

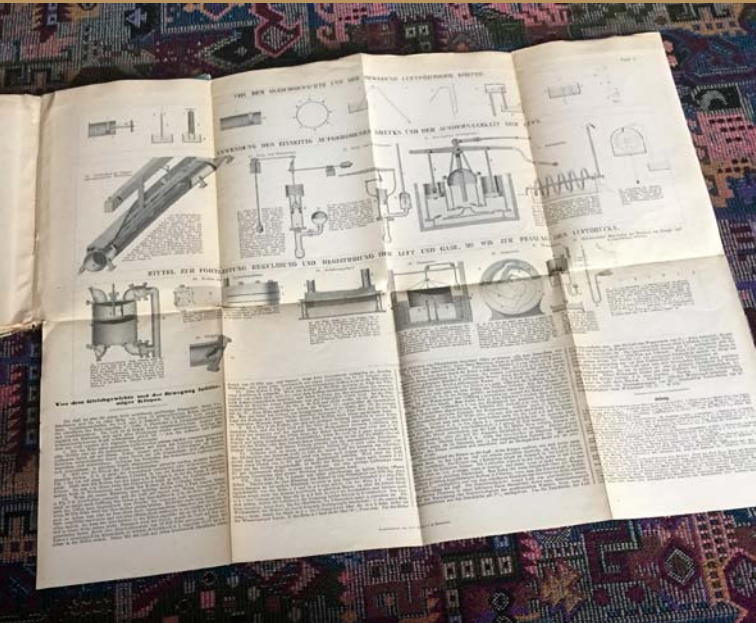
DISSERTAZIONE  
SU' GLI AUTOMI  
DI  
PAOLO RICCHINI.

**Automatenbuch – Automatic machines – Machines automatiques – Ricchini, Paolo.** Su gli automi de' signori padre e figlio Droz, elveti e su due recentissimi effalmatori che ora viaggiar fannosi per Italia a pubblico-prezzolata mostra di se: Dissertazione archeologica con note critiche et spiegative ... Voghera, dalla tipografia Sormani 1828. 86 pages. Publisher's blue printed wrappers. € 2.500,-

First and only edition. The automata were created between 1768 and 1774 by Pierre Jaquet-Droz (1721-1790), his son Henri-Louis and Jean-Frédéric Leschet, and at the time of the publication owned and exhibited by the French showman Auguste Bullot. The book contains a detailed description of the three life-like automaton dolls and the automaton grotto 1. The musician, a female organ player. The music is not recorded or played by a musical box. The doll plays a genuine, custom-built instrument by pressing the keys with her fingers. Movements of her chest show her "breathing", and she follows her fingers with her head and eyes. The automaton also makes some of the movements that a real player would do, such as balancing the torso. 2. The draughtsman, a young boy. He is capable of drawing four different images: a portrait of Louis XV, a royal couple (believed to be Marie Antoinette and Louis XVI), a dog with "Mon toutou" ("my doggy") written beside it, and a scene with a cupid driving a chariot pulled by a butterfly. The draughtsman works by using a system of cams that code the movements of the hand in two dimensions, plus one to lift the pencil. The automaton also moves on his chair, and he periodically blows on the pencil to remove dust. 3. The writer, a young boy. It is the most complex of the three automata. Using a system similar to the one used for the draughtsman for each letter, he is able to write any custom text up to 40 letters long. The text is coded on a wheel where characters are selected one by one. He uses a goose feather to write, which he inks from time to time, including a shake of the wrist to prevent ink from spilling. His eyes follow the text being written, and his head moves when he takes some ink. 4. A representation of the contrast of art and nature, an elaborate grotto, with an assemblage of rocks, parterres, cottages, and pieces of architecture with moving elements. The three automaton dolls are nowadays housed in the Musée d'Art et d'Histoire of Neuchâtel in Switzerland, the automaton grotto got lost. Without the list of printed books by the publisher Sormani from Voghera on numbered pages 87-96 found a in few copies. A fine copy in its publishing state with a manuscript note on front paste down mentioning an exhibition of the automata in Bologna in november 1828. A scarce volume on the Droz automata.

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**Dampfmaschinen – Steam engines – Machines à vapeur** – Booklet with a probably nonce binding of blue boards with a cloth spine, label without lettering on front board, one page at front with school prize inscription to one Ludwig Geisler, awarded to him in Kaiserslautern in 1857. Encloses five large engraved folding plates. Dedication page coming loose, front hinge tender, first plate with tear in bottom edge. All plates printed by Chr. Kichler, Darmstadt. Plates, hinged into binding, on various topics in mechanics: On the equilibrium of rigid bodies, the motion of rigid bodies, the behavior of fluids, equilibrium and motion of gaseous bodies, and the history of steam engines. Each plate folds out to eight panels, dimensions are ca. 48 x 41 cm unfolded. An interesting pedagogical document from the age of steam. € 120,-

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VON

RUDOLF DIESEL  
DR. ING. U. G.  
DER TECHNISCHEN HOCHSCHULE MÜNCHEN

MIT 83 TEXTFIGUREN UND 3 TAFELN



BERLIN  
VERLAG VON JULIUS SPRINGER  
1913

**Diesel, Rudolf.** Die Entstehung des Dieselmotors, Mit 83 Textfiguren und 3 Tafeln. mit goldgeprägtem Deckel- und Rückentitel, Original-Leinen-Band ohne Schutzumschlag, Verlag von Julius Springer, 1913, Berlin, 158 Seiten, Format 20 x 28 cm. € 330,-

Gutes Exemplar.

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ET  
M É C H A N I Q U E  
DES  
A R T S E T M É T I E R S  
ET DES BEAUX-ARTS.

COURS NORMAL

*A l'usage des Artistes et des Ouvriers, des Sous-Chefs et des  
Chefs d'ateliers et de manufactures;*

Professé au Conservatoire royal des arts et métiers,

PAR LE BARON CHARLES DUPIN,

*Membre de l'Institut (Académie des sciences), officier supérieur au corps du  
Génie maritime, officier de la Légion-d'Honneur et chevalier de Saint-Louis.*

.....  
TOME PREMIER. — G É O M É T R I E  
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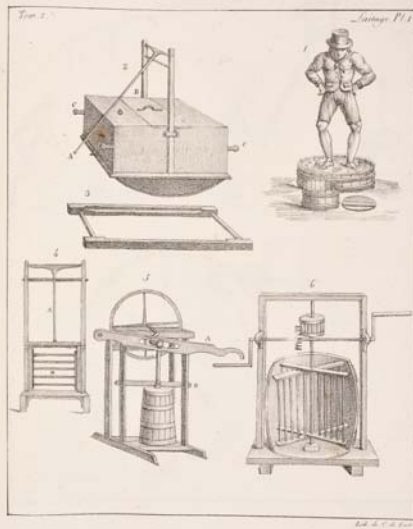
1825.

**Dupin, Charles.** Géométrie et mécanique des arts et métiers et des beaux-arts. Cours normal à l'usage des artistes et des ouvriers, des sous-chefs et des chefs d'ateliers et de manufactures; professé au Conservatoire Royal des Arts et Métiers. 3 vols. With 42 plates. 442 pp.; 509 pp.; 516 pp. 8vo (195 x 120 mm). Contemporary maroon calf, red and green spine labels. Exlibris. Paris, Bachelier, 1825-26. CHF 480.-

First edition of the lectures of Charles Dupin (1784-1873), mathematician, engineer and economist. This work is devoted to geometry, mechanics and dynamics, with many sections on architecture and perspective. It had a great success and was widely translated (also into German: Geometrie und Mechanik der Künste und Handwerke, 1826). The Dupin cyclide and Dupin indicatrix are named after him. In the tradition of Gaspard Monge he was focused on mathematics and mechanics. – Slightly spotted, otherwise fine. – DSB IV, 257.

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**Lasteyrie, Charles-Philibert de.** Collection de machines, d'instruments, ustensiles, constructions, appareils, etc., employés dans l'économie rurale, domestique et industrielle, d'après les dessins faits dans diverses parties de l'Europe. Paris, à l'établissement lithographique du comte de Lasteyrie, 1820-1821; 2 vols. in-4, half-basane fawn, posterior binding. € 1.800,-

Rare first print of the 201 beautiful lithographic plates of the Count of Lasteyrie, offering a wealth of information on agricultural machinery, cultivation, harvesting and breeding tools, irrigation, winemaking, etc. It is the first publication to use lithography to disseminate models of agricultural implements and constructions. Each plate is accompanied by explanatory leaflets.

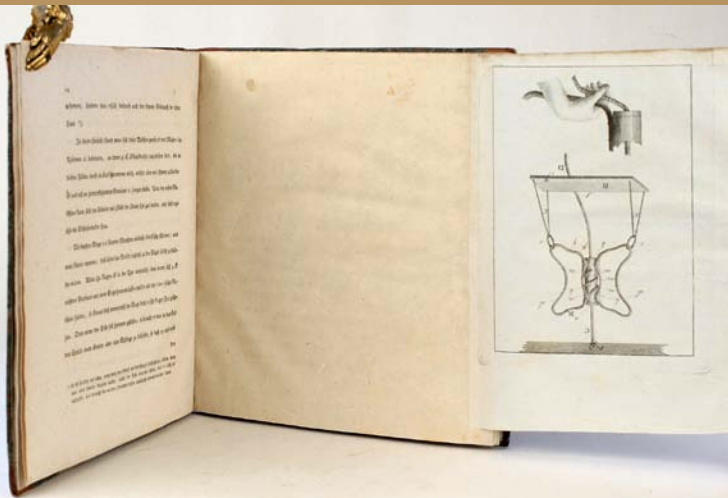
The Count of Lasteyrie (1759-1849) had made several visits to Bavaria to study the new reproduction process of Aloys Senefelder. On his return in 1816, he opened the first French lithographic printing works.

The paper, with the exception of a few rare stitches and rubbish dumps, remained very fresh. Epiderminations on the spine of the binding.

Brunet, III, 868 cites only the second edition.

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**[Neander, Johann Christoph (?)]** Beschreibung einer Maschine, worauf man sich von Höhen sicher und bequem herunter lassen kann. Leipzig: bey Gerhard Fleischer dem Jüngern. 1802.

[BOUND WITH:]

**Neander, Johann Christoph.** Beschreibung eines Fuhrwerks zur bequemen und leichteren Fortschaffung der Wasser-Tonnen beim Feuerlöschen imgleichen zu Brief-Postwagen, in Fabriken, beim Garten- und Chausseebau, auf Leinwandbleichen, zur Straßenreinigung, und besonders zum Transport des Wassers auf und von Anhöhen vorzüglich brauchbar. Berlin: Bei Oehmigke dem Jüngern. 1800. 2 works in 1 volume, 4to, 16 pages, 1 stilted engraved plate; 2 leaves, pp. (5)–13, (3), 1 folding engraved plate. Half-title to the second work, old library stamp on title of first work. Contemporary half calf and marbled boards, small red morocco label in upper corner of upper cover. £ 650

FIRST EDITIONS. The first work is on a fire escape, by which a person may lower himself down the outside of a building, and the second is a description of a water barrel mounted on wheels for use against fires or for transporting water to wherever it might be needed. The first work is anonymous, and has no preliminary matter other than the title-page. Both are rare, particularly the first.

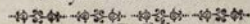
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RECUEIL  
de  
diverses Pieces  
touchant quelques nou-  
velles  
**MACHINES.**

Et autres sujets Philofophi-  
ques dont on voit la liste dans  
les pages fuivantes

par  
**Mr. D. PAPIN,**  
Dr. en Med. Professeur en Ma-  
thematiques dans l' Vniverfité de Mar-  
bourg, & membre de la Societé  
Royale de Londres



A Cassell  
Pour Jacob Estienne Marchand  
Libraire de la cour

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Chez la veſue de Jean George Huter imprimeur  
de la Cour  
M. DC. XCV.

**Papin, Denis.** Recueil de diverses pièces touchant quelques nouvelles machines et autres sujets philosophiques. Kassel, J. Estienne, Vve Jean George Hutter, 1695. In-12 de (12), 164 pp., 3 planches dépliantes. Basane brune, dos à nerfs orné. (Reliure de l'époque.) € 5.000,-

First edition, very rare.

"Denis Papin in 1695 was given a place in the court of the landgrave of Hesse, in Kassel. Here he devised a number of pumps and other practical inventions that intermittently interested his patron." "In 1690 he published an account of a single cylinder engine in which water was both boiled and condensed in a tube beneath a piston. Atmospheric pressure forced the piston down again. While not immediately practical in actual operation, the piston arrangement had the advantage, Papin noted, of requiring steam at pressure low enough to be accommodated by vessels artisans of the time could make. Thomas Newcomen independently achieved great success following this line." Illustrated by 3 folding plates. Paper browned as all the copies seen online.

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## Rechenmaschine – Calculating machine – Machine à calculer –

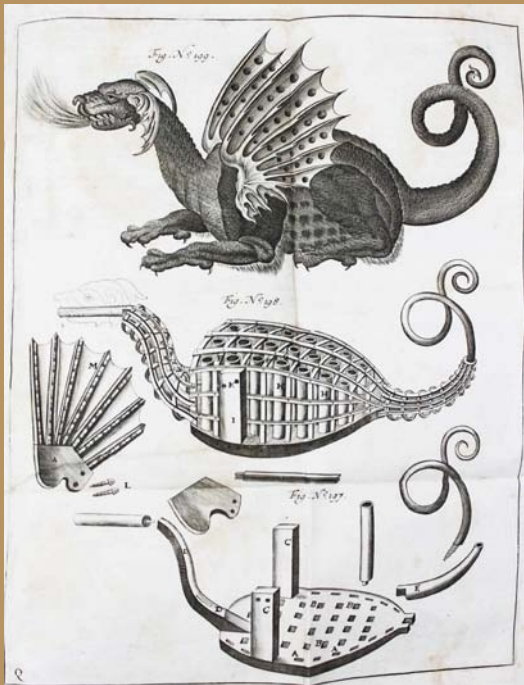
Napier's rods. Neperische Rechnungstäfelein No. 951 a (manuscript title on lid). No place, publisher and date (Nuremberg, G. H. Bestelmeier ca 1800). A complete set containing 33 engraved and handcoloured narrow lengthy cardboard strips (94 x 27 mm) and a four-page folded manual with printed text. Loosely contained in original wooden box covered with stone marbled paper on sides and lid, bottom with a block printed paper with a blue veined ground and a repetitive pattern made of black triangles, the movable lid with a mounted, cut-out and handcoloured engraved label with manuscript title and numbering. Size: 110 x 120 x 25 mm. Slightly rubbed. € 6.000,-

Very rare German set of Napier's rods by a German manufacturer, most probably Bestelmeier from Nuremberg. – For a similar exemplar see G. H. Bestelmeier: *Magazin von verschiedenen Kunst- und andern nützlichen Sachen zur lehrreichen und angenehmen Unterhaltung der Jugend, als auch für Liebhaber der Kuenste und Wissenschaften, ... Nuremberg, Bestelmeier 1807. Nr. 951 a.* "Neperische Rechnungstäfelein, deren sind in einem Kästchen 33 Stück beisammen; diese sind wegen ihrer Grösse von bequemem Gebrauch, als die gewöhnlichen Rechnungsstaeb. 36 kr." – After the death of John Napier a small book was published in 1617: *Rabdologiae seu Numerationis per Virgulas libri duo*. Looking to ease his own difficulties in calculating logarithmic tables, and impatient with the tedious and error-prone process of working with large numbers, Napier invented several mechanical methods of simplifying and speeding up multiplication, the most famous being special rods, later known as Napier's bones. He published a description of these in his *Rabdologiae*, the title of which Napier derived from the Greek *ραβδος* (rod) and *λόγος* (word) (incidentally, this section of Napier's work also contains the first printed reference to the decimal point). The reason for publishing the work is given by Napier in the dedication, where he says that so many of his friends, to whom he had shown the numbering rods, were so pleased with them that they were already becoming widely used, even beginning to be used in foreign countries. Book I of *Rabdologiae* is a description of the calculating tool, Book II offers forty-seven pages of tables, examples, and general problems demonstrating the utility of the rods in solving questions of geometry and mechanics. Book III is an appendix on Napier's promptuary, a more elaborate calculating device consisting of engraved rods and strips; and Book IV is an appendix of forty-one pages, devoted to so called *arithmeticae localis* (location arithmetic). In the next centuries a lot of inventors tried to improve and facilitate the work with Napier's rods, starting with Wilhelm Schickard in early 1620s. In early 1650s, an attempt to make a tool with Napier's rods made the French physicist, cartographer, and engineer Pierre Petit (1594-1677), a King Counsellor and Intendant des Fortifications. Petit placed paper strips with Napier's rods and made a mechanism, the so called *Arithmetical Cylinder* or *Tambour de Petit* (Cylinder of Petit), allowing the paper strips to be moved along the axes. The device he described in his book *Dissertations academiques sur la nature du froid et du chaud. Avec un discours sur la construction & l'usage d'un cylindre arithmetique, inventé par le mesme auteur* (Paris, 1653). According to Petit, people ceased using Napier's "beautiful invention" because "the multitude and embarrassment of those sticks, filled with numbers on all sides, proved prolonged and tedious." Since Petit found this method of calculating still useful, and because it was "easier to improve on inventions than to become an inventor", he designed long bands or ribbons of paper each containing all the multiples of Napier's rabdology. Those long bands were then attached end to end and mounted on a wooden cylinder the size of a child's drum or a hat, and of a length which depended on the quantity of bands one wished to have in order to make calculations with large numbers. The reckoning principles were identical to Napier's bones. Petit deemed these common enough by then that he wrote only a brief summary of how to proceed toward making a multiplication and a division. Several years after Petit, in late 1650s, a device with Napier's rods developed the famous German scientist Athanasius Kircher (1602-1680). In late 1650s as a prominent mathematician Kircher was asked to prepare a set of mathematical tools for teaching the young Austrian crown prince (Archduke) Karl Joseph Erzherzog von Österreich (1649-1664). The order was fulfilled and a set of ten different tools of bone-like tablets for performing a variety of different tasks was manufactured (see the nearby image of the tool, placed now in the Istituto e museo di storia della scienza, Florence, Italy) and sent to Archduke in 1661, who was very pleased. The toolset (called *Organum Mathematicum*, *Mathematische Orgel* or *cista*) was placed in a veneered wooden chest with a hinged lid (taking up the space of a large desk) and was described later in a book of his pupil Gaspar Schott (1608-1666)—*Organum Mathematicum libris IX explicatum*, published in 1668 in Würzburg, Germany. Schott not only described Kircher's *Organum Mathematicum*, but added his own improvement to Napier's reckoning rods. Instead of having to deal with a number of individual little rods each time one desired to perform multiplication, Schott designed a box (*cistula*) in which Napier's rods were converted into cylinders, each one of them incorporating the complete set of multiples from one to nine previously found on several separate rods. To operate the machine, one only had to turn the cylinders' handles to the proper figure needed to be multiplied, and it then only became a matter of following Napier's well-defined rules of rabdology. Moreover, to ensure the machine would be utilized by the greatest possible number of people, a table of addition and subtraction was provided on the inside cover of the box. Later on the multiplication tool from *organum mathematicum* (with improvement of Schott) was described in *Theatrum arithmetico-geometricum* of Leupold. In 1728 the German scientist Johann Michael Poetius described in his book *"Anleitung zu[r] arithmetischen Wissenschaft, vermittelt einer parallelen Algebra"* (Instructions for arithmetic means of science, a parallel algebra) an instrument, composed of concentric moving circles (so called *Mensula Pythagorica*), which seems to be a variation of the Napier's bones and can not render more services than the multiplication table (on the nearby image is shown a sector of *Mensula Pythagorica*). In 1789, the German mathematician M. Prah! devised an instrument, which he called *Arithmetica Portatilis*, and which was the same as the *Mensula Pythagorica* of Poetius. A fine and complete copy.

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**Siemienowicz, Kazimierz.** Volkommene Geschütz-, Feuer-werck- und Büchsenmeisterey-Kunst: hiebevor in Lateinischer Sprach beschrieben ... Anitzo in die Hochdeutsche Sprach übersetzt von T. L. Beeren. Mit Kupffern und einem gantzen neuen Theil vermehret durch D. Elrich. Frankfurt, Heinrich Friesen for Johann David Zunner, 1676. In-folio de frontispice, (16), 232, (4) pp., 22 plates, frontispice, 116, (6) pp., 26 plates. Contemporary stiff velum. € 6.000,-

First edition in German. Illustrated by 2 engraved frontispices and 46 engraved plates.

Kazimirz Siemienowicz, Lithuanian-born Lieutenant General of Ordnance in Service to the King of Poland, originally intended to write a two-part "Compleat Art of Artillery" but only the first part was finished before his death. The first part deals with caliber, pyrotechnics, rockets, fire-balls and the building of firework set-pieces. Due to its specialized nature, this treatise became the standard "recipe book" for firework displays and the ultimate, and often plagiarized, authority on military and recreational pyrotechnics for well over a century.

"The first part of Daniel Elrich's 1676 translation is a quite faithful rendering of Siemienowicz's original Latin into German. However, Elrich then added new material of his own on the manufacture of saltpeter, the workings of a powder mill, and the construction of elaborate firework set-pieces, including a burning castle. This German edition is opened at illustrations of a rocket making shop and a selection of tools of the trade." (Brown University Library). Some browning. Ties of the binding are partly missing. Complete copy with the rare last folio: "Bericht an den Buchbinder". Very fine copy.

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