

## THE PRODUCTION OF AMERICAN POTTERY.

BY WALDON FAWCETT.

The announcement of the awards in the ceramic department at the Paris Exposition has served to awaken fresh interest, both in this country and abroad, in a unique institution at Cincinnati, O., which has pro-



VIEW OF THE WORKS.

duced not only in some respects as artistic ware as has been turned out on this side of the Atlantic, but specimens which may be said to be the most thoroughly representative of American ideas and methods in pottery work. The development of the Rookwood enterprise is especially interesting in view of the fact that it is in so full a degree an evolution. Neither at the time of the inception of the project nor for a considerable interval thereafter did there exist in the imagination of any one of the founders or workers any



FINISHED ROOKWOOD POTTERY.

conception of the Rookwood ware as it is to-day known to the art-loving public.

Rookwood virtually owes its existence to Mrs. Bellamy Storer, a woman of wealth in Cincinnati, who was prompted her to take up the work of which the present plant is the outgrowth in the Japanese ceramic display at the Philadelphia Centennial in 1876. Previous to that time she had painted on china and was especially interested in Japanese designs. It was the enthusiasm which she felt upon visiting the Japanese display, however, which determined her to make an

effort to found a pottery in which experiments in native clays by native workers could be carried on with a view to the development of a distinctively American ware.

This pioneer feminine worker and several other Cincinnati women who were associated with her to some extent had done more or less work in over-glaze porcelain decoration; but with a plan for new work laid out, they soon tried other processes of decoration under the glaze. Mrs. Storer's individual experiments in painting the unbaked clay were carried on originally in a pottery where graniteware was made. As the scope of the work gradually broadened, tests were made with all sorts of native clays found in Ohio and Indiana, which demonstrated many of these to be of excellent quality.

The investigators eventually discovered that the heat at the graniteware factory was too intense for firing under glaze; and realizing the disadvantage under which Mrs. Storer was working, her father came forward and offered her the use of a building which he owned and which, after having been suitably refitted, became the original Rookwood pottery. All this time the whole effort was in the direction of artistic achievement and no thought was taken of financial considerations. One important line of experiments in 1877 and 1878 was in the application of color to the wet clay body. The color, diluted with slip—clay thinned with water—was applied with paint brushes as a decoration on the raw clay vase. The idea was to produce a new pottery of native American clays by applying color decoration in the material itself before firing, to make body and decoration a homogeneous mass in the first firing, and then to protect and enrich this biscuit with a glaze.

It may be of interest to note at this point that the name Rookwood which was given to the new pottery was that of a country place in the suburbs of Cincinnati, which was so designated because of the great number of crows which frequented the woods in the vicinity. The first kiln of ware was fired late in 1880; and while attention was given principally to the manufacture of household and table ware from material possessing some of the best characteristics of both the cream-colored and white granite wares, there was always kept in view the ideal of a ware which should possess individuality and be as dissimilar to all exist-

ing pottery as possible. For a time breakfast and dinner services, and every imaginable class of ware, from plaques to water-buckets, were produced; but as an increasing degree of attention was given to the artistic development of the enterprise, the printing processes were abandoned, and the table wares were succeeded by the elaborate decorative forms. For all that, it was not until 1889, or nine years after the establishment of the works, that the Rookwood pottery became self-supporting, a circumstance that came simultaneously with the award of

a gold medal at the Paris Exposition held in that year.

The present Rookwood pottery was built less than ten years ago, and it is quite as picturesque as the ware produced there. The building, which is perched on a hill that overlooks a goodly portion of the city of Cincinnati, is a large rambling structure in the early English style of architecture. It is of frame construction with tiled roof, and so arranged that the employes may gain the benefit of a maximum amount of light. The equipment of the plant is thoroughly modern in every respect, the kilns being fired with crude petroleum, which insures more satisfactory results. Special machinery is provided for mixing the clay, and there is kept on hand a vast assortment of moulds of all kinds; although many of the most beautiful pieces of Rookwood are modeled by hand, the potter throwing up the clay by means of the old-fashioned wheel.

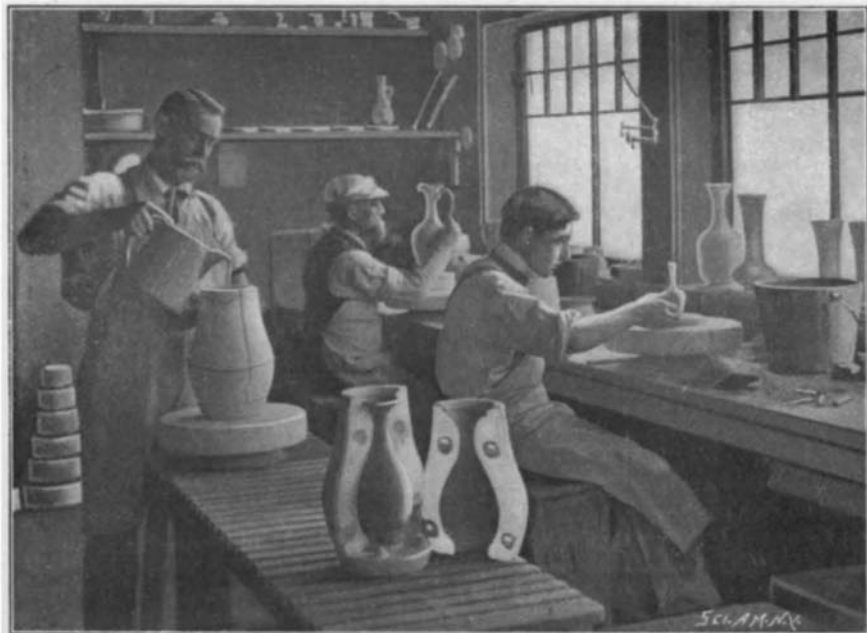
Practically no machinery, save the primitive potter's wheel, is used at the Rookwood plant in the actual work of manufacture, although, as has been stated, mechanical appliances are relied upon for the preparation of the clays. The men and women whose genius has been responsible for the achievements at Rookwood have always contended that the wholly mechanical processes in molding restricted the variety of outlines in vessels; and, inasmuch as it is desired to have Rookwood pieces in the main variations of classic forms, and to furthermore have each distinguished by



PLACING WORK IN THE KILN.

individuality of treatment, adherence has been held to the old method of manufacture.

Although but one thrower is employed at the Rookwood works, he is not only able to work with wonderful rapidity, but he enjoys wonderful creative ability. He passes a piece of ware, when he has completed it to



MOULDING ROOKWOOD WARE.



GLAZE DIPPING.

his satisfaction, to a turner, who employs a lathe operated by hand power to carefully trim off the surfaces. The casting method is employed only in the case of certain pieces, such as jars and pitchers which are of standard form, and which must be produced in considerable quantities. Even in this part of the work a method of ancient origin is utilized. The liquid clay is poured into a hollow mold and allowed to stand until the plaster has absorbed the superabundant moisture from the parts in contact. A thin shell of uniform thickness is thus formed and adheres to the mold when the more liquid portion is poured off. When the shell has remained in the mold a short time, it may be removed with safety.

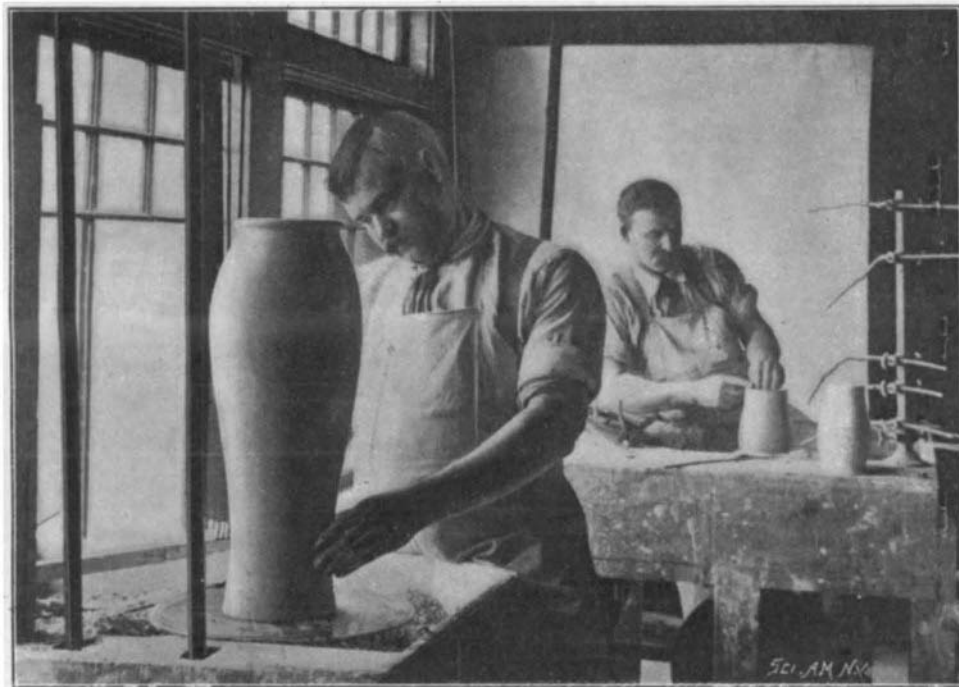
After a piece of ware has been shaped by the potter, or cast in the mold, it is, while still wet, painted with the mixture known as "slip," and then follows a light firing. The pottery specimen, which at this stage is known as "biscuit," has a soft, dull surface. The ware is then subjected to successive firings, and these may radically change its appearance. The workers know that, as a result of this fiery baptism, dull blue may change to gray, and certain shades of green may emerge as pink; but there is always the chance that a wholly unanticipated transformation will take place as the result of some peculiar combination of the metals in glaze and clay effected during the firing. Following the application of the decoration, the piece is dipped in white glaze and sent to the kiln. The firing is, of course, a sort of crucial test, for a running of the colors or a defect in the glaze may play havoc with a specimen which is the potter's especial pride; moreover, there is the danger of breakage always to be considered. From the mixing of the clay to the withdrawal of the completed piece of ware from the kiln, a Rookwood specimen passes through the hands of twenty-one operatives.

The great proportion of the clays used at the Rookwood pottery are found in the Ohio Valley, notably at Buena Vista, Ohio, and Hanging Rock, Ohio, and the predominant shades are red, brown and yellow. Of late the institution has also made use of mixtures from more southerly fields, including a white or cream colored clay from Chattanooga, Tenn., and a clay from Virginia, which, when combined with artificially tinted bodies, gives the wonderful sea-green tint found in much of the Rookwood ware of more recent manufacture.

It would be an error to infer that Rookwood is limited to a warm yellow or red tone, for even dark pieces have often been relieved with deep rich greens and blues, and there has been latterly developed an important series of light arrangements in pale blue, translucent greens, and even some fiery single-color reds. In all of these, however, are found the mellow tone and brilliant glaze characteristic of the ware. The Rookwood products might be divided into three general classes: the cameo, or shell-tinted ware; the dull-finished ware, characterized by the same dainty pink shading into white, but apparently unglazed; and, finally, the richly glazed ware. The distinguishing characteristics of these respective classes are found in the tinting and the blending of colors—effects made possible by the heavy, transparent, colored glazes. Of the various bodies employed, one might be described as genuine earthenware. The principal body in use combines the properties of stoneware and semi-porcelain, a valuable quality, since the object of the artisan is to approach as near as may be to the point of perfect vitrification without endangering the underglaze colors. A piece of Rookwood "biscuit," if well fired, possesses a vitreous ring, infinitely superior to that of earthenware, and will to all intents and purposes hold water, although absorbing the liquid to some extent.

The men and women who have directed the destinies of the Rookwood institution have endeavored in every way possible to cultivate individual artistic feeling on the part of the employes. No mechanical means has

been employed in the production of designs, printing patterns being barred absolutely, and no two pieces of ware are alike. All the artists of the Rookwood corps, with the exception of a Japanese, are natives of this country, and most of them have received their art education in Cincinnati. In pursuit of the policy of liberality heretofore mentioned, the conductors of the pottery have at various times sent their decorators to Europe and Japan, and the Rookwood artists are also

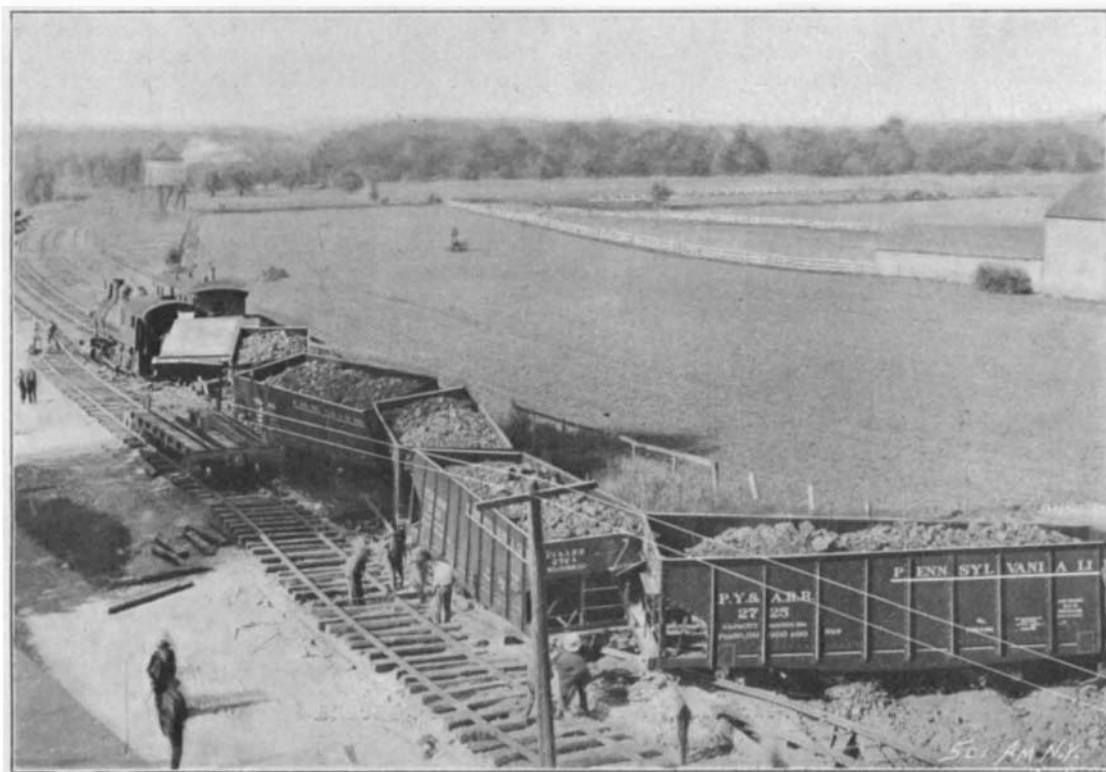


THROWING AND TURNING VASES.

permitted to initiate every piece of work turned out. Fully equal to the opportunities afforded the artists are those presented to the practical potters for the preparation of improved clay for the body, for beautifying the forms, and studying the glazes.

#### AN ACCIDENT TO A TRAIN OF STEEL CARS.

We present an interesting engraving showing what a small effect a railroad accident has on a distinctively American product—the steel mineral car. The accident occurred on the Youngstown and Ashtabula branch of the Pennsylvania Railroad. Heavy shipments of coal and ore are sent over this road, and, until recently, the old-style wooden car was used on the branch, but finally heavier locomotives and pressed steel cars were provided. Although the road was ballasted to withstand the additional strain, the rails were not replaced by heavy ones, and an accident like the one shown in the engraving is not a rare occurrence. An open switch was, however, the cause of the accident



ACCIDENT TO A TRAIN OF STEEL CARS AT AUSTINBURG, OHIO.

in this instance. A heavily loaded train of thirty or more coal-laden steel cars was passing through the little hamlet of Austinburg, sixteen miles from Ashtabula, and was making good time in order to pass over a heavy grade just north of the village, when an open switch caused the locomotive and five of the pressed steel cars, each of 100,000 pounds carrying capacity, to leave the track. Strange to say, the cars proper were not injured, although the running gear, brake mechanism, etc., was damaged. The main track and the sid-

ing were both badly torn up, and an auxiliary track was laid to allow local traffic to pass, but the next morning a train of empty gondolas, in attempting to pass, left fourteen of its number by the wayside, as the auxiliary track was not of sufficient stability to hold them, even at low speed. The steel cars could not be moved until they had been unloaded. Out of nearly thirty thousand pressed steel cars, there has never been one which has been wrecked beyond repair.

#### Recent Developments in Wireless Telegraphy.

At the recent meeting of the International Electric Congress at Paris, some interesting developments regarding wireless telegraphy were explained. In connection with the possibility of being able to communicate over great distances, M. Willot, of Paris, contended that it was impossible to telegraph satisfactorily over distances exceeding 28 miles, owing to the adverse influence offered by the curvature of the earth.

This contention, however, is disproved by the results of the experiments carried out by Marconi himself, who has been successful in transmitting messages on several occasions over far greater distances than the limit mentioned by M. Willot. Marconi is of opinion that the Hertzian waves follow smoothly round as the earth curves. For instance, the curvature of the earth between his station at Poole, in Dorsetshire, and the station at the Needles, in the Isle of Wight, a distance of about 25 miles, amounts to at least a dip of 500 feet, and yet the messages have not been influenced in the slightest degree. From this result it is apparent that the ether waves follow the curvature of the earth, otherwise the messages transmitted from Poole would travel many hundreds of feet above the station at the Needles.

Captain Tissot does not utilize the ordinary Ruhmkorff induction coil in connection with his wireless telegraphy, but avails himself of a peculiar unipolar transformer invented by M. O. Rochefort. The apparatus comprises the primary coil, but the secondary coil is a single one, that only occupies one-half of the central space. By this means the tension is greater at one pole than at the other, and it is possible to carry on the work with higher electromotive forces.

In relation to the coherers, Captain Ferrié has been conducting several experiments with carbon-metal contacts, which he has found to be more sensitive than carbon-carbon contacts. He has also found them to be preferable to wire and an electrolyte contacts, and that there is a tendency for metal-metal contacts to stick, owing to the current flowing when the apparatus is at rest. He stated that the results of his experiments had convinced him that there is a layer of dielectric between the two points, which breaks down when the difference of potential becomes too high. When the coherers are placed in petroleum they act, but not when they are placed in a vacuum. Should the particles chance to be in very close proximity to one another, then a partial vacuum between them may be produced, through which a brush discharge might pass. It is due to this fact that Captain Ferrié attributes the curious current variations that result from the placing of a lamp carbon upon a cylinder of silver, without any intervention of Hertzian waves.

Another electrician, M. Budde, has devised a method by which vessels can communicate at sea. He places his transmitter in a cylindrical parabolic mirror, which revolves, and by this means radiates the Hertzian waves successively in all directions. The aerial wires are attached to the masts of the vessels. He completely insulates the transmitter and receiver upon each vessel from one another, so that no interference of one with the other may ensue, by means of a commutator which turns synchronously with the transmitter mirror. This apparatus has only been employed over short distances, but the results have been so successful that the method should be subjected to thorough tests over great distances.