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Alvares

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[54] **HOCKEY PUCK PASSER**

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[52] **U.S. Cl.** ..... **124/16,** 273/1 B, 273/129, 124/36

[51] **Int. Cl.** **A63b 71/00**

[58] **Field of Search** ..... 273/129, 26 P, 30, 1 B, 273/105.4; 124/6, 7, 8, 16, 42, 17, 21, 36, 41, 49, 26, 49

[56] **References Cited**

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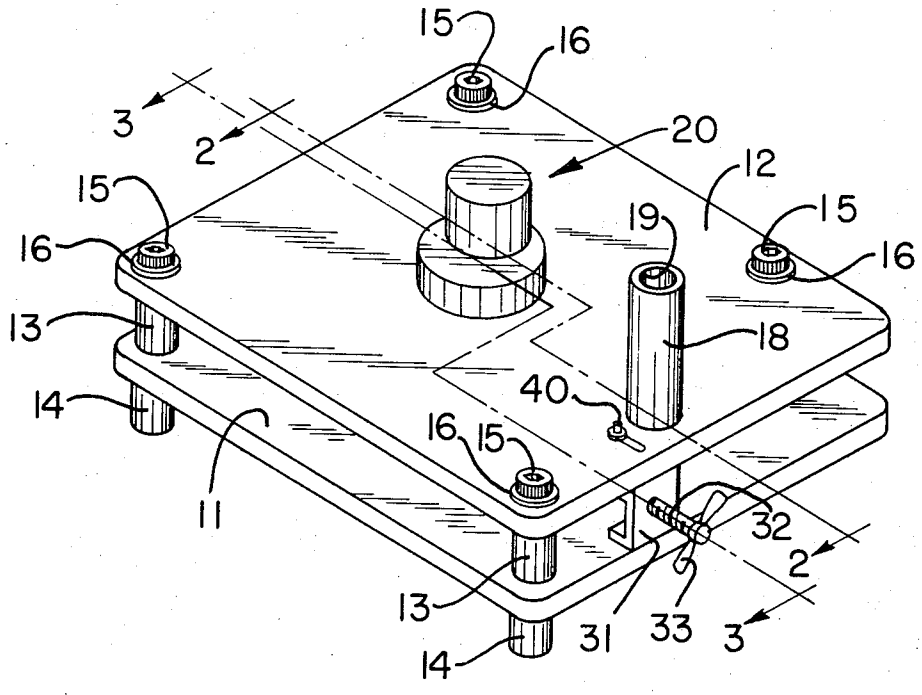
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Assistant Examiner—Theatrice Brown
Attorney, Agent, or Firm—William Frederick Werner

[57] **ABSTRACT**

This specification discloses a machine for automatically shooting or propelling a hockey puck. The machine includes apparatus for automatically issuing a hockey puck from a hopper. The puck is then dropped onto a platform in the path of a motor drive energy storing spring which propells the puck in a desired direction. The energy storing spring is provided with two separate structures for adjusting the spring energy. The two separate structures for adjusting the energy in the spring are a pair of screws inserted in a pair of elongated slots at one end of the spring for adjustably attaching the spring to the motor drive shaft and a block pin adjustably positioned such that the other end of the spring will be deflected upon contact with the block pin once during each revolution of the spring.

2 Claims, 4 Drawing Figures



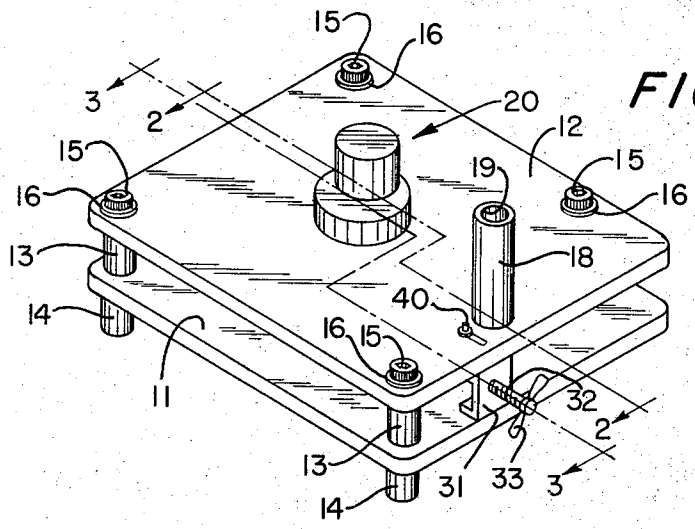


FIG. 1

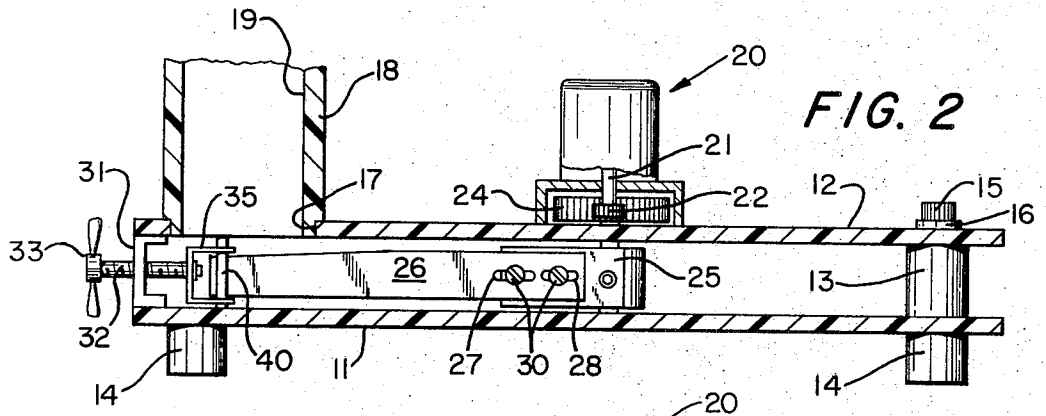


FIG. 2

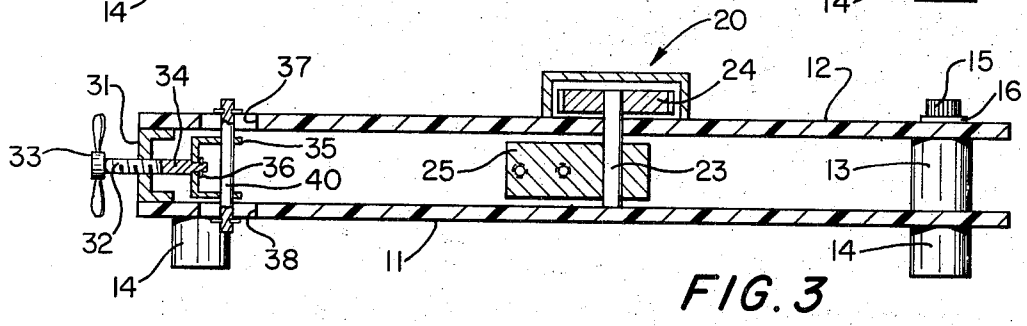


FIG. 3

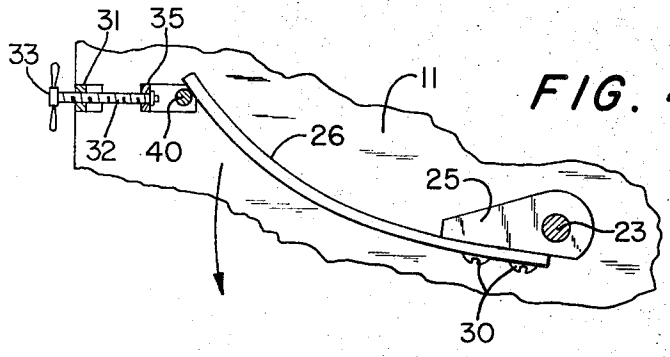


FIG. 4

HOCKEY PUCK PASSER

The present invention relates to a hockey puck passer and more particularly to a portable machine wherein hockey pucks are stored in a hopper with the lower most puck resting upon a platform. A motor with an energy storing spring adjustably attached to the motor shaft, rotates the spring into energy storing position, whereby upon release the spring strikes to propell a puck in a desired direction and at a desired rate of speed.

An object of the present invention is to provide a portable hockey puck passer, inexpensive to manufacture, free of maintenance costs, and adjustable as to the speed at which a puck passes from the machine.

Another object of the present invention is to provide a portable hockey puck passer with an energy stored leaf spring and dual means for adjusting the energy storing capacity of the spring.

Other objects of the present invention will become apparent in part and be pointed out in part in the following specification and claims.

Other objects of the present invention will become apparent in part and be pointed out in part in the following specification and claims.

Referring to the drawings in which similar characters of reference indicate corresponding parts in all the figures:

FIG. **1** is a perspective view of the new and improved hockey puck passer.

FIG. **2** is a vertical cross sectional view, taken on line **2—2** of FIG. **1.**

FIG. **3** is a vertical cross sectional view, taken on line **3—3** of FIG. **1.**

FIG. **4** is a fragmentary plan view, showing the energy storing leaf spring in loaded position.

In proceeding with this invention reference is directed to the drawings, wherein a base platform is indicated by reference numeral **11.** A top plate **12** is held in spaced relation to base platform **11** by means of collars **13.** Feet **14** underlie base platform **11.** Screws **15** hold washers **16** against top plate **12,** pass through collars **13** and fasten in feet **14,** thereby to secure base platform **11** to top plate **12** with the space therebetween slightly greater than the thickness of a hockey puck or other pellet which might be propelled from base platform **11.**

Top plate **12** is provided with an orifice **17.** A magazine or hopper **18** having an inside diameter **19** slightly larger than the outside diameter of the hockey puck or other pellet stored therein for gravity feed, is fastened to top plate **12** in alignment with orifice **17.**

An electric motor, generally indicated by reference numeral **20,** is provided with a drive shaft **21** having a pinion gear **22** fastened thereon. Motor **20** is fastened to top plate **12.** A driven shaft **23** rotatably supported in top plate **12** is provided with a driven gear **24,** rotatably engaged with said pinion **22,** on one end. A bracket **25** is fastened to the other end of driven shaft **23.** An energy storing leaf spring **26,** provided with two elongated slots **27, 28** is fastened to bracket **25** by means of screws **30.** Thereby to adjustably secure spring **26** to bracket **25.**

A flange **31** is fastened to top plate **12** and base platform **11.** A stem **34** provided with screw threads **32** is rotatably supported in flange **31.** A handle **33** is fastened on one end of stem **34.** A U-shaped fixture **35** is fastened to stem **34** by means of a cotter pin **36.**

Top plate **12** is provided with an elongated slot **37.** Base platform **11** is provided with an elongated slot **38** aligned with elongated slot **37.** A block pin **40** is fastened in fixture **35** and is slidably guided in elongated slots **37, 38.** Block pin **40** is located in the rotating path of energy storing leaf spring **26.**

In operation, electric motor **20** through drive shaft **21,** pinion gear **22,** driven gear **24,** driven shaft **23** and bracket **25** will rotate energy storing leaf spring **26** through repeated 360° cycles.

However, block pin **40** provides a barrier to the free rotation of spring **26.** Motor **20** will force leaf spring **26** against block pin **40** where the outer end of leaf spring **26** will be momentarily held against rotation. As motor **20** continues to rotate leaf spring **26,** said spring flexes (see FIG. **4**) thereby storing up energy and simultaneously slidably receeding away from block pin **40.** When the maximum energy is stored in leaf spring **26** as dictated by the length of leaf spring **26,** the energy in spring **26** is released in a whipping action. A hockey puck or other pellet lying in the path of the whipping spring **26** will be propelled across base platform **11** and beyond the confines of base platform **11.** Before the 360° cycle of leaf spring **26** is completed, a hockey puck or other pellet stored in hopper **18** will be dropped by the forces of gravity upon base platform **11** in alignment with the rotating leaf spring **26,** whereby the whipping action cycle of leaf spring **26** is repeated.

Rotation of stem **34** moves block pin **40** toward and away from driven shaft **23** and thereby the relative position of block pin **40** to the length of the degree of energy stored in leaf spring **26** is determined. The relative position of leaf spring **26** to bracket **25** through elongated slots **27, 28** also determines the degree of energy stored in leaf spring **26.**

Having shown and described a preferred embodiment of the present invention, by way of example, it should be realized that structural changes could be made and other examples given without departing from either the spirit or scope of this invention.

I claim:

1. A hockey puck passer comprising a base platform having an elongated slot, a top plate having an elongated slot aligned with the elongated slot in said base platform, means supporting said top plate in selected spaced relation to said base platform, drive means including a driven shaft rotatably supported in said top plate, a bracket fastened to said driven shaft to provide a continuing cycle of rotation, an energy storing leaf spring, means adjustably fastening said leaf spring to said bracket, whereby said drive means through said driven shaft rotates said bracket and said energy storing leaf spring in a continous cycle of rotation, a block pin, means adjustably fastening said block pin for movement and support in said elongated slots in alignment with the rotatable path of said energy storing leaf spring, hopper means fastened to said top plate, whereby hockey pucks gravity fed find support upon said base platform in the rotatable path of said leaf spring to be successively engaged in each cycle of rotation by said leaf spring, said block pin blocking the path of free rotation of said leaf spring to thereby store energy in said leaf spring, said energy being released upon the continued rotation of said leaf spring.

2. A hockey puck passer comprising a base platform, a top plate, means supporting said top plate in selected spaced relation to said base platform, drive means including a driven shaft rotatably supported in said top plate, a bracket fastened to said driven shaft, an energy storing leaf spring, means adjustably fastening said leaf spring to said bracket, whereby said drive means through said driven shaft rotates said bracket and said energy storing leaf spring in a continuous cycle of rotation, a block pin, (said means adjustably fastening said block pin in said top plate and said base plate comprises) a flange fastened to said top plate and said base platform, a stem having screw threads, means rotatably supporting said stem in said flange, a "U" shaped fixture, means fastening said fixture to said stem, and means fastening said block pin in said fixture whereby said stem adjustably positions said block pin in alignment with the rotatable path of said energy storing leaf spring, hopper means fastened to said top plate, whereby hockey pucks gravity fed find support upon said base platform in the rotatable path of said leaf spring to be successively engaged in each cycle of rotation by said leaf spring, said block pin blocking the path of free rotation of said leaf spring to thereby store energy in said leaf spring, said energy being released upon the continued rotation of said leaf spring.

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