No. 852,403. PATENTED APR. 30, 1907.

F. L. O. WADSWORTH.

GRINDING AND POLISHING MACHINE.

APPLICATION FILED JUNE 24, 1905. RENEWED AUG. 27, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

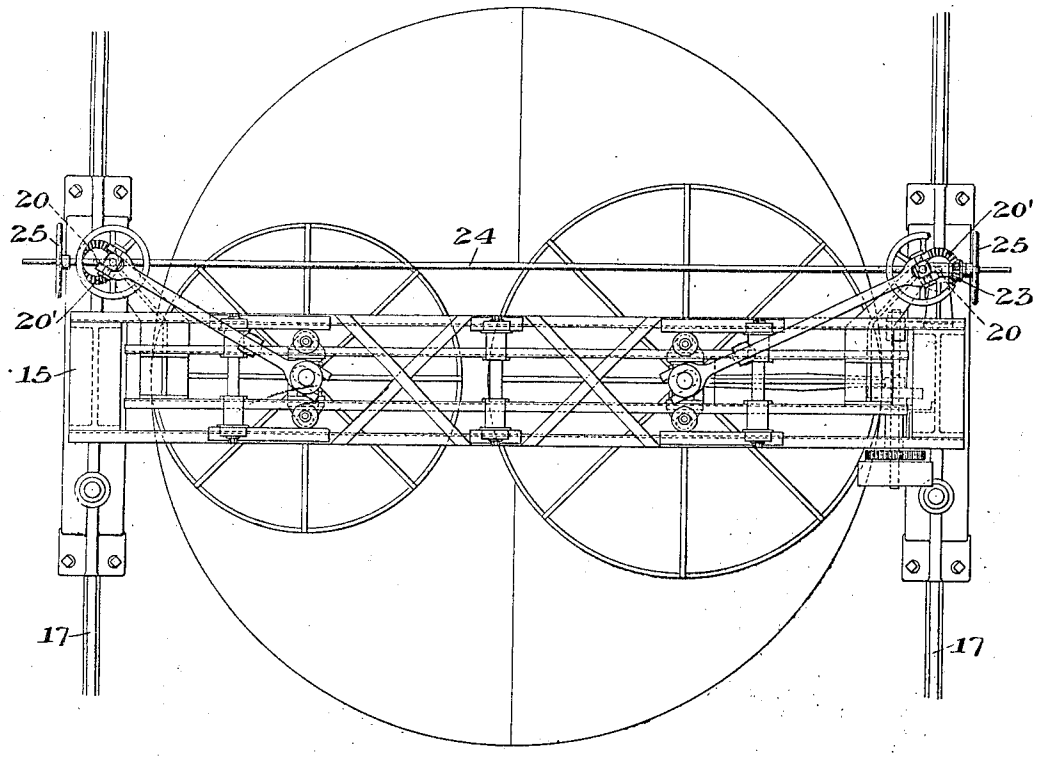
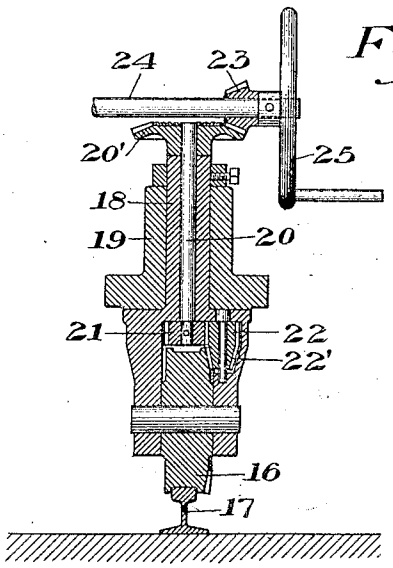


Fig. 2.



WITNESSES

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Fig. 4.

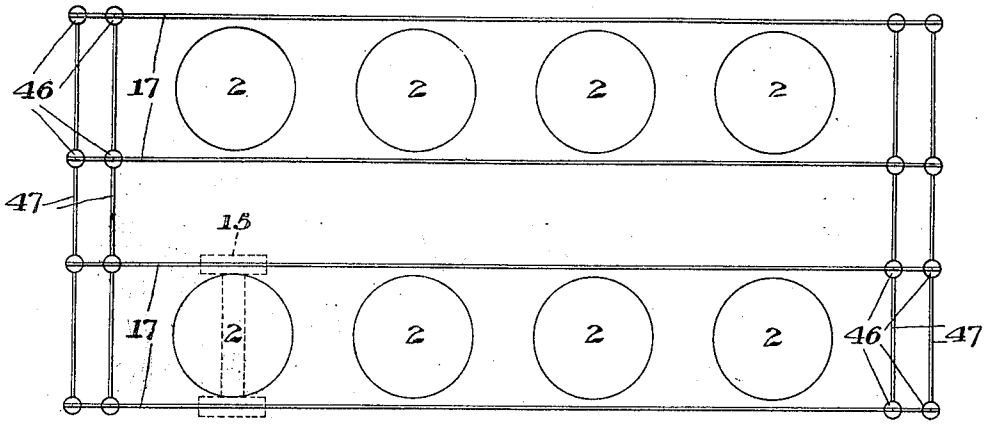
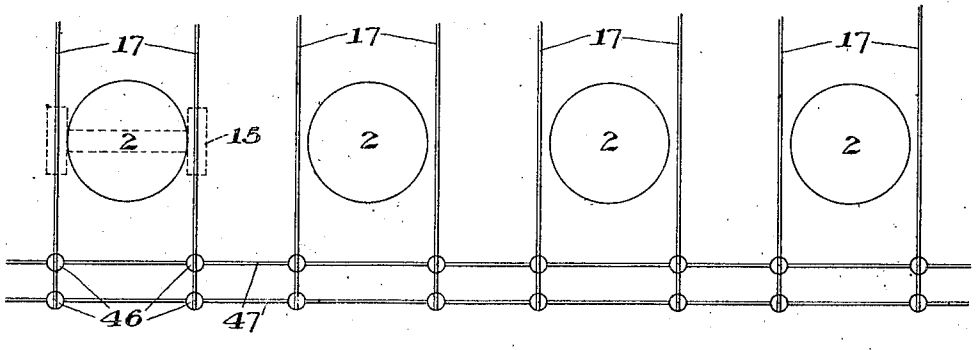


Fig. 3.



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UNITED STATES PATENT OFFICE.

FRANK L. O. WADSWORTH, OF MORGANTOWN, WEST VIRGINIA, ASSIGNOR TO PRESSED PRISM PLATE GLASS COMPANY, OF NEW YORK, N. Y., A CORPORATION OF WEST VIRGINIA.

GRINDING AND POLISHING MACHINE.

No. 852,403. Specification of Letters Patent. Patented April 30, 1907.

Application filed June 24, 1905. Renewed August 27, 1906. Serial No. 332,203.

To all whom it may concern:

Be it known that I, FRANK L. O. WADSWORTH, of Morgantown, Monongalia county, West Virginia, have invented a new and useful Grinding and Polishing Machine, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a top plan view of a grinding machine constructed in accordance with my invention; Fig. 2 is a detail view of the wheel bearings and their connections; Fig. 3 is a plan view showing one arrangement of the track and turntable; and Fig. 4 is a partial plan view showing another arrangement which is the preferred arrangement of the same.

In my apparatus I employ a movable bridge 15 carried upon wheels 16 movable upon tracks 17. The bearings for these wheels are formed in the lower parts of vertical hollow spindles 18 which extend up through suitable bearings in the castings 19 forming the end of the bridge, within which hollow spindle is a driving shaft carrying at its upper end a bevel wheel 20 and provided at its lower end with bevel gearing 21 driving a stub shaft 22 to which the supporting wheel is secured. The wheels 20 are driven by bevel pinions 23 on a common shaft 24 extending across the bridge and having hand wheels 25 at each end. In this manner the bridge may be moved along its tracks, while at the same time castors or supporting wheels may be turned around on their axes for a purpose hereinafter explained.

In the ordinary systems where traveling bridges are used the entire bridge is moved out in front of one table onto a large turntable and then turned around at right angles, moved laterally in front of the next table onto another large turntable, and then turned and run forward over this next table. In such system the turntables are large and heavy and occupy a large amount of space. Moreover, a grinding bridge and a polishing bridge are used for each table and part of these bridges were idle a large part of the time. I have done away with the large, heavy turntables, and employ instead of them small turntables on which the supporting wheels of the bridge rest when run out in front of the table. Thus, I show in Fig. 3 four small turntables 46, which are arranged to receive the supporting wheels of the bridge. The bridge wheels being on rotary spindles, when the small tables are turned the wheels turn with them to bring them into alinement with the cross track 47. The bridges then run sidewise in front of the other table onto a similar four turntable device, where the wheels are again shifted and the bridge then run forward over the next table. This system enables one grinding and one polishing bridge to supply four tables, thus reducing the cost of the system and economizing space, as the four small tables take up much less room than in the single large table.

In the construction shown in Fig. 4 the grinding tables are arranged in two parallel rows, and the transverse tracks on which the bridge is run are parallel thereto. In this arrangement the bridges are started at one end of the row and moved continuously forward from one table to the next until the end of that row is reached. They are then run onto four small turntables 46, of the same construction and arrangement as those shown in Fig. 3. These tables are turned, carrying with them the transfer wheels 16 of the bridges, and the bridge run across to four similar turntables at intersections of the cross transfer tracks 47 with the longitudinal transfer tracks of the second row of grinding tables. These transverse wheels and tables are then turned again to bring the wheels of the bridges into line of the second set of longitudinal transfer tracks and the operation continued on the second row of grinding tables in the same manner but in a reverse direction to that on the first row. When the bridges have reached the end of this second row of grinding tables they are again transferred to bring them to the initial position in front of the first row and the operation repeated. With this plan the only transfer operations involved are those required at the end of each row, and the operation is simpler and more rapid than the operations required in the system shown in Fig. 3.

The use of my invention also enables the grinding and polishing operations to be rapidly carried out successively on a series of tables. It also permits the attendants to follow the grinding and polishing operations

and prepare the tables for another operation.

I claim:—

1. In a grinding or polishing system having traveling bridges, supporting wheels for the bridges mounted on rotary stems, and small turntables on which the wheels are adapted to rest, said small turntables being located in front of the table; substantially as described.

2. In a grinding or polishing bridge system, a pair of tables having tracks leading outwardly therefrom, transverse tracks between the table tracks, and small turntables at the junctures of the tracks arranged to turn the spindles of the supporting wheels for the bridges; substantially as described.

3. In a grinding or polishing system, a series of work-supporting tables, two track systems at an angle to each other, bridges arranged to travel on the track systems, grinding or polishing mechanism carried by the bridges, and means for transferring the bridges from one track system to another; substantially as described.

4. In a grinding or polishing system, two series of rotary tables for supporting the work arranged side by side, a track for each system, cross tracks having turntables at the junctures and bridges movable on the tracks and having grinding or polishing apparatus thereon; substantially as described.

5. In a grinding or polishing system, a series of work-supporting tables, a track leading past the tables, bridges arranged to travel on the track and carrying grinding or polishing mechanism, a return track, and means for transferring the bridges from the first named track to the return track; substantially as described.

6. In a grinding or polishing system, a series of work-supporting tables, a track leading past the tables, bridges arranged to travel on the track and carrying grinding or polishing mechanism, a return track, means for transferring the bridges from the first named track to the return track and a second series of tables along the return track; substantially as described.

In testimony whereof, I have hereunto set my hand.

FRANK L. O. WADSWORTH.

Witnesses:

JOHN MILLER,

H. M. CORWIN.