The object of this invention is to provide improvements in toy vehicles, and particularly in that type which is automatically propelled along a surface upon being released after winding certain elastic means by manually propelling it in reverse direction upon said surface.

Another object has been to construct a toy of this character in which the movement of the toy when released creates a sound which is similar to and represents the familiar sound given off by an automobile when the muffler is cut out, as well as reproducing the familiar sound of a pneumatic horn, commonly referred to as “honk, honk”.

A further object is to so construct the toy that the propulsion of it when released is caused by the unwinding of a rubber band, or similar element, which at one end is readily attached to or disconnected from a relatively fixed portion of the article, while its opposite end portion is secured to a hook carried by or forming a part of the driving axle, and from which said band or the like is readily disengageable when desired, but which hook to all intents and purposes forms a normally permanent connection between the band and the axle.

Still another object is to provide the driving axle with one or more collars to prevent the elastic or the like from entering and entangling with the bearings of said axle, a collar comprising a toothed gear or ratchet which is engaged by a resilient member secured at its opposite end to the body of the vehicle, so that vibrations set up in said member through rotation of said toothed collar are communicated to said body and thereby amplified so as to create an easily audible vibratory sound.

With these and other objects in mind the present invention comprises further details of construction and operation which are fully brought out in the following description when read in conjunction with the accompanying drawings in which Fig. 1 is a longitudinal vertical section of a toy vehicle comprising one embodiment of the invention; and Fig. 2 is a bottom plan view of the same.

Referring to the drawings, a vehicle is illustrated as representing any well-known type of automobile, but may instead represent any other form of vehicle desired. Being a toy, it is preferably made in the form of a shell, substantially as shown in Figs. 1 and 2, said shell comprising a top wall 1 which has a forward wall 2 and oppositely positioned side walls 3. Rotatably mounted upon the outer side of each of the side walls and the forward portion thereof is a wheel 4, surrounded by a tire 5, in order to prevent these forward wheels from skidding laterally as the vehicle is propelled rapidly forward over a given surface.

Extending forwardly from the lower portion of the forward wall 2 is a lug 6, representing the well-known connection provided for attachment of a crank, which in a genuine automobile serves the purpose of manually starting the engine when such is necessary. This lug may comprise the head of a screw or pin, the opposite end of which extends inwardly through the front wall and provides a hook 7 adapted to normally and detachably receive one looped end portion of a rubber band or other suitable form of elastic 8, the opposite end of which elastic detachably engages a hook 9, which is formed in any suitable manner as by under-cutting one side of the central portion of the combined rear axle and driving shaft 10, and thus provides a hook which extends parallel with, and preferably of no greater thickness than, the diameter of said shaft.

Said driving shaft extends rotatably through the side walls 3 of the vehicle and upon its outer ends supports driving wheels 11, provided with tires 12 for frictionally engaging a given surface and insuring the tractive effort of the driving wheels with respect to said surface.

It has been found through extensive experiments that as the driving wheels are rotated in a reverse direction in any suitable manner, as for instance by manually gripping the vehicle and moving it rearwardly with the driving wheel tires in contact with a given surface, the elastic 8, if other than flat and broad, in winding upon the shaft 10 tends to wind toward one end or the other of said
shaft, and may enter the journal supports of the same were it not for one or more collars carried by said shaft.

In the present embodiment of the invention such collars may be secured to the shaft between the hook 9 and the vehicle walls 3, one of said collars (not shown) being a mere flange or washer (when actually provided) while the other of said collars 13 is notched to provide the equivalent of a ratchet or gear, having peripheral teeth which are yieldingly engaged by the free end portion of a resilient member 14, the opposite transversely enlarged end portion 15 of which is normally secured rigidly to the upper wall 1 or any suitable portion of the vehicle body by means of a rivet, bolt, screw, or any other desired form of connection 16.

In addition to providing for one given sound by the engagement of the spring 14 with the teeth 13, a pneumatic whistle 17 of any suitable construction is provided, said whistle being sounded by the sudden compression of an elastic, normally distended rubber bulb 18, against which intermittently presses a relatively broad finger 19, which at its opposite end is pivotally connected at 20 to any suitable portion of the relatively fixed vehicle body, such as the rear portion 21. A radial projection 22 carried by the collar 13 intermittently engages the finger 19 as the shaft 10 rotates and thereby causes the bulb 18 to suddenly expel air and sound the whistle 17.

In the operation of the device, as previously referred to, the vehicle body is manually gripped and placed upon and with the driving wheel tires 12 in contact with a given surface, whereupon the vehicle is moved in a direction which is the opposite to that which it is intended to take when released and subsequently moving under its own power. As the vehicle is thus moved manually, the elastic 8 winds upon the driving shaft 10 as far as may be desired, or as far as may be safe within the limit of elasticity of such elastic, after which the vehicle body can be released and the tension of such elastic will operate to reversely rotate said driving shaft and propel the vehicle along the surface upon which it rests.

As the vehicle is propelled rapidly forwardly under the power of the contracting elastic 8, the rapid frictional engagement of the resilient member 14 with the notched or toothed collar 13 creates an intermittent sound, which is conveyed to the upper wall 1 of the vehicle body, which acts as a sound board. By modifying the shape, size and resiliency of the member 14, the number and shape of the notches on the collar 13, the method of attachment of the member 14 to the body wall 1, and by varying the material of the vehicle walls themselves, a wide range of audible sounds may be produced, including among others the well-known sound created by an automobile when running with the muffler cut out. While this self-propelled movement of the vehicle is taking place, the shaft also rotates the projection 22, which upon engaging the finger 19 compresses the bulb 18 and sounds the whistle 17, thus simulating the "toot, toot" or "honk, honk" of well-known types of audible automobile signals.

It is also to be noted that by extending the hook 9 parallel with the shaft 10, when the elastic 8 has become fully unwound from said shaft and the momentum of the vehicle starts to wind said elastic reversely, there is no danger of the elastic jumping from said hook as was found to be the case when a hook is employed having a direction other than parallel with said shaft. Furthermore, it has been found that when operating the device upon an inclined surface, it will propel itself in the manner described either upwardly or downwardly of such surface, but whether up or down, when the power of the elastic is spent, said elastic serves in effect as a brake and prevents the device from moving downwardly under the force of gravity, until manually so moved or raised freely from said surface.

Having thus described my invention, what I claim and desire to protect by Letters Patent of the United States is:

1. A toy vehicle, comprising a body having a lug and providing spaced journals, a driving axle extending through said journals and cut to provide a longitudinally extending hook, which does not increase the effective diameter of the axle, an elastic detachably connected to and extending between said lug and said hook, a toothed collar carried by said axle, and a resilient member at one end engaging said collar and secured at its other end to said body to produce a typical automobile sound as the vehicle is driven by the unwinding of said elastic.

2. A toy vehicle, comprising a body having a lug and providing spaced journals, a driving axle extending through said journals and transversely and longitudinally undercut to provide a hook which extends parallel with and as an integral part of said axle, an elastic detachably connected to and extending between said lug and said hook, a toothed collar carried by said axle, and a resilient member secured at one end to said body and its free end engaging the teeth of said collar to produce a given sound as the vehicle is propelled under the power of said elastic rotating said shaft.

3. A toy vehicle, comprising a hollow body, a rotatable axle carried by said body and so cut as to provide a hook extending parallel with its axis, an elastic extending between a fixed portion of said body and said hook, adapted to be wound upon said axle and in
unwinding to rotate said axle, a toothed collar carried by said axle, a resilient member secured to said body and engaging said collar to create a sound while said axle revolves, a pneumatic signal, a collapsible bulb therefor, a finger pivotally supported at one end by said body, and a projection carried by said axle and engageable with said finger to intermittently collapse said bulb and sound said signal while said first sound is substantially continuous.

In testimony whereof I have affixed my signature.

MAURICE ALLAND.