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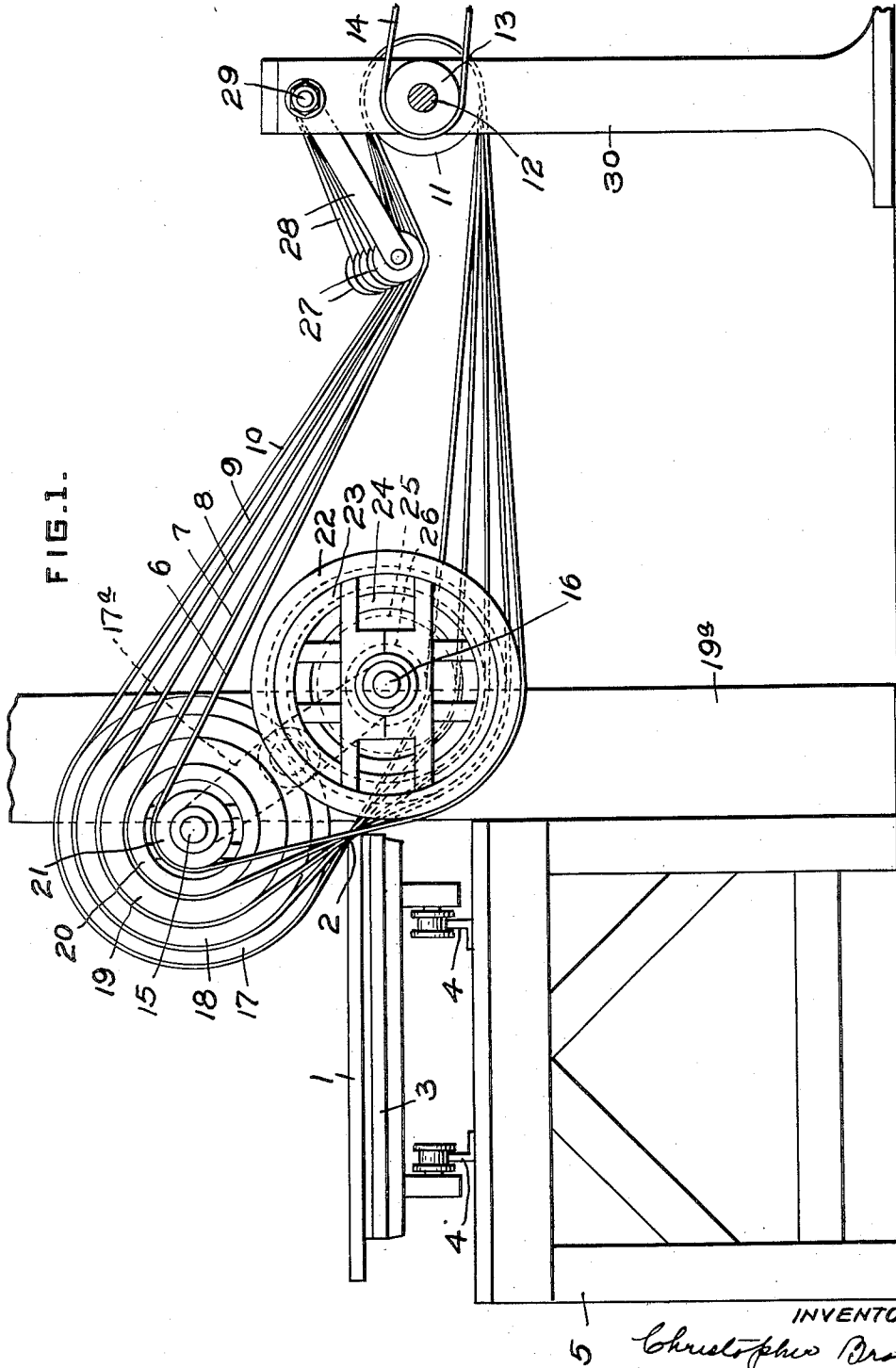
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C. BROWN

CORNER ROUNDING MACHINE

Filed March 18, 1922

2 Sheets-Sheet 1



INVENTOR

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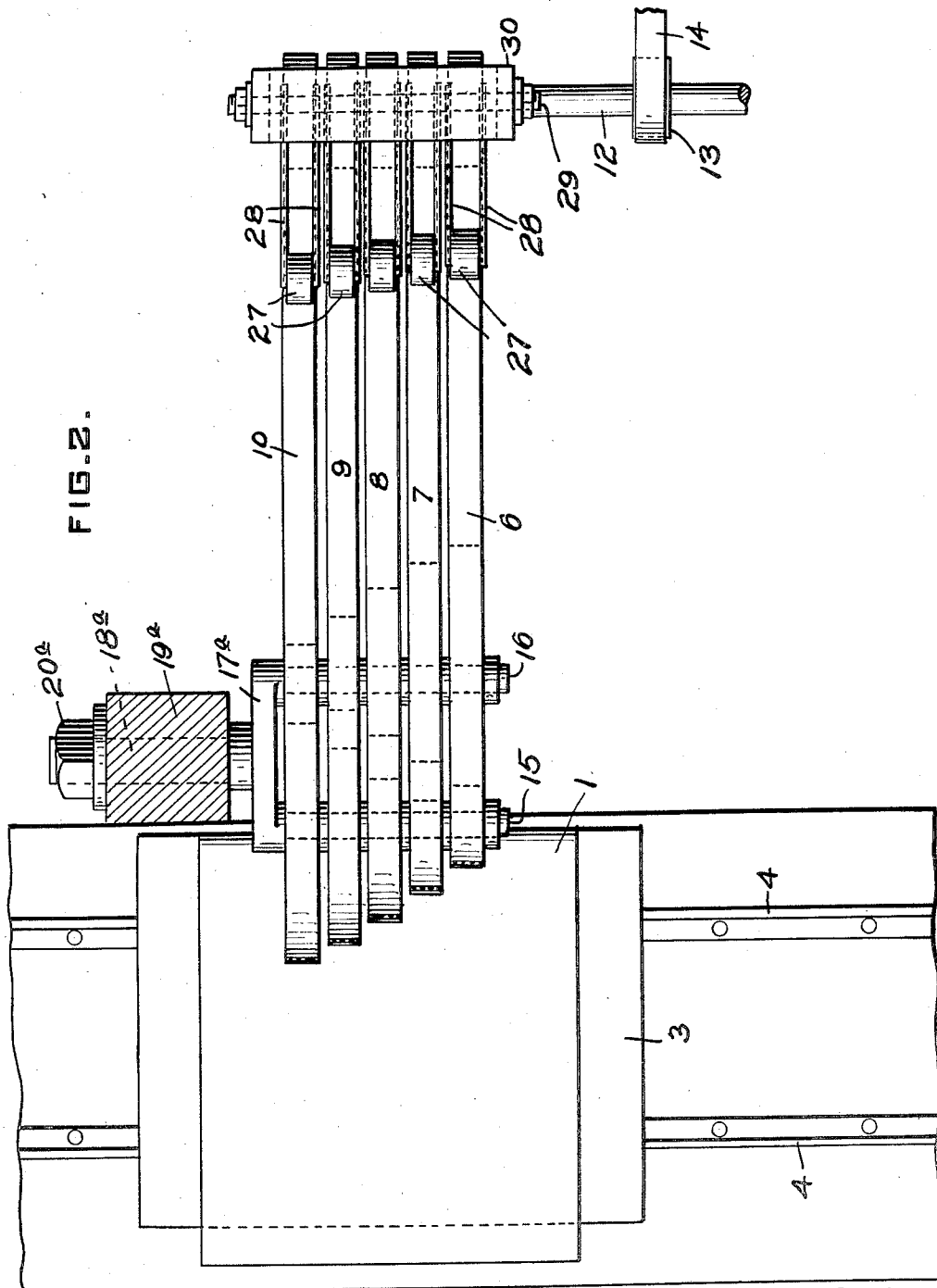
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2 Sheets-Sheet 2

FIG. 2.



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UNITED STATES PATENT OFFICE.

CHRISTOPHER BROWN, OF CHARLEROI, PENNSYLVANIA, ASSIGNOR TO PITTSBURGH
PLATE GLASS COMPANY, A CORPORATION OF PENNSYLVANIA.

CORNER-ROUNDING MACHINE.

Application filed March 18, 1922. Serial No. 544,804.

To all whom it may concern:

Be it known that I, CHRISTOPHER BROWN, a citizen of the United States, and a resident of Charleroi, in the county of Washington and State of Pennsylvania, have made a new and useful invention in Improvements in Corner-Rounding Machines, of which the following is a specification.

The invention relates to a machine for rounding the corners at the edges of plates on sheets of glass, marble, etc. Such rounded corners are required in certain classes of work. The present machine constitutes an improvement over the machine shown in my Patent #1,365,583, issued Jan. 11th, 1921. It involves the use of abrading belts as in the patent referred to, but requires no tilting of the belt or work during its reducing operation as is the case in the machine of my patent. The machine comprises a plurality of belts which are placed at varying angles with respect to the corner to be rounded and with respect to each other. The work is supported upon a table and carried past the plurality of belts, although this arrangement might be reversed and the belts carried along the work. The machine is described as provided with abrading belts to cut away the sharp corners of the glass, marble or other material, but it will be understood that polishing belts might be used in the same way to polish previously rounded edge. One embodiment of the invention is illustrated in the accompanying drawings wherein:

Figure 1 is a side elevation of the machine, and Fig. 2 is a plan view thereof.

Referring to the drawings, 1 is a plate or sheet of glass whose corner 2 is to be rounded by means of the machine. This plate is mounted upon a truck 3 whose wheels are carried by the rails 4. The rails are supported upon a suitable framework 5. The edge rounding device consists of a plurality of endless belts 6, 7, 8, 9 and 10 of leather or fabric, having their outer surfaces coated with suitable abrasive material, such as powdered carborundum or the like. These belts are driven by the series of pulleys 11 keyed to the shaft 12, such shaft carrying another pulley 13 driven by the belt 14 (Fig. 2).

The belts pass around two other sets of pulleys placed adjacent the truck 3, as indicated in Fig. 1, and mounted upon the shafts

15 and 16. The shafts 15 and 16 are carried by a yoke 17^a provided with the shaft portion 18^a which projects through the vertical column 19^a and is secured by means of the nut 20^a. The five pulleys, 17, 18, 19, 20 and 21 carried by the upper shaft 15 are stepped or varied in size as indicated in Fig. 1, while the five pulleys 22, 23, 24, 25 and 26 on the lower shaft 16 are reversely stepped or varied in size, so that the abrasive belts are given different angles of inclination with respect to the corner of the sheet to be rounded. Since the revolutions per minute of the pulleys on the shafts 15 and 16 vary, each pulley is free to rotate independently of the others. The slack in the belts is taken up by means of the rollers 27, each of which is mounted upon a bar 28 pivoted upon the transverse rod 29 carried by the standards 30.

Since the belts each engage the corner of the plate to be rounded at a different angle, their aggregate effect is to produce the desired rounding of the corner. The roughness of the abrasive on the various belts may be the same throughout, but preferably the middle belt 8 is provided with a coarser abrasive than the other belts, which has been found to increase the rapidity of the smoothing operation. In carrying out the operation, the plate 2 is pushed forward on the truck 3 so that the corner to be rounded engages the various belts with the desired amount of pressure, after which the truck is moved back and forth on the rails until the corner of the plate is rounded off. By loosening the nut 20^a the angle of the yoke 17^a, which carries the shafts 15 and 16, may be varied to give a varying rounding effect in case this is desired, but ordinarily, when the proper angle is found this angle is maintained for all classes of work. The invention may be embodied in a wide variety of forms as to the method of mounting the pulleys, the number of belts employed and the variation in angle of the belts with respect to the corner of the plate, the form of mechanism illustrated being one of the simplest available and working satisfactorily in practice to very rapidly round the corners of heavy glass plates, such as carrara employed in table tops and building constructions.

What I claim is:

1. In combination in a corner rounding

machine, a supporting device for a plate whose corner is to be rounded, an abrading device comprising a plurality of pairs of opposing pulleys with a plurality of driven abrasive belt flights side by side crossing said support at different angles intermediate the pulleys of each pair, and means whereby one of said devices may be given a movement in a direction transverse of the flights.

2. In combination in a corner rounding machine, a support for a plate whose corner is to be rounded, an abrading device comprising a plurality of pairs of opposing pulleys carrying a plurality of driven endless abrasive belts arranged side by side across said supporting device at different angles intermediate the pulleys of each pair and means whereby one of said devices may be given a movement in a direction transverse of the belts.

3. In combination in a corner rounding machine, a support for a plate whose corner is to be rounded, a plurality of pairs of opposing pulleys, and a plurality of driven abrasive belt flights side by side crossing said support intermediate the pulleys of each pair at different angles, the said support being mounted for movement transversely of said flights.

4. In combination in a corner rounding machine, a support for a plate whose corner is to be rounded, mounted for movement in a direction longitudinally of said support, and a plurality of driven endless abrasive belts with pulleys therefor arranged side by side crossing said support at different angles intermediate the pulleys.

5. In combination in a corner rounding machine, a support for a plate whose corner is to be rounded, a plurality of pairs of opposing pulleys, a plurality of driven abrasive belt flights side by side crossing said support at different angles, means whereby the angles of all of said belts may be correspondingly shifted at the same time and means whereby said support may be given a relative movement transversely of the flights.

6. In combination in a corner rounding machine, a support for a plate whose corner is to be rounded, two sets of opposing reversely stepped pulleys mounted adjacent said support, another set of pulleys to the rear of said pulleys, a plurality of endless abrading belts extending around the pulleys with the flights between the stepped pulleys crossing at the support, drive means for one set of pulleys, and means whereby said support may be given a relative movement transversely of the belts.

7. In combination in a corner rounding machine, a support for a plate whose corner is to be rounded, two sets of opposing reversely stepped pulleys mounted adjacent said support, another set of pulleys to the rear of said pulleys, a plurality of endless abrading belts extending around the pulleys with the flights between the stepped pulleys crossing at the support, means whereby the axes of the stepped pulleys may be adjusted in and out to vary the angles of all the flights with respect to said corner, and means whereby said support may be given a relative movement transversely of the belts.

8. In combination in a corner rounding machine, a support for a plate whose corner is to be rounded, two sets of opposing reversely stepped pulleys mounted adjacent said support, another set of pulleys to the rear of said pulleys, a plurality of endless abrading belts extending around the pulleys with the flights between the stepped pulleys crossing at the support, a common adjustable support for the axes of both sets of stepped pulleys whereby the axes of both sets of pulleys may be adjusted simultaneously in opposite directions to vary the angles of all the flights with respect to said corner, and means whereby said support may be given a relative movement transversely of the belts.

In testimony whereof, I have hereunto subscribed my name this 24th day of Feb., 1922.

CHRISTOPHER BROWN.