Jan. 15, 1924. 1,480,833

P. J. NEILON

SKIPPING MACHINE

Filed May 6, 1922 2 Sheets-Sheet 1

Fig. 1.

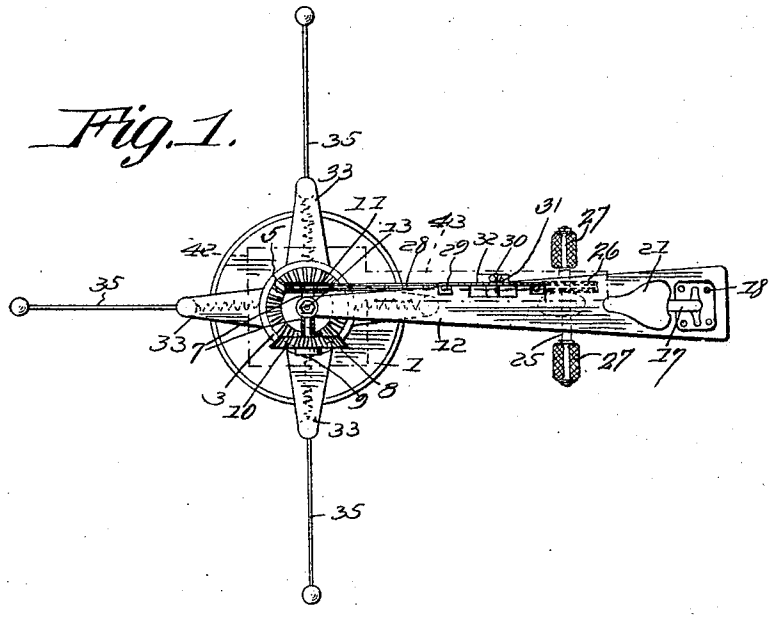


Fig. 2.

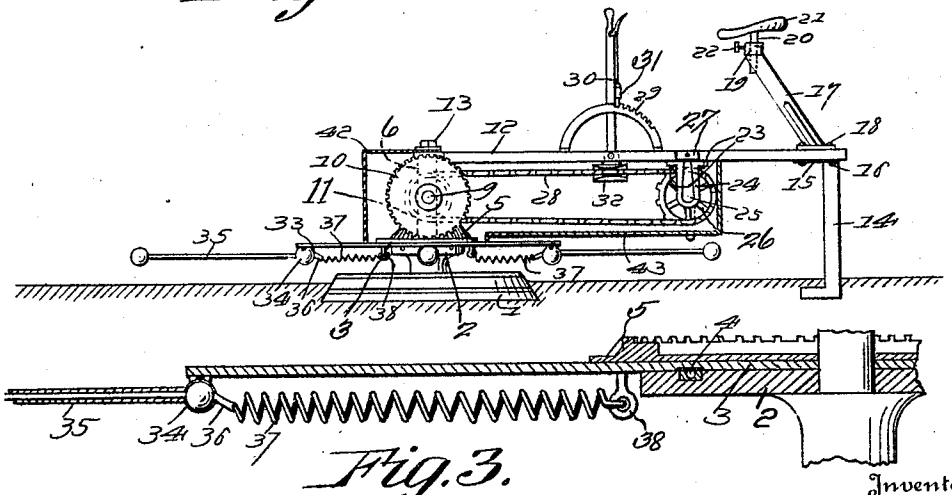


Fig. 3.

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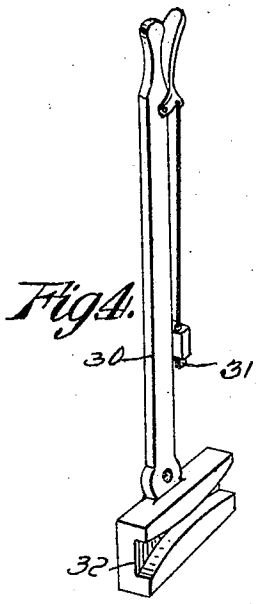


Fig. 4.

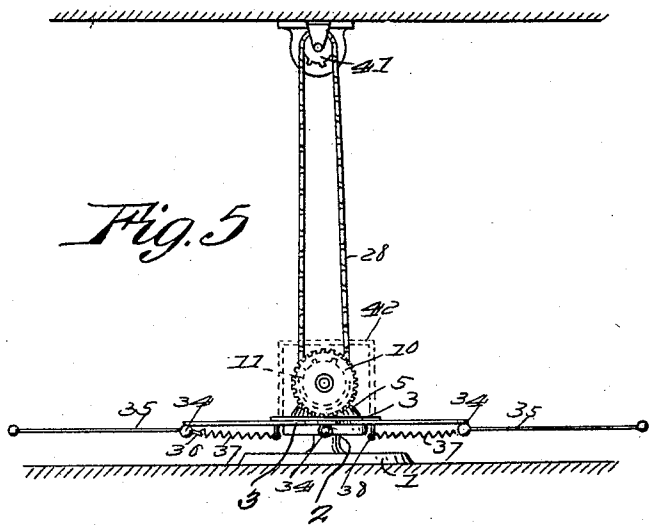


Fig. 5.



Fig. 6.

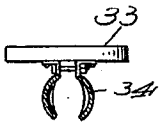


Fig. 7.

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Patented Jan. 15, 1924. 1,480,833

UNITED STATES PATENT OFFICE.

PATRICK J. NEILON, OF CLEVELAND, OHIO.

SKIPPING MACHINE.

Application filed May 6, 1922. Serial No. 558,954.

To all whom it may concern:

Be it known that I, PATRICK J. NEILON, a subject of the King of England, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Skipping Machines, of which the following is a specification, reference being had to the accompanying drawings.

The present invention has for its purpose the provision of a machine of this character, especially adapted for use at playgrounds, places of amusements or resorts, or may be used in gymnasiums for exercising purposes.

Another purpose is to provide a machine of this kind, wherein a revoluble table is mounted upon the base, and rotated by any suitable means, and provided with arms, over which persons may jump or skip as the table rotates, for exercising the body, causing circulation of the blood, and also exercising the muscles of the legs.

A still further purpose is the provision of a skipping machine, wherein the arms over which the person skips or jumps as the table rotates, are yieldably mounted, so that in case the arms are struck by the person's foot, the arms will give, and then automatically return to their initial positions, radially from the table.

Still a further purpose is the provision of manually operated means for rotating the table, in combination with a brake mechanism, for preventing the machine from operating too rapidly, in case those who are skipping over the arms are not as agile and as quick as others. In other words the machine may be controlled according to the rapidity of the jumping action of those who are exercising with the machine.

It is to be understood that the particulars herein given are in no way limitative and that while still keeping within the scope of the invention, any desired modifications of detail and desired proportions may be made in the apparatus according to circumstances.

The invention comprises further features and combination of parts, as will be hereinafter set forth, shown in the drawings and claimed.

In the drawings:—

Figure 1 is a plan view of the improved skipping machine constructed in accordance with the invention;

Figure 2 is a side elevation of the same, showing more clearly the operating means for rotating the table;

Figure 3 is a sectional view through the base, turn-table and through the ball or universal joints, which connect the yieldable arms to the rigid arms of the turntable;

Figure 4 is a detail view of the brake, showing how it is constructed, in order to operate upon the sprocket chain for braking the machine;

Figure 5 is a view of a modified form of the skipping machine showing the same connected to a motor of a sprocket chain, the motor being mounted on the ceiling;

Figure 6 is a view of a further modified form of the skipping machine in side elevation, showing the same connected up with a motor, which may be suspended from the ceiling of a room;

Figure 7 is a detail sectional view of the outer casing of the universal joint 34.

Referring to the drawings, 1 designates a base which is relatively flat, and may be any size and diameter, and square, rectangular or otherwise shaped. This platform or base may be constructed of any suitable material, either wood, metal or concrete. Preferably the base or platform has a beveled edge, and may be sunk into the ground. It may be made of metal and may be sunk in a concrete flooring.

Rising from the base is a stationary pedestal 2, upon which a revoluble table 3 is rotatably mounted, there being ball bearings 4 between the circular top of the pedestal and the table, in order to permit the table to rotate freely. Movable with the revoluble table is a bevel gear 5, there being a suitable standard or support 6 passing through the bevel gear and through the table, and connected to the pedestal. This support 6 is provided with lateral bearings 7 which have a bore 8 extending therethrough, for the reception of the shaft 9. On one end of the shaft 9 a bevel gear 10 is fast therewith, while a sprocket wheel 11 is fast to the opposite end. The upper end of the support 6 is reduced and engages through a platform 12, there being a nut 13 for holding the reduced portions of the support in position. The platform at its other end is supported by a leg 14. The foot of the leg is sunk into the ground or concrete base, in order to insure rigidity. The up-

per end of the leg has a reinforced plate 15, which is secured by screws 16 to the platform. A seat support 17 has its base secured by screws 18 on the platform, and the upper end of the seat support has a suitable socket 19 for the reception of the stem 20 of a suitable seat 21. This stem 20 may be any convenient length, in order to permit the seat to be adjusted vertically. The stem is rectangular in cross section, to prevent the seat from turning, and may be held in different adjusted positions, by means of a set screw 22, which passes through the wall of the socket and bears against the stem. The seat support inclines upwardly and toward the inner end of the platform so as to support the operator in a convenient position for actuating the pedals of the driving means.

Depending from the platfrom and secured thereto by screws 23 is a bracket 24, in a bearing at the lower end of which a crank shaft 25 is mounted. This crank shaft also carries a sprocket 26, and the lateral arms of the cranks carry suitable pedals 27, which may be engaged by the feet of an operator, who may occupy the seat 21, in order to impart movement to the crank shaft. The sprocket is engaged with by a sprocket chain 28, which in turn passes about the sprocket 11. Obviously, when movement is imparted to the crank shaft 25, movement in turn will be imparted to the shaft carying the sprocket 11 and the bevel gear 10, the latter of which will rotate the bevel gear 5 and impart revoluble movement to the rotating table.

A suitable arcuate rack 29 is mounted upon the platform, and pivotally mounted on the side of the platform is a lever 30 carrying a suitable hand gripped operated dog 31, for cooperating with the teeth of the rack to hold the lever 30 in different positions. The lower end of the lever 30 carries a conventional form of brake 32, which engages with the chain 28, for retarding or braking its action, so that the table may be rotated according to the speed with which the party who is using the machine displays when skipping.

The table is provided with a plurality of radial arms 33, to the terminals of which by means of universal or ball joints 34 arms 35 are connected. The rear ends of the arms 35 have extensions 36, the ends of which are connected by tensioned coil springs 37. These coil springs are arranged radially, and are in turn connected at 38 to the table, and act to hold the arms 35 (the extreme outer ends of which have spherical knobs) radially and substantially in alignment with the arms 33. Obviously when a person is jumping or skipping over the arms 35, they will yield and resume their normal positions, in case they are struck by the feet or legs of the person skipping.

In case the machine is installed in a building, such as a gymnasium, the sprocket chain and the sprockets 26 and 11 may be dispensed with, and in lieu thereof a drive shaft may extend from the center of the bevel gear 5 to the ceiling, and be operatively connected to a suitable motor, which may receive its power from any suitable source. The motor 39 may be of the usual type, and in some cases the shaft 40 which is connected to the motor may be dispensed with, and instead the sprocket chain 28 may be connected to the sprocket 11 and a sprocket 41 carried by the motor.

The various gears and sprockets may be suitably housed, by means of boxings 42 and 43.

The radial rods 35 which are connected to the arms 33 by the universal joints 34, are covered with rubber, in order to prevent injury to the shins or the feet of those skipping over the rods.

The invention having been set forth, what is claimed is:—

1. In a skipping machine, a revoluble table, a supporting base therefor, arms universally connected to outer portions of the table, and yieldable resilient means for normally holding the arms radially positioned and constructed to permit the arms to yield in all directions, in case the arms are struck by the person skipping over the arms.

2. In a skipping machine, a revoluble table, a supporting base therefor, radial arms connected to the outer portions of the table universally, and resilient yieldable means for holding said arms normally in horizontal and radial positions.

3. In a skipping machine, a revoluble table provided with radial arms, a supporting base therefor, additional radial arms universally connected to the outer ends of the first arms, and means yieldably connecting the inner ends of the second arms and a portion of the table, for yieldably supporting the second arms in horizontal and radial positions, close to the ground, whereby persons may jump thereover as the table rotates, and means for rotating the table and including brake means for retarding the action of the revoluble table.

4. In a skipping machine, a revoluble table, a supporting base therefor, radial arms connected to the outer portions of the table universally, means for holding said arms yieldably in horizontal and radial positions, said holding means being yieldable and resilient to return the arms to their initial positions should they be struck, and means for rotating the table and including a device for retarding or braking the action of the table.

5. In a skipping machine, a revoluble member, a support therefor, an arm connected to the revoluble member for lateral

swinging movement relative thereto, and resilient yieldable means for normally holding said arm radially positioned relative to the revoluble member.

6. In a skipping machine, a revoluble member, a support therefor, an arm connected to the revoluble member for lateral swinging movement relative thereto, resilient yieldable means for normally holding said arm radially positioned relative to the revoluble member, an operating shaft, operative connections between the operating shaft and the revoluble member including a sprocket gearing, and braking means associated with said gearing for controlling the rotation of the revoluble member.

In testimony whereof I hereunto affix my signature.

PATRICK J. NEILON.