

THE GOVERNMENT BUILDING AND POST OFFICE EXHIBIT AT THE WORLD'S FAIR, ST. LOUIS.

By the St. Louis Correspondent of the SCIENTIFIC AMERICAN.

THE very fine government exhibit at the St. Louis Exposition is housed in three buildings, which were erected from designs prepared by the Supervising

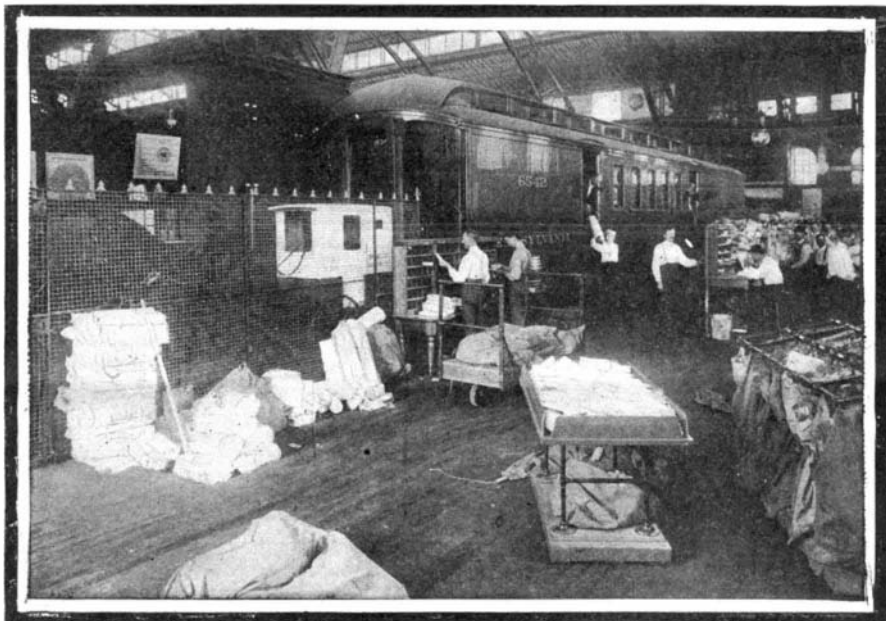
Architect of the Treasury Department. These are the main Government Building, of which we present a handsome illustration on our front page, the Commission of Fish and Fisheries Building, and the Life-Saving Service Building. The cost of the first two of these was \$450,000, and the cost of the last \$8,000.

In some earlier expositions it has been a matter of complaint that the architecture of the Government Building was decidedly inferior to that of the majority of the exhibition buildings, and that it was not representative of the dignity of the government nor of the high character of the display which it housed. No such complaint, however, can be made against the Government Building at St. Louis, to which many competent critics have given the first choice in point of architectural beauty and general fitness for its work. It stands on a slight eminence about twenty-five feet above the level of the main exhibition buildings, closing the vista of one of the principal plazas. The building is 800 feet long and 180 feet wide. There are no interior posts, the roof being supported by elliptical steel trusses. The architectural style of the building is classic or pseudo-Roman. The main entrance consists of a portico of eight Ionic columns, 5 feet in diameter and 45 feet high. It is connected with the end porticoes by colonnades of Ionic columns of the same height and diameter. The central dome is 90 feet in diameter, and the top of the Quadriga which surmounts the dome is 160 feet above the floor of the building.

The Ionic order referred to is 56 feet high, and carries an attic 12 feet in height. The whole building is enriched with colossal statuary, and the roof and various portions of the architecture have been emphasized by a judicious use of bronze tinting. Altogether, we have never seen an exhibition building that pleased us better than this very successful effort of the United States government.

Practically all of the departments of the government are represented within or connected with this building, and in the present connection we have selected the Post Office Department for an illustrative description. The most prominent feature is a full-size postal car, in which the whole of the postal business of the Exhibition is carried on, the mail from over one hundred boxes being brought to the car, "pouched," and sent to the Wabash Railroad Station, just outside the grounds. In order to illustrate the working of the postal car, the siding has been removed, thereby enabling the public to see the whole process as carried on in a standard postal car of any of our railroads. Near the car stands an old-time Rocky Mountain mail coach, which ran once a week from Helena to Bozeman, Montana. Over the same route there are now four mail trains a day. This coach was captured by the Indians in 1877, and recaptured after a hot pursuit by Gen. Howe. Garfield, Arthur, and Sherman traveled in it on a tour of inspection in 1877. It was during this tour that Gen. Sherman made the distance from Fort Ellis to Helena, 108 miles, in eight hours, using six horses with frequent relays. Near by stands a model of a rural free delivery wagon. The success of the free delivery has been so great—it has proved such a boon to the agricultural districts—that naturally this portion of the display attracts great attention. We might mention that the mail wagon is really a traveling rural post office. The driver has in front of him a small desk with drawers, pen, ink, etc., and he is able to do a regular post office business, including the selling of stamps, money orders, etc. A series of microscope pictures shows the whole work of the post office in its various phases. In one group of pictures we see the letter carriers starting on their different routes. In another machine the Star Route carrier is shown at his particular work. Some of the mail wagons are gone all day, leaving at 7 o'clock in the

morning and returning at 5 in the evening. In order to facilitate the delivery of the mail, Star Route carriers meet these mail wagons at certain specified points, gather up what mail they have collected, and drive with it to the nearest railroad station. Another series of pictures depicts the work of catching the mail pouch from a mail train moving at sixty miles an hour, or delivering it to such a train.



POST OFFICE EXHIBIT. SORTING THE EXPOSITION MAIL.

An exhibit that is specially interesting is that of an Alaskan mail carrier. He is shown with his sled and team of eight dogs. These dogs, by the way, are the same that were used by Lieut. Peary in his attempt to reach the North Pole. There are also excellent models of mail carriers of the Western plains and of a Puerto Rico mail carrier of a time prior to the Spanish-American war. The Western mail carrier is a somewhat familiar figure; but not so the Puerto Rico mail carrier, who sits astride a burro, which has two panniers or mail pouches slung, one on each side.

One corner of the exhibit has a full-size working installation of a pneumatic postal tube of the type installed in New York and other leading cities. The operation is carried through exactly as it is in daily service, and an opportunity is given to examine the details of the carriers and of the receiving and dispatching mechanism. We have so fully described this system in the SCIENTIFIC AMERICAN, that no further description is necessary at this time.

Historically, the Post Office Department exhibit is full of interest. There is a case of relics, among which is the original book of accounts of the first Postmaster-General, Benjamin Franklin, in which one may read the annual report in Franklin's own handwriting. Another case contains a collection of objects which have been sent in disobedience of the rules, through the mails, including a rattlesnake, and a package containing an explosive, sent to Capt. Eulate of the "Viscaya," the work, of course, of some crack-brained creature. To stamp collectors, perhaps the most attractive feature of the post office exhibit will be the magnificent collection of United States stamps, which, needless to

from Savannah to Liverpool. It was many years before the department would give a contract for carrying the United States mails, the chief objection being that steamship transportation was "slower than sailing."

THE VARNISH-DIPPING PROCESS AND DIPPING VARNISHES.

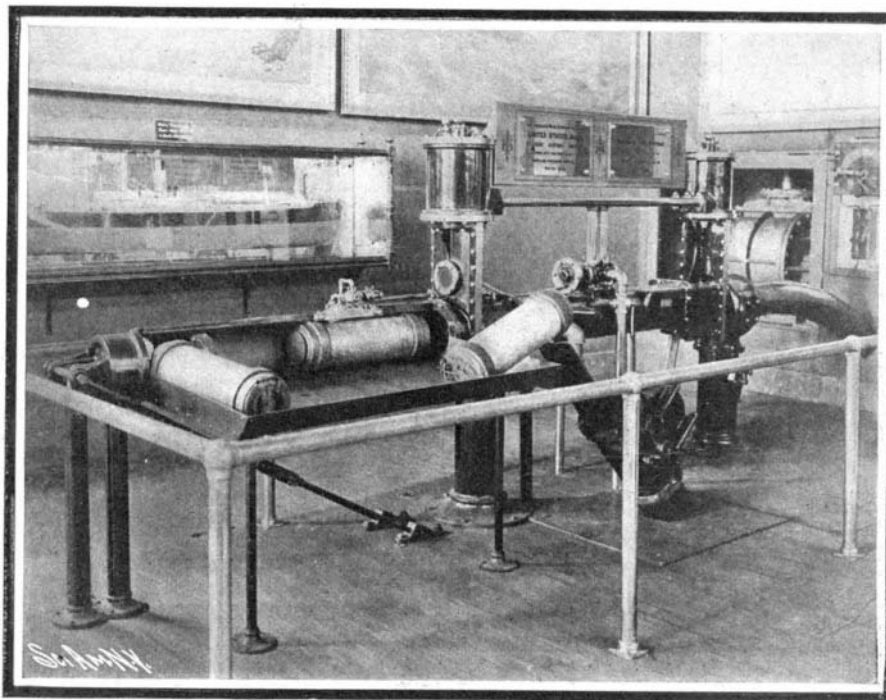
THE ordinary process of coating objects of what material soever with films of glossy or dull colors and varnishes consists, as is well known, in applying the liquid, which is to furnish the color, color and gloss, or gloss only, to the exterior surface of the object with a brush, and, by means of the customary "spreading," that is the passing of the brush to and fro over it, covering it as evenly as possible.

We do not need to be told that this is an operation which consumes much time; it also presupposes a certain technical facility in the manipulation of the brush, particularly where large surfaces are concerned and where these surfaces are situated perpendicularly rather than horizontally, or where they are inclined at varying angles.

Nor are the difficulties less present when the objects are small, especially if they are of irregular shape, possessed of depressions, elevations, corners or niches, because the dents or corners must be dabbed with the brush, in which operation it may easily occur that too much color or varnish falls in the indentations while the higher spots appear to have been scarcely touched; or, in the effort to cover them evenly, the strokes of the brush become plainly discernible. This method of application is attended with still another inconvenience, viz., in objects of this nature, during the dabbing, when thin and quickly drying colors or varnishes are used, air bubbles are liable to form and remain on the surface, producing, instead of a smooth and glossy effect, rather a rough and disturbing aspect. Again very small objects, such as buttons, hooks and eyes, eyelets, etc., can, in many cases, either not be coated at all, or only by the aid of some means of holding them, as wooden pegs, or wire.

With these difficulties in view some time has already elapsed since manufacturers cast about for some other method of applying the necessary protecting and beautifying coatings.

Buttons and such small objects were placed in a revolving drum or "tumbler" with a small quantity of the varnish and permitted to turn and roll about in it until all the buttons were evenly coated. The methods varied according to the shape and the size of the objects to be coated, and in the course of time was built up the process known as the "Varnish dipping process" now so extensively employed for metals and glass, though less used in connection with wood. Such progress in the application of the method has been made that it is no longer confined to the smallest or even the small objects, but articles of considerable size, such as parts of lamps, parts of vehicle wheels, sewing machine parts, and stands of all sorts may at present be faultlessly coated with smooth, glossy colors, or mirror-like varnishes. There is, of course, a limit to the size of the objects which may be profitably dipped, not only on account of the difficulties in the way of coating them, of which we shall speak anon, but chiefly on account of the corresponding increase in the size of the vessel, not to mention the necessary quantity of the liquid which increases out of all proportion to the amount virtually consumed. For this reason it is technically impossible to dip objects weighing several hundreds of pounds, or even large parts of machines or engines. Such weighty pieces require a block and



PNEUMATIC POSTAL TUBE EXHIBIT.

THE POST OFFICE EXHIBIT AT THE ST. LOUIS EXPOSITION.

say, is as complete as such a collection could possibly be. The whole exhibit is enriched by a series of oil paintings representing different scenes in the work of the Post Office Department; and in closing, mention should be made of the model of the first ship to carry the United States mail on the Atlantic Ocean. This was the steamship "Southerner," which made the trip

fall or some kind of lifting device, to lower them into the bath as well as to remove them again, not to mention a vat of excessive size that shall contain enormous quantities of the liquid, all of which appears unreasonable, not to say wasteful, on its very face.

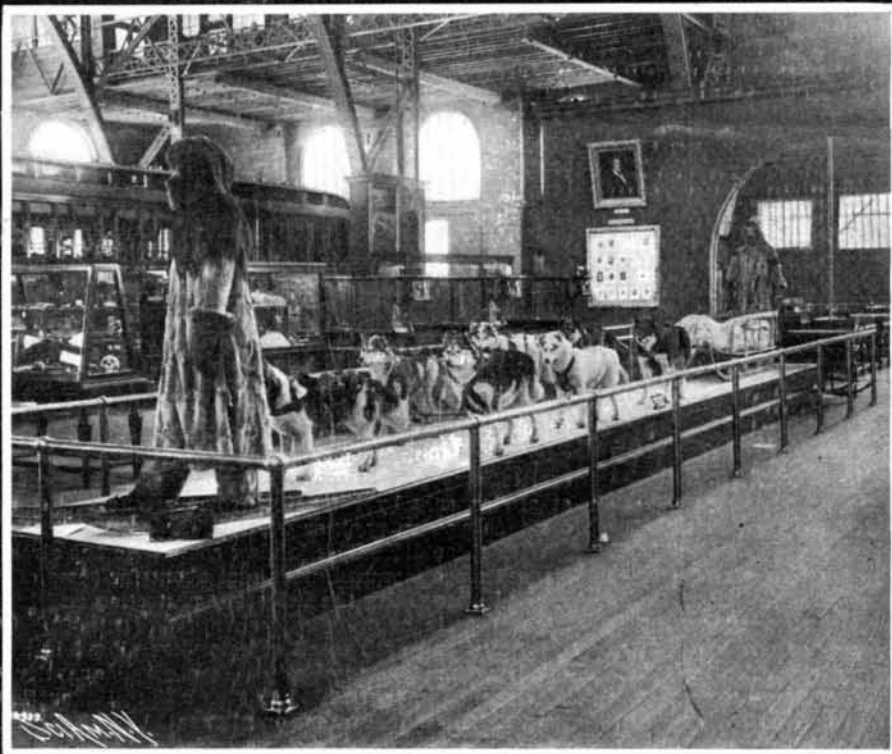
Whether an oil or spirit varnish, or in fact any other volatile varnish or color be used, the varnish-dipping

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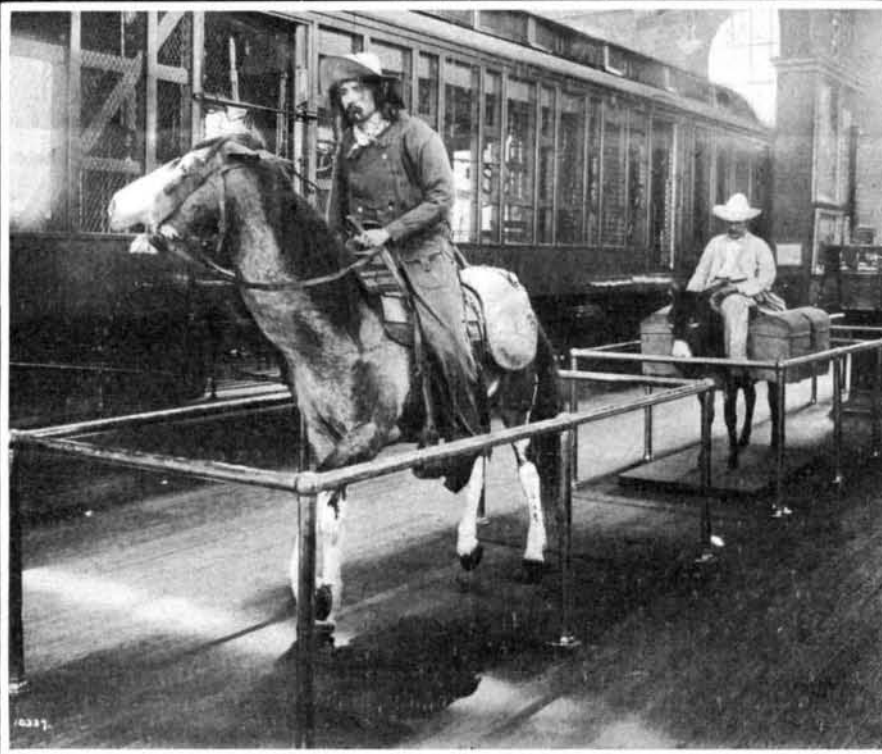
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ALASKAN MAIL CARRIER. THE DOGS WERE THOSE USED BY PEARY IN THE ARCTICS.



MAIL CARRIERS OF THE WESTERN PLAINS AND OF PUERTO RICO BEFORE THE WAR.



THE UNITED STATES GOVERNMENT BUILDING.
THE POST OFFICE EXHIBIT AT THE ST. LOUIS EXPOSITION.