

THE NEW MOTOR CHAIR.

The new motor carriage here shown is termed the "morette," and was one of the novelties at the last British Automobile Exhibition. As here shown, it is built to carry one person up to 12 miles an hour. The double morette can carry two persons side by side and a higher-powered motor is then used.

The morette is started from the seat by the lever *B*, shown, is steered by the tiller handle, and has a footbrake acting simultaneously on the back wheel tires. The engine (which contacts with the front wheel tire), and all the paraphernalia pertaining thereto, is disposed in an eminently neat fashion within the front frame. The basket body is wide and comfortable, and is strengthened throughout with iron stays. The single morette is designed to carry one person at a speed up to 12 miles an hour. A double carriage is also made, with, of course, a higher-powered engine to attain the same results. The prices of the two designs are respectively 50 and 70 guineas. The frame is very strongly made with $1\frac{1}{2}$ -inch steel tubes, and fully braced and strengthened to meet all strains, particular attention having been paid to the attachments at ball head and rear axle—the vital points. The metal work is finished in any color, and nicely set off with aluminium-enameled panels. With regard to the question of vibration, either from the engine or the road, elaborate precautions have been taken to insure the comfort of the rider, and render him or her immune from this undesirable accompaniment of his pleasure. The body of the carriage is isolated from the frame, being cradled between luxuriant C springs, while a padding of vulcanized sheet rubber has been inserted where the engine rests on the frame. Additional, there is the vibration-absorbing quality of the tires, the well-known Swain tire being recommended as standard. On the single morette, tandem non-slipping tires are fitted to the back wheels, and a plain motor cycle tire to the front wheel, the latter being also safeguarded within by the fitting of a self-sealing air chamber. In the double morette, motor cycle tires are fitted all round. The wheels are 26-inch back and 28-inch front. Coming now to the more mechanical, and certainly most vital, point of the propulsion medium, the morette engine will be found to be one of the most efficient on the market, while, as we have remarked above, it is automatic in every action, requiring no expert knowledge to manipulate it. It is a two-cylinder valveless motor. The flywheel, which is plainly shown in the illustration, carries on its inner side a rubber-covered driving pulley, which is in frictional contact with the tread of the front tire. The engine is carried on a bracket behind, and attached to the crown of the front fork, the latter being more than sufficiently strong. The engine is carefully balanced upon both sides of the front wheel. It is lubricated upon the chop feed principle, the oil being atomized as it is carried into the engine with the petrol mixture.

The cylinder of the engine when in action is inclined slightly upward. The well-known F. N. carbureter of the latest type is fitted, and this is placed where the most even temperature is insured. The petrol tank holds a supply sufficient for 70 miles' actual use. The catalytic system of ignition has been successfully introduced here. The great advantage of this system is that the electric spark is only required for the first explosion, the subsequent firing being automatic. Thus a very diminutive battery suffices for an indefinite length of time, and unsightly wiring is entire-

ly eliminated. As we remarked above, the engine is started from the seat by the operator pulling the lever, *B*, shown in the illustration. This lever operates through free wheel clutches on both rear wheels. At each pull the carriage is impelled forward a cer-

provide a high-power vehicle as one of moderate capabilities, which insures comfort and safety. A $2\frac{1}{2}$ horse power engine will at the same time be fitted to the single morette if desired. The entire control is by the tiller handle, the grip of which actuates the current by rotation. The position of the handle, as shown in our illustration, is the normal one, and represents the engine properly adjusted in running contact with the front tire. By raising the handle the engine pulley is freed from driving contact, while by depressing it the engine may be slowed or stopped if desired. Thus the speed and the brake are controlled by one hand, while the double-action foot brakes on the back wheels are an additional emergency safeguard. It will be conceded that the morette is distinctly a forward step in the provision of a practical motor carriage for the million. With automatic carburetion and ignition, and instantaneous control of the engine and brakes by practically the same motion, the acme of simplicity is attained; and it would seem almost an impossibility for a mistake of any kind to occur.

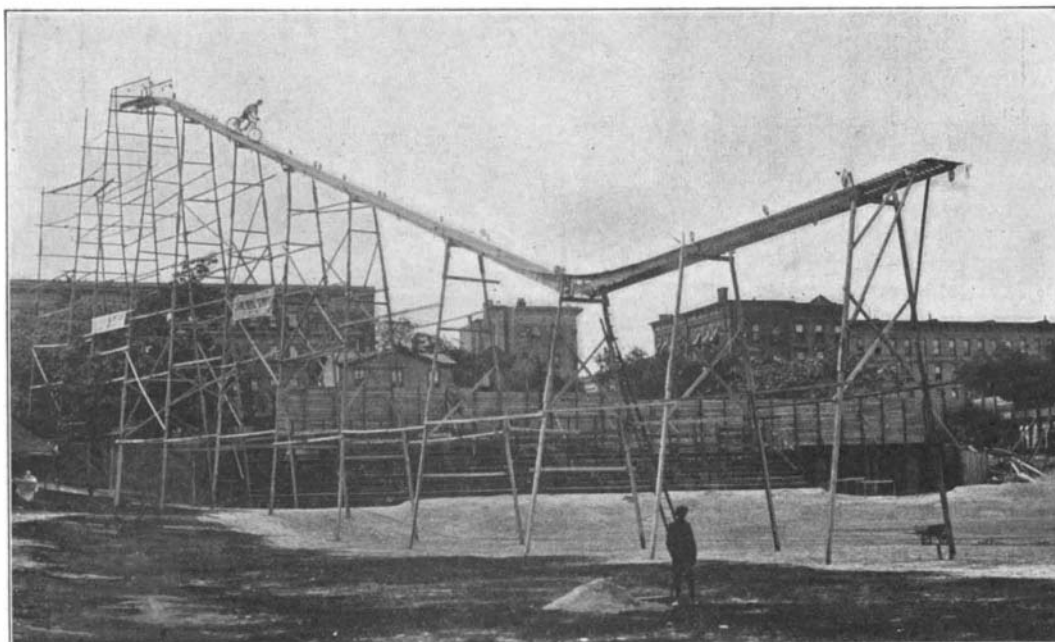


A MOTOR CHAIR.

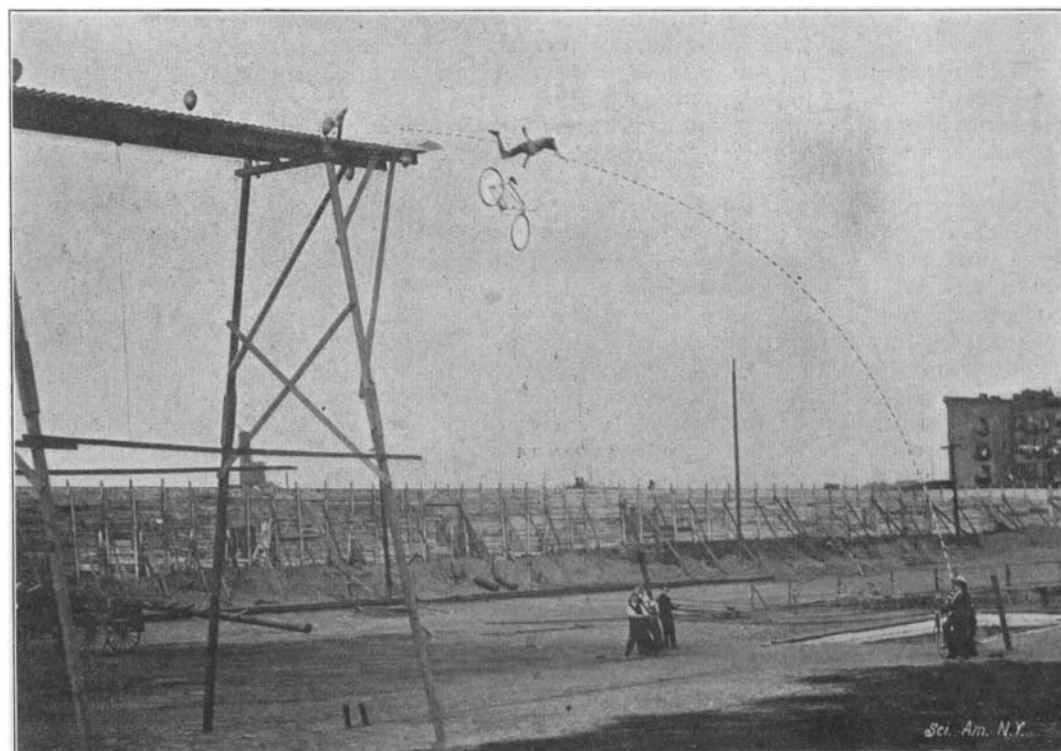
tain distance, until ultimately the engine takes up the running. The driving-pulley being in frictional contact with the front wheel, is rotated by this motion, and the engine started. The standard powers of the engines are $1\frac{1}{2}$ horse power for the single carriage and $2\frac{1}{2}$ horse power for the double morette. This is calculated to be sufficient for all general purposes, and will take the morette up the steepest hills in the country, always provided the passenger alights on these occasions, retaining control, of course, while walking, on the tiller handle. The object is not so much to

A DARING FEAT IN THE AMUSEMENT LINE.

Danger has always a great fascination for the peoples of all countries, especially where it is possible to be a passive participant. To "loops," "whirls," "aerial spirals" and other similar amusements we must now add one where the *deus ex machina* is reduced to its lowest terms; a simple incline, a fraction of a curve, and a platform a few feet long—that is all. It is noble in its simplicity. It is appalling to think of any wheelman who has the temerity to ride down an incline nearly one hundred feet high and after traversing a few feet of almost horizontal planking, detaches himself from his wheel and dives 105 feet through the air to a shallow tank.



A. M. Schreyer One-third down the Incline of the Chute.



A. M. Schreyer Making a Sensational Dive from a Chute. Path Traversed in Flight is 105 Feet.

A DARING FEAT IN THE AMUSEMENT LINE.

Yet this is done almost daily by Mr. A. M. Schreyer, and our staff photographer has succeeded in catching a picture of him in midair at a ride given specially for the SCIENTIFIC AMERICAN staff in New York.

The chute is a light wooden structure measuring 98 feet in height at its top and 35 feet high at the lower end, or what in this instance might be called the "jumping off place." The total length of the structure is 215 feet. The floor of the raceway is formed of slats placed three inches apart. A stripe of black paint indicates the center of the path. There is a slight curve at the lower end of the incline and this curve in turn gives way to a nearly horizontal pathway which is slightly tilted. The dive begins about 20 feet from the end of this section. The pool of water is 78 feet away and is 38 feet long, 8 feet wide and 4 feet deep.

It would seem at first sight that, if this feat could be successfully performed, it could be repeated every day with as much precision as riding a loop, but this performance is one in which the conditions are constantly changing, and in which psychology plays an important part.

Before riding Mr. Schreyer gives himself half an hour of quiet and then mounts the lower end of the pathway. Here he studies the position of a flag beyond the pool, which is adjusted to meet various conditions of wind. He then mounts to the top where his helper holds his wheel. He carefully observes every feature of the landscape, cheers himself up, and when he feels his nerve is at its best he releases himself and pedals down the incline at railroad speed. He holds his wheel to a painted stripe and looks out for a mark a little way beyond the curve which designates the spot