June 19, 1923.

1,459,474

W. J. MacDONALD ET AL

AMUSEMENT APPLIANCE

Filed March 29, 1920

3 Sheets-Sheet 1

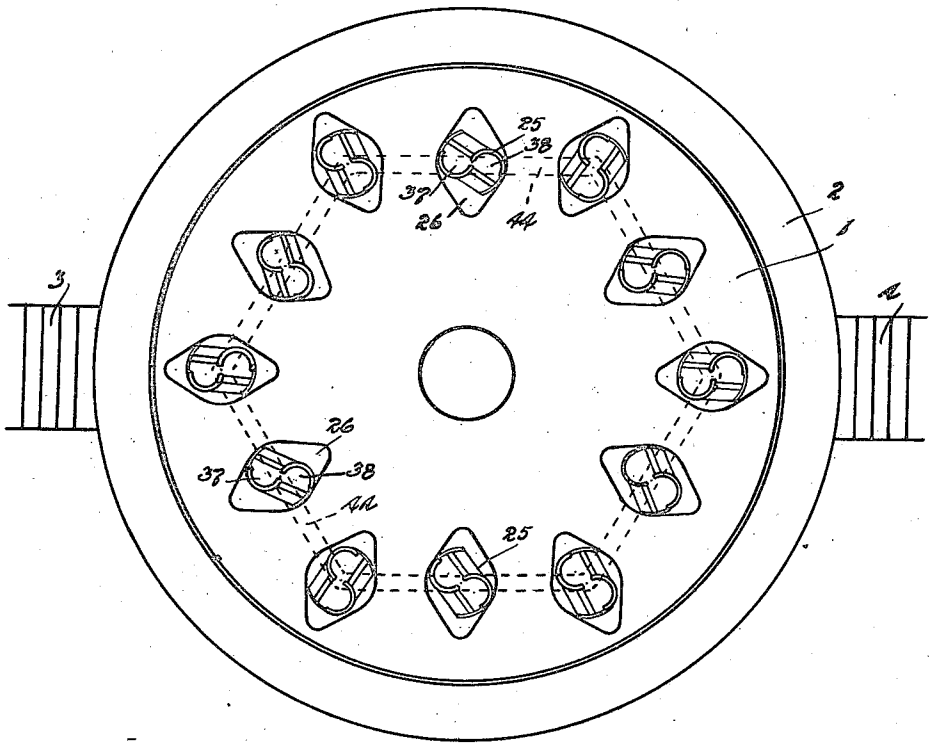

Fig 1

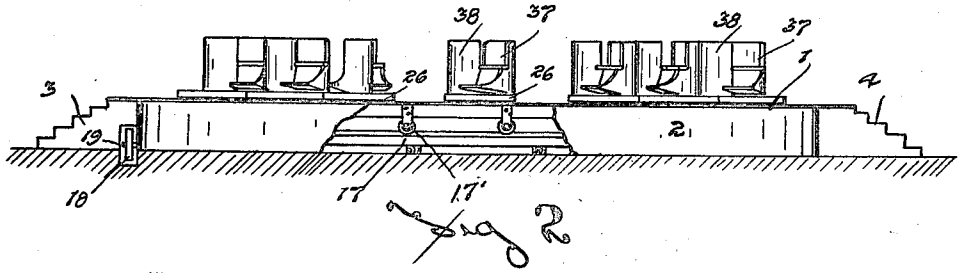

Fig 2

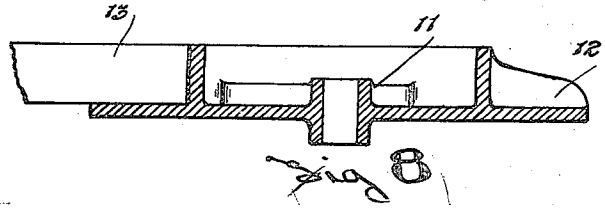

Fig 8

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3 Sheets-Sheet 2

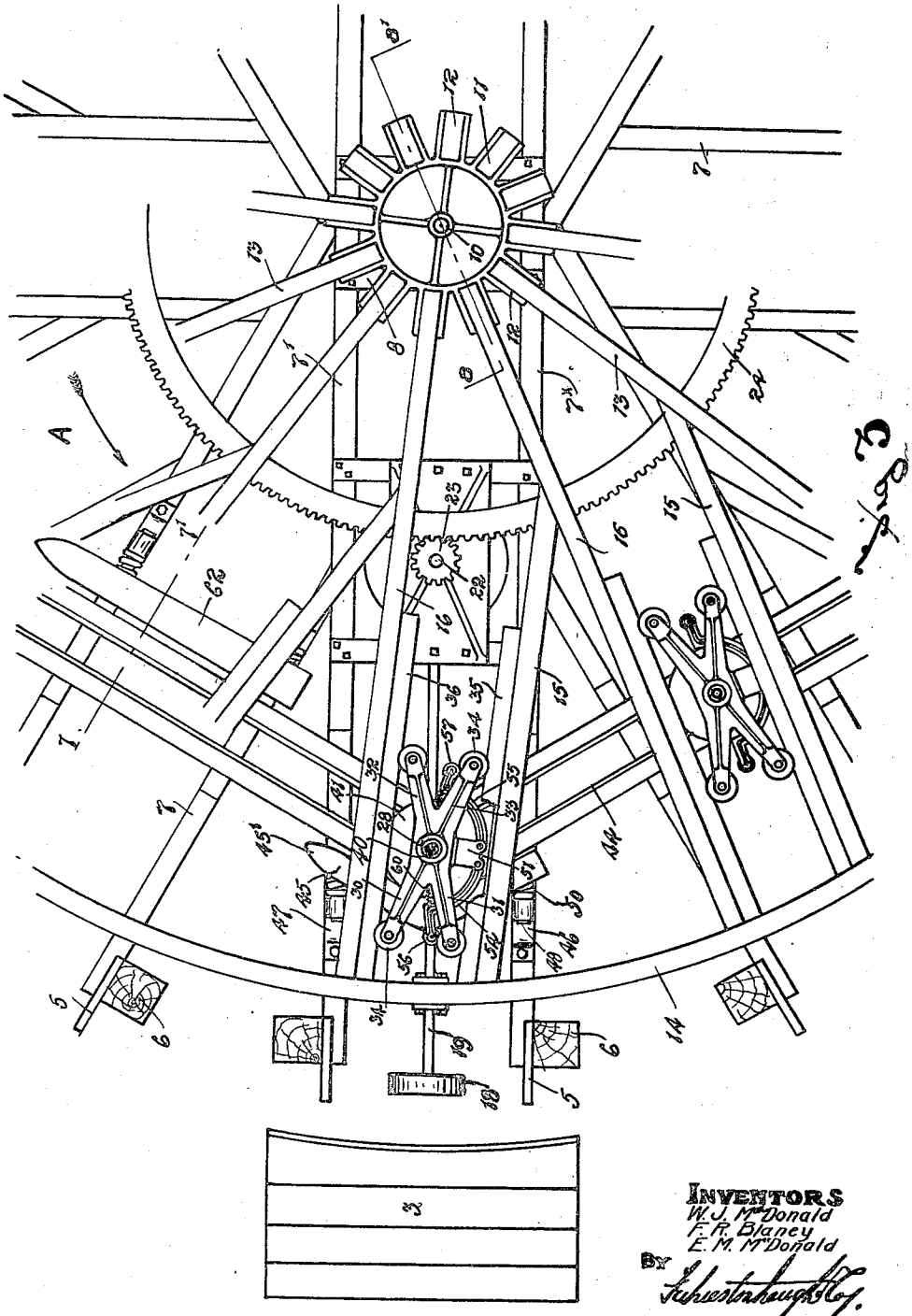

Fig. 2.

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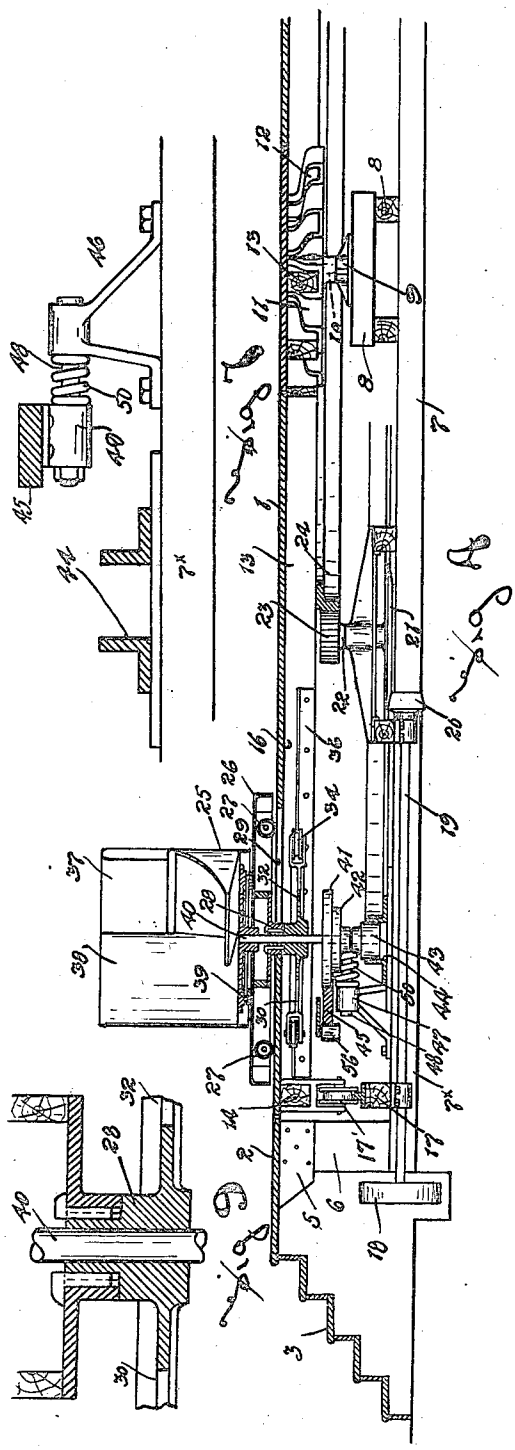
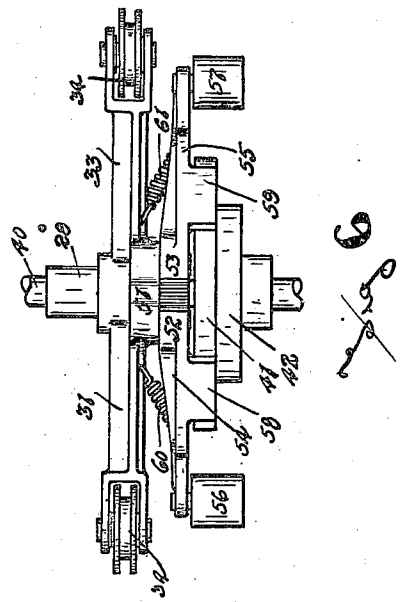
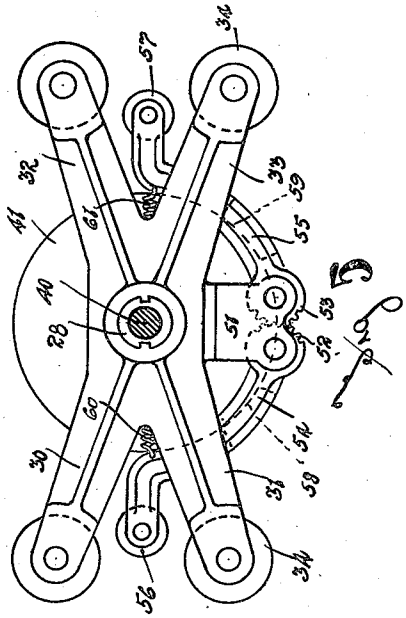
AMUSEMENT APPLIANCE

Filed March 29, 1920

3 Sheets-Sheet 3







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Patented June 19, 1923. 1,459,474

UNITED STATES PATENT OFFICE.

WILFRED JOHN MacDONALD, FRANCIS R. BLANEY, AND EDITH MAY MacDONALD, OF WINNIPEG, MANITOBA, CANADA.

AMUSEMENT APPLIANCE.

Application filed March 29, 1920. Serial No. 369,682.

To all whom it may concern:

Be it known that we, WILFRED JOHN MacDONALD, FRANCIS R. BLANEY, and EDITH MAY MacDONALD, all of the city of Winnipeg, in the Province of Manitoba, Canada, have invented certain new and useful Improvements in Amusement Appliances, of which the following is the specification.

The invention relates to improvements in amusement appliances and particularly to a machine after the type of the merry-go-round, and the principal object of the invention is to provide a driven machine for the amusement of the public which provides a dancing movement, the present machine being what might be termed a waltzing machine as the movement of the couples thereon is in the nature of a waltz.

A further object of the invention is to construct the machine so that a greater or less amount of turn can be had in the chairs and such that the chairs can be rotated at selected times in different directions as desired.

A still further object of the invention is to construct the machine so that it can be readily assembled and such that it is formed from a plurality of duplicated units, thereby not only saving in initial cost of production but also in setting up.

With the above more important and other minor objects in view, which will become more apparent as the description proceeds, the invention consists essentially in a table, and a plurality of moving carriers mounted on the table and designed to receive the public in pairs and, when driven, to move in a fixed path and turn during movement and thereby produce the effect of a dancing action, the parts being arranged and constructed as hereinafter more particularly described and later pointed out in the appended claims, reference being had to the accompanying drawings in which:—

Fig. 1 is a plan view of the amusement appliance.

Fig. 2 is a side view thereof, part being broken away to expose interior construction.

Fig. 3 is an enlarged detailed plan view of part of the under structure of the device.

Fig. 4 is an enlarged detailed vertical sectional view through one side of the appliance.

Fig. 5 is a plan view of the guide rollers and associated parts.

Fig. 6 is a side view of the parts appearing in Figure 5.

Fig. 7 is an enlarged detailed side view of one of the cushioning brackets, the section being taken at 7—7′ Fig. 3.

Fig. 8 is an enlarged detailed vertical sectional view at 8—8′ Fig. 3.

Fig. 9 is an enlarged detailed vertical sectional view through the bearing for the chair spindle.

In the drawings like characters of reference indicate corresponding parts in the several figures.

1 represents a horizontally disposed turntable rotatably mounted as later disclosed within an outer annular platform 2, the platform being stationary and being approached by side steps 3 and 4. The platform is carried by floor beams 5 secured to the upper ends of upright posts 6 located at the outer ends of inwardly extending suitably arranged ground beams 7, it being here noticed that there are a pair of parallel ground beams specially indicated by the reference numerals 7′ and 7× which pass centrally from side to side of the platform.

On the beams 7′ and 7× we mount further beams 8 which provide a slightly elevated support for a fixed bearing 9 which receives rotatably the centre or king pin 10 of the appliance, such being located at the centre of the table and carrying a specially cast head 11 presenting a plurality of pockets 12 which receive and support the inner ends of the table supporting beams 13. The arrangement of the table beam structure is best shown in Fig. 3 where it will be seen that the beams are arranged more or less in a Y-shaped form, the outer ends of the beams being all fastened to an edge beam 14 located immediately underneath the under edge of the table.

Whilst we have described the arrangement of these beams in detail it will be readily understood that we do not wish to be limited to the arrangement shown. As

shown, however, they are best arranged to co-operate with parts later described. By placing the beams in this Y-shaped manner it will be seen that they group themselves in parallel pairs indicated specifically at 15 and 16, the pairs of parallel beams forming guides utilized for controlling the inward or radial movement of the carriers shortly disclosed.

The weight of the outer edge of the table is supported by suitably disposed rollers 17' operating on a track 17 carried by the under stationary beam structure of the appliance and the table is driven by a pulley 18 located at the outer end of a drive shaft 19, the shaft being fitted at the inner end with a bevel pinion 20 which meshes with a bevel gear 21 located at the lower end of a vertically disposed short shaft 22 fitted at the upper end with a driving pinion 23 meshed with a comparatively large driving gear 24 permanently secured to the table and mounted concentric to the pin 10.

On the table we mount a plurality of similar carriers 25 which move with the table and have an independent movement of their own which is controlled from underneath the table. In the present arrangement the carriers take the nature of chairs for the reception of a couple and the complete chair movement is such that it resembles the movement of the dance known as a waltz. As the structure of all the carriers is the same we have only considered it necessary to describe one of them in detail.

26 is a carriage located on the table and carried by rollers 27 operating on the top surface of the table. The carriages are disposed radially of the table and are each permanently connected to a sleeve like bearing 28 which passes through a radially disposed slot 29 formed in the table, the slot allowing for the in and out radial movement of the carriage. The lower end of the sleeve is formed integral with two pairs of extending arms 30, 31, 32 and 33 and the outer ends of the arms carry guide rollers 34, the guide rollers operating on parallel horizontally disposed tracks 35 and 36 in the nature of angle irons permanently secured to the beam structure of the table. 37 and 38 are a pair of oppositely directed seats or chairs arranged side by side and located centrally of the carriage. Roller bearings 39 are disposed between the chairs and the carriage to carry the same and a vertically disposed spindle 40 extends upwardly through the bearing 28 and has the upper end permanently connected to a pair of chairs and the lower end fitted with a pair of friction wheels 41 and 42 and a guiding wheel 43, all of said wheels being permanently secured to the spindle. The guide wheels 43 of all the spindles are received within a guiding channel 44 mounted on the ground beams of the device and this channel can follow any desired shape as suits the whim of the manufacturer.

In the present instance the channel is arranged as best shown in dotted outline in Fig. 1, where it will be observed it presents six angles or turning points and six intervening straight sides.

From the above arrangement it will be apparent that when the table is rotated the carriages will be forced to travel in and out on the table to comply with the direction of travel of the rollers 43 in the channel. This movement is given to produce the effect of the in and out movement as occurs when waltzing. As the wheel 43 of each pair of chairs approaches the angles of the track when travelling we desire to rotate or spin the chairs to produce the reversing action as occurs when waltzing and this is done by friction blocks 45 disposed adjoining the angles of the channel 44 and arranged to frictionally engage one or other of the friction rollers 41 and 42.

The blocks 45 are somewhat of an L-shape and are located to the outer sides of the friction wheels and they are supported by pairs of brackets 46 and 47 permanently mounted on the ground beams. Referring to Figure 7, it will be seen that each bracket carries a spindle 48 received slidably within a bearing strap 49 permanently bolted to the underside of the friction block and that the friction blocks are cushioned by a spiral cushioning spring 50 inserted on the spindle 48 between the bracket and the strap.

Whilst we desire to have these friction blocks at the angles of the channel to effect a rotation of the chairs at these points of travel, still it will be readily understood that friction blocks could be readily introduced at any place to rotate the chairs. If a quick rotation is required the friction blocks are positioned to engage with the smaller pulleys 42 whilst on the other hand if a slower rotation is wished they are positioned to engage with the larger friction wheels 41.

By properly arranging the friction blocks in respect to the channel and friction wheels the chairs will be rotated when the friction wheels in the movement of the table are brought into riding contact with the friction blocks.

In order to positively limit the time of spinning of the chairs we have provided a brake for each pair of chairs, the brake being released during the interval that the friction pulleys are passing the blocks and being operated to automatically stop the rotation of the chairs after they have passed the friction blocks.

51 is a bracket formed integral with the arms 31 and 33 and carrying a pair of piv-

otally mounted partial gears 52 and 53 which are meshed. Arms 54 and 55 extend from the gears and terminate in outwardly extending ends fitted with rollers 56 and 57. The arms 54 and 55 carry brake shoes 58 and 59 which extend downwardly and are directly opposite the periphery of the friction wheels 41. Pressure springs 60 and 61 fastened to the arms act to hold the friction shoes engaged with the friction wheel 41 unless otherwise disturbed.

As the brakes are actually carried by the arms 31 and 33 which of themselves have no rotary movement, it will be obvious that the chairs cannot rotate when the brakes are applied but will be free to rotate as soon as the brakes are released. The release is effected by employing the friction blocks 45, the outer sides of which are adapted to engage the rollers 56 and 57.

If reference be made to Figure 3 and one consider the direction of rotation of the table as indicated by the arrow A, then it will be found that the end of the friction block first engaged is fitted with a tapering nose 45'. This nose is arranged to pick up, so to speak, the friction wheels 41 and 56, the friction wheel 41 passing in and riding the inner side of the friction block, whilst that 56 is drawn out and rides the outer side of the block. The springs 50 assure of a good contact between the friction wheel 41 and the friction block and the action of the block on the pulley 56 is to release the brake shoes from the friction wheel 41 during the interval that the said friction wheel is passing the friction block, thereby allowing the chairs to rotate freely. However, immediately the pulley 56 clears the other end of the friction block the springs 60 and 61 act to draw in the shoes to grab the friction wheel 41 and consequently stop the spinning of the chairs.

In order to show how the chairs can be rotated in either direction as desired we have shown in Fig. 3 a straight friction block 62 located at the inner side of the channel 44 and arranged to engage with the friction wheels and the rollers 57 to rotate the chairs and release and set the brakes. As this friction block is on the opposite side of the channel to the block 45 it will obviously produce an opposite rotation in the friction wheel and consequently spin the chairs in the opposite direction.

When the machine is assembled and operating the couples sit in the chairs and as the table revolves go through the full movement of waltzing which is the movement for which this particular appliance is designed.

We do not, however, wish to be limited to this special movement as by changing the path of travel of the channel and the times at which the chairs are turned various dancing movements can be produced. The brakes are not essential to the machine as the chairs could be allowed to spin until they stopped of themselves. By speeding up or decreasing the spinning of the chairs at different points as the table turns one can cause considerable amusement to the occupants.

What we claim as our invention is:—

1. In an amusement appliance, a driven rotatably mounted table, a plurality of carriers mounted on the table and turning with the same, means for effecting an in and out radial movement of the carriers as they travel with the table, means for rotating the carriers around their vertical axes at the ends of their in and out travel and means for automatically locking the carriers against rotation around their vertical axes during their radial movement.

2. In an amusement appliance, a driven rotatably mounted table, a plurality of carriers mounted on the table and moving therewith, a driving spindle extending downwardly from each carrier and through a radial slot provided in the table, a roller located at the lower end of each spindle, a stationary guiding channel receiving all the rollers and designed to effect an in and out movement of the carriers in respect to the table as they turn with the same and means for effecting an independent rotary movement of the carriers at predetermined points throughout their travel with the table.

3. In an amusement appliance, a driven rotatably mounted table, a plurality of carriages mounted on the table and moving with the same, a sleeve like bearing permanently secured to and extending downwardly from each carriage and through a suitable radial slot provided in the table, means for positively preventing the rotation of the bearing sleeve and for guiding it for radial movement in the direction of the slot, a pair of seats rotatably mounted on each carriage, a vertical spindle permanently secured to each pair of seats and extending downwardly rotatably through the bearing, a guiding wheel secured to the lower end of each spindle, a stationary guiding channel receiving all the wheels, said channel being designed to effect an in and out movement of the carriages in respect to the centre point of the table and as the table rotates and means for rotating the spindles to turn the chairs during predetermined intervals throughout their travel.

4. In an amusement appliance, a driven rotatably mounted table, a plurality of carriages mounted on the table and moving with the same, a sleeve like bearing permanently secured to and extending downwardly from each carriage and through a suitable radial slot provided in the table, means for positively preventing the rotation of the

bearing sleeve and for guiding it for radial movement in the direction of the slot, a pair of seats rotatably mounted on each carriage, a vertical spindle permanently secured to each pair of seats and extending downwardly rotatably through the bearing, a guiding wheel secured to the lower end of each spindle, a stationary guiding channel receiving all the wheels, said channel being designed to effect an in and out movement of the carriages in respect to the centre point of the table and as the table rotates, a friction wheel permanently secured to each spindle and a plurality of friction blocks engageable at predetermined instants with the friction wheels and adapted to rotate the spindles.

5. In an amusement appliance, a driven rotatably mounted table, a plurality of carriages mounted on the table and moving with the same, a sleeve like bearing permanently secured to and extending downwardly from each carriage and through a suitable radial slot provided in the table, means for positively preventing the rotation of the sleeve and for guiding it for radial movement in the direction of the slot, a pair of seats rotatably mounted on each carriage, a vertical spindle permanently secured to each pair of seats and extending downwardly rotatably through the bearing, a guiding wheel secured to the lower end of each spindle, a stationary guiding channel receiving all the wheels, said channel being designed to effect an in and out movement of the carriages in respect to the centre point of the table and as the table rotates, a friction wheel permanently secured to each spindle, a plurality of friction blocks engageable at predetermined instants with the friction wheels and adapted to rotate the spindles and a friction brake associated with each friction wheel and automatically controlled so that it is clear of the wheel during the interval that the wheel is engaged with the block and is released to engage the wheel as the wheel disengages the block.

Signed at Winnipeg, this 28th day of February, 1920.

WILFRED JOHN MACDONALD.
FRANCIS R. BLANEY.
EDITH MAY MACDONALD.

In the presence of—
G. S. ROXBAUGH,
K. B. WAKEFIELD.