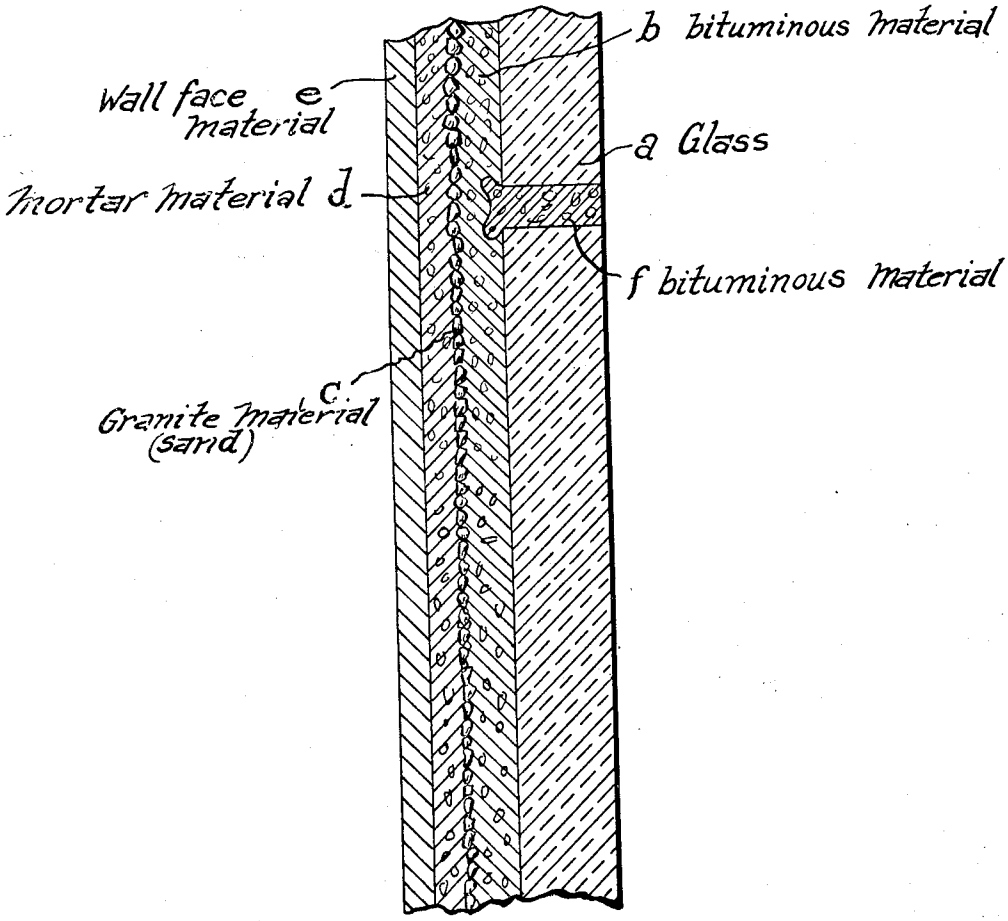
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PROCESS FOR COVERING WALLS

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PROCESS FOR COVERING WALLS

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Rigid walls are covered with glass plates, stone plates or facing plates of other resistant hard material by fixing them to the surface of the wall by means of a suitable mortar, e.g. cement mortar, filling up the crevices, and finally smoothing off. For filling up the crevices a mortar mixture differing from that used for fixing the plates may also be employed. Hitherto facing plates have also been fixed in this way to the inner walls of large ferro-concrete containers, such as are used in many industries, e.g. the brewing industry; for the purpose of lining such and similar containers the mortar is in addition provided with a coating which serves for protecting it against the action of the fluid contents, as well as for protecting the fluid contents of the container from the action of the mortar, and indeed for this purpose it is necessary. In such cases fatty substances or fat-like substances, such as paraffin, ceresin, and mixtures thereof, are used as the covering layer.

The present invention differs from this known method of covering walls with facing plates of resistant hard material or of lining the inner walls of containers in that, in order to fix the facing plates, besides the mortar a mass is used which is solid at ordinary temperature, can be softened to the point of flowing simply by heating, possesses adhesive properties, is impermeable to moisture, and, as far as is necessary, is indifferent, which mass consists of bituminous or bitumen-like substances, or a mixture of the same. As bituminous and bitumen-like substances bitumen itself, asphalt, mixtures of both or similar substances, as well as coal tar pitches and pitches of like property come into consideration. As a rule an addition of finely ground indifferent fillers is made to the bituminous or bitumen-like substances or mixtures thereof; more particularly fillers of mineral nature, such as soapstone meal, talc powder, kieselguhr, heavy spar, slate or shale meal, asbestos meal, and in small quantities powdered lime as well, are employed. However, other indifferent fillers, such as for example finely ground coal, may also be added to the bituminous substances, either alone or in admixture with other fillers.

Such masses with or without admixed indifferent, finely ground fillers may be used in various ways for fixing facing plates. One method of using them consists in employing the mass for filling the crevices. The crevices which arise when the facing plates are fixed with mortar are deepened, soon after the mortar has set, by being raked out and are thereupon filled up with warmed rods or strips of the filling material and the whole is then smoothed off with the aid of a scraper or some other suitable appliance. The deepening of the crevices by raking them out can be carried out so that the surface of the deepened crevice is somewhat below the lower surface of the facing plate, whilst the crevice space is widened towards the bottom thereof; as a result, when the crevices are filled up with the filling mass a base-like extended portion is formed of the same. The rods or strips of filling material which are used in this filling of the crevices are made by first of all making the filling material and then shaping it in the plastic state into the form of plates, e.g. by using contrariwise-moving rollers. The plate is cut up into rods or strips of suitable length and width. When using the rods and strips for filling crevices, they are heated so that the surface is softened to the point of fusion and the rods and strips are then readily forced into the crevices, whereby the latter can be completely filled with the plastic filling material.

By a suitable choice and admixture of the bituminous and bitumen-like substances, with which may be mixed if necessary small quantities of difficultly volatile tar oils, and by the nature and quantity of the finely ground fillers which are added to the liquefied bituminous and bitumen-like substances or mixtures thereof, no difficulty is experienced in avoiding any injurious softening of the filling material, even at the highest temperatures which act on the walls covered or lined with the facing plates, and in avoiding that the material in the crevices becomes fragile and brittle at the minimum temperatures and as a result is damaged, e.g. when cleaning.

The mass from which the strips or rods are made for filling the crevices of ferro-concrete containers must, as is usually obviously the case, be tasteless and odourless, so that there is no noticeable influence on the taste or odour of the contents of the vessel, e. g. fermenting worts, beer, fruit juices; if necessary for lining the inner wall of ferro-concrete containers for particularly sensitive liquids, the fused filling material is heated before its use in the presence of water or steam until the necessary freedom from taste and odour is attained; by subsequent dry heating it may be ensured that the mass is free from water again.

Another method of using the masses which are solid at ordinary temperature, can be softened to the point of fusion by heating, possess adhesive qualities, are impermeable to moisture, and, as

far as is necessary, indifferent, consists in providing the facing plates for covering the walls first of all with a coating of the mass on the inner side thereof and sprinkling the layer whilst it is still soft with granular material, such as for example coarse sand; the plates prepared in this way are now fixed to the rigid wall with mortar, e. g. to the inner wall of the ferro-concrete container, the crevices being filled in the manner set forth above.

The same mass as is used for filling the crevices may be employed for this preparation of the inner surface of the facing plate; however, a similar mass may also be used. Since in the case of ferro-concrete containers which are lined with the facing plates the liquid contents do not come into contact with the inner surface of the facing plates, and since also in the case of other walls the inner surface of the facing plates is completely sealed off, cheaper bituminous substances may be used for fixing the facing plates to the wall which is to be covered.

The new method of filling the crevices provided by this invention is such that each of the separate facing plates is held in a framework of slightly elastic material which is firmly fixed to the covered wall, the frames surrounding each individual plate being connected with one another. In this way loosening of the plates by temperature differences is avoided more satisfactorily in the present process, as compared with the methods hitherto employed for fixing the plates. In the preparation of the inner surface of the facing plates by applying a layer of slightly elastic material, the separate plates are fixed to the wall exclusively by means of the slightly elastic fixing layer. Splitting off of parts of the plates is quite out of the question; furthermore the considerably enhanced surface of the inner side of the facing plates brings about a much firmer union with the wall.

The wall covering carried out in the said way, that is, either with just the filling up of the crevices or with preparation of the inner surface of the facing plates as well, is suitable in all those cases, in which walls or surfaces are to be covered or lined with great permanency, and particularly for those purposes in which it is desirable that the walls can be readily and thoroughly cleansed and can be kept sweet for use, for example for the walls in factory rooms, laboratories, operating theatres. Laboratory benches, floors and the like can also be provided in this way with facing plates of resistant hard material.

In a constructional form of the invention, the wall covering according to applicant's process is illustrated in vertical section in the form of a wall section in the accompanying drawing.

The plate *a*, whose back is roughened or grooved, is provided with a covering layer *b* of a mixture of the bituminous material and mineral fillers and granular material *c* is scattered thereover whilst it is still soft. The plate thus treated is fixed to the wall face *e* by means of the layer of mortar *d*. The crevices *f* between the plates are filled with the same elastic mass of bituminous-like substances and mineral fillers; the filling is effected by making strips of the mass which are heated and used for filling in the previously deepened crevices.

I claim:

1. A process of covering walls with facing plates of resistant hard material such as glass plates, earthware plates and the like by fixing the plates to the walls provided with a layer of mortar, which comprises first providing the plates on the side opposite the walls with an adhesive covering layer impermeable to moisture and consisting of a mixture of bitumen-like substances and indifferent mineral fillers, said layer being solid at ordinary temperature and capable of being softened by heating to the point of fusion.

2. A process as described in claim 1, in which said covering layer is provided whilst still soft with a cover of granular material scattered thereover.

3. A process as described in claim 1, in which crevices formed between said facing plates are filled with a mass of the same composition as said adhesive covering layer.

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