Oct. 1, 1940. R. SMYTHE 2,216,656

TOY

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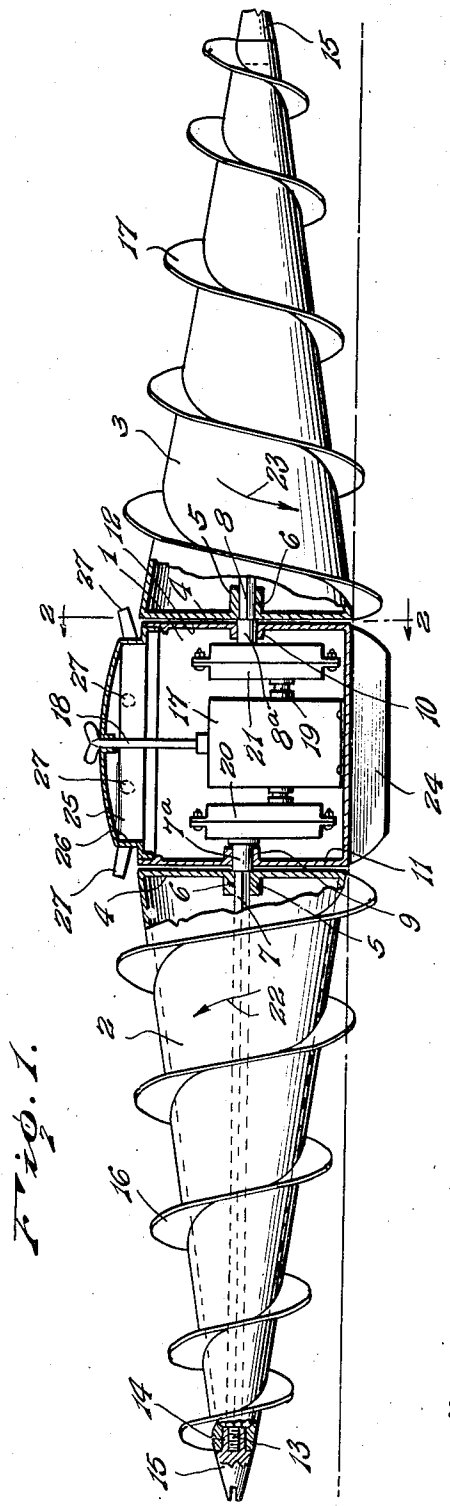


Fig. 1.

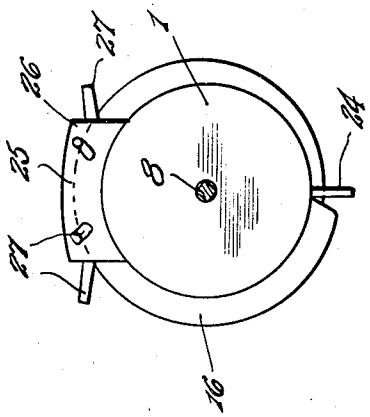


Fig. 2.

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2,216,656

TOY

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Application December 2, 1938, Serial No. 243,648

1 Claim. (Cl. 46—219)

This invention relates to toys and more particularly to a toy vehicle representing a war machine or "tank," it being one object of the invention to provide a toy adapted to be used by small children in sand boxes or upon sandy beaches.

Another object of the invention is to provide a toy wherein there has been provided a central motor compartment and tractor members projecting forwardly and rearwardly from the motor compartment or body portion of the vehicle, the tractors being of such construction that, when the toy is placed upon sand and the tractors set in operation, they will propel the toy forwardly by engagement of the tractors with the sand.

It is another object of the invention to provide the toy with tractors which are of conical formation and carry spirally extending blades for engaging sand and propelling the toy forwardly.

Another object of the invention is to so form the tractors that they will not only propel the toy forwardly along sand but also cause the toy to bore its way through piled up sand if such an obstruction is erected in the path of the moving toy.

Another object of the invention is to so form the motor housing or body portion of the toy and the conical tractors that, although the toy may tunnel its way through sand, the sand will be prevented from having access to the interior of the motor housing or conical tractors. It will thus be seen that the sand will be prevented from clogging the interior of the motor housing or the conical tractors and interfering with operation of the motor or adding undesired weight to the conical tractors.

Another object of the invention is to provide the motor housing or body of the toy with means for guiding forward movement of the toy along or through the sand.

The invention is illustrated in the accompanying drawing, wherein:

Figure 1 is a view showing the improved toy partially in side elevation and partially in vertical section, and

Figure 2 is a sectional view taken along the line 2—2 of Figure 1.

This improved toy has an intermediate section or body 1 constituting a motor housing and end sections or front and rear tractors 2 and 3 which are of conical formation and project from front and rear ends of the motor housing or body 1, as shown in Figure 1. Each of the tractors is of hollow conical formation and provided at its inner end with an end wall 4 at the center of which is an inwardly extending boss or block 5 bored longitudinally, as shown at 6. These bores are rectangular in cross section and through them extend the front and rear shafts 7 and 8 which are square in cross section, as shown in Figure 2, throughout practically their entire length but have their inner end portions 7^a and 8^a circular in cross section and journaled through bearings 9 and 10 formed centrally of the front and rear walls 11 and 12 of the motor housing or body 1. The outer end of each of the shafts 7 and 8 is formed with a threaded end portion 13 for engaging in the internally threaded shank 14 of a screw 15, as shown at the left-hand end of Figure 1, and referring thereto, it will be seen that, when the conical tractor is slid longitudinally into place about the shaft carrying the same, the screw may be applied and when it is screwed tightly upon the threaded end portion of the shaft, the conical tractor will be firmly held in place and caused to turn with the shaft. Blades 16 and 17 extend spirally about the conical tractors from their inner ends to their outer ends, and when these tractors are turned, the spirally extending blades will have such engagement with the sand upon which the toy is placed that the toy will be propelled forwardly. The blades extend spirally about the conical tractors in opposite directions and as the tractors are turned in opposite directions their blades may both have good gripping engagement with the sand and very effectively propel the toy forwardly.

In order to rotate the two shafts, there has been provided a motor which is mounted in the motor housing or body 1. This motor is of a conventional construction and may be a spring motor wound through the medium of a key 18 or in any other desired manner. The shaft 19 of the motor extends longitudinally of the toy with its end portions projecting forwardly and rearwardly from the motor casing and into gear housings 20 and 21. The inner ends of the two shafts 7 and 8 also extend into the gear housings 20 and 21 and conventional gearing is provided in the housings to cause rotary motion to be transmitted to the two shafts and cause one shaft to turn in a clockwise direction and the other in a counter-clockwise direction, as indicated by the arrows 22 and 23. While it has been stated that a single motor is mounted within the motor housing or body 1, it will be understood that separate motors may be employed for driving the two shafts in opposite directions and that instead of winding the motor through the medium of a key 18, this may be accomplished by grasping the two tractors and turning them in opposite directions to effect

winding of the motor. A fin **24**, which extends longitudinally of the body or motor housing, is carried by the bottom of the motor housing or body, and since the lower portion of this fin will become embedded in the sand, it will serve as a rudder to guide forward movement of the toy and cause it to progress forwardly in a straight line. While a single fin has been shown, it will be obvious that additional fins may be provided if so desired and spaced from each other transversely of the body. A hood **25** serves as a top for the motor housing and is formed with a marginal wall **26** from which extend members **27** representing machine guns. It will thus be seen that the toy will present a realistic representation of a war tank which, when in use, will propel itself forwardly along the sand. If sand is piled in front of the toy, the front tractor upon encountering the piled up sand will bore its way through the sand instead of moving over it and the entire toy will pass through the sand similar to the manner in which a mole digs its way through the ground.

Having thus described the invention, what is claimed as new is:

A toy of the character described comprising a housing, shafts journaled through end walls of said housing and projecting from front and rear ends of the housing, a conical propeller body fitting about each shaft and having an end wall at its inner end of a diameter substantially corresponding to the size of the housing, the end wall of each propeller body being formed with an inwardly extending boss to snugly receive the shaft about which it fits and cause rotation of the propeller body with the shaft, securing caps in threaded engagement with outer end portions of said shafts having heads at their outer ends engaging apices of the propeller bodies to hold the propeller bodies upon the shaft, said heads being tapered toward their outer ends to form penetrating tips for the propeller bodies, a traction blade extending spirally about each propeller body, means in said housing for imparting rotary motion to said shafts in opposite directions, and a fin extending longitudinally of said housing and projecting downwardly from the bottom thereof for guiding movement of the toy when the propellers are in operation.

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