

# KNAFF Albert (Jr)

(1899 - 1969)

(DE)

## Patents (details)

### 1 - Grinding and polishing device

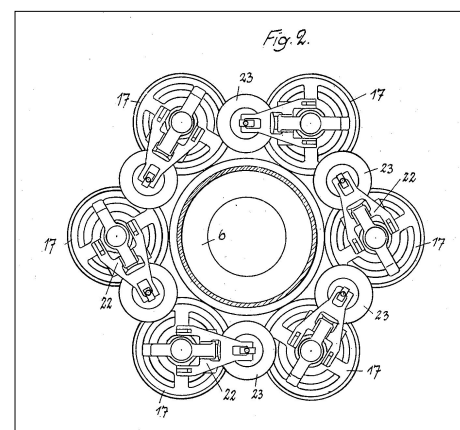
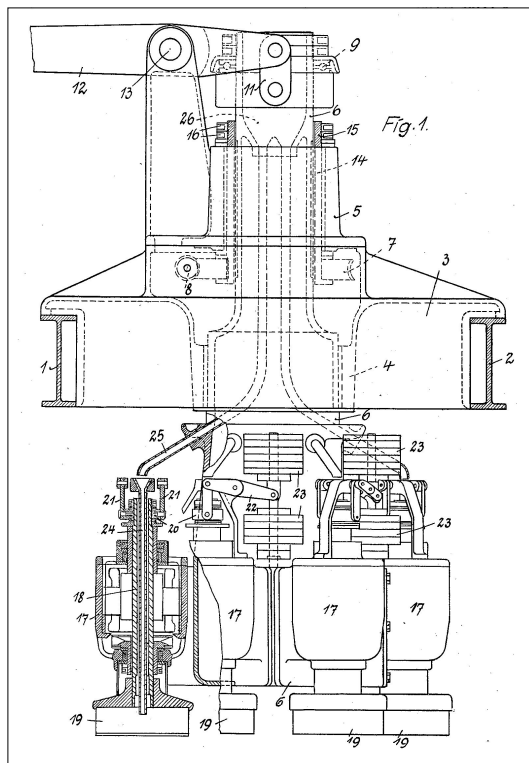
US patent	2033034
Application date	23 January 1933

*The object of the present invention is a device relating to grinding and polishing of flat surfaces, more especially in the manufacture of plate glass.*

*In accordance with this method the grinding and polishing tools machine the surfaces to be ground and polished under a very low pressure-contrary to pressures hitherto customary- further, the grinding and polishing tools run at a high relative speed between tool and workpiece-contrary to speeds customary at present. By this same method afore described ways of operating may both be applied in conjunction and simultaneously.*

*The grinding and polishing device which forms the object of the present invention comprises a system of rotary grinding and polishing elements respectively suspended, for the purpose of dealing with the work-piece, in a suitable manner, for example from stationary girders. A certain number of these tools, six for example, suitably grouped in a circle, are, either in their totality or singly, supported in bearings of vertical direction in which they rotate carefully balanced by means of counterweights or other suitable means, so as to permit the working pressure to be adjusted within the finest limits.*

*Each single tool as well as the whole system of tools rotate around their vertical axes, each single tool very rapidly, the whole system at a lower speed, according to the special requirements of the work-piece to be dealt with.*



## 2 - Charging procedure for glass industry furnaces <sup>1</sup>

FI patent	22169
Application date	14 December 1945
Applicant	Glaceries de St Roch

*In the glass industry, the fusible mixture (charge) is usually placed in powder form in the furnaces used, and in particular in the sink furnaces, either with the help of various wings or conveyors, which place the materials in the furnace either in piles that are pushed into the furnace from the dog-house, or continuously in small batches.*

*There are several disadvantages to using a powdery charge, the most notable of which are the following:*

- *penetration of dust into the oven, bulbs, regeneration chambers, etc., which causes rapid corrosion of refractories.*
- *the waste of the various ingredients of the charge, especially the alkalis, the most expensive substances, when they are placed in the furnace.*
- *separation of the mixed substances according to their specific gravity and grain size when processing the batch from the mixer to the oven.*

*In order to avoid these disadvantages, some glass factories carry out the briquetting of the batch in such a way that the batch, to which water has been added, is compressed into various shaped briquettes, the dimensions of which usually do not exceed the dimensions of a normal brick. Naturally, these briquettes must be treated in some way in order to make their mechanical resistance sufficiently high. To achieve this, high pressures must be used, up to 750 kg/cm<sup>2</sup>, depending on the properties of the substances in the mixture and the amount of water added. However, by using binders or agglomerates, sufficient mechanical resistance can be achieved even at much lower pressures.*

*Using the pelletization of the charge not only avoids the disadvantages caused by the powdery charge, but also achieves considerable advantages:*

- *the glass melts better because the contact between adjacent parts of the different substances in the charge is much more thorough. The quality of the glass will be better and melting will happen faster. This is promoted by better thermal conductivity inside the briquette, because there are no more air bubbles in the briquette,*
- *the glass bath is more homogeneous, and since the different substances are no longer separated from each other, the corrosion of refractory substances in contact with the glass is not so strong, especially in the surface layer of the glass melt.*

*Patent claim:*

1. *The charging method of glass industry furnaces, characterised by the fact that the amount of charge to be placed in the furnace is made into such large lumps, corresponding to a weight of 50 to 1,000 kg or more, that it becomes unnecessary and practically impossible to charge in piles, and that these lumps are then charged individually and placed next to the oven.*

## 3 - Surfacing of glass

US patent	2623332
Application date	18 May 1951
Assigned to	Glaceries de St Roch

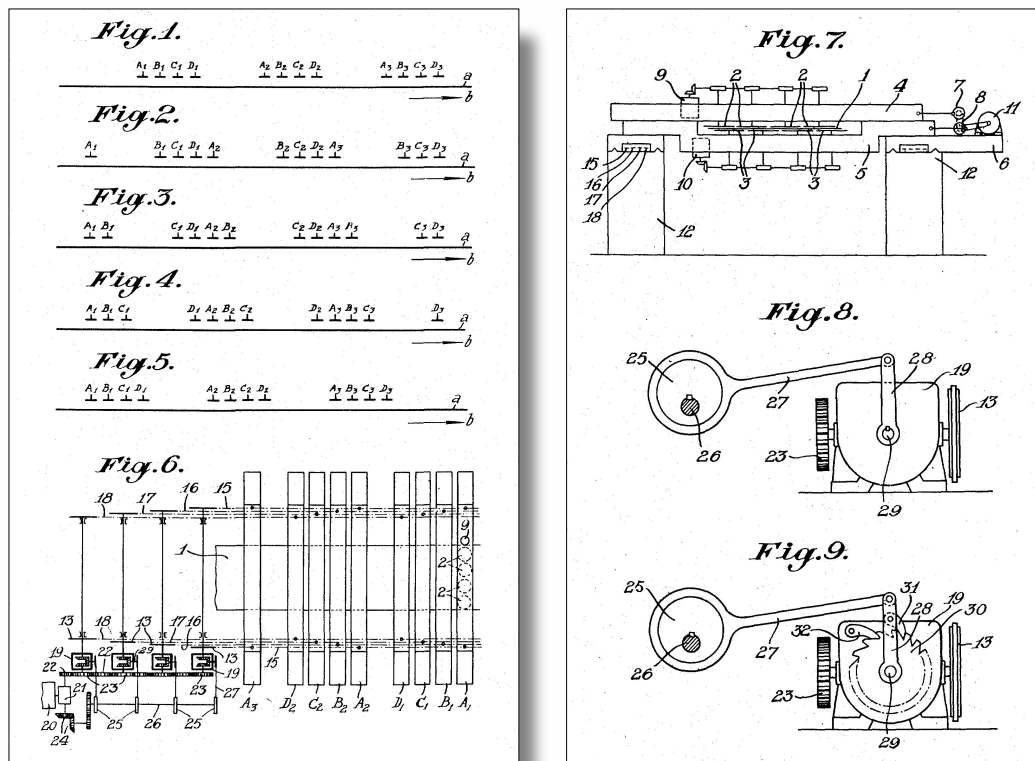
*According to this invention, the operating tools or the groups of operating tools have imparted thereto reciprocatory movements in the longitudinal direction of the glass such that the stress on the glass due to the advance of a tool or group of tools in the direction of movement of the glass is practically compensated for by a backward movement of another tool or group of tools. In practice, these movements are preferably imparted to the tool-supporting beams, and the advantages of this process are particularly noticeable when operating simultaneously on both faces of a continuous sheet of glass with the aid of tools which are opposite one another. In this case, with the sheet of glass being advanced in a continuous movement, the*

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<sup>1</sup> Translation provided by "Google Translate"

reciprocatory movement of the tools is superimposed on the continuous movement of the glass in the longitudinal direction thereof.

It is thus rendered possible for the traction stresses or the longitudinal compressional stresses exerted on the ribbon of glass to be counterbalanced or to be suitably limited, either by two adjoining tools, or by two adjoining groups of operating tools.



### Corresponding patents

CA, DE

## 4 - Process and apparatus for the continuous production of flashed glass

US patent	2751714
Application date	21 January 1952
Assigned to	Glaceries de St Roch

The present invention relates to a process and to apparatus for the continuous production of flashed glass, which are applicable to plants for the production of sheet glass both by rolling and by drawing.

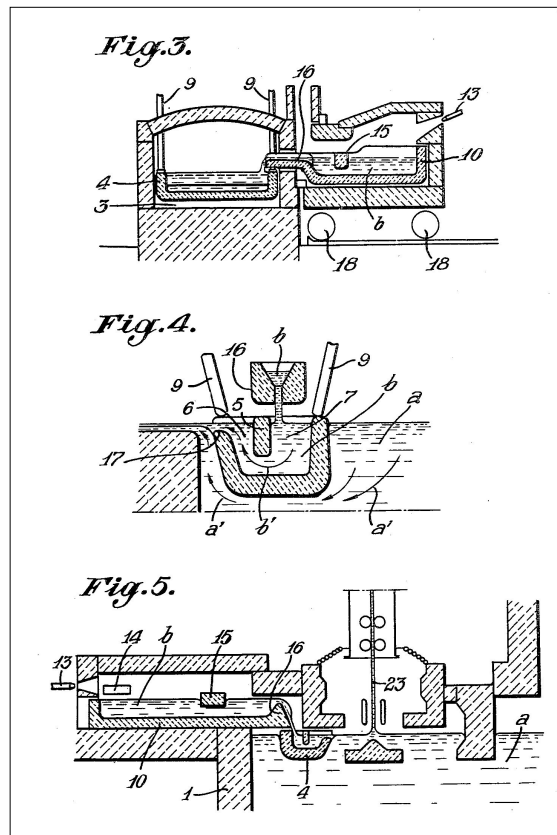
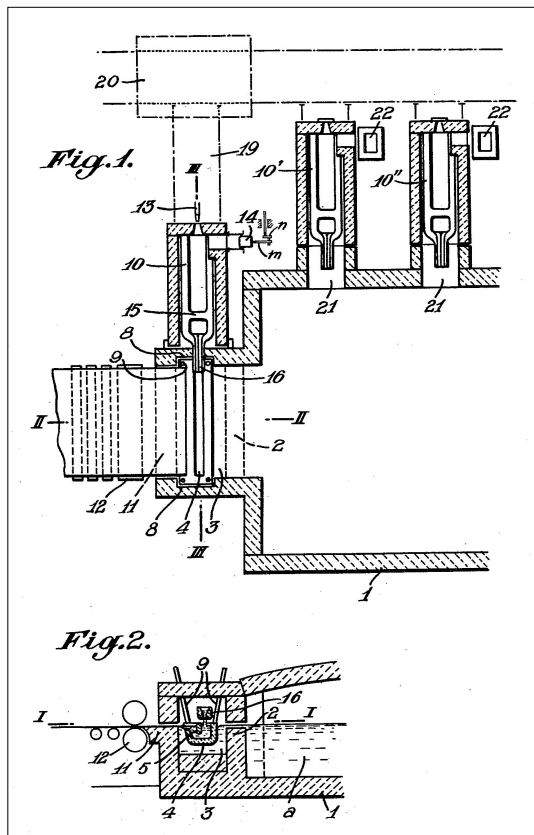
In the processes hitherto employed, difficulties have been encountered in continuously producing flashed glass in which the thickness of the flashing layer can be varied at will, while remaining uniform over the entire area of the sheet.

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In accordance with the invention, the molten base glass is passed under a float constituting a receptacle into which the flashing glass is introduced, also in the molten state, the said flashing glass being made to overflow so that it forms on the surface of a base glass a thin layer which becomes welded thereto before the formation of the sheet. The thickness of the flashing layer may be adjusted at any time by varying the quantity of flashing glass introduced into the float and the constancy of the thickness of the flashing layer over the entire width of the sheet can be readily maintained even when this thickness is reduced to a fraction of a millimetre.

The apparatus employed for carrying out the process comprises a trough-like float immersed in the bath of base glass and fed by a small auxiliary tank containing the flashing bath. For the manufacture of flashed glasses of different colours, a number of auxiliary tanks may advantageously be provided which, in the

inoperative position, are heated by the gases for the heating of the main tank containing the base glass, the auxiliary tank in operation being brought opposite the receptacle which it is to feed.



### Corresponding patents

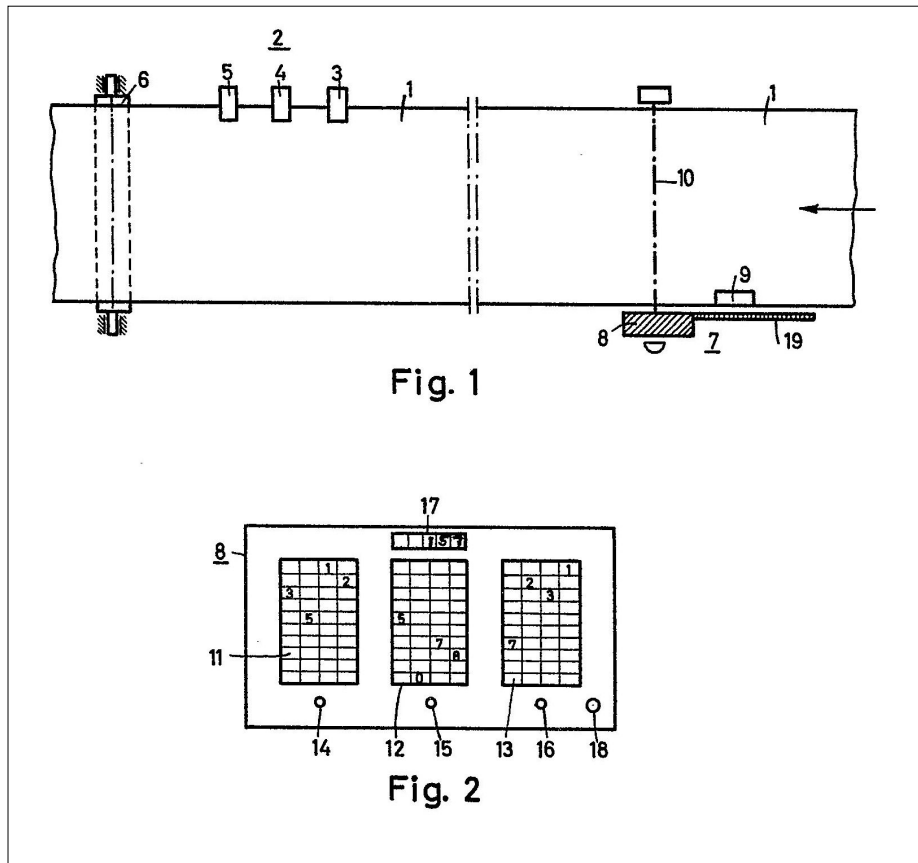
CA, DE

## 5 - Improvements in or relating to apparatus for cutting plate glass produced in a continuous ribbon

GB patent 838187  
Application date 20 June 1958

When plate glass is produced in a continuous ribbon, it is still common practice to cut the ribbon into the desired lengths by hand. This is effected by measuring off the desired length of glass and marking it on the ribbon and thereafter manually scoring the ribbon, perpendicular to its length, with the aid of a straight edge at the marked place. The cracking off is then effected by lifting the end of the ribbon with the aid of an eccentric roller. However, the manual scoring of the cutting line is extremely laborious and requires the attention of additional staff.

The present invention has for its object to provide a cutting apparatus with control means for devices for cutting plate glass produced in the form of a continuous ribbon, with which it is possible to cut the glass to lengths accurately adapted to the purpose of use, as also to utilise the glass up to a point as close as possible to any fault which may be present in the glass.



Corresponding patent  
DE