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I—Abrasives

Evaluation of grinding wheels. C. KRUG. *Werkstattstech. u. Maschinenbau*, 41 [3] 88-91 (1951); abstracted in *Bibliog. Ind. Diamond Applications*, 8 [June] 330 (1951).—Definitions of grinding power, grinding effect, useful life, hardness of grinding wheels, grinding time, abrasive material consumption, and grain disintegration are given. Difficulties arise when the quality of the grinding wheel is denoted by performance standards. When wheels of different makes are compared, the workpiece feed must be kept constant. Economic working capacity is derived, and an estimation of grinding costs is attempted. These considerations refer mainly to roughing, where the main objective is the removal of a large quantity of material from the workpiece. The possibility of introducing a one-grade grinding wheel is discounted unless new abrasive materials can be produced with a hardness between that of silicon carbide and diamond or unless diamond prices are reduced. Qualities are compared, and the influence of

working conditions is considered. 3 references, 2 illustrations. — Methods of testing abrasion and wear in the Netherlands. P. BRABER AND G. SALOMON. *Engineering*, 173 [4506] 725-30 (1952).—Details of the testing of fibers, textiles, building materials, paving brick, etc., are given. 16 figures, 2 tables.

A.H.A.

Survey of the International Symposium on Abrasion and Wear (Delft, Holland, Nov. 1951). H. C. J. DEDECKER. *Engineering*, 173 [4505] 699-700 (1952).—Papers dealt with types of material (surface, rigidity of the bulk, and modulus of the wearing materials), basic factors promoting wear (mechanical attack, chemical attack, fatigue phenomena, and heating), and factor-counteracting wear (reduction of wearing forces, choice of resists ing materials, and surface finishing). Examples and discussion are included.

A.H.A.

II—Art and Archeology

Annotated bibliography of Ming blue and white. JOHN A. POPE. *Far Eastern Ceram. Bull.*, 1950, No. 10, pp. 72-89.—This list includes most major works published in European languages since about 1900.

F.R.M.

"Artist-potters" in Finland. ANON. *Pottery and Glass*, 30 [4] 74-75 (1952).—The Arabia Potteries in Finland, established in 1874, manufactures domestic ware, sanitary ware, refractory brick, technical porcelain, and artware. Six intermittent and four tunnel kilns are used, employing 2500 workers and making 250,000 pieces daily. The art department employs a dozen artists who work in complete freedom. Mass production is not affected by their experiments. 6 photos.

C.M.C.

Domestic pottery today—evolution of its forms: II, Cups and saucers. GEOFFREY BEMROSE. *Pottery and Glass*, 30 [3] 56-63 (1952).—B. describes cups and saucers used since the introduction of tea into Britain in 1657. At first tea vessels consisted of a pot for the infusion, a jug for cream, and a cup with saucer. From China came small porcelain bowls for tea drinking, and these were soon copied by the European potters. In the 18th century handles were introduced. 18 photos, 1 plate. III, Teapots. *Ibid.*, [4] 52-59.—A full description is given of teapots, old and new. In the 18th century when tea was 100s./lb. pots were small, and later when tea became cheaper, teapots got larger. Lid infusers

came into use about 1830. The standard type of teapot was founded on the old Worcester porcelain shape of about 1760, but the countless varieties in production today defy classification. 19 illustrations. For Part I see *Ceram. Abstracts*, 1952, June, p. 1046.

C.M.C.

Earliest blue and white wares of China: I. SHINZO SHIRAE AND WARREN E. COX. *Far Eastern Ceram. Bull.*, 1949, No. 7, pp. 12-17.—Underglaze blue designs on white porcelain appeared in early Ming times, not as a new art but as a modified technique using a blue pigment instead of the black which had been common in Sung times for underglaze painting. Examples of what the authors think are the earliest recognizable types of blue and white are cited, and some details of the decoration are analyzed. 10 illustrations. II. *Ibid.*, 1950, No. 9, pp. 40-50.—Comments are made on Part I. It is proposed to call an unknown artist of the Yuan to early Ming period "Master of the David Vases." Several vessels attributed to this artist are described and illustrated as well as some copied in his manner. From evidence in the designs it is surmised that the artist was probably a western painter working in China. The significance and origin of the grape, melon, and morning glory as decorative motifs are discussed. 9 illustrations.

F.R.M.

Early blue and white wine pot excavated in the Philippines.

IX—Production Equipment and Unit Operations

Air heaters supply rapid recirculation of hot air for drying clayware castings and molds. F. S. LAPPIN. *Ind. Heating*, 19 [6] 1077-84 (1952).—The drying system maintains a temperature of 110°F. in the casting departments. Equipment and operation are described in detail. M.H.A.

Drying of ceramic products: I, II. F. LAUREN. *Ind. Céramique*, 1948, No. 382, pp. 6-8; No. 383, pp. 24-26.—The basic facts and concepts of the drying process as applied to the capillary system of a ceramic body are reviewed. For Parts III-VII see *Ceram. Abstracts*, 1950, May, p. 101c. W.R.T.B.

Dust and the ventilating engineer: I, Pulmonary diseases due to dust—some physiophysiological considerations. H. H. WATSON. *Heating & Ventilating Engr.*, 25 [300] 540-45 (1952).—A review, sufficiently technical for the engineer concerned with dust problems. 4 diagrams. W.A.

Flow driers. K. KRÖLL. *Z. Ver. deut. Ing.*, 94 [13] 360-64 (1952).—The principles of drying granular and comminuted materials in a hot current of air or gas are discussed, and the theory is derived for calculating the dimensions and energy consumption of apparatus for this purpose and the drying times required. A few examples of installations are described. 11 references. M.H.A.

PATENTS

Adjustable outlet burner head for gas or oil burners. GEORGE W. FRANZHEIM. U. S. 2,574,635, Nov. 13, 1951.—1. A burner head including a body portion and deflector connected for relative rotary adjustment, the body portion having spaced inlet and outlet openings and the deflector being positioned across the outlet opening with its peripheral edge spaced from the outlet opening edge to define an annular space therebetween, an annular series of lugs on the body portion and an annular series of lugs on the deflector, the lugs of both series each being of substantially right-triangular configuration when viewed in top plan, each lug having one side wall disposed substantially radially of the annular space and another side wall disposed chordally of the annular space, the substantially radial side walls of the lugs of the deflectors being disposed to contact the corresponding side walls of the body portion lugs, and the chordal side walls of the deflector lugs being disposed to contact the chordal side walls of the body portion lugs, the lugs of both series extending across the space to divide the space into an annular series of outlet ports, the lugs of one series adapted on selected adjustments of the body portion and deflector to engage the lugs of the other series to reduce the number of ports while increasing the area of each port remaining, and to increase the number of ports while reducing the area of each port, the lugs of both series, peripheral deflector edge, and outlet opening edge being all disposed in a horizontal plane common with the plane of the uppermost end of the burner head.

Bin feeding mechanism. ADOLPH L. BOLTZEN. U. S. 2,574,524, Nov. 13, 1951.—4. In combination, a conveyor belt movable continuously over a path to transport articles thereon, a plurality of bins along one edge of the belt to receive articles moved over an edge of the belt, and a plurality of carriages movable over the belt to sweep articles from the belt into one of the bins, each carriage including a drum thereon, a flexible cable wound on the drum and extended along the belt to an end thereof, a wheel on the carriage engaged with the belt for rotating the drum to move the carriage from one end to the other end of a path of travel, and means for rendering the wheel ineffective to move the carriage at the other end of the path and for returning the carriage to the one end.

Charging glass furnaces. HARTFORD-EMPIRE CO. Australian 145,598, May 2, 1950.—1. The method comprises placing batch material on the surface of the molten glass and displacing the glass adjacent thereto by the action of a rabble so as to form a pocket of molten glass infolding therein the batch material. 5. A device for charging batch materials comprises a movable rabble, mechanism operatively associated with the rabble to move it cyclically along a closed path within a portion of the glass furnace, e.g., within a doghouse, so that the rabble is partially immersed in the molten glass of the furnace for a part of its travel and is moved above the molten glass level for the remainder of its travel along the path, and a batch-feeding device arranged to supply a regular flow of batch to the glass furnace directly behind and adjacent to the point on the path at which the rabble begins its cycle of movements. W.O.W.

Classifier and separator. LYLE GORDON McLEAN. U. S.

2,574,493, Nov. 13, 1951.—1. A classifier and separator comprising a trough having a substantially horizontally disposed bottom wall that is perforated substantially throughout its entire area, a supply station for supplying material to the trough, receivers longitudinally spaced beyond the supply station and beneath the trough and having mouths opening through the bottom wall to remove a portion of the material therefrom, a foraminous conveyer operatively mounted longitudinally in the trough for advancing the material from the supply station along the bottom of the trough and past at least some of the receivers, means beneath the trough for supplying air under pressure to the trough and directing the air substantially vertically up through the conveyer and the material to float the material and cause the material particles to stratify according to their weight, wiper members transversely of the conveyer and extending substantially to the bottom plate for moving the heavier bottom strata along the bottom plate to the mouths, shields mounted transversely across and partially covering the open mouths of the receivers to support and pass over the mouths the stratified top layer of lighter particles while the heavier particles stratified as the bottom layer flow under the shields into the receiver mouths, and means beyond the receivers for removing the stratified top layer from the trough.

Coated metal mold for blowing glass and method of preparing. JAMES FRANKLIN HYDE (Corning Glass Works). U. S. 2,573,337, Oct. 30, 1951.—1. A metal mold for blowing glass having on its glass-contacting surface an adherent coating comprising a heat-cured siloxane composed of silsesquioxane units and diorganosiloxane units, the silsesquioxane units comprising at least one of the group consisting of $\text{CH}_3\text{SiO}_{1.5}$ and $\text{C}_6\text{H}_5\text{SiO}_{1.5}$, and the diorganosiloxane units being selected from the group consisting of $(\text{CH}_3)_2\text{SiO}$ and $\text{CH}_3\text{C}_6\text{H}_5\text{SiO}$, the diorganosiloxane units amounting to 5 to 90 mole % of the total siloxane, the coating having on its surface a porous, water absorbent, siliceous residue, the residue being that resulting from the contact of the heat-cured siloxane with molten glass.

Drying stove. J. A. JOHNSON. U. S. 2,587,479, Feb. 26, 1952.—An apparatus for drying flat clayware, such as plates and saucers, which are carried by swinging trays or shelves on a moving conveyer, is described. 5 figures. C.W.H.

Dust collector filter. GORDON H. VOKES (Vokes, Ltd.). U. S. 2,575,148, Nov. 13, 1951.—1. In a dust collector filter of the type including a bag of narrow elongated cross section and for arresting dust on its outer surface, a frame for supporting the bag at its side edges, the bag being adapted to be inflated by internal pressure for removing collected dust and by which the bag's sides are ballooned in a catenary-like curve between its edges and beating means carried by the frame within the bag for engaging the sides of the bag and freeing the bag from dust by a beating operation, the improvement in the beating means of a curved profile on its bag-contacting surface substantially coinciding with the catenary-like curve adopted by the bag's sides under internal pressure.

Dust filter. HENRY J. HERSEY, JR. U. S. 2,573,844, Nov. 6, 1951.—1. In a dust filter, the combination of a porous flexible filter medium, means for introducing dust-laden gas to one side of the filter medium at a gaseous pressure higher than that existing on the other side of the filter medium, means on the high pressure side of the filter medium defining an accumulation zone to which solid particles separated from the dust-laden gas may gravitate, a reverse jet cleaning device located on the low pressure side of the filter medium for dislodging solids from the high pressure side of the filter medium, the cleaning device being pressed against the filter medium in opposition to the pressure of the dust-laden gas therein whereby to deflect adjacent portions of the filter medium inwardly of the high pressure side thereof, a plurality of partitions located on the high pressure side of the filter medium, the partitions having edges extending into proximity with the high pressure side and being so constructed and arranged as to define a plurality of passageways extending downwardly from the high pressure side toward the accumulation zone, means for moving the cleaning device relative to the filter medium whereby successively to deflect portions of the high pressure side thereof substantially into contact with the edges of adjacent partitions and to dislodge accumulated solids from the high pressure side into the passageway between the adjacent partitions for gravitation therethrough to the accumulation zone.

Endless breaker plate structure for crushers. EDWIN H. KEL-