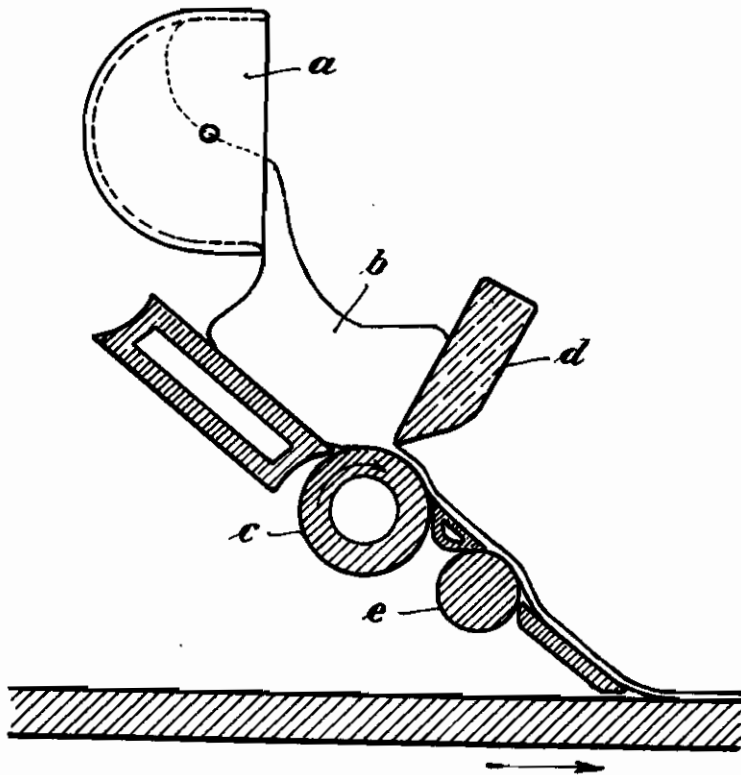


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# ALIEN PROPERTY CUSTODIAN

## PRODUCTION OF FLAT GLASS

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This invention relates to the production of flat glass having a fire-polished surface, and has for its object to replace the methods hitherto in use for this purpose by a much simpler and cheaper method which, moreover, makes it possible to manufacture flat glass fire-polished on one side only. This is often desirable, particularly if the glass is to be used in making wall plates.

Flat glass having a fire-polished surface is at present obtained by drawing with or without nozzles, or by rolling on tables or machines in the manner of cast glass.

In order to produce or retain the fire-polish during drawing it is necessary to proceed in such manner that the glass while in plastic condition does not come into contact with solid bodies. Owing to the peculiarity of the drawing process, the glass thus produced is, however, always fire-polished on both sides, and its composition can be varied only within comparatively narrow limits.

The manufacture of flat glass by rolling requires a very high roller temperature and the greatest possible roller speed. Apart from the difficulties presented already by these requirements, it has further been found in practical operation that the surface of rolled glass of this type leaves much to be desired and at any rate does not exhibit the same degree of fire-polish as for instance drawn window glass. This is due to the fact that a sort of hammering is formed on the fire-polished surface during the rolling of the glass on casting tables owing to uneven cooling.

The machine rolling process involves similar troubles with respect to the condition of the surface, because the removal of the rolled glass confronts the operator with new difficulties in view of the high roller speeds and the still highly plastic state of the rolled ribbon, so that pulling stresses might develop. Furthermore, the high roller speeds, in order to render profitable the installation of a plant of this kind, presuppose production on such a large scale that the quantities delivered usually considerably exceed the absorptive capacity of the market.

The invention avoids these drawbacks of the known methods and affords, moreover, the possibility of selectively producing flat glass fire-polished on one or two sides and of adapting the output to actual requirements.

The principle of the invention resides in exerting a conveying effect upon the underside of a mass of glass emerging from a slot whose upper limitation is formed by a profiled body, whereby

the glass accumulating in the rear of the slot is caused to be spun off from the inside of the mass and the outcoming glass is molded in the form of a ribbon.

According to the preferred form of application of the new method, this conveying effect is produced by employing as lower limitation of the slot a moving surface which drives the mass of glass by friction while on the other hand the upper layers of the glass stick to a certain extent to the profiled body which for this purpose is kept at a suitable temperature. The glass is thus formed by the moving surface representing for instance an endless band, a roll, etc. and possessing a smooth, roughened or profiled top to suit requirements, spun off as it were from the inside of the mass positioned back of the slot and delivered by the latter in the form of a ribbon which by the moving surface, or by a correspondingly inclined surface to which it is passed in the course of operations, is conveyed onwards and reduced to the desired thickness of the flat glass to be manufactured through regulation of the speed of the moving surface. Subsequently, the glass ribbon is either guided through the free space of the workroom to a cooling oven or treated in a heated chamber at correspondingly dropping temperatures.

In further accordance with the invention the slot from which the glass emerges may be formed by two adjustably spaced stationary profiled bodies instead of by a stationary profiled body and a moving surface, the conveying effect being exerted upon the moving support located rearwardly of the slot.

It will be seen that the surface of the glass having passed through the slot remains free from any contact between the moving surface and the profiled body and retains therefore its fire-polish even if the speed at which the liquid glass comes out of the slot is relatively slight.

Essential for the successful application of the method according to the invention are a suitably adjusted temperature of the liquid glass in the rear of the slot, the maintenance of a pressure exerted by the glass upon the slot that is as uniform as possible, i. e. keeping a practically constant glass level by the selection of corresponding charging methods and/or an appropriate construction of the container, an inclination chosen in view of these factors of the entire plant or of the conveying means in front of the slot, which may be as great as 45° from the horizontal according to manufacturing conditions, and finally and particularly the proper regulation of the con-

veying speed or of the speed of the moving surface.

Having reached a state at which the fire-polish cannot be disturbed any more, the finished glass may be treated of course in known manner with a polishing roller so as to smooth its surface still more if desired.

The invention is illustrated by way of example in the accompanying drawing showing a diagrammatic view of a device for performing the method according to the invention.

The mass of glass *b* emerging from a reservoir *a*, shown to be fed by a casting ladle, through a slot formed by a profiled body *d* of suitable refractory material and by a roll *c*, adjustably spaced from the body *d*, sticks to the latter and, owing to the friction of the surface of the roll *c*, is so to speak spun off from the mass and con-

veyed out of the slot. The ribbon formed subsequently passes to one or more conveying rolls *e* into a hearth type or roller cooling oven.

The change in the general arrangement involved when a stationary profiled body instead of the roll *c* serves as lower limitation of the slot and conveying rolls of the type of the rolls *e* perform also the work of spinning the glass off from the slot is obvious and for this reason need not be described.

The surface of the roll *c*, or of the rolls *e* employed instead of the former and assuming also the conveying task, or of an endless band, may be correspondingly profiled, which is important particularly if glass wall plates are to be made with a back insuring good adhesion to the wall.

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