his classification was exhaustive. The author, with very simple means, professes to solve the problem in all generality. Since his solution is very often mentioned in Russian writings, an account of it follows. There exists an "entirely general" mobility formula by Dobrovol'skiĭ: (1) $w=(i-n)n-\sum_{k=5}^{n+1}(k-4)p_k$, $k=5, \cdots, n+1$, where w is the degree of freedom of the mechanism with one bar fixed, $n+1$ the number of bars,

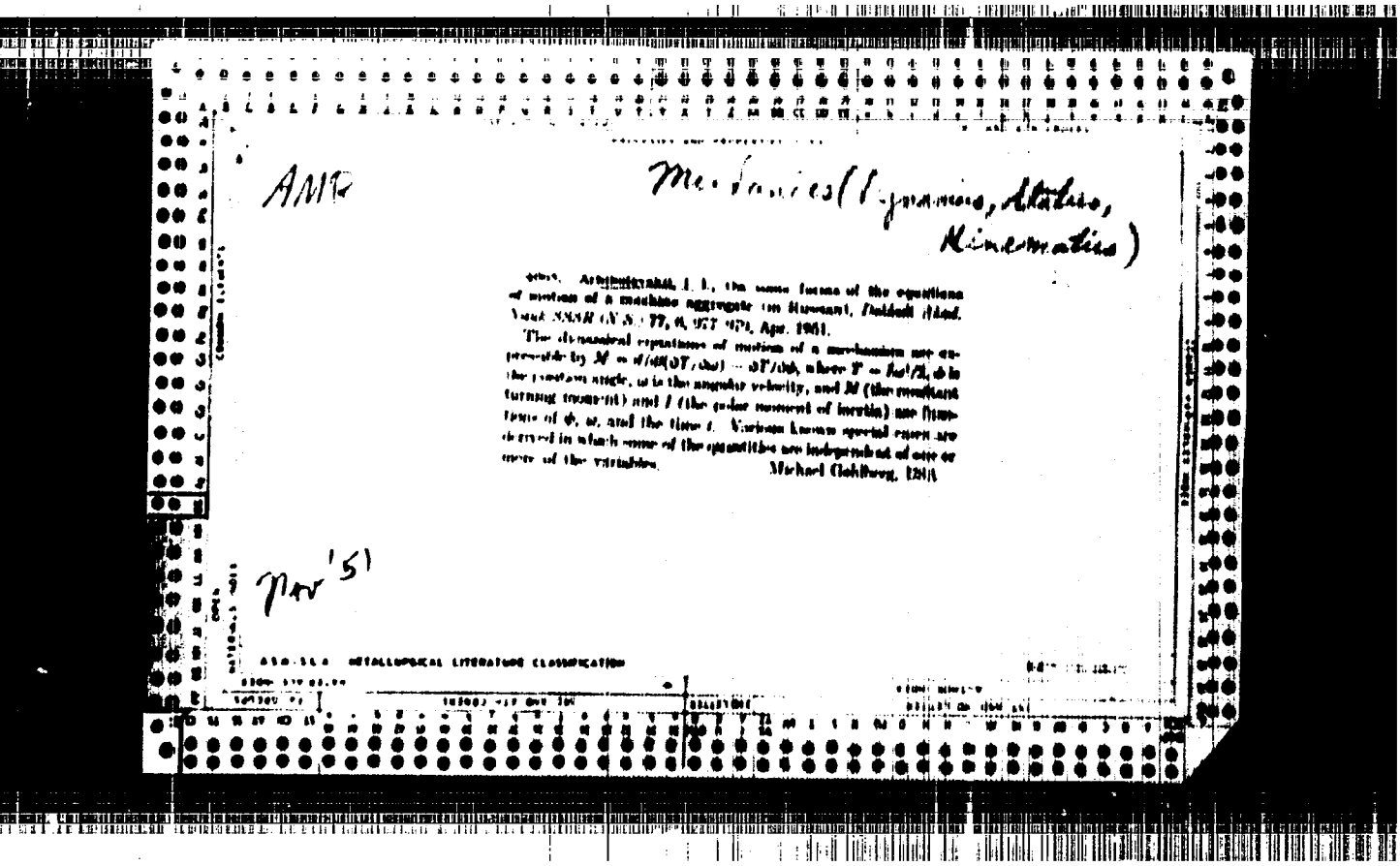
ARTobolevskiĭ, I. I. (B) 4/4 17

p_k the number of pairs with relative mobility k ($k=5$ for a rotary or sliding pair), and m a magic number defining a "family" in the Artobolevskiĭ sense. It is easily seen that $m=3$ makes (1) valid for a plane mechanism. The reviewer has been unable to find a definition of m beyond the vague statement that "m is the number of constraints on the mechanism as a whole". Moreover, the definition of m cannot be gleaned from the examples given: the author simply announces the value of m for each case. Now, it is evident that (1) can be solved for m for any w, and that any constraints on the bars stem from the pairs (e.g., parallel hinge axes make the mechanism a plane one). Is it possible to determine m without studying the relations (possibly singular) between the hinges? This does not seem feasible to the reviewer, who finds the genealogy of Artobolevskiĭ's families very enigmatic. *A. W. Wundheiler*

ARTOBOLEVSKIY, Ivan Ivanovich, akademik; CHEBOTAREVA, A.B., redaktor izdatel'stva; SHEVCHENKO, G.N., tekhnicheskiy redaktor

[Mechanisms; a manual for engineers, designers, and inventors] Mekhanizmy; posobie dlia inzhenerov, konstruktorov i izobretatelei. Moskva, Izd-vo Akademii nauk SSSR. Vol.4. 1951. 1175 p. [Microfilm] (Machinery)

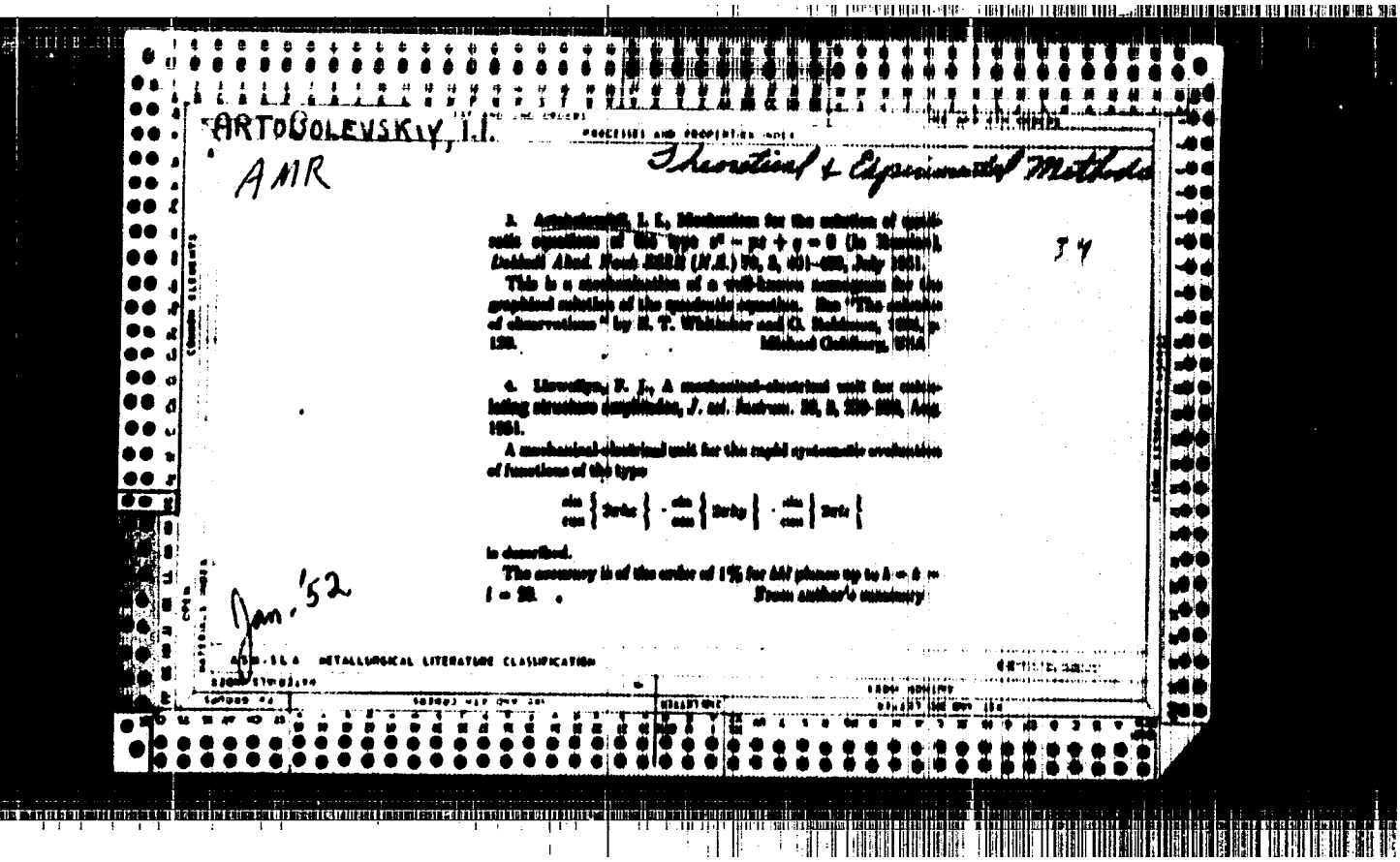
(MLRA 10:3)



AMR

Mechanics (Dynamics, Statics, Kinematics)

Nov '51



ARTOBOLEVSKIY, I.I.

AMR

Theoretical + Experimental Methods

Jan. '52

ARTOBOLEVSKIY, I. I.

USSR/Mathematics - Instruments, Mathe- 21 Aug 51
matical

"Mechanism for Cubic Involution," Acad I. I. Artobolevskiy

"Dok Ak Nauk SSSR" Vol LXXIX, No 6, pp 933-935

Describes a simple mech scheme of rods and joints for constructing the cube or extracting the cube root of a number: $n = n^3$ or $n = \sqrt[3]{n}$. Gives a simple diagram. Submitted 23 Jun 51.

ARTOBOLEVSKIY, I. I.

USSR/Mathematics - Instruments, Mathematical — 1 Oct 51

"A Mechanism for Solving Quadratic Equations of the Type $a_1x^2+a_2x+a_3=0$," Acad I. I. Artobolevskiy

"Dok Ak Nauk SSSR" Vol LXXX, No 4, pp 549-551

Describes a simple linkage mechanism intended to solve quadratic eqs. Gives schematic representation of the mechanism. Gives derivation. Submitted 1 Aug 51.

ARTOBOLEVSKIY, I. I., Acad

USSR/Mathematics - Instruments, Mathematical 11 Oct 51

"Two Mechanisms for Tracing Curves of Higher Order," Acad I. I. Artobolevskiy

"Dok Ak Nauk SSSR" Vol LXXX, No 5, pp 717-719

Describes a simple linkage mechanism for drawing the versiera (witch of Agnesi) $y^2x = 4r^2(2r - x)$. Demonstrates its derivation. Submitted 15 Aug 51.

LAIEVSKIY, N.P.; ARTOBOLEVSKIY, I.I., akademik, redaktor.

[Methods for an experimental study of the mechanical parameters of machines] Metody eksperimental'nogo issledovaniia mekhanicheskikh parametrov mashin. Moskva, Izd-vo Akademii nauk SSSR, 1952. 235 p. (MLRA 7:3)
(Electric measurements) (Physical measurements)
(Measuring instruments)

[redacted], I. [redacted]

New Equipment and New Methods of Work.

Izvestia, Feb. 2[illegible], p. 3, 1952.

SO: MIRA

ARTOBOLEVSKIY, I.I.; SYSOYEV, N.I.

Founder of agricultural mechanics, outstanding Soviet scientist, Academician V.P.Goriachkin. Trudy po ist.tekh. no.1:53-65 '52. (MLRA 6:7)
(Goriachkin, Vasilii Prokhorovich, 1868-1935)

ARTOBOLEVSKIY, I. I.

"Leonardo da Vinci as a Constructor," Izv. AN SSSR, Otd. Tekh. Nauk, No 6, 1952, p. 883

MLRA Nov 1952

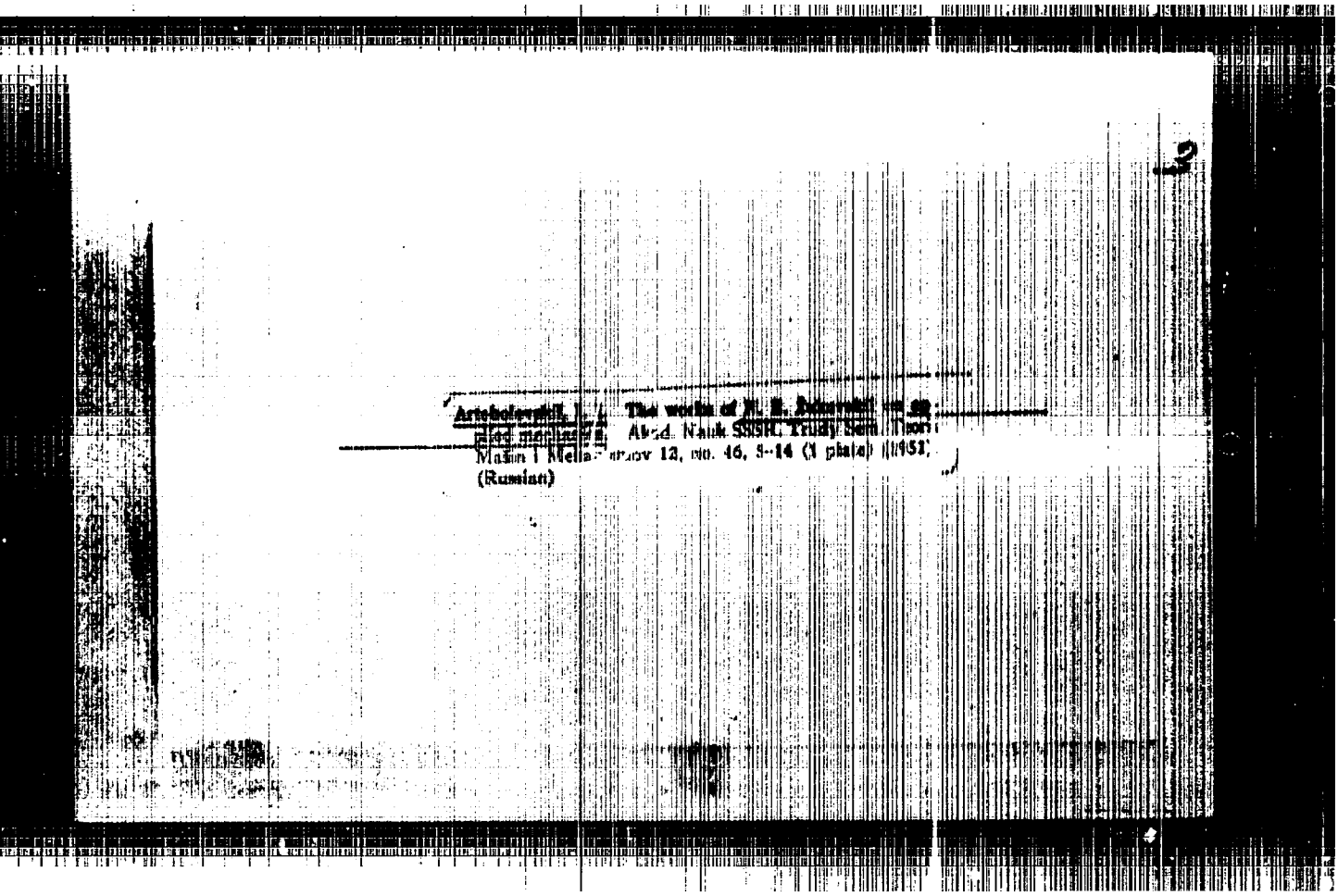
1. ARTOBOLEVSKIY, I. I.

2. USSR (600)

4. Machinery, Kinematics of

7. Problem of the movement of a machine. Izv AN SSSR Otd tekh nauk No. 12 1952.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.



Artobolevskiĭ, I. I. The works of N. E. Zhukovskiĭ on ...
... Akad. Nauk SSSR, Trudy Sem. Ist. ...
Matem i Mekha... prov 12, no. 46, 5--14 (1 plate) (1951)
(Russian)

ART [redacted]LEVSKIY, I. I.

"Outstanding Structure of the Stalin Epoch," Nauka i zhizn', 19, No 5, 1952

MLRA Aug 1952

Technology

U. S. S.R. the land of unprecedented technological progress. Khimiya i zhizn' 19, No. 7, 1952.

9. Monthly List of Russian Accessions, Library of Congress, September 1958, Uncl.

1. ARTOBOLEVSKIY, I. I., ACAD.

2. USSR (600)

4. Machinery Industry

7. Progress of Soviet machine building. Nauka i zhizn' 19, no. 11, 1952, p 13-16

9. Monthly List of Russian Accessions, Library of Congress, March 1953, Uncl.

1. ARTOBOLEVSKIY, I. I. Acad.

2. USSR (600)

4. Technology

7. Further strengthening of the ties between the branches of technical sciences and industry. Vestnik AN SSSR 22 no. 10, 1952.

9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

1. ARTOBOLEVSKIY, I. I. Acad.

2. USSR (600)

4. Technology

7. Technical progress. Priroda, 41 no. 10, 1952.

Shows how the Soviet Union has progressed in technical science, industrialization and collectivization. Cites examples of number of industrial enterprises, percentage increase in the use of cement, speed of metal cutting at higher temps, transmission of high-voltage current, number of tractors constructed, acreage of afforestation and reclamation, etc. Written in connection with the 19th session of the Party on the Fifth Five-Year Plan for the development of the USSR in the years 1951-1955. Stresses importance of industrialization and technical progress to Communism.

259T103

9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

1. ARTOBOLEVSKIY, I.I. [illegible]

2. USSR (600)

4. Machinery, Kinematics of

7. Stability of the state of steady motion of a machine. Dokl. AN SSSR 87 no. 1, 1952

States that the stability depends not only on the laws of variation of the reduced moments of force of the engine and moments of force of resistance but also on the law of variation of thereduced moment of inertia. Derives differential eqpressions involving the parameters of the roller bearings, in the form of inequalities whose signs determine stability of instability. Presented 2 Sep 52.

252T97

9. Monthly List of Russian Accessions, Library of Congress, February 1953, Unclassified.

USSR/Physics - Inequilibrium 21 Nov 52

"Dynamic Coefficient of Inequilibrium Describing the Behavior of a Machine," Acad I. I. Artobolevskiy

"Dok Ak Nauk SSSR" Vol 87, No 3, pp 349-352

A theoretical and experimental investigation of a number of operating machines shows that the angular velocity of the roller bearings of these machines possesses, in the period of stationary motion, significant fluctuations, in most cases much greater than those of the machines' engines. Derives approximate expressions of the average value of subject coefficient. Submitted 30 Sep 52.

245T101

[redacted]

"Mechanization of Labor-Requiring Processes in Machine Building," published in Leninskoye Znamya on 11 Jul 53.

DOBROVOL'SKIY, Vladimir Vladimirovich; ARTOBOLEVSKIY, I.I., redaktor.

[Theory of devices used in geometrical construction of curves on a plane] Teoriia mekhanizmov dlia obrazovaniia ploskikh krivykh. Moskva, Izd-vo Akademii nauk SSSR, 1953. 143 p. (MLRA 6:12)
(Geometrical drawing)

BYKHOVSKIY, Mikhail Lazarevich; ARTOBOLEVSKIY, I.I., akademik, otvetstvennyy red.; AMTRUSHIN, B.D., red.izd-va; MOVICHKOVA, N.D., tekhn.red.

[Principles of dynamic precission of electric and mechanical circuits] Osnovy dinamicheskoi tochnosti elektricheskikh i mekhanicheskikh tsepei. Moskva, Izd-vo Akad.nauk SSSR, 1953. 155 p. (MLRA 11:3)
(Automatic control) (Electric circuits)

ARTOBOLEVSKIY, I.I.; ZHARKOV, D.V., redaktor; GAVRILOV, S.S., tekhnicheskiy redaktor

[The theory of mechanisms and machines] Teoriia mekhanizmov i mashin. Izd. 3. Moskva, Gos. izd-vo tekhn.-teoret. lit-ry, 1953. 712 p. (MLRA 7:10)

(Mechanics, Applied) (Machinery, Kinematics of)

USSR.

*Artobolevskii, I. I. Teoriya mekhanizmov i mashin. [Theory of mechanisms and machines.] 3d ed. Gosudarstv. Izdat. Tehn.-Teor. Lit., Moscow, 195[illegible]. [illegible] pp. 14.60 rubles.

Except for minor corrections this edition is the same as the second edition [1951; these Rev. [illegible]].

ARTOBOLEVSKIY, I. I. Feb 53

USSR/Engineering - Machine Design, Automation

"Certain Problems of the Theory of Mechanisms and Machines in the Field of Automatic-Machine Design," Acad I. I. Artobolevskiy

Iz Ak Nauk, SSSR, OTN, No 2, pp 176-192

Briefly discusses most essential problems of theory of mechanisms and machines in Fifth Five-Year Plan, which requires max authomation and mechanization of technological processes. Concludes that efforts of Soviet scientists in this field are insufficient and suggests some improvements. States that even Acad Sci USSR does not provide satisfactory conditions for conducting experimental-theoretical works on the theory of mechanisms and machines. Numerous Soviet scientists who have contributed to this subject are mentioned in article.

262T14

MYASNIKOV, N.N.; ARTOBOLEVSKIY, I.I., akademik.

Vyshnegrad's direct control theory and the effect of retardation. Izv.AN SSSR Otd.tekh.nauk no.9:1217-1228 S '53. (MLRA 6:10)

1. Akademiya nauk SSSR (for Artobolevskiy). (Automatic control)

ARTOBOLEVSKIY, I.I., akademik, nauchnyy rukovoditel',

Preface. Trudy Sem.teor.mash. 13 no.51:3-4 '53. (MLRA 7:1)
(Machinery)

1. Seminar po teorii mashin i mekhanizmov.

ARTBOLEVSKIY, I.I., akademik.

Leonardo da Vinci, the scientist and engineer. Trudy Sek.n.teor.mash. 13 no.51:54-59 '53. (MLRA 7:1)

(Leonardo da Vinci, 1452--1519)

ARTOBOLEVSKIY, I.I.; GERTS, Ye.V.; KOBRINSKIY, A.Ye.; RAIKVSKIY, N.P.

Dynamics of pneumatic machinery. Trudy Sem.teor.mash. 13 no.51:60-85 '53. (MLRA 7:1)

(Pneumatic tools)

ARTOBOLEVSKIY, I.I., akademik.

Preface. Trudy Sem.po teor.mash. 14 no.53:3 '53. (MLRA 7:3)
(Mechanical movements)

MOROSHKIN, Yu.F.; ARTOBOLEVSKIY, I.I., akademik.

On the forms of basic equations in the geometry of mechanisms. Dokl.AN SSSR 91 no.4:745-748 Ag '53. (MLRA 6:8)

1. Akademiya nauk SSSR (for Artobolevskiy).
(Mechanics, Analytic)

ARTOBOLEVSKIY, I.I., akademik

[Present status of the theory of machines and its immediate problems] Sovremennoe sostoianie teorii mashin i ee blizhaishie zadachi. Moskva, Izd-vo Akademii nauk SSSR, 1954. 38 p. (MLRA 8:7)
(Mechanical engineering)

ARTOBOLEVSKIY, I.I., akademik, otvetstvennyy redaktor; LITKO, G.P., redaktor; ZEMLYAKOVA, T.A., tekhnicheskiy redaktor

[Experimental methods of testing machinery; collection of articles] Eksperimental'nye metody issledovaniia mashin; sbornik. Moskva, 1954. 151 p. (MLRA 7:11)

1. Akademiya nauk SSSR. Institut mashinovedeniya.
(Machinery--Testing)

ARTOBOLEVSKIY, I.I., akademik, redaktor; IROZDOVSKAYA, I.S., redaktor; LOVLEVA, N.A., tekhnicheskiy redaktor

[Agricultural machinery construction; collection of translated articles from foreign journals] Sel'skokhoziaistvennoe mashinostroenie; sbornik perevodov statei iz inostrannoi periodicheskoi literatury. Moskva, Izd-vo inostrannoi lit-ry, 1954. 258 p. [Microfilm] (MLRA 8:3)

(Agricultural machinery)

ART'BOLEVSKIY, I. I.

USSR/Miscellaneous--Machine Tools

Card 1/1

Authors : Artobolevskiy, I. I.

Title : Some Questions in Regards to the Theory of Automatic Machines

Periodical : Vest. AN SSSR, Ed. 2, 12-20, Feb/1954

Abstract : General concepts on the theory and problems involved in the design and production of automatic machines, follow-up and complex mechanisms. Author outlines the role of the Institute for Machine Building, and other Institutes of the Academy of Sciences, on the solving and analysis of technological processes of machine construction, studies concerning hydromechanics, electrotechnology, and the kinematics and dynamics of mechanisms.

Institution : .....

Submitted : .....

124-1957-1-157

Translation from: Referativnyy zhurnal, Mekhanika, 1957, Nr 1, p 17 (USSR)

AUTHOR: Artobolevskiy, I. I.

TITLE: On a Criterion Regarding the Stationary Motion of Operating Machines (Ob odnom kriterii rezhima ustanovivshegosya dvizheniya rabochikh mashin)

PERIODICAL: V kn.: Sb. trudov po zemledel'cheskoy mekhanike. Moscow, Sel'khozgiz, 1954, Vol 2, pp 39-60

ABSTRACT: Bibliographic entry

1. Motion--Theory

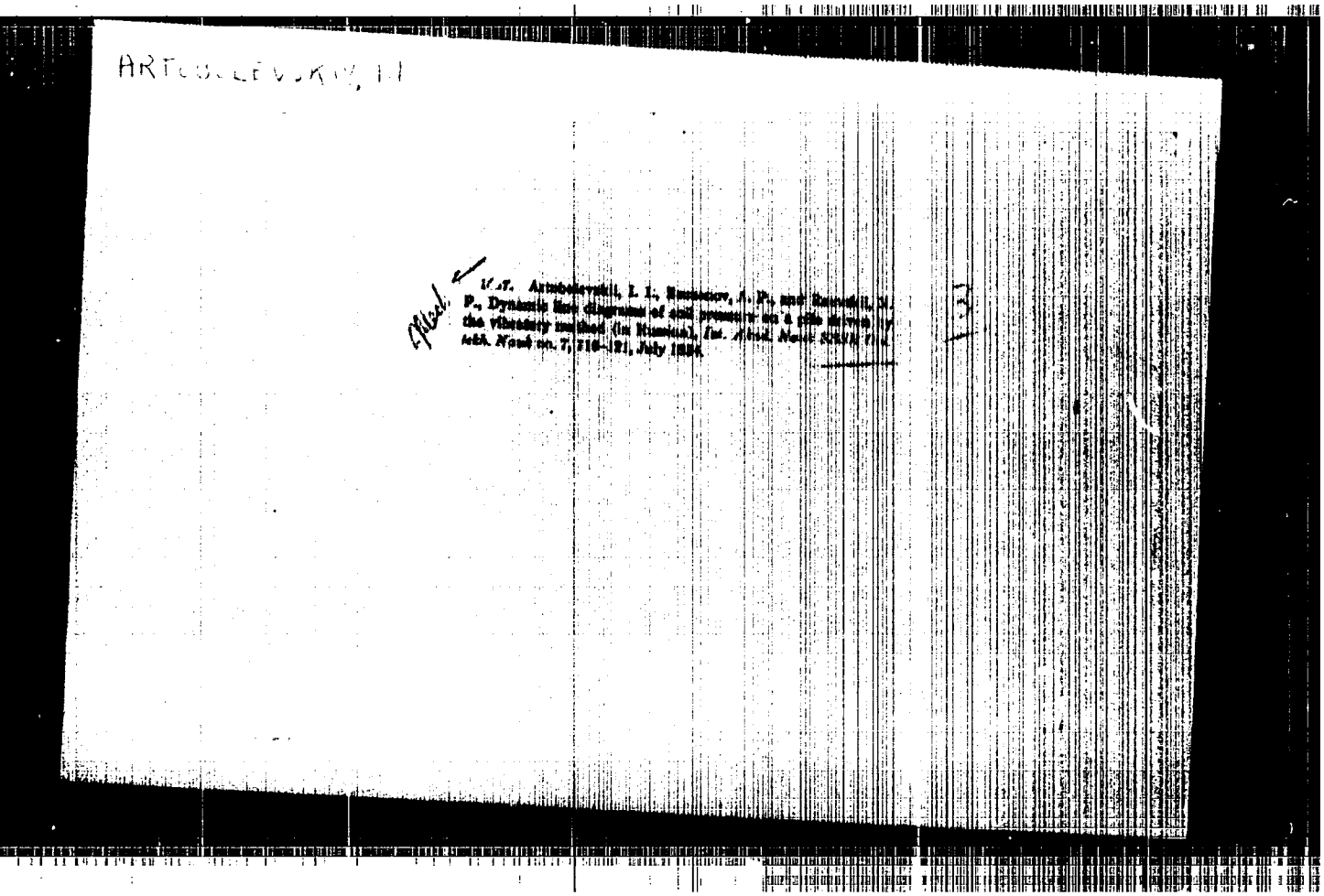
Card 1/1

ARTOBOLEVSKIY, I.I., akademik.

N.E.Zhukovskii's work on applied mechanics. Trudy po ist.tekh. no.4: 34-43 '54. (MLRA 7:9)
(Zhukovskii, Nikolai Egorovich, 1847-1921) (Mechanics, Applied)

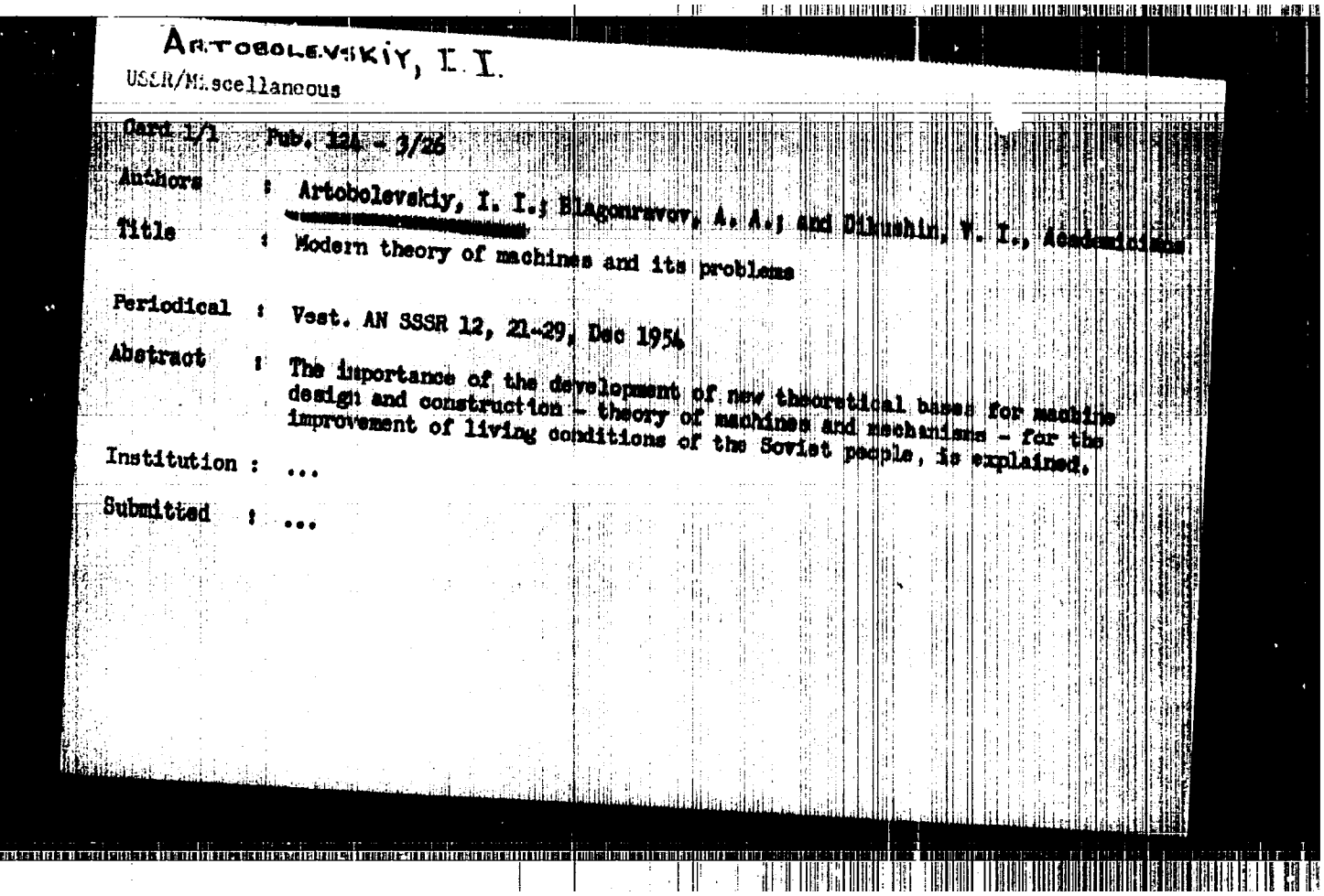
ARTOBOLEVSKIY, I.I., akademik.

L.V.Assur and his works on the theory of mechanisms. Trudy po ist.tekh. no.7:3-11 '54. (MLRA 7:7)
(Assur, Leonid Vladimirovich, 1878-1920)



ARTOBOLEVSKIY, I.I.

W.T. Artobolevskii, I. I., Bessonov, N. P., and Kazakevich, M. P., Dynamic force diagrams of axial pressure on a pile driven by the vibratory method (in Russian), Izv. Akad. Nauk SSSR (Otd. Tekh. Nauk) no. 7, 116-121, July 1954.



ARTOBOLEVSKIY, I. I.

USSR/Miscellaneous

Card 1/1 Pub. 124 - 3/26

Authors : Artobolevskiy, I. I.; Blagonravov, A. A.; and Dikushin, V. I., Academicians

Title : Modern theory of machines and its problems

Periodical : Vest. AN SSSR 12, 21-29, Dec 1954

Abstract : The importance of the development of new theoretical bases for machine design and construction - theory of machines and mechanisms - for the improvement of living conditions of the Soviet people, is explained.

Institution : ...

Submitted : ...

ARTOBOLEVSKIY, I.I., akademik.

Preface. Trudy Sem. po teor.mash. 14 no.55:3 '54. (MLRA 8:1)

1. Nauchnyy rukovoditel' seminara po teorii mashin i mekhanizmov.
(Mechanical engineering)

ARTOBOLEVSKIY, I.I., akademik.

Science of automatic machines. Tekh.mol. 22 no.2:1-4 F '54.
(MLRA 7:2)
(Machinery, Automatic)

ARTOBOLEVSKIY, Ivan Ivanovich; ZINOV'YEV, Vyacheslav Andreyevich; [illegible] SHTEYN, Boris Vital'yevich; LEVANTOVSKIY, V.I., redaktor; MURASHOVA, N.Ya., tekhnicheskiy redaktor

[Problems in the theory of mechanisms and machines] Sbornik zadach po teorii mekhanizmov i mashin. Izd. 3-e, perer. Moskva, Gos.izd-vo tekhniko-teoret. lit-ry, 1955. 243 p. (Mechanical engineering) (MLRA 9:2)

ARTOBOLEVSKIY, I. I.
USSR/Engineering - Soil Mechanics

Card 1/1 : Pub. 41-12/17 FD-1458

Author : Artobolevskiy, I. I. Bessonov, A. P., and Rayevskiy, N. P., Moscow

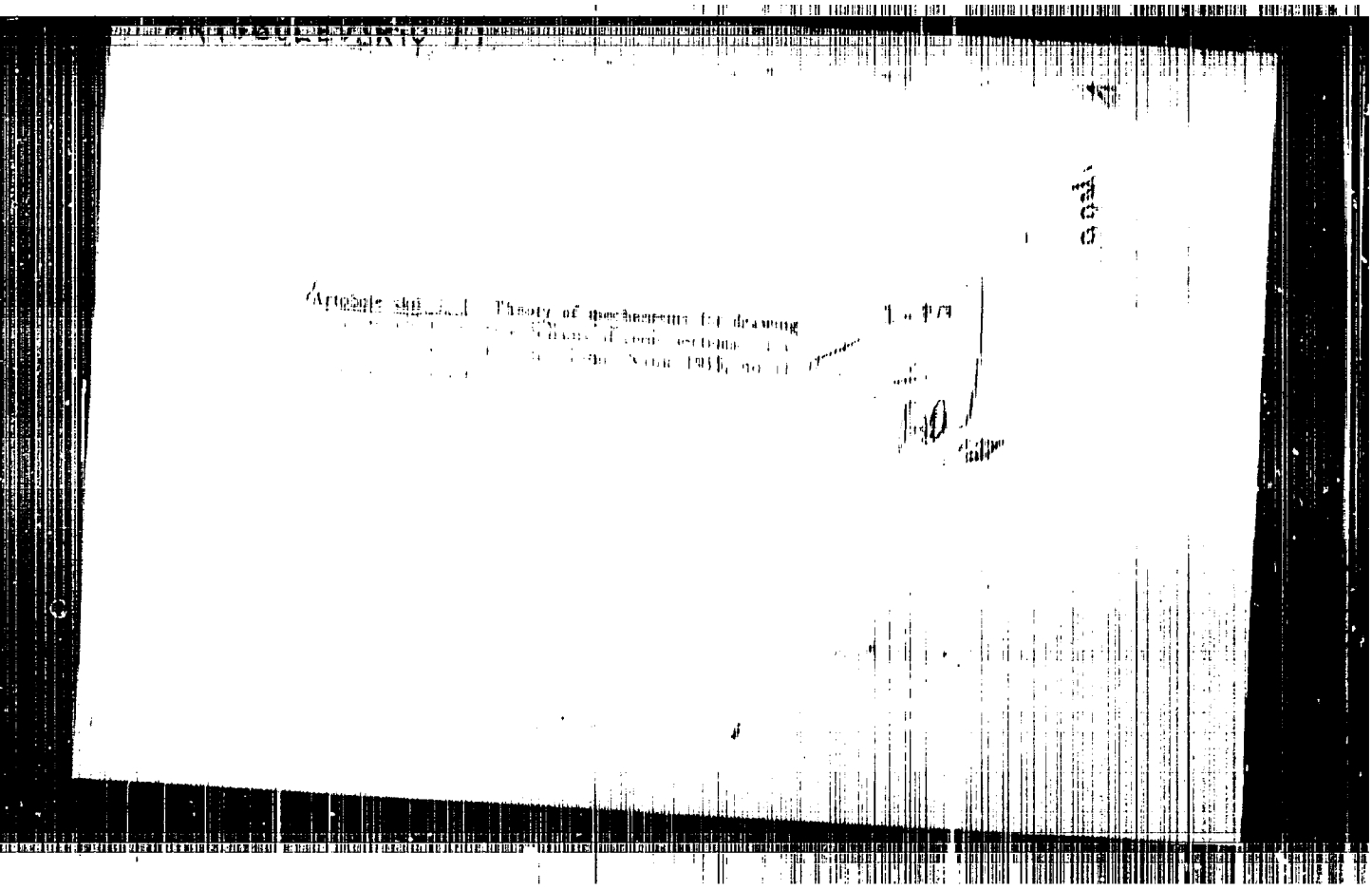
Title : Dynamic curves of soil pressure on a pile driven by the vibration method

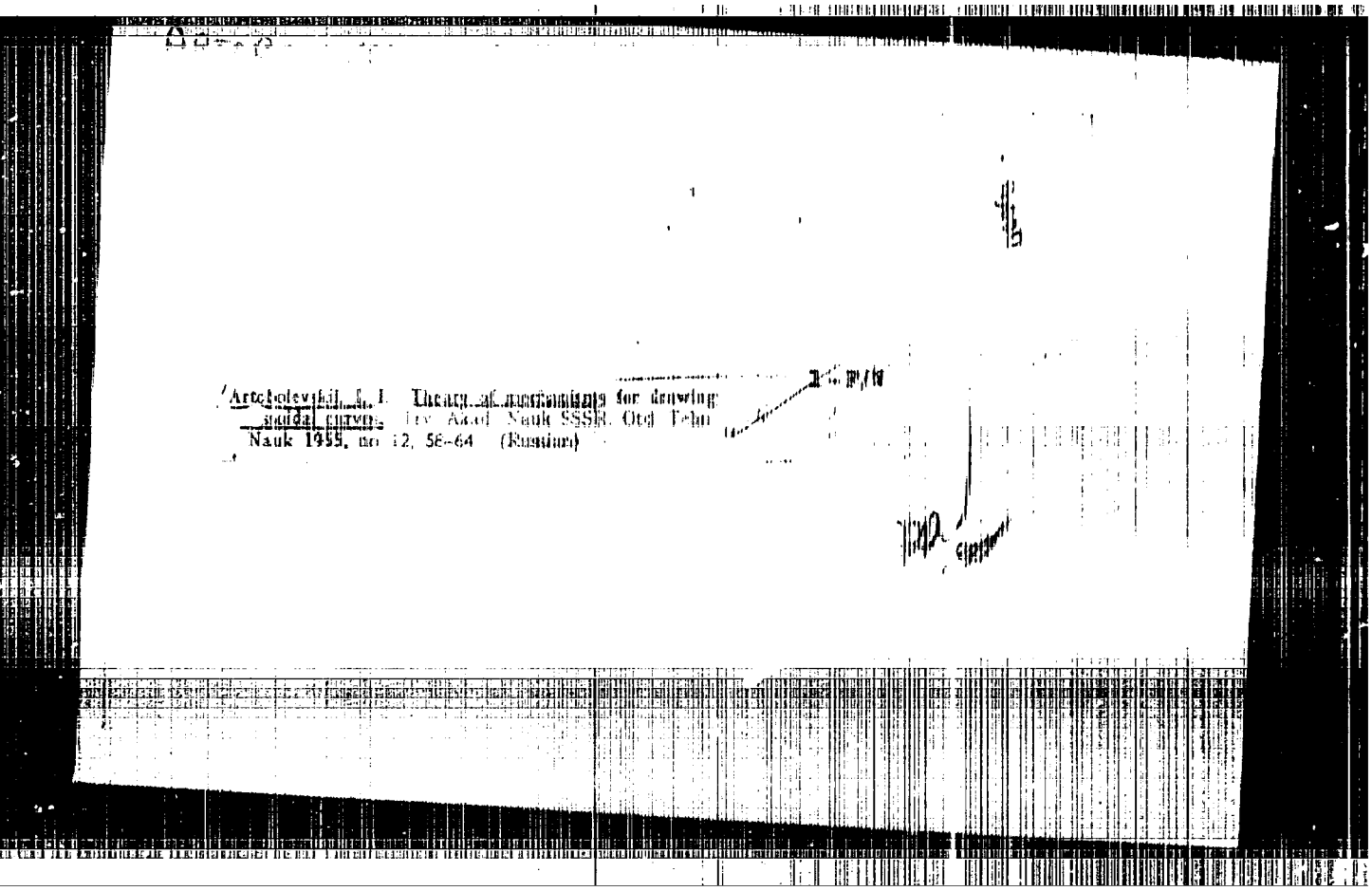
Periodical : Izv. AN SSSR. Otd. tekh. nauk 7, 116-121 - 1955

Abstract : Describes apparatus used and gives results obtained in an experimental investigation of the effective pressure of soil on a pile under conditions of vibration pile-driving. Obtains curve of soil pressure on the butt of a pipe and a curve of the displacement of the pipe during process of vibration pile-driving as a function of time. Oscillogram; diagrams; graphs. Seven references.

Institution :

Submitted : September 3, 1954





Artobolevskiĭ, I. I. Theory of mechanisms for drawing
angular curves. Izv. Akad. Nauk SSSR. Otd. Tekh.
Nauk 1955, no. 12, 58-64 (Russian)

ARTOBOLEVSKIY, I.I.; GERTS, Ye.V.; KOBRINSKIY, A.Ye; RAZEVSKIY, N.P.

Theoretical and experimental investigation of pneumatic drive for welding machines. Trudy Sem. po teor. mash. 14 no.56:5-19 '55. (MLRA 8:7)
(Pneumatic machinery) (Welding)

ARTOBOLEVSKIY, I.I., akademik

Preface. Trudy Sem. po teor. mash. 15 no.57:3 '55. (MLRA 8:6)

1. Rukovoditel' seminara po teorii mashin i mekhanizmov, Akademiya nauk SSSR.

(Machinery, Kinematics of)

ARTOBOLEVSKIY, I.I., akademik

Preface. Trudy Sem. po teor.mash.15 no.58:3 '55. (MLRA 9:2)

1.Nauchnyy rukovoditel' seminara.
(Mechanical engineering)

ARTOBOLEVSKIY, I.I., akademik.

Preface. Trudy Sem.po teor.mash. 15 no.59:3 '55. (MLRA 9:6)

1.Nauchnyy rukovoditel' seminara po teorii mashin i mekhanizmov.
(Machinery, Kinematics of)

ARTOBOLEVSKIY, I.I., akademik.

Great achievement of science. Nauka i zhizn' 22 no.4:13-15 Ap '55.
(Atomic energy) (MLRA 8:6)

ARTOBOLEVSKIY, I.I., akademik

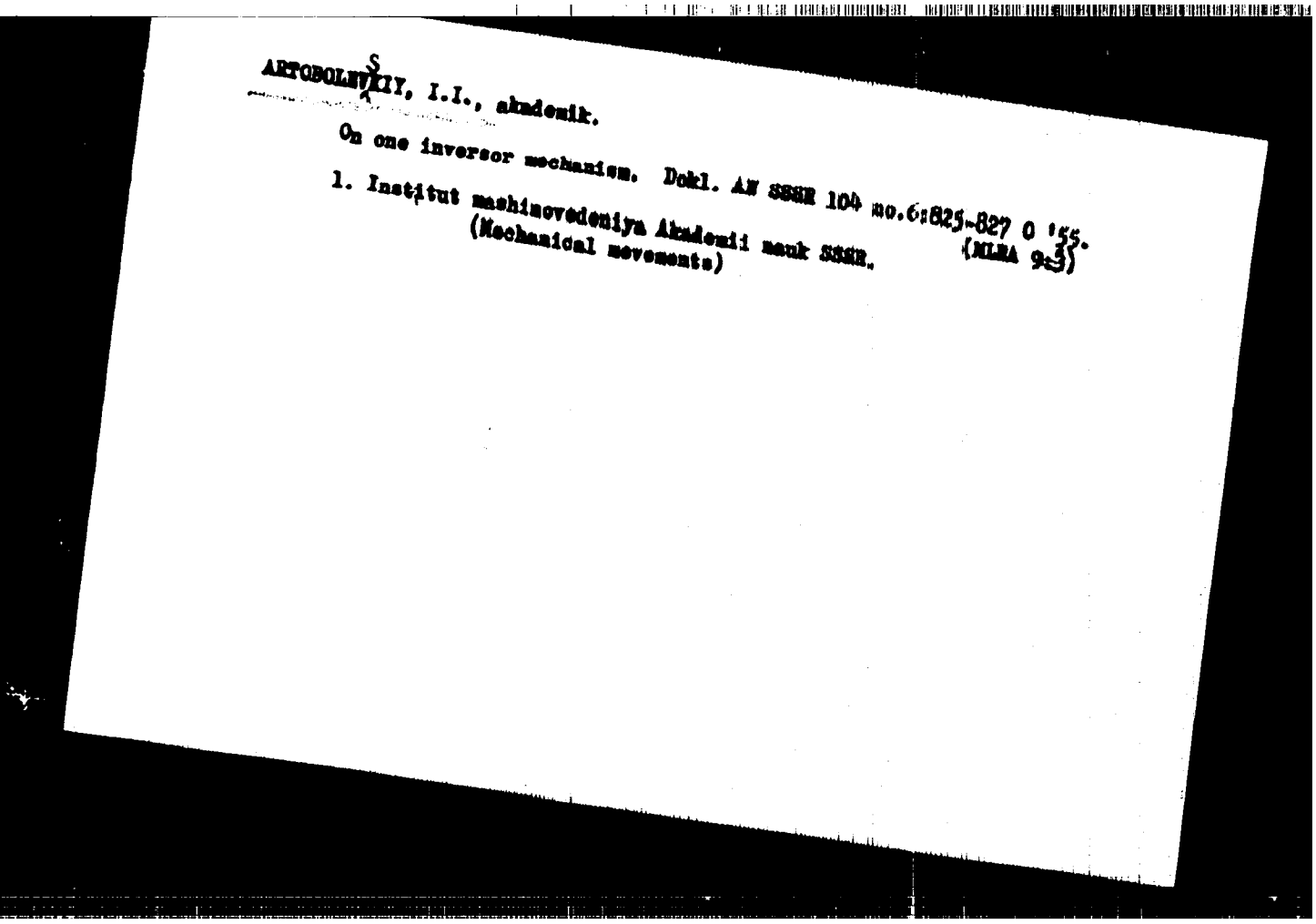
On the road of technological progress. Nauka i zhizn' 22 no.7: 1-3 Jl '55. (MLRA 8:9)

(Russia--Industrie)

ARTOBOLEVSKIY, I.I., akademik.

Mechanism of rounding-off conical-section drawing instruments.
Dokl.AN SSSR 104 no.5:702-705 O '55. (MLRA 9:2)

1.Institut mashinovedeniya Akademii nauk SSSR.
(Drawing instruments)



ARTOBOLEVSKIY, I.I., akademik.

On one inversor mechanism. Dokl. AN SSSR 104 no.6:825-827 O '55.
(MLRA 9:3)

1. Institut mashinovedeniya Akademii nauk SSSR.
(Mechanical movements)

ARTOBOLEVSKIY, I.I., akademik.

Mechanisms describing conical-section pedal curves. Dokl. AN SSSR 105 no.1:38-41 N '55. (MLRA 9:3)
(Curves, Pedal) (Mechanical movements)

ARTOBOLEVSKIY, I. I. Academician.

"Basic Problems of the Theory of Automatic Machine Tools."
a paper given at the Conference on Scientific Problems of Production Automation. Moscow State U. 15-20, Oct 56.

ARTOBOLEVSKIY I.I. (Acad.)

Connection between questions of automation of machines and methods of further raising of productivity of labour.

paper read at the Session of the Acad. Sci. USSR, on Scientific Problems of Automatic Production, 15-20 October 1956
Avtomatika i telemekhanika, No. 2 p. 182-192, 1957

9015229

[redacted], I. I. (Acad.); [redacted], A. A. (Acad.); [redacted], I. I. (Acad.); KUL'BAKIN, V. S. (Acad.)

"Tasks of the technical sciences in the development of machines and [redacted] processes in connection with automation."

paper read at the Session of the Acad. Sci. USSR, on Scientific Problems of Automatic Production, 15-20 October 1956.

Avtomatika i telemekhanika, No. 2, p. 182-192, 1957

9015229

ARTOBOLEVSKIY,I.I., akademik; BESSONOV,A.P., kandidat tekhnicheskikh nauk; SHLYAKHTIN,A.V., kandidat tekhnicheskikh nauk; REBINDER,P.A., akademik, redaktor; MITIN,V.I., redaktor; PAVLOVSKIY,A.A., tekhnicheskiy redaktor

[Vibrating machines] O mashinakh vibratsionnogo deistviia. Moskva, Izd-vo Akademii nauk SSSR, 1956. 45 p. (MLRA 9:3)
(Vibration--Industrial application)

Translation from: Referativnyy zhurnal, Elektrotekhnika, 1957, Nr 7, p 109 (USSR) 112-57-7-14504

AUTHOR: Artobolevskiy, I. I.

TITLE: Principal Problems in Automation of the Control and Drive of Machines (Osnovnyye zadachi v oblasti avtomatizatsii upravleniya i privoda mashin)

PERIODICAL: V sb.: Avtomatizatsiya tekhnol. protsessov v mashinostr. Privod i upravleniye (Collection: Automation of Technological Processes in Machine Construction. Drive and Control of Machines), Moscow, AS USSR, 1956, pp 5-6

ABSTRACT: Bibliographic entry.

Card 1/1

807/112-57-5-10578

Translation from: Referativnyy zhurnal, Elektrotekhnika, 1957, Nr 5, p 149 (USSR)

AUTHOR: Artobolevskiy, I. I.

TITLE: Fundamental Problems of the Theory of Mechanisms and Machines Related to Design of Automatic Machines (Osnovnyye zadachi teorii mekhanizmov i mashin v oblasti konstruirovaniya mashin-avtomatov)

PERIODICAL: V sb.: Avtomatizatsiya tekhnol. protsessov v mashinostr. Obrabotka metallov rezaniyem i obshchiye vopr. avtomatizatsii. M., 1956, pp 25-44

ABSTRACT: Bibliographic entry.

Card 1/1

Subject : USSR/Engineering AID P - 4501

Card 1/1 Pub. 128 - 28/29

Authors : Artobolevskiy, I. I., et al.

Title : Memorable dates

Periodical : Vest. mash., #4, p. 91, Ap 1956

Abstract : Short obituary note on L. B. Levenson, Professor, Doctor Tech. Sci., who died on April 18, 1955. He was known for his pedagogical activities and scientific work in the field of mining, metallurgy, applied mechanics and machine building.

Institution : None

Submitted : No date

ARTOBOLEVSKIY, I.I., nauchnyy rukovoditel' seminara, akademik.

Preface. Trudy Sem. po teor. mash. 16 no.62-3-4 '56.

(MLRA 9:10)

(Mechanical engineering)

ARTOBOLEVSKIY, I., akademik.

New methods for the detection of defects. Nauka i zhizn' 23 no.1: 63 Ja '56. (MLRA 9:4)
(Radioactive isotopes--Industrial application)

ARTOBOLEVSKIY, I.I., akademik; SHUKHARDIN, S.V., kandidat tekhnicheskikh nauk

Leonardo da Vinci's scientific legacy (Leonardo da Vinci selected natural science works." Reviewed by I.I.Artobolevskii, S.V.Shukhardin) Nauka i zhizn' 23 no.8:59-60 Ag '56. (MLRA 9:9)
(Leonardo da Vinci, 1452-1519)

ARTOBOLEVSKIY, I.I., akademik; BYKHOVSKIY, M.L., kandidat tekhnicheskikh nauk.

Program control of metalworking machines. Vest.AN SSSR 26 no.6:51-57 Je '56. (MLRA 9:9)
(Metalworking machinery) (Automatic control)

ARTOBOLEVSKIY, I.I., akademik.

Two new precise guiding mechanisms. Dokl. AN SSSR 110 no.3:341-344 S '56. (MLRA 9:12)

1. Institut mashinovedeniya Akademii nauk SSSR.
(Links and link-motion)

[redacted], akademik.

Mechanism of a cissoid plotter for hyperbolas. Dokl. AN SSSR 111 no.3:550-553 N '56. (MLRA 10:2)

1. Institut mashinovedeniya Akademii nauk SSSR.
(Hyperbola) (Drawing instruments)

Translation from: Referativnyy Zhurnal, Elektrotekhnika, 1957, Nr 3, p. 169 (USSR) 112-3-6239

AUTHOR: Blagonravov, A., Artobolevskiy, I., Dikushin, V., Kulebakin, V.

TITLE: Problems of the Technical Sciences in the Development of Machines and Technological Processes for Automation (Zadachi tekhnicheskikh nauk v razvitii mashin i tekhnologicheskikh protsessov v svyazi s avtomatizatsiyey)

PERIODICAL: Prom.-ekon. gaz., 1956, 26 Oct., Nr 116, pp. 2-3; 28 Oct., Nr 117, pp. 2-4

ABSTRACT: Bibliographic entry.

Card 1/1

ARTOBOLEVSKIY, I.I., akademik, otvetstvennyy redaktor; GRIGOR'YEV, Ye.N., redaktor izdatel'stva; PRUSAKOVA, T.A., tekhnicheskiy redaktor

[The mechanics and design of vibration machinery, papers of a conference] Mekhanika i raschet mashin vibratsionnogo tipa; materialy soveshchaniia. Moskva, Izd-vo Akad. nauk SSSR, 1957. 89 p. (MLRA 10:5)

1. Akademiya nauk SSSR. Institut mashinovedeniya.
(Vibration) (Vibrators)

TOPCHIYEV, A.V., akademik, glavnyy redaktor; ARTOBOLEVSKIY, I.I., akademik, otvetstvennyy redaktor; ZELENKOVA, Ye.V., tekhnicheskiy redaktor

[A session of the Academy of Sciences of the U.S.S.R. on scientific problems in automatization of production, October 15-20, 1956; theory and methods of calculating and designing machinery, automatic machines and automatic production lines] Sessiia Akademii nauk SSSR po nauchnym problemam avtomatizatsii proizvodstva, 15-20 oktiabria 1956 g.; teoriia i metody rascheta i proektirovaniia mekhanizmov mashin-avtomatov i avtomaticheskikh linii. Moskva, 1957. 211 p. (MLRA 10:5)

1. Akademiya nauk SSSR.
(Automatic control) (Machinery, Automatic)
(Assembly-line methods)

[redacted]ELY, I.I.
USSR Academy of Sciences, Moscow.

"Contribution to the Theory of the Synthesis of Mechanisms for the Reproduction of Some Kinds of Algebraic and Transcendental Curves," paper presented at Third National Congress of Applied Mechanics at the Indian Institute of Science, Bangalore, December 1957/[redacted].

Comment: B 3,102,544, 16 April 1959

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 1, p 17 (USSR) SOV/124-58-1-157

AUTHOR: Artobolevskiy, I. I.

TITLE: Problems of the Theory of Machines and Mechanisms in the Development of Methods for the Calculation and Design of Automatic Machinery (Zadachi teorii mashin i mekhanizmov v razvitii metodov rascheta i proyektirovaniya mashin avtomaticheskogo deystviya)

PERIODICAL: Sessiya AN SSSR po nauchn. probl. avtomatiz. proiz-va, 1956, Vol 6. Moscow, AN SSSR, 1957, pp 4-15

ABSTRACT: Bibliographic entry

Card 1/1

ARTOBOLEVSKIY, I.I. (Moskva)

Theory of mechanisms used for constructing curves of second order.
Izv.AN SSSR.Otd.tekh.nauk no.2:85-90 F '57. (MLRA 10:5)
(Drawing instruments) (Links and link-motion)

Artobolevskiy, I.I.

AUTHOR: Artobolevskiy, I.I., Academician 25-11-7/28

TITLE: The Basic Link (Osnovnoye zveno)

PERIODICAL: Nauka i Zhizn', 1957, # 11, pp 11-16 (USSR)

ABSTRACT: Today the Soviet Union occupies a leading position in mechanical engineering. From 1950 - 1955, 4,600 new types of machines and equipment were developed, and in 1955 the production in the fields of machinebuilding and metal working surpassed the level of 1940 by 5 times. In 1960 it will have increased by 80% compared with 1955. Automation of production processes is stressed especially. About 220 automatic and semi-automatic production and assembly lines are to be introduced in machinebuilding alone. In the last year of the 5th Five-Year Plan, 170.2 billion kwh were generated in the Soviet Union. A generator with a capacity of 300,000 kw was designed for the Krasnoyarsk Hydro-Electric Power Plant, the construction of which will be started during the present Five-Year Plan. Characteristic of this generator is the absence of a shaft whose functions will be performed by the bushing of the rotor, which results in a reduction in weight by 100 tons. In the mines of the Kuzbass the application of the drifting combine

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The Basic Link

25-11-7/28

" ПКГ -2", constructed by Ya.Gumennik, increased the output by 3 times and doubled the productivity of miners. New improved models of this highly efficient drifting combine are just being designed " ПКГ -3" and " ПКГ -4". The rolling equipment alone produced by Soviet machinebuilders in 1956 exceeded the production of 1940 by 11 times. The Novo-Kramatorsk machine-construction plant has just completed the construction of a continuous sheet rolling mill "2,500" for the rolling of carbonic and high alloy steel. The weight of this mill amounts to 30,000 tons and the capacity of the main engines of the mill "2,500" and of the slab mill equal about 60,000 kw. In 1956, 121,300 machine tools were produced, in comparison with 1913 the production increased by more than 80 times. The Kolomna plant for heavy machinebuilding (Kolomenskiy zavod tyazhëlogo mashinostroyeniya) constructed a unique vertical boring and turning machine, model "1594"; it consists of 28,500 parts and has a total weight of 1,400 tons, and is equipped with 103 electric motors of a joint capacity of more than 2,000 kw. In 1956 Soviet machinebuilding plants constructed 205 different machines for complex mechanisation of agriculture. The corn silage harvesting combine "КСК-2.6 у" is a universal machine harvesting about

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The Basic Link

25-11-7/28

0.9 - 1.5 hectars per hour.
There are 13 Figures

AVAILABLE: Library of Congress

Card 3/3

ARTOBOLEVSKIY, I.I.

New mechanisms for plotting plane curves. Trudy inst. mash. Sem. po teor. mash. 16 no.64:54-64 '57. (MIRA 11:4)
(Mechanical movements) (Mathematical instruments)

124-58-9-9538

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 9, p 12 (USSR)

AUTHOR: Artobolevskiy, I. I.

TITLE: Employment of one of the Types of Guide-and-slide Groups of Mechanisms for the Description of Plane Curves (Ispol'zovaniye odnogo iz vidov dvukhpovodkovoy gruppy v mekhanizmakh dlya obrazovaniya ploskikh krivykh)

PERIODICAL: Tr. Seminara po teorii mashin i mekhanizmov. In-t mashinoved. AN SSSR, 1957, Vol 16, Nr 64, pp 65-76

ABSTRACT: It is shown that by combining a guide-and-slide group (the links of which form an irrotational sliding-block pair) with a basic rotating-pair mechanism it becomes possible to form all mechanisms required for the tracing of conchoids. Mechanisms for the tracing of conchoids, straight lines, and conical sections are examined.

1. Tracing mechanisms--Design 2. Mechanics V. N. Geminov

Card 1/1

ARTOBOLEVSKIY, I.I., akademik.

Twenty years of the activity of the Seminar on the Theory of Machines and Mechanisms. Trudy Inst. mash. Sem. po teor. mash. 17 no.65:7-15 '57. (MIRA 10:12)

(Mechanical engineering)

124-58-6-6342

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 6, p 8 (USSR)

AUTHOR: Artobolevskiy, I. I.

TITLE: A Theory of Contour-drawing Mechanisms and its Application to Cyclic Curves (Teoriya mekhanizmov dlya obrazovaniya poder i yeye primeneniye k tsiklicheskim krivym)

PERIODICAL: Tr. Seminara po teorii mashin i mekhanizmov. In-t mashinoved. AN SSSR, 1957, Vol 17, Nr 65, pp 37-72

ABSTRACT: A general method is described for the design of mechanisms for describing the contours of given curves. On the basis of this method, mechanisms are devised for the drawing of contours for the following curves: 1) cycloid, 2) trochoid, 3) epicycloid, 4) curtate epitrochoid, 5) prolate epitrochoid, 6) hypocycloid, 7) curtate hypotrochoid, 8) prolate hypotrochoid, 9) involute of a circle. Each of these curves is examined separately. A description is also offered of mechanisms for describing several curves related to the cyclic or roulette family of curves.

1. Drafting--Equipment

Card 1/1

N. I. Levitskiy

ARTOBOLEVSKIY, I.I., akademik

The main link. Nauka i zhizn' [24] no.11:11-16 [N] '57. (MIRA 10:11)
(Machinery industry)

AUTHOR ARTOBOLEVSKII, I.I., Member of the Academy PA - 2643
TITLE On a Mechanical Transformer
(Ob odnom mekhanicheskom preobrazovatele,- Russian)
PERIODICAL Doklady Akademii Nauk SSSR, 1957, Vol 113, Nr 1, pp 43-45 (U.S.S.R.)
Received 5/1957 Reviewed 6/1957

ABSTRACT The present work discusses the theory of a new kind of motion transformer consisting of a kinematic chain. A member rotates round a center. It consists of a knee lever with an invariable angle of 90°. The sides of the lever glide in two rotatingly arranged slides. These slides move on a traverse and the traverse belongs to a member moving continuously in immobile guides. This kinematical chain possesses two degrees of freedom and transforms the curve $\Psi(\xi,\eta) = 0$ into the curve $\Phi(x,y) = 0$. It applies that $x = \xi$, $y = \xi^2/\eta$. The transformability of the motion by means of this chain if reversible. This mechanism transforms a straight line into an irregular hyperbola, in this way acting as a hyperbolegraph. In other cases this mechanism may also be used as a parabolegraph. Furthermore it is possible to employ this kinematic chain for the following purposes: Transformation of curves of second order into curves of the fourth order, transformation of ellipses and kappa curves, and semicubic parabolas. Thus, after suitable adjustment of its members, it is possible by means of this mechanical transformer to transform various curves of different orders.
(4 ill.)

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Inst. for Mechanical Science AS USSR

Artobolevskiy, I.I.

25(2)

PHASE I BOOK EXPLOITATION SOV/2564

Akademiya nauk SSSR. Institut mashinovedeniya. Seminar po teorii mashin i mekhanizmov

Trudy, tom 18, vyp. 69 (Transactions of the Institute of Mechanical Engineering, Academy of Sciences, USSR. Seminar on the Theory of Machinery and Mechanisms, Vol 18, No. 69) Moscow, Izd-vo AN SSSR, 1958. 69 p. Errata slip inserted. 2,500 copies printed.

Ed. of Publishing House: V.R. Beylin; Tech. Ed.: N.F. Yegorova; Editorial Board: I.I. Artobolevskiy, Academician (Resp. Ed.); G.G. Baranov, Doctor of Technical Sciences, Professor; V.A. Gavrilenko, Doctor of Technical Sciences, Professor; V.A. Zinov'yev, Doctor of Technical Sciences, Professor; A.G. Kobrinskiy, Doctor of Technical Sciences, Professor; Doctor of Technical Sciences; N.I. Levitskiy, Candidate of Technical Sciences, Professor; N. P. Rayevskiy, Technical Sciences, Professor; L.N. Reshetov, Doctor of Technical Sciences, Professor; and M.A. Skuridin, Doctor of Technical Sciences, Professor.

Card 1/4

Transactions of the Institute (Cont.) SOV/2554

PURPOSE: This book is intended for engineers interested in the theory of machinery and mechanisms.

COVERAGE: This collection of scientific papers deals with the synthesis and analysis of types of linkage, an investigation of vibratory mechanisms, and methods of calculating the nonuniformity of tape movement in tape-feeding mechanisms of memory units. References follow several of the articles.

TABLE OF CONTENTS:

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Artobolevskiy, I. I.

PHASE I BOOK EXPLOITATION 688

Bykhovskiy, Mikhail Lazarevich

Osnovy dinamicheskoy tochnosti elektricheskikh i mekhanicheskikh tsepey (Principles of Dynamic Accuracy of Electric and Mechanical Circuits) Moscow, Izd-vo AN SSSR, 1958. 155 p. 5,500 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut mashinovedeniya.

Resp. Ed.: Artobolevskiy, I.I., Academician; Ed. of Publishing House: Antrushin, B.D.; Tech. Ed.: Novichkova, N.D.

PURPOSE: This book may be useful to engineers engaged in the development of automatic control systems.

COVERAGE: An investigation of the dynamic error of electric circuits is made, and methods of solving the dynamic problem of systems without the use of differential equations are presented. There are 89 references, 66 of which are Soviet (including 4 translations),

Card 1/4

D'YACHKOV, Aleksey Konstantinovich; ARTOBOLEVSKIY, I.I., akademik, otvetstvennyy red.; BURKOV, N.S., red.izd-va; GUSEVA, I.N., tekhn. red.

[Friction, wear and lubrication in machinery] Trenie, iznos i smazka v mashinakh. Moskva, Izd-vo Akad. nauk SSSR, 1958. 157 p. (MIRA 11:5)
(Lubrication and lubricants) (Mechanical wear) (Machinery)

ARTOBOLEVSKIY, I. I.

I. I. Artobolevskiy, "The Present State of Machine and Mechanism Theory."

paper presented at the 2nd All-Union Conf. on Fundamental Problems in the Theory of Machines and Mechanisms, Moscow, USSR, 24-28 March 1958.

ARTOBOLEVSKIY, I. I.

I. I. Artobolevskiy, "Theory of Kinematic Synthesis for the Reproduction of Some Kinds of Algebraic and Transcendental Curves."

paper presented at the 2nd All-Union Conf. on Fundamental Problems in the Theory of Machines and Mechanisms, Moscow, USSR, 24-28 March 1958.

24-58-3-26/38

AUTHOR: Artobolevskiy, I. I. (Moscow)

TITLE: Notes on the Mechanism of L.N. Sretenskiy (Zametka o mekhanizme L. N. Sretenskogo)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1958, Nr 3, pp 149-151 (USSR)

ABSTRACT: 1. L.N. Sretenskiy and the author have developed a mechanism for the reproduction of a complex curve, the construction of which may be changed by a different arrangement of the components. Fig.1 shows the general arrangement and kinematics. Crank 2 rotates about a[illegible] F and connecting rod 3 slides in block 6, swinging about C. The mechanism may be altered by changing the dimensions a, c, d and l. Link 2 is rigidly connected to disc 2' and its motion is transmitted by flexible belt to disc 4, rigidly connected to the larger disc S. Discs 2' and 4 may be connected by either open or cross drive, while the point E of the mechanism traces out the cyclical curve on plane S.

2. The equation of the curve $F(x,y) = 0$ described by point E of the mechanism is given by :

$$[(l-x)(x^2+y^2+c^2+d^2-a^2)+2d(xd-yc)]^2+[(y(x^2+y^2+c^2+d^2-a^2)-2d(xc+yd)]^2 = 4[xc(x-l)+cy^2-dly]^2 \quad (1)$$

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Notes on the Mechanism of L.N. Sretenskiy

where a, c, d and l are constants of the mechanism. The curve described by point E on the stationary disc S is thus of the sixth order.

3. In examining the curve described by point E on the plane which rotates about point D, the flexible drive may be replaced by direct gearing, with either external ($4_2'$ and $4_4'$) or internal ($4_2'$ and 4_4) contact. The curve described on the moving disc S is more complex, and is obtained by superimposing a rotation $-\omega_4$ on the mechanism. The internal or external contact conditions give two different mechanisms, and a similar performance is obtained by replacing by circles 5 and 7 (radii R_5 and R_7); the ratio $\frac{R_5}{R_7}$ is determined.

4. Fig.2 shows this simplified form of the mechanism. Angles φ, θ, τ and β are shown, and the general expression for movement of point E is:

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Notes on the Mechanism of L.N. Sretenskiy

$$x = a\cos\varphi - b\cos(\tau + m\varphi) + \frac{c[e\cos(\beta+\varphi) + b\cos(\tau+m\varphi)] - d[e\sin(\beta+\varphi) + b\sin(\tau+m\varphi)]}{\{e^2 + 2be\cos[\beta + \tau + (m+1)\varphi] + b^2\}^{1/2}} \quad (9)$$

$$y = a\sin\varphi - b\sin(\tau + m\varphi) + \frac{c[e\sin(\beta+\varphi) + b\sin(\tau+m\varphi)] + d[e\cos(\beta+\varphi) + b\cos(\tau+m\varphi)]}{\{e^2 + 2be\cos[\beta + \tau + (m+1)\varphi] + b^2\}^{1/2}} \quad (10)$$

where φ = variable parameter. A particular case occurs when $r_4 = 2r_2$. Point B describes an ellipse, and if $b = R_5$: B describes a line passing through D.
There are 2 figures and no references.

SUBMITTED: December 19, 1957.

Card 3/3

1. Mechanisms—Development 2. Mechanisms—Applications
3. Mathematics

AUTHORS: Artobolevskiy, I. I., Member, Academy of Sciences, USSR, SOV/ 30-58-6-33/45
Bessonov, A. P., Candidate of Technical Sciences,
Khrushchov, M. M., Doctor of Technical Sciences,
Pruzhanskiy, L. Yu.

TITLE: The Development of Machine Science (Razvitiye nauki o mashinakh)

PERIODICAL: Vestnik Akademii nauk SSSR, 1958, Nr 6, pp. 118-122 (USSR)

ABSTRACT: At the Institute of Machine Science of the AS USSR, the second All Union Conference on essential problems of the theory of machines and mechanisms took place from March 24 - 28. The task of this conference was the discussion of concrete results obtained by Soviet and foreign scientists in this field in the course of recent years, as well as to determine the main directions of the further development of this science. Besides Soviet scientists from various towns of the USSR, also scientists of the other peoples' republics took part. More than 80 reports and communications were heard. The first plenary meeting was opened by I. P. Bardin, Member, Academy

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of Sciences. In his report A. A. Blagonravov dealt with the importance of machine science for solving the problems in the automatization of production processes. I. I. Artobolevskiy, Member, Academy of Sciences, gave a survey of the present stage of the machine and mechanism theory. N. G. Bruyevich, Member, Academy of Sciences, reported on the main trends in the development of the science of the accuracy in machine- and apparatus-building. V. Likhtenkhel'dt characterized in short the stage of development of the theory of mechanisms in the German Democratic Republic, D. Manzheron reported on the works of Rumanian scientists in this field. I. Shreyter (Czechoslovakia), Ya. Oderfel'd (Poland) and G. Kalitsin (Bulgaria) delivered short welcoming addresses. The work of the conference was carried out in 5 sections: analysis and synthesis of mechanisms; machine dynamics; theory of accuracy in machine and apparatus building; theory of automatic machines; theory of machine drives. Reports dealing with the preset control of metalworking machines met with great interest. At the end of the conference it was found that the research carried out is closely connected with the problem of automatization. It was

noticed, too, that not all trends in machine theory show a uniform development. The most important problems for the future were outlined. Urgent problems concerning the method of teaching machine theory as a subject were discussed with the representatives of the Chairs of Universities.

The third All Union Conference on friction and wear in machines was organized by the Institute for Machine Science of the AS USSR in Moscow, and was held from April 9 - 15. It was attended by representatives of the ministries, the councils of national economy, the scientific research institutes, the universities and industrial enterprises of various cities of the USSR, as well as by the foreign scientists F. Dukati and E. Lekhner (Hungary), V. N. Konstantinesku and N. Tipey (Romania) and I. Sgon (Czechoslovakia). The conference was opened by A. A. Blagonravov, Member, Academy of Sciences. Further reports were delivered by:

Card 3/5

1) Ye. M. Gut'yar on the present trends in the development of the theory on hydrodynamic lubrication.

2) G. V. Vinogradov on some new problems in the field of lubrication and lubricating materials.

3) B. V. Deryagin on modern lubrication problems.

4) I. V. Kragel'skiy on the development of the sciences of dry friction.

5) M. M. Khrushchov on modern trends in the development of the science of wear and resistance to wear.

The - - work of the conference took place in 5 sections: hydrodynamic theory on lubrication and sliding surfaces; lubrication and lubricating materials; dry friction and limit friction; wear and resistance to wear; friction and antifriction materials. The conference expressed the wish that a national committee on friction and wear in machines be formed. The necessity of working out a terminology in the field of friction and wear was stressed. At the Universities for Machine Building a course of lectures on friction, wear and lubrication of machines is to be introduced. It was also suggested to establish branches of the seminary, of the Institute of Machine Science dealing with this field

The Development of Machine Science SOV/ 30-58-6-33/45

at other centers.

ASSOCIATION: Institut mashinovedeniya
(Institute of Machine Engineering)

1. Machines--Theory 2. Machines--Design

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16 (1), 25 (1)

SOV/145-58-7/8-1/24

AUTHOR: Artobolevskiy, I.I., Academician

TITLE: Mechanisms for Rounding Hyperbolas and Parabolas

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy - Mashinostroyeniye, 1958, Nr 7-8, pp 3-10 (USSR)

ABSTRACT: The author refers to his previous works in this field of research entitled "Mechanisms for Rounding Conic Sections", published in "Vestnik inzhenerov i tekhnikov", Nr 11-12, 1946, and "Mechanisms for Rounding Ellipses", DAN USSR, Volume LXV, Nr 4, 1949. The present article is devoted to analyzing the problems of rounding hyperbolas and parabolas. In a number of diagrams, the author gives illustrations of different possible combinations. Thus, Fig 1 shows a layout of a six-element link gear. Fig 2 - mechanism for simultaneous rounding a hyperbola by two straight lines. Fig 3 - six-element rigid angle link gear rounding a hyperbola. Fig 4 - six-element link gear with different dimensions. Fig 5 - mechanism for simultaneous

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