

May 4, 1937.

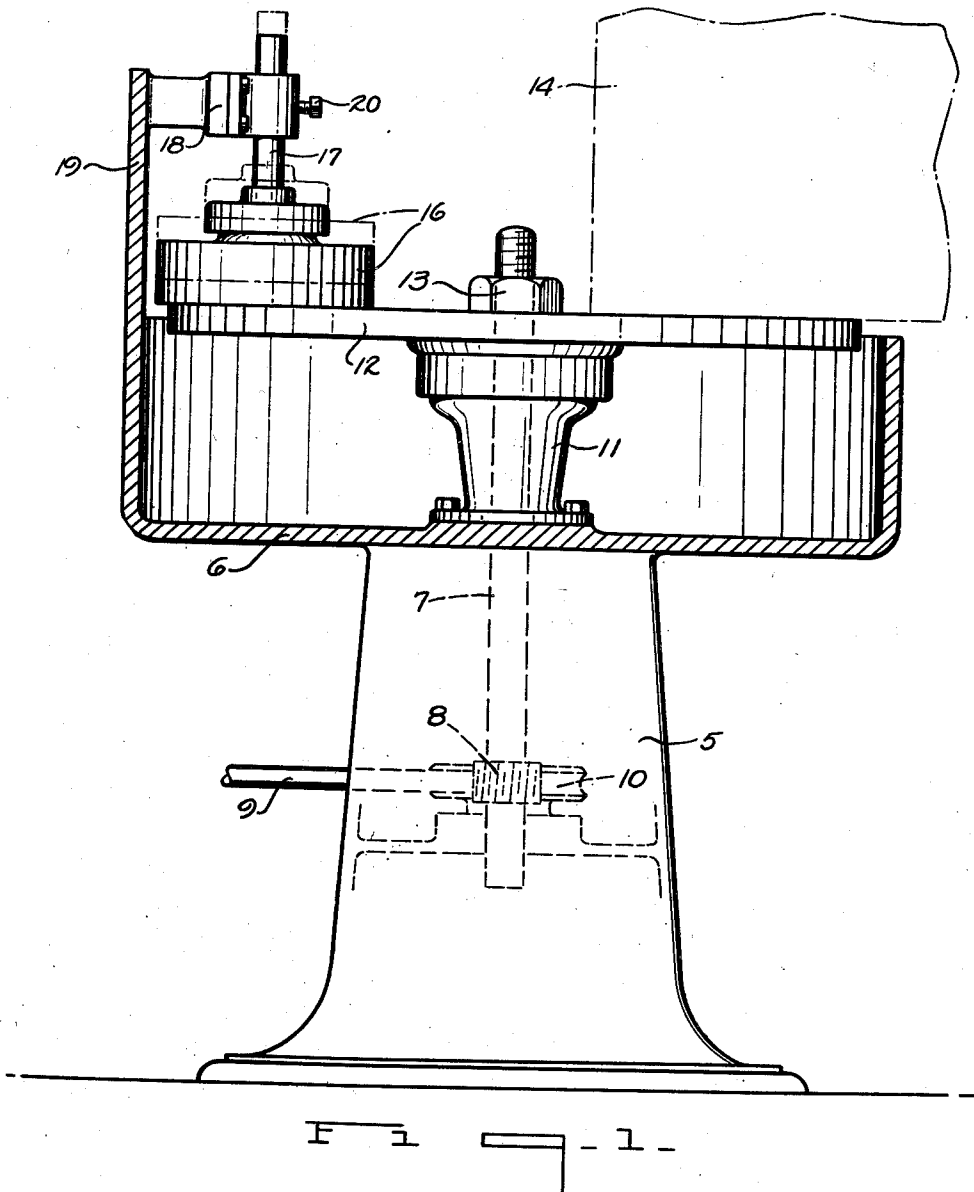
H. O. KRANICH

2,079,076

TRUING APPARATUS FOR GRINDING WHEELS

Filed April 3, 1931

2 Sheets-Sheet 1



BY

*Frank J. Jase*

ATTORNEY

INVENTOR  
Henry O. Kranich

May 4, 1937.

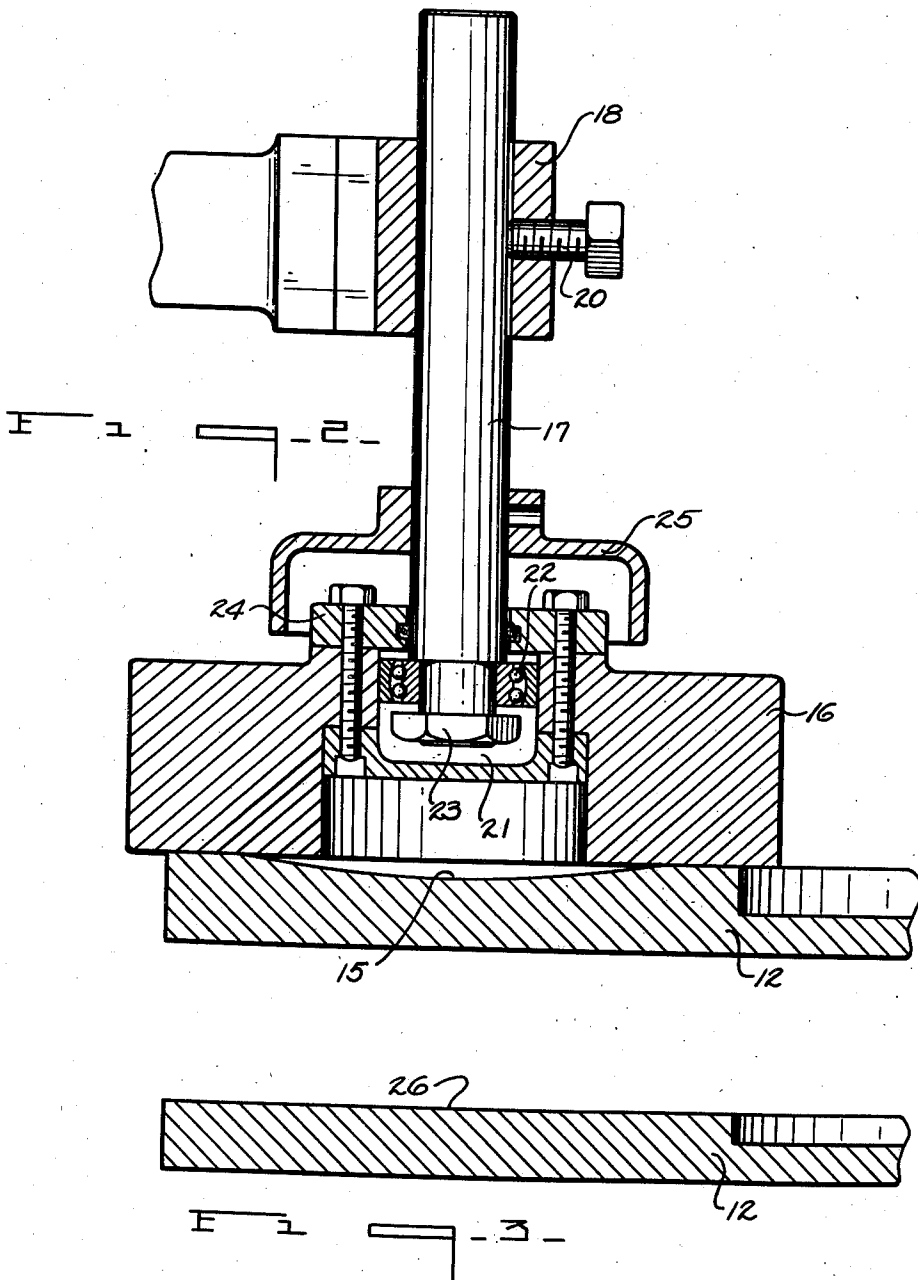
H. O. KRANICH

2,079,076

TRUING APPARATUS FOR GRINDING WHEELS

Filed April 3, 1931

2 Sheets-Sheet 2



INVENTOR  
Henry O. Kranich

BY

Frank Fraser  
ATTORNEY

## UNITED STATES PATENT OFFICE

2,079,076

TRUING APPARATUS FOR GRINDING  
WHEELS

Henry O. Kranich, Toledo, Ohio, assignor to  
Libbey-Owens-Ford Glass Company, Toledo,  
Ohio, a corporation of Ohio

Application April 3, 1931, Serial No. 527,441

3 Claims. (Cl. 51-241)

The present invention relates broadly to glass grinding apparatus and more particularly to a machine for use in grinding the edges of sheets or plates of glass or the like.

5 According to this invention, there is provided a grinding machine having a grinding or roughing plate or wheel rotatable about a substantially vertical axis. The edges of the glass sheets are ground upon a machine of this character by  
10 bringing the said edges into engagement with the upper surface of the grinding wheel during rotation thereof in a manner well known in the art. In this type of machine, the upper working surface of the roughing wheel or plate will,  
15 after a certain period of use, become dished or formed with a slight recess or depression therein and, when this occurs, it is desirable to true or dress the roughing wheel whereby to remove the dished-out portion or recess and restore a plane  
20 grinding surface thereto.

An important object of the invention, therefore, is the provision of means associated with a grinding machine of the above character for truing or dressing the roughing wheel or plate  
25 after it has become worn.

Another object of the invention is the provision of means of the above character adapted to function in a manner to grind away the roughing wheel so as to remove any recess or depression  
30 therein and restore a plane working surface thereto.

A further object of the invention is the provision of a freely rotatable truing or dressing block mounted above the roughing wheel and  
35 normally maintained out of engagement therewith, but which can be lowered upon the said wheel when it is desired to true or dress the same.

Other objects and advantages of the invention will become more apparent during the course  
40 of the following description when taken in connection with the accompanying drawings.

In the drawings forming a part of this application and wherein like numerals are employed  
45 to designate like parts throughout the same,

Fig. 1 is an elevation, partially in section, of a grinding machine provided by the present invention,

50 Fig. 2 is a vertical section through a portion of the roughing wheel and the means for truing the same, and

Fig. 3 is a fragmentary section of the roughing wheel after truing.

The grinding machine herein provided embodies generally a supporting standard or base

portion 5 carrying at its upper end a basin or tub 6. Mounted centrally within the base portion is a vertically disposed shaft 7 positively driven in any well known manner such as by means of a worm 8 carried by a drive shaft 9  
5 and meshing with worm gear 10 fixed to the lower end of vertical shaft 7. The said shaft 7 projects upwardly through a bearing support 11, and mounted upon the upper end thereof is a grinding or roughing wheel or plate 12 carried  
10 upon bearing support 11 and being held in position by means of a nut 13. The basin 6 surrounds the roughing wheel and is slightly larger in diameter than the same so that it may catch all of the surplus abrasive or other grinding  
15 medium which may be employed in the grinding operation.

In the use of a grinding machine of the above character, the roughing wheel 12 is preferably continuously rotated. When it is desired to grind the edges of a glass sheet or plate 14, the  
20 said sheet is manually held in a vertical position above the roughing wheel as indicated by the broken lines in Fig. 1, with the edge to be ground in engagement therewith. This edge is then  
25 ground by the rotation of the grinding wheel in conjunction with a suitable abrasive material which is usually supplied thereto. After the roughing wheel has been in use for a certain  
30 length of time, the upper surface thereof becomes dished-out or recessed as indicated at 15 in Fig. 2, and when this occurs it is desirable that this recess or depression be removed so that a plane grinding surface will be restored to the  
35 roughing wheel.

As pointed out above, the present invention contemplates the provision of means for truing or dressing the roughing wheel after it becomes worn. The means herein provided for this purpose consists of a truing or dressing member or  
40 block 16 preferably of cast iron and mounted above the roughing wheel 12. The truing block is carried at the lower end of a vertical spindle 17 which projects upwardly through a bracket  
45 arm 18 carried by the upwardly extending portion 19 of the basin 6. The truing block 16 is normally mounted in an elevated position above the roughing wheel as shown by the broken lines in Fig. 1, and may be maintained in such position by means of one or more set screws or the  
50 like 20 carried by the bracket arm 18 and engaging spindle 17.

The truing block 16 is preferably loosely mounted upon spindle 17 so that it may freely rotate relative thereto. Thus, the truing block is pro-  
55

vided with a centrally disposed recess 21 within which the lower end of spindle 17 is received, and encircling the spindle within the recess is a ball bearing assembly 22 which will allow the desired rotation of block 16 with respect to spindle 17 and also a limited amount of universal rocking movement. When the block 16 is raised to its inoperative position, it is held upon the spindle 17 by a nut 23. The ball bearing assembly 22 is protected from grit and other foreign matter by means of the plate 24 through which the spindle 17 projects and also by a shield 25 carried by the said spindle and encircling said plate.

During the normal operation of the grinding machine, the truing block 16 is maintained in an elevated position in spaced relation to and out of contact with the roughing wheel 12. However, after the roughing wheel has become worn and it is desired to true or dress the same, the block 16 is lowered so that it rests freely upon the roughing wheel. The roughing wheel is then positively driven and the rotation thereof will effect the desired rotation of the truing block 16. The truing block acting upon the roughing wheel will function to grind out the recess or depression 15 therein so that a plane upper grinding surface will be restored thereto as indicated at 26 in Fig. 3. From the above, it will be readily seen that there has been provided novel and simplified means for dressing the roughing wheel in a rapid, convenient and efficient manner and without the necessity of removing the roughing wheel from the machines. Consequently, considerable time and labor can be saved in the dressing operation.

It is to be understood that the form of the invention herewith shown and described is to be taken as the preferred embodiment of the same, and that various changes in the shape, size and arrangement of parts may be resorted to without

departing from the spirit of the invention or the scope of the subjoined claims.

I claim:

1. In a machine for use in grinding the edges of glass sheets or plates, the combination with a grinding wheel rotatable about a substantially vertical axis in a fixed horizontal plane, of a freely rotatable dressing tool adapted to rest freely upon the grinding wheel for truing the upper surface thereof, a vertically disposed spindle, and means for loosely connecting the dressing tool to the lower end of said spindle so that it may freely rotate relative thereto and also have a limited amount of universal rocking movement.

2. In a machine for use in grinding the edges of glass sheets or plates, the combination with a grinding wheel rotatable about a substantially vertical axis in a fixed horizontal plane, of a freely rotatable annular dressing tool adapted to rest freely upon the grinding wheel for truing the upper surface thereof, said dressing tool being driven by the rotation of said grinding wheel, a basin surrounding the grinding wheel and having a portion thereof projecting above said wheel, a horizontally disposed bracket arm carried by the projecting portion of the basin, a vertical spindle passing through the bracket arm, and means for connecting the dressing tool to the lower end of the spindle so that it may freely rotate relative thereto and also have a limited amount of universal movement.

3. In a machine for use in grinding the edges of glass sheets or plates, the combination with a rotatable grinding wheel, of a rotatable dressing tool adapted to engage the working face of the grinding wheel for truing the same, a spindle, and means for connecting the dressing tool to said spindle so that it may have a limited amount of universal rocking movement.

HENRY O. KRANICH.