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MEANS FOR EQUAL HEATING OF FLATTENING STONES

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Fig. 1.

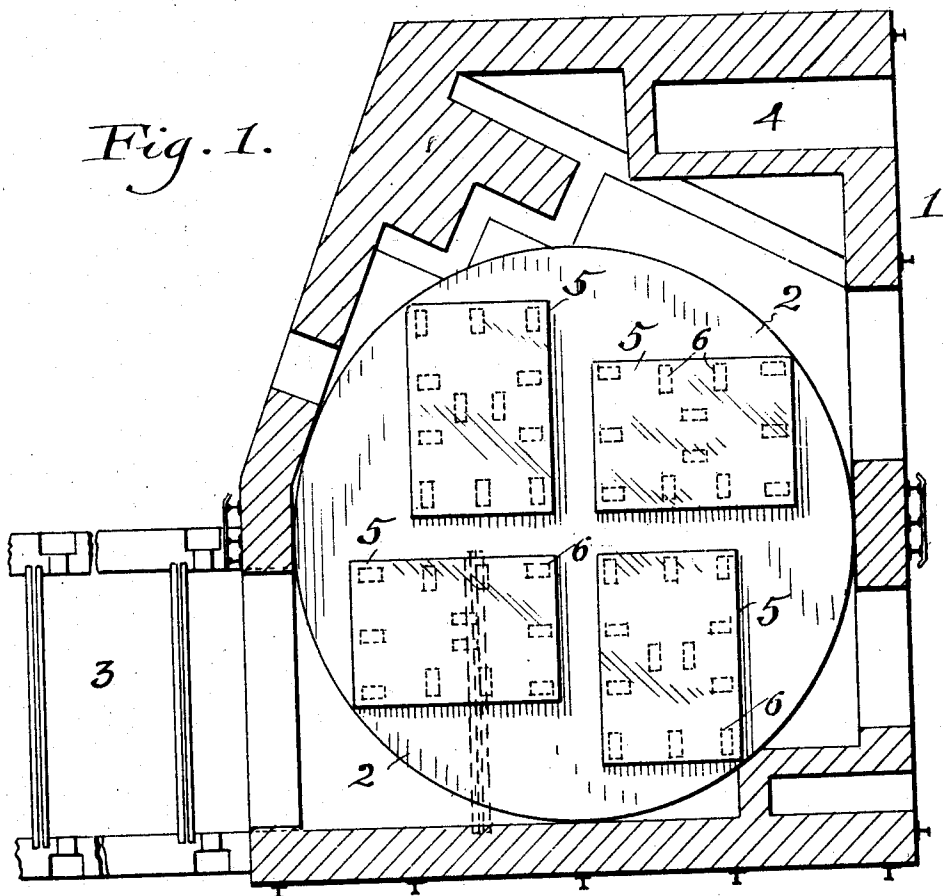
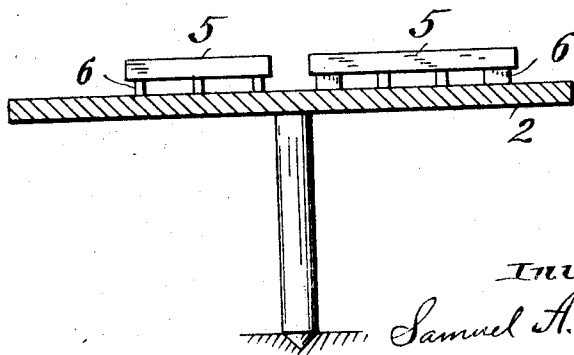


Fig. 2.



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UNITED STATES PATENT OFFICE.

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MEANS FOR EQUAL HEATING OF FLATTENING STONES.

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To all whom it may concern:

Be it known that I, SAMUEL A. MCKITTRICK, a citizen of the United States, residing at Sandusky, in the county of Erie and State of Ohio, have invented a certain new and useful Improvement in Means for Equal Heating of Flattening Stones, of which the following is a full, clear, and exact description.

The present invention relates to the provision of means for flattening curved shawls of glass either hand blown or machine blown, so that the resultant flattened shawls are as near perfectly flat as it is possible to get them.

A further object of the invention is the provision of means and structure whereby the flattened stones on which shawls are constantly flattened shall be so heated that the top surface thereof shall be maintained in a flat condition and not subject to a bow form, which form would subsequently be imparted to the shawl when it is flattened on the stone.

Other objects of the invention will appear as the description proceeds.

Reference should be had to the accompanying drawings forming a part of this specification, in which Fig. 1 is a sectional plan view more or less diagrammatically representing a glass flattening furnace with a lehr leading therefrom; Fig. 2 is an elevation of the flattening wheel showing the flattening stones positioned thereon.

Referring to the drawings, 1 indicates a glass flattening furnace which may be of usual construction having located upon the interior thereof the flattening table 2, and connecting with the furnace the lehr structure 3. Heat is introduced into the furnace in any desired manner or form, the portion indicated at 4, in the present construction, indicating the source of heat. No description of the furnace is necessary because such construction is well known, and the flattening table and flattening stones are placed in position to be subject to the heat within the furnace in the same manner as is now done.

At the present time the practice is to place the flattening stones, such as represented at 5, upon the flattening wheel or table 2, and then to brick up around the edges of the flattening stones until these flattening stones may be described as encased in brick work.

This brick work extends up along the edges of the flattening stones to within an inch or two of the top of the stone. These flattening stones may be given a comparatively speaking flat top, that is to say, they may be rubbed until the top surface is as near flat as it is possible to get these stones, but after they have been placed on the flattening wheel and have been heated the top surface becomes more or less curved or bowed, which is undoubtedly due to the fact that the flattening stones are not uniformly heated, for the heat which impinges upon the flattening stones practically heats only their upper surface, and the heat will of course penetrate into the stone a certain distance, but the bottom part of the stone particularly when encased in the brick as before mentioned will never be as evenly heated as is the top of the stone. Consequently, under the expansive action of the heat the top of the stone will expand more than the lower part of the stone, and this will give to the upper surface of the stone a curved or bow shape.

Naturally, the glass shawls which are flattened against a stone having a curve or bow in it will have the same curve or bow after the glass is flattened against the stone, and this curve or bow will persist in the glass even after the glass is sent through the lehr, and is subsequently ready for use.

In the present invention the flattening stones 5 are mounted upon the flattening wheel 2, but the stones are elevated above the flattening wheel, being supported upon supporting members which are indicated at 6. The number of supporting elements used for each stone will be sufficient to adequately support the stone and yet leave a free space beneath the stone for the heated gases to circulate. The height of the flattening stone 5 above the table 2 is quite immaterial so far as this invention is concerned, but should be of a height so as to permit the ready circulation of the hot gases beneath the flattening stone.

The construction which has just been described will mean that by the circulation of the heated gases beneath the flattening stone as well as the impinging of the heated gases upon the top of the stone, the heating effect with respect to the entire stone will be at least approximately uniform so that the stone will expand or contract in a uniform manner throughout its entire body. There-

fore, if under such conditions a flattening stone has been given a satisfactory flat surface, before insertion in the furnace, the top of the stone will remain flat due to the fact that the equal heating will produce equal expansion and contraction effects.

It is though that in all cases the circulation of the usual heated gases within the flattening furnace will sufficiently heat the bottom of the flattening stone in order to preserve the top of the stone flat. However, if it be found in any instance that the gases circulating beneath the stone are not sufficiently hot to produce the desired effect, it is within the province of this invention to provide additional heating means which will directly heat the underside of the flattening stones in order to secure the equal expansion of the stone and prevent any warping or curving of the upper surface of the stone.

It may also be stated that the effect of having the flattening stones elevated on supports will be to allow the heat to pass under the stone and reach that portion of the furnace adjacent the lehr where the shawl is taken by the shoving pan to be transported from a flattening stone to the lehr, and will give a better and more even heating effect to the shawl while on the shoving pan.

Having described my invention, I claim:

1. A flattening furnace comprising an enclosing casing, a table mounted for rotation within the said casing, means associated

with the casing for directing heating medium into the portion of the furnace occupied by the said rotatable table, a flattening stone carried by the said rotatable table said flattening stone being elevated above the said table thereby to permit the heating of the under side of the flattening stone as well as the upper side thereof.

2. A flattening furnace comprising an enclosing casing, a table mounted for rotation within the said casing, means associated with the casing for directing heating medium into the portion of the furnace occupied by the said rotatable table, a flattening stone carried by said rotatable table, and means for so mounting said flattening stone upon the table that heating medium may be applied to the under side of the stone as well as the upper side thereof.

3. A flattening furnace comprising an enclosing casing, a table mounted for rotation within the said casing, means associated with the casing for directing heating medium into the portion of the furnace occupied by the said rotatable table, a flattening stone carried by said rotatable table, legs for supporting the said flattening stone upon the said table whereby heating medium may be applied to the under side of the flattening stone as well as the upper side thereof.

In testimony whereof, I hereunto affix my signature.

SAMUEL A. McKITTRICK.