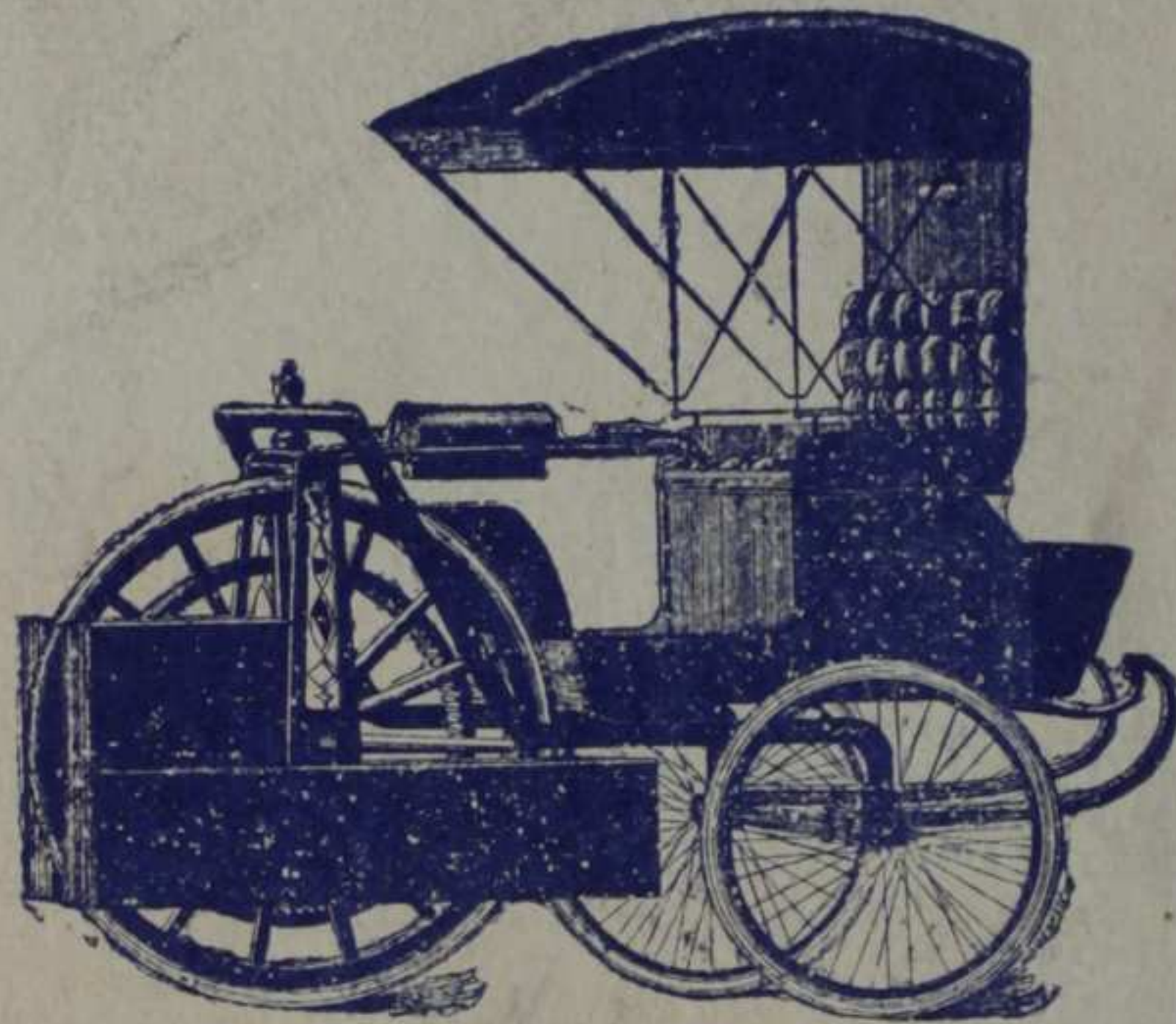


A.E.OSBORN

MAY 28 1898

The Barrows Vehicle Company,



302-304-306 West Fifty-Third Street, New York.

FREDERICK W. DUNTON, PRESIDENT.

CHARLES H. BARROWS, VICE-PRESIDENT AND TREASURER.

WILLIAM H. BOYNTON, SECRETARY

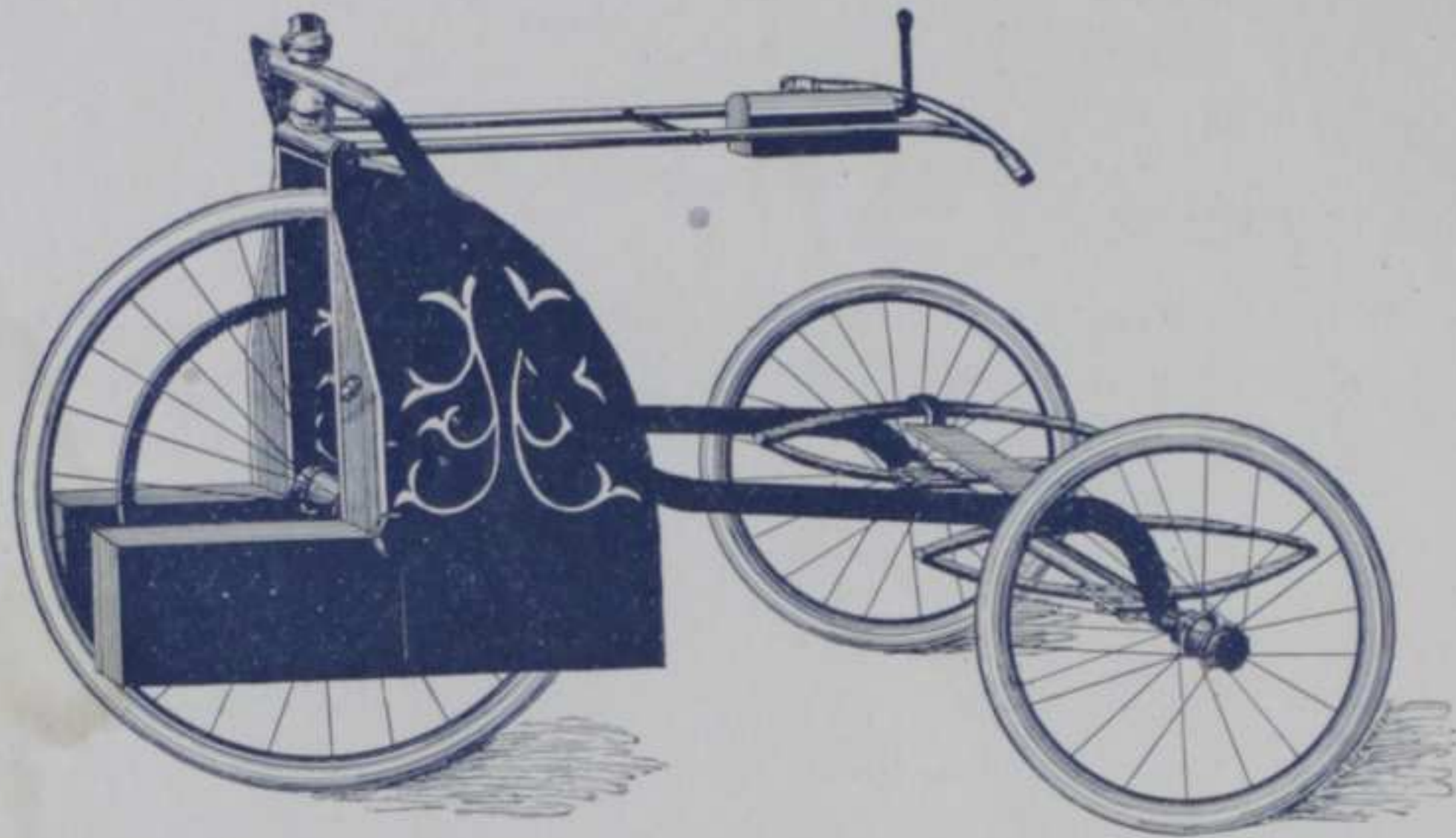
The Barrows' Vehicle.

TO THE PUBLIC.

After innumerable experiments, extending over a period of years, with motors, power, running gear and bodies of all character and description, we present a vehicle hereinafter described, which, upon examination and trial, will certainly demonstrate its fitness for a place in the front rank, if not foremost among competitors for your favor.

WHAT WE HAVE.

We have what is practically a mechanical horse. To this we couple or hitch a running gear arranged to receive an innumerable number of styles of suitable vehicle bodies, ranging in price from \$15 to \$100, some of which are illustrated, thus giving to purchasers of one of our power equipments a great variety in style of vehicle at trifling cost, when compared with wagons and carriages obtainable for horse use.



Illustrates the Barrow's Power Equipment ready to receive any style of body.
Substitute runners for rear wheels for sleighing. Made in sizes 0, 1
and 2. See pages 17 and 19, for prices and detail.

THE ONLY INTERCHANGEABLE VEHICLE.

It is the only Self Propelling Vehicle in the world susceptible of such interchange, and consequent production at figures bringing it within reach of multitudes of people. We supply complete apparatus for changing bodies with slight exertion. A boy can do it.

SOLVES THE PROBLEM.

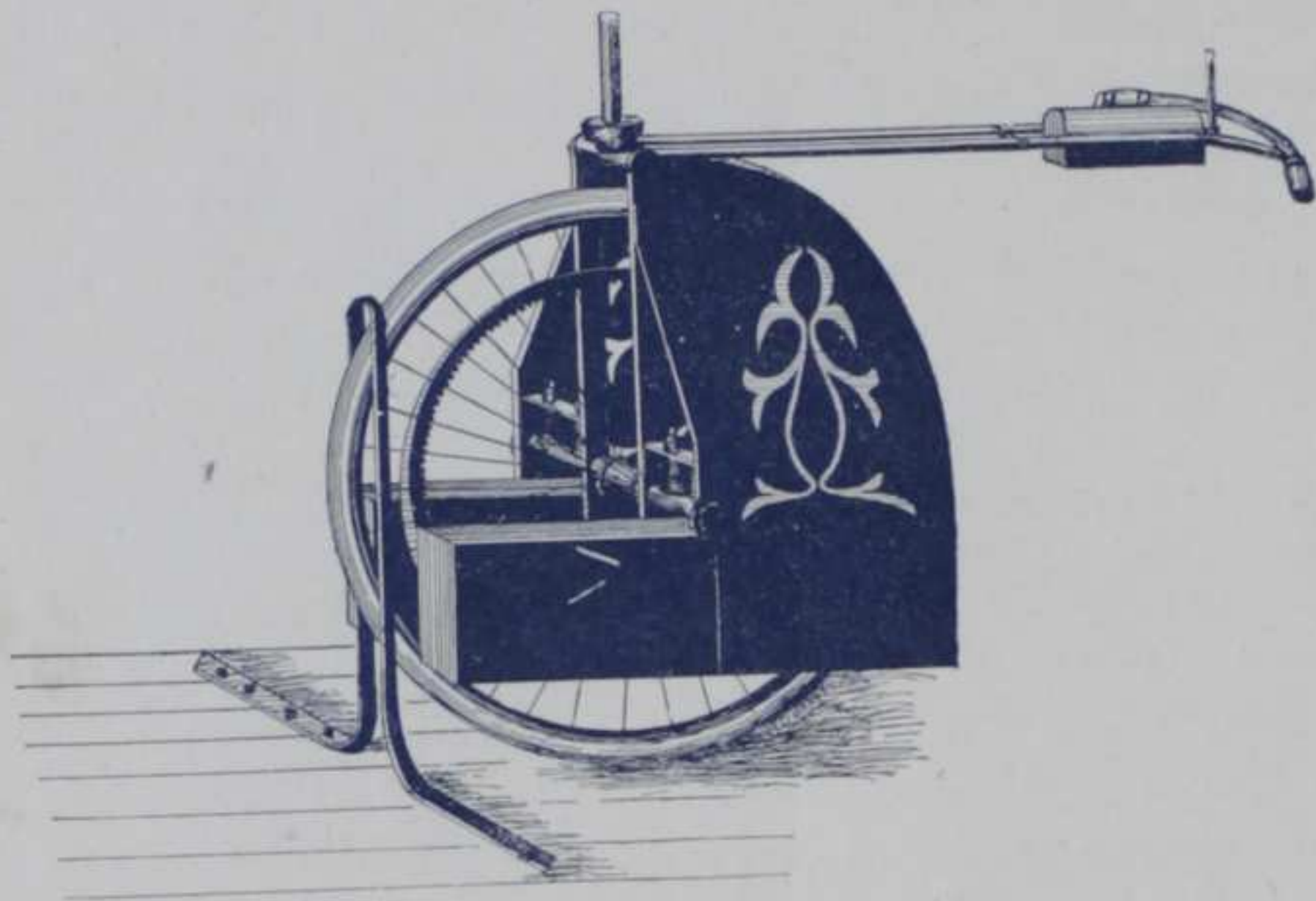
It solves the problem confronting other inventors and manufacturers in this line of how to overcome the great cost and lack of variety of equipage and widen the field for their introduction.

THE POWER.

The power is supplied from Storage Batteries, manufactured especially for the purpose, and fully described below. They are a perfectly reliable and economical source of power.

THE STORAGE BATTERY IN PRACTICE.

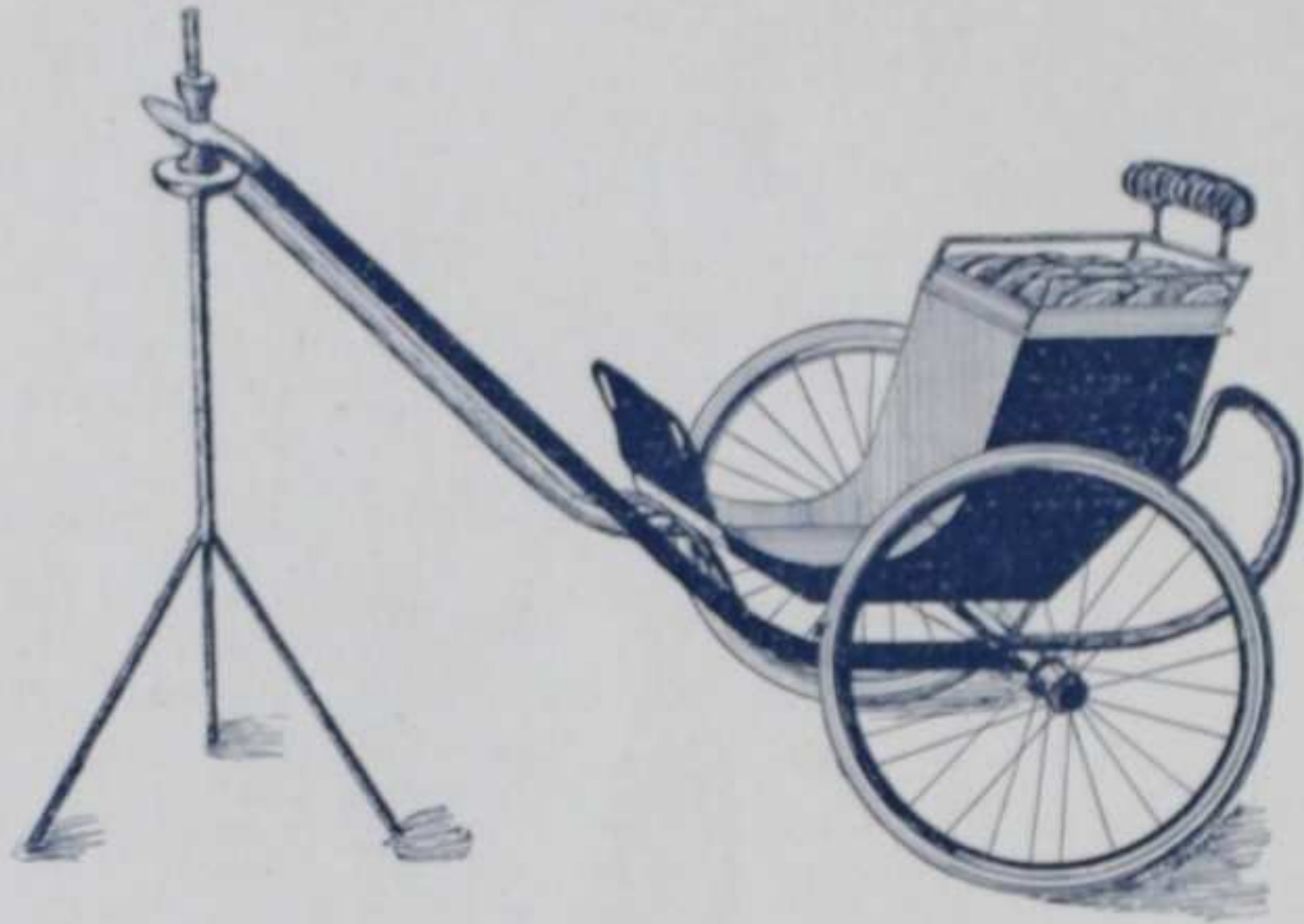
Within an incredibly brief period the storage battery has become a necessary factor in a multiplicity of lines. Its economy and reliability has already adapted it to hundreds of uses, which daily increase with the knowledge of its many advantages.



The horse to which any suitable running gear may be attached.

BATTERIES FOR MOTOR VEHICLE PROPULSION.

The many superior qualities of these batteries peculiarly adapt them to motor vehicle propulsion. The battery plate consists of a piece of pure, rolled sheet lead, deeply cut on both sides, leaving leaves, or projecting shelves, at an angle to the surface of the plate. The active material is formed directly from the lead itself, by electro-chemical means; no paint, paste, cement or pellets of any kind. No applied oxides, no joints or solder. The negative plates are inserted in containing cells, which have grooves at each end for their reception. The finished positives are surrounded with an envelope of cellulose pulp and slipped into a corrugated hard rubber sheath, after which they are inserted into the grooves in the containing cell and between the negative plates. This improved construction enables the purchaser to make renewals in a few minutes instead of hours. It will thus be seen that each element is perfectly rigid with respect to the containing cell, and that each positive plate will be kept perfectly intact. They effectually prevent the "sheddings" of the plate from "bridging" or accumulating at the bottom of the cell. The plates never buckle, no matter how much current may be drawn from the battery and never short circuit. This construction is the outcome of long experience, and yields results that make the motor carriage a success.



SINGLE SEAT.

GUARANTY.

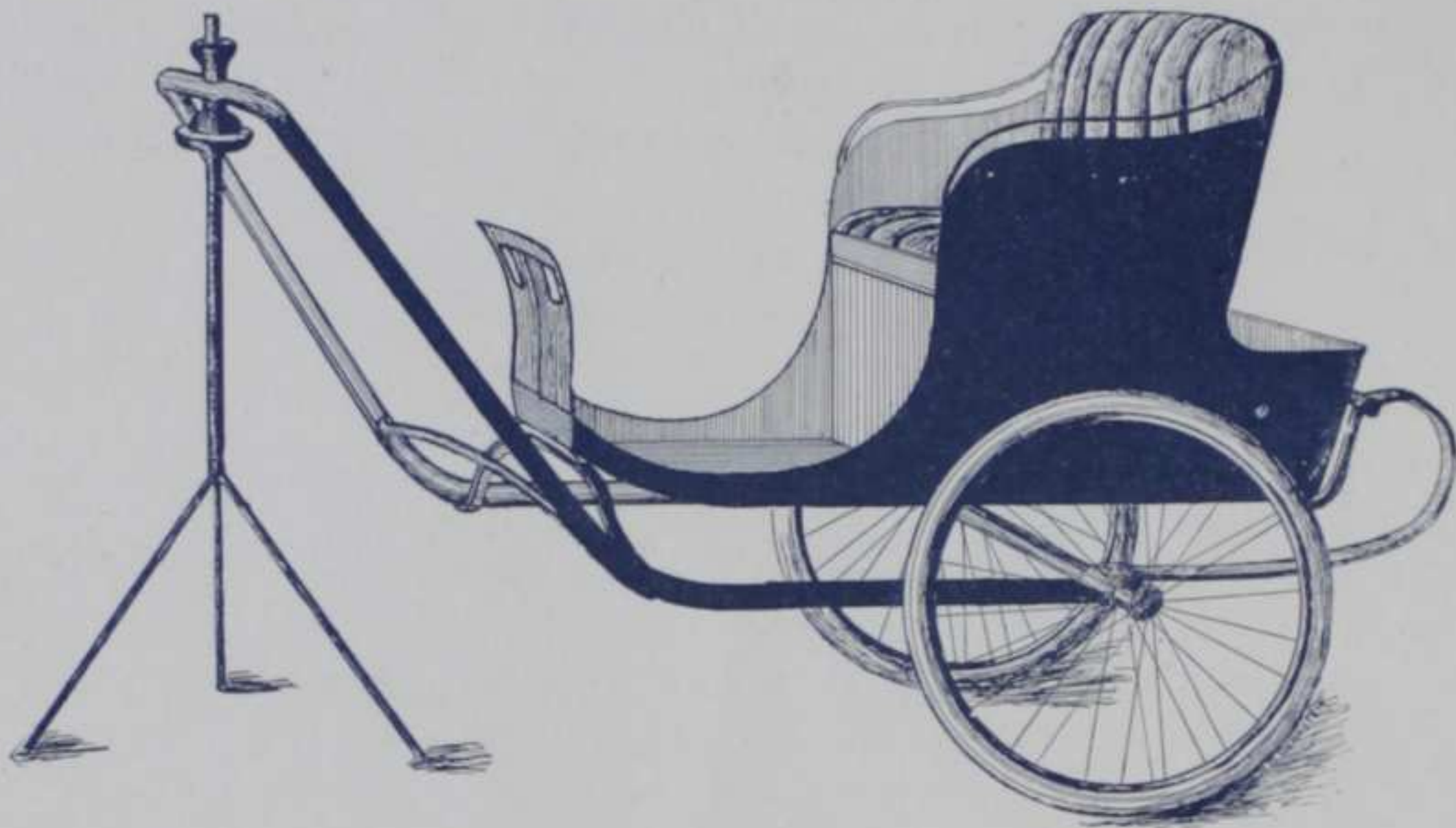
Where it is desired we make a maintenance guaranty, wherein for a small sum, we maintain the battery for a period of years, thus insuring to the customer for such time a perfect working battery at a specific outlay and leaving no element of uncertainty as to this item of expense: As to this feature we are enabled to make exceedingly favorable terms owing to the long life and constant capacity that the superior construction insures.

NO COST WHEN NOT USED.

Unlike horses, the Batteries eat only when they work.

CHARGING BATTERIES.

The process is as simple as feeding a horse, a mistake less possible. A full charge requires about three hours and needs watching no more than a horse at his oats.



FULL SEAT.

COST OF CHARGING BATTERIES.

Current from City mains will not cost to exceed $1\frac{1}{2}$ cents **per mile**. With our special plant, engine and dynamo referred to below, charging will cost less than $\frac{1}{3}$ cent per mile.

SPECIAL CHARGING PLANTS.

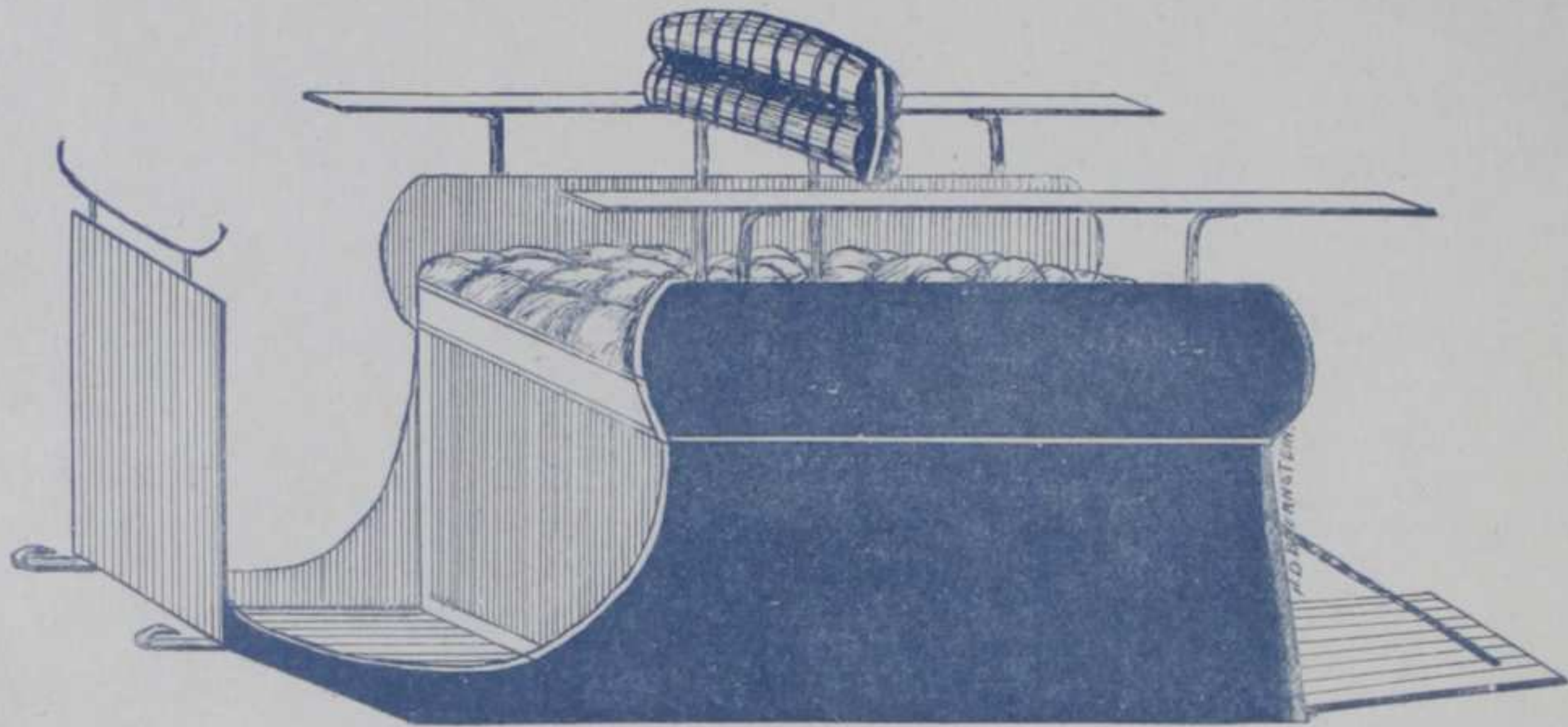
For from \$200 to \$300 we are prepared to install a dynamo and a gas or gasoline burning engine, which reduces the cost of power to a nominal sum. These plants are so simple and economical, we do not hesitate to recommend them for city as well as country use. A boy can operate them.

MOTORS.

Our motors are no longer matters of guess work or question. For a small sum we maintain the motor for a series of years.

INDICATORS.

Each vehicle is equipped with indicators showing just how much power there is in the batteries at any time and the mileage run.



Four Passenger Body for No. 2 Power Equipment.

SPEED.

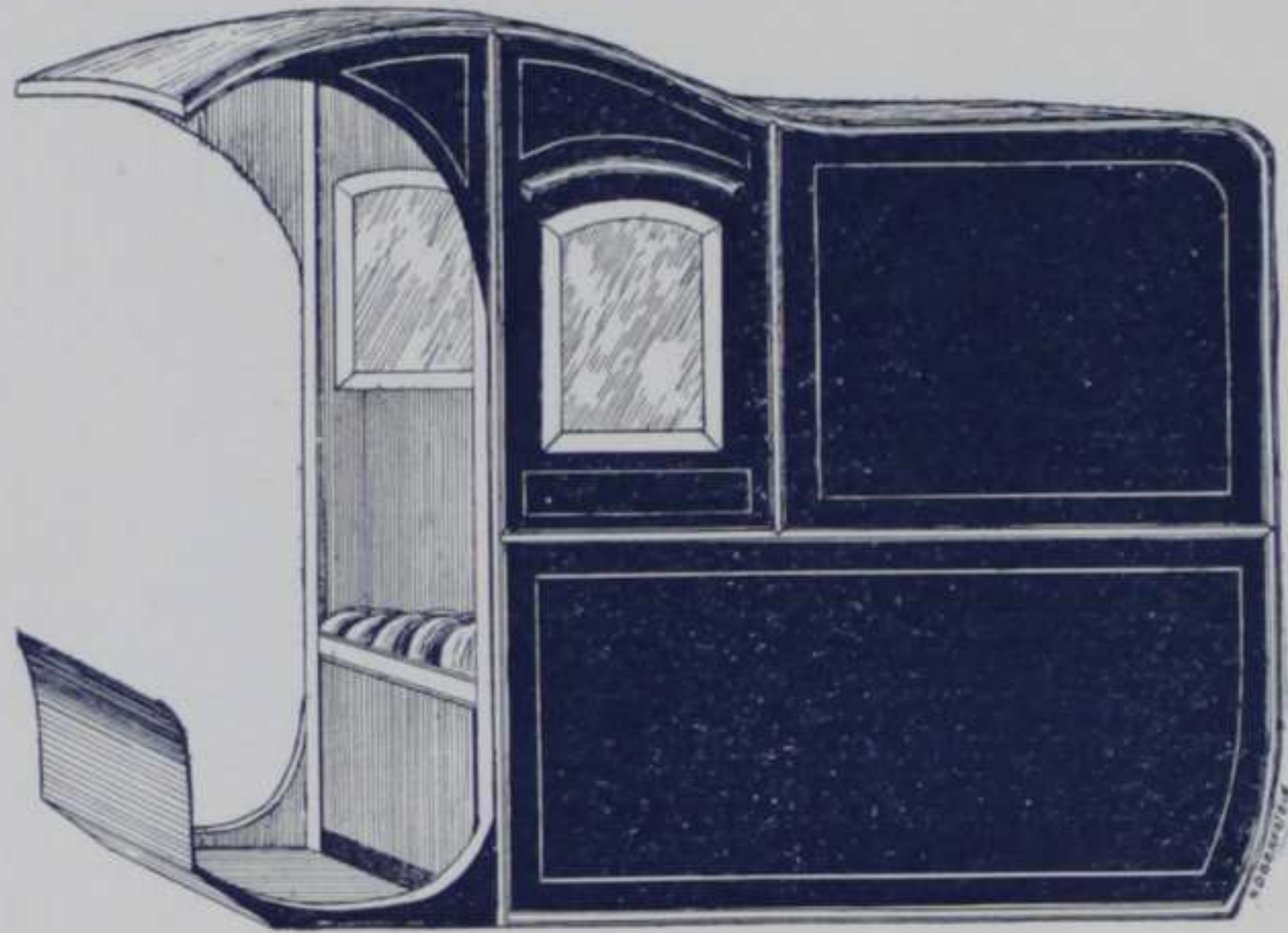
While we can build vehicles good for a two minute clip, their use must of course be restricted to tracks and speed ways. In our standard power equipments we provide three speeds, four, eight and twelve miles per hour forward, and one speed, four miles per hour, backward, all controlled from one lever on the steering handle, the manipulation of which is simplicity itself.

WE APPLY THE POWER AT LONG END OF LEVER.

Ours is the only self propelling vehicle in the world upon which similar application of power is possible. In our system the power is applied close to the rim of the driving wheel or at the long end of the lever, thereby accomplishing the same amount of work with one-half the batteries and motor power used upon other vehicles. Its advantage in this respect does not need enlarging upon.

STEERING.

We steer just as the bicycle is steered. A ten year old boy can do it.



Delivery body for No. 1 or No. 2 Power Equipment.

BRAKING.

We brake with hand and foot brakes, ample for all conditions.

OILING.

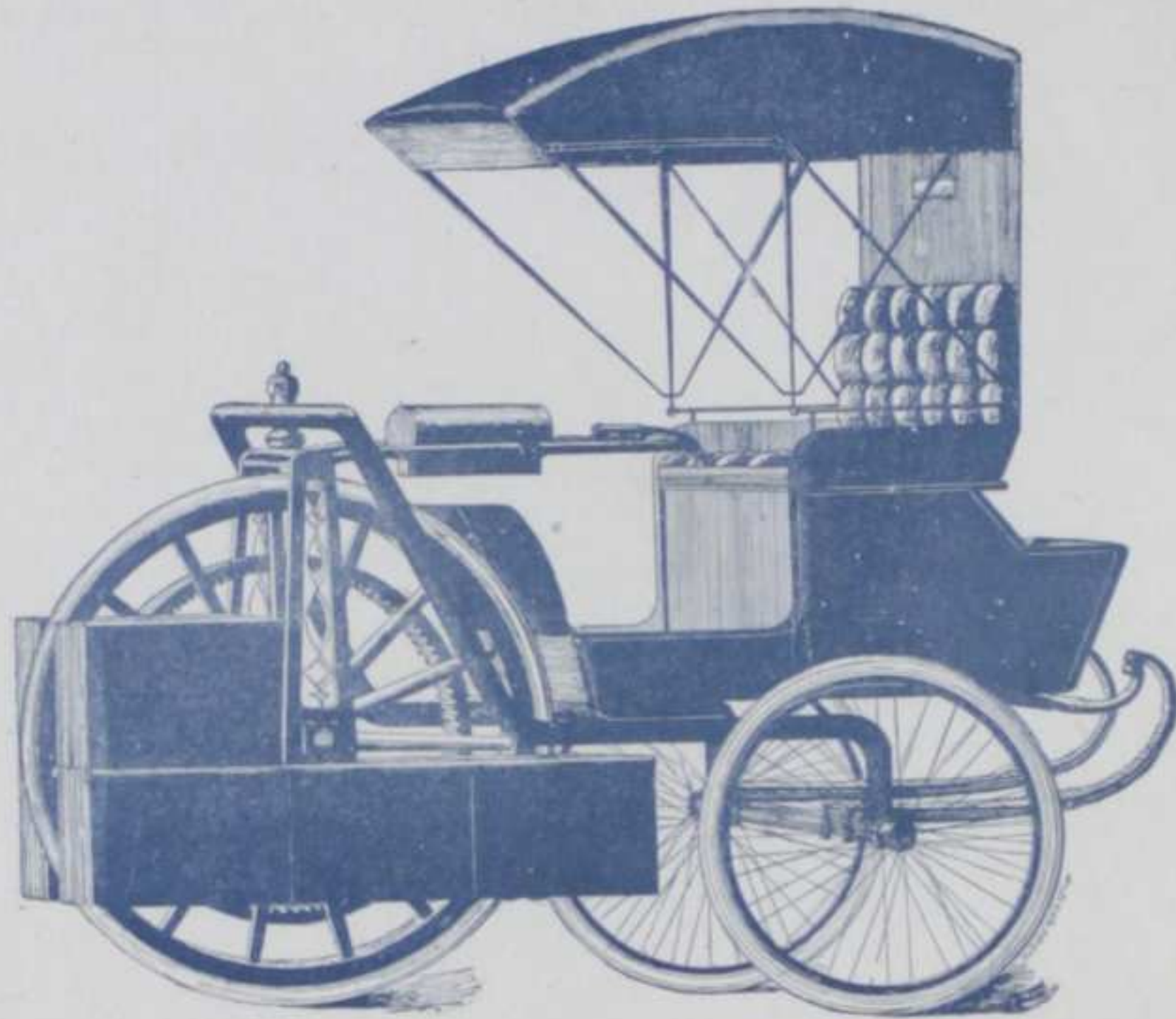
Oil like a bicycle.

WARNING SIGNAL.

We use the ordinary bicycle bell attached to handle bar and operated just like the bicycle bell.

FOR SLEIGH RIDING.

Substitute for the rear wheels a \$10 pair of steel runners (see cut on page 16) and you have the prettiest sleighing outfit imaginable.



A Stiver's Full Seat Body on a Barrow's No. 2 Power Equipment.

STYLES OF BODIES.

There is no limit to the style of bodies which may be used. Anything from a one man up to a four passenger seat, open or covered or light delivery, and any price, according to trim and elaboration, from \$15 upwards.

WHEELS.

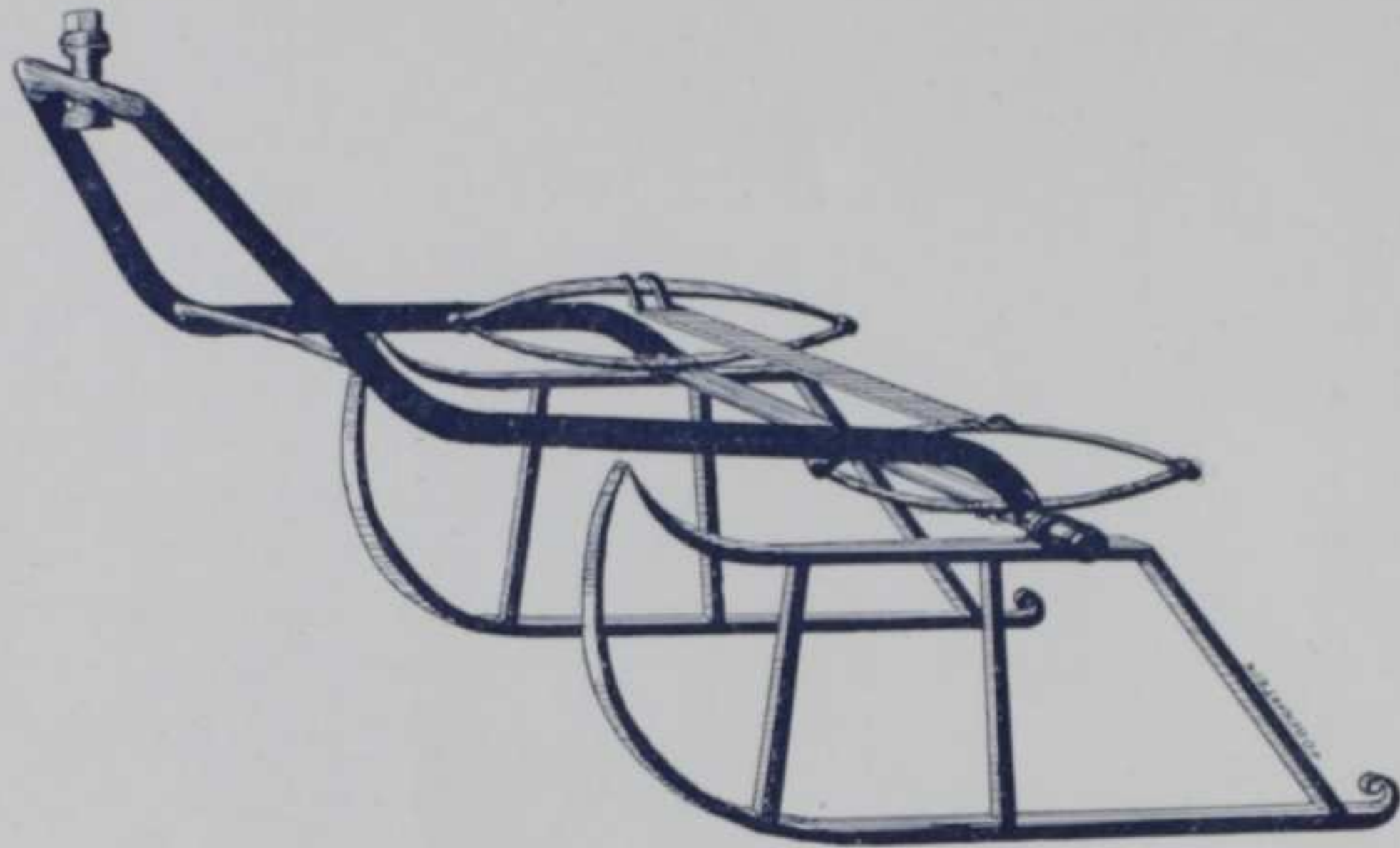
All bicycle built, ball bearings and require less attention than must be given to bicycle wheels. The tires may be extra heavy pneumatic, almost impenetrable and kept inflated same as all pneumatic tires, or solid rubber as patrons prefer.

FRAME.

All tubing of the best quality.

WASHING.

All bearings are water, mud and dust proof. Put hose on as you would any carriage. They cannot be injured in washing.



Illustrates the extremely low cost of a Barrow's Sleigh. Simply substitute runners for rear wheels.

The front wheel is 36 in and has 20 in carries 20 lbs of storage cells another 100 lbs being under the seat The electric equipment is 500 lbs total $\frac{1}{3}$ being on front wheel The motor

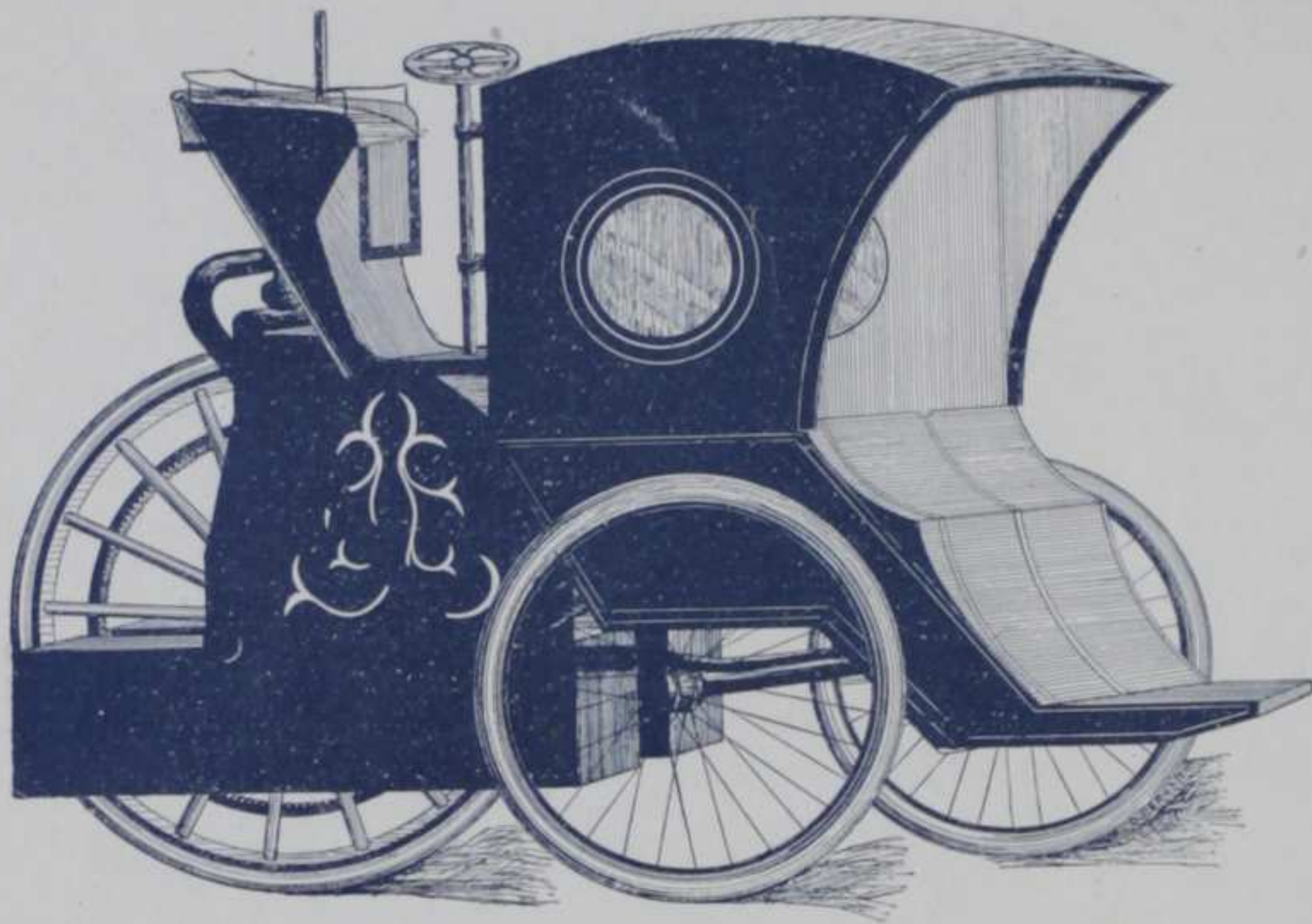
EQUIPMENT No. 0 (see page 2). Weight, 650 Pounds. Price, \$650.

Average maximum mileage capacity on one charge of batteries, carrying two persons, fifteen miles. Carrying one person, twenty miles. Number of three-quarter size cells, twenty. One horse-power motor. All other items same as in Equipment No. 1. This is the lightest and cheapest electric carriage on earth. Its light weight and low cost is made possible by our method of utilizing power.

EQUIPMENT No. 1 (see page 2). Weight, 800 Pounds. Price, \$800.

Average maximum mileage capacity on one charge of batteries, carrying full load, twenty miles. Carrying one person, thirty miles. This is an equipment made up of twenty full sized cells of the special batteries, enclosed in four boxes, containing five cells each. A one horse-power motor. A solid thirty-eight inch, rubber tire, ball bearing, wire spoke power wheel, with all appurtenances. A running gear upon ^{2 inch} pneumatic, ball bearing, wire spoke, twenty-eight inch wheels for summer and runners for sleighing, ready to receive any suitable body for accommodation of not more than two persons for its full mileage. It will carry a third person three-fourths of its maximum mileage. Also will serve for light delivery or marketing purposes up to 400 pounds, with driver, for its full rated capacity. Beyond the cost of this equipment a purchaser can go as far as his requirements for pleasure or business may lead. A one man body, open or covered, will cost from \$15 upwards; a full seat, \$40 upwards; a top delivery, \$75 upwards; an express body, open, \$25 upwards.

gears by a 2 1/2 in rawhide pinion to a 28 in gear on wheel and the total weight is 700 lbs (38 - 2 1/2 = 11 1/2) 24 x 2 1/2 = 60 4 miles



THE BARROW'S HANSOM.

EQUIPMENT No. 2 (see page 2). Weight, 1,200 Pounds. Price, \$1,200.

Average maximum capacity carrying full load on one charge of batteries, thirty miles. Carrying two passengers, forty miles. Carrying one person, 50 miles. This is an equipment made up of thirty-two full sized cells of batteries, enclosed in four boxes, containing eight cells each. A two horse-power motor. A forty-six inch solid rubber tire drive wheel, special ball bearing axle hub and rim, wood spokes. An immensely powerful wheel, with all appurtenances. A two inch steel tubing running gear upon pneumatic or solid rubber, ball bearing, wire spoke, thirty-two inch wheels for summer and runners for sleighing, made to receive any suitable body for accommodation of not more than four persons or 700 to 800 pounds of load for its full mileage. This is an equipment for long, hard drives. Beyond the cost of this equipment a purchaser can go as far as he pleases in matter of bodies which may be varied in cost and appearance to suit every whim.

ILLUSTRATING COST OF BODIES.

To give some idea of the cost of bodies we refer to cuts and say that the one single seat body will cost \$15 to \$25, depending on trim. The top full seat body, \$40 to \$100. The Dos a Dos, four passenger body, \$50 to \$100. The light delivery body, shown on page 12, \$30 to \$75.

HANSOMS AND COUPES.

We will build for \$1,500, to \$2,000 and guarantee a greater mileage on one charge than any other electric cab.

Some Thoughts Concerning the Mechanical Vehicle.

PRESERVATION AND CLEANLINESS OF ROADS.

Nothing will contribute so much to the preservation of roads and streets and relief of burdens on tax payers for maintenance as the rubber tire Mechanical Vehicle. This should be a great factor in their introduction. The Good Roads Movement and the Mechanical Vehicle go hand in hand.

THE QUESTION OF POWER FOR SUCH VEHICLES.

While we are not limited to electricity as a source of power, observation and experiment **and the storage battery perfection** has convinced **us** that it is to-day by far the most desirable medium. Makers have at their disposal three elements of power: steam, gas and electricity. If, which is by no means the case, every other objection had been overcome in steam, the fact that Legislation requires a licensed engineer in charge of a steam engine, renders it out of the question. Gas and oil motors are nothing more nor less than gas engines. They have, beyond a doubt, been greatly improved upon within a short time. So far, however, as we have been able to discover, their odors are disagreeable, their noise unpleasant, their heat and vibration uncomfortable, their fuel dangerous, their cleanliness low, their construction complicated, their management requiring skill. A point in their favor is their greater mileage capacity

from one storage of fuel than the electrically propelled vehicle. **But after all what does this amount to.** Electricity is superior in all other respects and will carry you more miles per day than you ever ride. **Why take an inferior motive power because of its ability to do the one thing you don't want done ?**

ELECTRICITY IS:

- 1st. Absolutely safe.
- 2d. Noiseless.
- 3d. Free from vibration.
- 4th. Free from heat.
- 5th. Free from odor.
- 6th. As simple as A B C.
- 7th. Can be handled by any member of the family over ten years of age.
- 8th. Starts, stops and backs by moving one lever.
- 9th. Absolutely clean.
- 10th. Cheap enough for the most exacting.

LONG JOURNEYS.

An Electrical Vehicle cannot travel regardless of proximity to stations for recharging of batteries. Few desire to travel long distances over highways, but for their information we state that such an itinerary, including points where

electric power is obtainable, can be made up, as will put the ordinary tourist book to blush. For illustration, in Massachusetts there are 100 such points; in Connecticut, 35; in Rhode Island, 15; in New Jersey, 65; in New York, 100; in Pennsylvania, 100. In but few States in the Union is there the least difficulty in making up a delightful route along which the necessary charging facilities may be found.

IS IT CHEAPER THAN THE HORSE?

The maximum cost of maintaining one of our No. 2 vehicles per year will be :

Batteries, guaranteed for five years, \$75 per year.

Motor, " " \$10 "

Add one-half cent per mile for the number of miles you think you will run it and you will find that as against this vehicle you could not afford to take the horse as a gift.

WHAT IS THE ORDINARY MILEAGE REQUIREMENT.

Cyclometers placed upon the vehicles of physicians, expressmen, private citizens and other constant users of horses indicate a daily mileage for such not exceeding twenty-five.

OUR EQUIPMENT REGULATED TO MEET IT.

To cover every contingency our electric equipments have been regulated for thirty to forty miles upon one charge of the batteries, depending on condition of roads. Of course there are thousands of pleasure drivers who do not average forty miles per week. If your drive does not average twenty-five to forty miles per day and is never likely to, then all you want is something which will do this more economically and satisfactorily than the horse.

SPECIAL BUILDS FOR PHYSICIANS.

For physicians, or any hard long distance users, we furnish duplicate set of batteries, and construct the vehicles so that they may be interchanged, one set "charging" while the other is out on the road, said change being the work of a few moments only.

FOR DELIVERY WORK.

For all light delivery work the Barrow's Vehicle is par excellence. With proper elevator facilities it can be lowered and raised from top floor to basement. Everything under the one roof, stable expense eliminated. Vehicles loaded under cover. Sidewalks unobstructed. Large savings effected.

Pat Advertiser 8/14/73
5 75 00

ROOM OCCUPIED.

In a big city, space occupied is an important item. We take less than $\frac{1}{3}$ of the room required for the horse. Intending builders will take this into consideration. As a matter of fact no stable at all is needed in such cases. Simply provide vehicle room on ground floor of house or store, or a runway, or elevator to cellar or basement. Everything under one roof and cost of or rent for a stable altogether saved.

STEEP GRADES AND HEAVY MUD OR SNOW.

No greater damage to the self-propelling vehicle can be done than by erroneous statements on the part of manufacturers. Both as to good policy and strict regard for truth, we frankly say to persons residing where hills predominate, stick to the horse. Mechanical Vehicles will not give satisfaction where grades exceeding ten per cent. are frequent, or in constant deep mud, sand or snow. Where hills are in the minority, the reverse is the case because there are generally roads around as well as over nine-tenths of them. Such hills present no barriers to the use of our vehicle, neither do the ordinary highways or city streets. Our vehicles will mount hills, go through mud, sand, etc., but the excess of energy required shortens the distance practical on one charge and therefore we say where steep hills, deep mud, sand and snow predominate, don't try them.