

## AN IMPROVED UNICYCLE.

In this machine the seat is arranged below the center, so that the wheel may be easily balanced, and provision is made for the lateral movement of the rider, whereby the wheel may be readily turned. It is light and strong in proportion to its size, and is made in readily detachable sections, to be easily taken apart and packed for shipment. It has been patented by Mr. Lewis W. Harper, of McHugh, Becker County, Minn. The large outer wheel, carrying the entire mechanism, has preferably a pneumatic tire, secured in a hollow jointed felly, as shown in Fig. 3, each joint being formed by inserting a plug in the abutting ends of the sections, and fastening the sections to the plug by setscrews. Parallel hollow rings on opposite sides of the felly are connected with it by short spokes, the rings being also made in separable sections, and the spokes being screwed into the felly, while their inner ends terminate in heads held within the rings. Fig. 2 is a sectional view of that portion of the driving mechanism located at the hub. On the inner face of and integral with each hub is a bevel gear wheel, and the hubs have a central transverse opening to receive the axles on which the frame of the machine is suspended, each axle working in ball bearings, which are also provided for the other principal working parts. The inner end of each axle is formed as a head, which is secured to the upper end of the main frame, the latter being of substantially U-shape, and made of hollow pipe, elliptical in cross section. Extending longitudinally through each member of the frame is a countershaft having on its upper end a pinion which engages and drives the bevel gear of the hub, thus turning the main wheel, while the lower end of the shaft carries a pinion engaging a bevel gear on a short shaft connected with cranks provided with the usual pedals.

At the upper end of the saddle stem is a collar with set screw, for regulating the height of the saddle, and the saddle rod is a flat steel bar, permitting of bending from side to side, but preventing forward and backward motion. The machine has suitable brakes, which bear on the rings connected by short spokes with the felly, the brake blocks being operated by flexible rods or wires connected with a handle located near the main handles of the machine. The latter, of which one is shown in Fig. 4, project laterally from opposite members of the main frame, and by grasping them the rider may hold himself steadily in the machine, and throw his weight from side to side as necessary in steering.

## THE HARRISON STANDARD BURR STONE MILLS.

The Harrison mills have been on the market nearly fifty years, thus attesting their standard merit, while, as at present made, they contain the most recent improvements contributing to simplicity of construction and effective working capacity. The flour mill shown in the illustration is made in different sizes to have a capacity of from ten to twenty barrels of flour per day. It is especially designed for use in the Spanish-American countries, and is so made as to be readily taken apart and sent in small packages on the back of a mule. It does not get out of order easily, and the mill is sent

complete, with pulleys, gearing, belt for moving the sieves, etc. The wheat is put in the hopper, A, and ground in the mill, B, from which the flour passes by the chute, C, to the bolter, D; the flour of the first grade passes out through E, of the second through F, and the grits through G, which is at the end of the

found that in ordinary circumstances the cost of traction will be reduced by about 65 per cent. The gas is ignited by an electric spark, and the motive power, which consists of two double-action 7-H. P. gas engines, is completely hidden, together with the fly-wheel, at the back of the seats. Major-General Hutchin-son, Board of Trade inspector, has expressed his approval of the car, and passed it, subject to the carrying out of certain minor alterations.

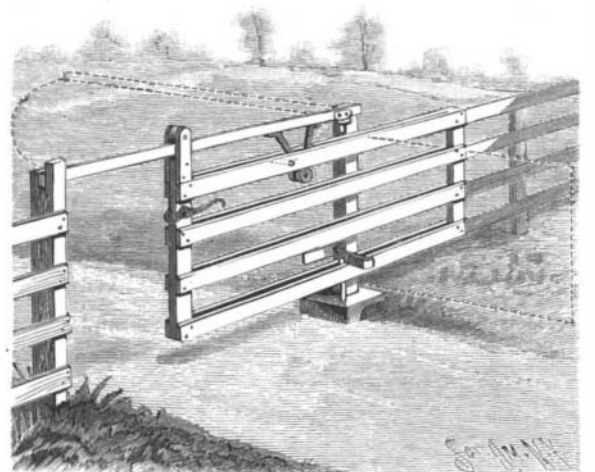
## The Fisheries of Newfoundland.

The fisheries of Newfoundland are, as is well known, the object of incessant litigations between France and England, and are the cause of a continual exchange of diplomatic notes. At this moment, when the question of the reform of orthography proposed to the French Academy is calling attention to the utility or inutility of etymology, it is curious to remark that all those litigations relative to the fishery have for a basis a bad interpretation of a Latin word.

Mr. F. Mocquart, in fact, demonstrates by numerous citations in the *Naturaliste* that from the epoch at which Pliny wrote his *Natural History* up to that at which Linnæus published the first edition of his *Systema Naturæ*, that is to say, up to 1735, the majority of naturalists applied the term *fish* to all aquatic animals—to cetaceans, crustaceans, mollusks, etc., as well as to the fishes properly so called. The result is that at the signing of the treaty of Utrecht, in 1713, the lobster, crab and oyster were still considered as fishes with as good a title as the cod, and that, consequently, the right conceded to France to catch the fish of Newfoundland certainly includes the right to fish as well for the lobster as for the cod. —*Le Genie Civil*.

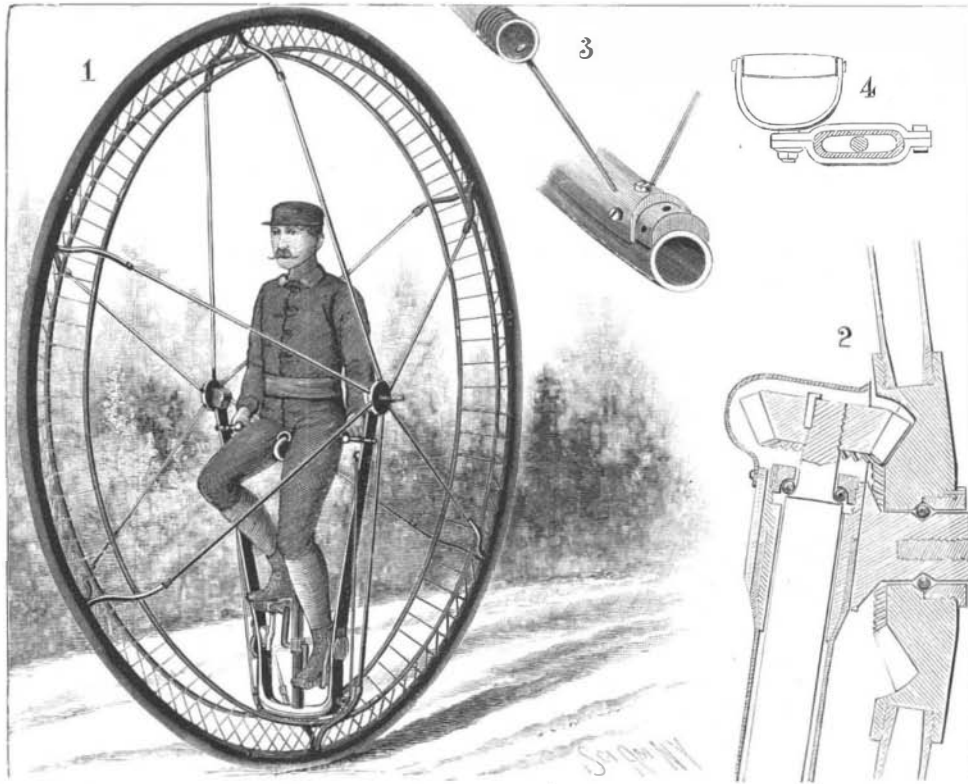
## AN IMPROVED GATE.

A gate which may be slid open to permit the passage of stock, or which may be swung entirely open for the passage of vehicles, the gate being easily operated in either case, is shown in the accompanying illustration, and has been patented by Mr. Levi W. Youngs. The swing post has at its upper end a socket which receives a pin on one end of a supporting bar, whose



YOUNGS' GATE.

other end, when the gate is closed, rests in a notch in the top of the keeper post. The forward standard of the gate has at its top a roller resting upon the supporting bar, and a guide bracket extending downwardly from the under face of the bar carries rollers which engage the lower edge of the upper pair of rails of the gate. When the supporting bar is in engagement with both the keeper and the swing post, the gate may be slid backward to partially open it. When it is to be entirely opened, as indicated by dotted lines, it is slid backward until a pin in the upper pair of slats comes in contact with the depending bracket of the supporting bar. The gate will then be nearly balanced upon the bar, and by pressing downward upon the rear end of the gate the bar will be lifted out of its recess in the keeper post, and the gate may be swung around, rest arms or blocks low down on the swing post engaging the lower slats of the gate to guide and support it in the partially and fully open positions. A pin or short post, adjacent to the swing post, is also adapted to engage the bottom pair of slats of the gate, in guiding it to the open position. This gate may be readily set up on any kind of land, and may be opened or closed with but little exertion. Further information relative to this improvement may be obtained of Mr. W. H. Ayres, Sackett's Harbor, N. Y.



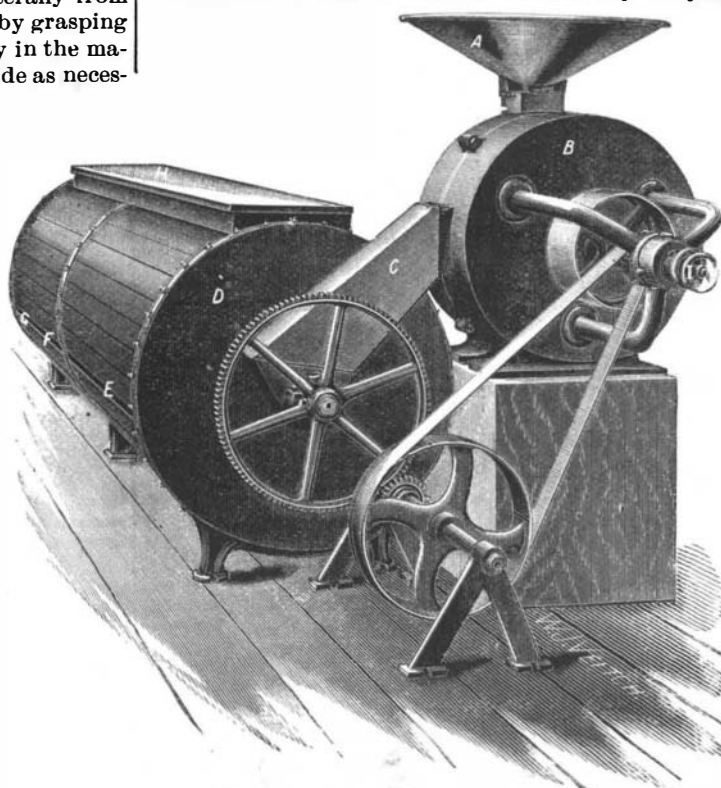
HARPER'S UNICYCLE.

drum. H is the door or ventilator through which the air enters to the bolter, and I is the hand wheel by which the stones can be adjusted when grinding.

The general grinding mill shown is made in sizes adapted to grind from 5 to 50 bushels of meal per hour, depending on the power and speed and the fineness of meal required. The mill should be run at the rate of 700 to 1,000 turns per minute. It is built entirely of steel and iron, has improved ball bearings, a spring attachment for preventing the stones from running together and is strong, durable and easily accessible in all parts. It was awarded a medal and diploma at the World's Columbian Exposition. The stones are of the best selected French burr, securely banded and balanced for high speed and fast work.

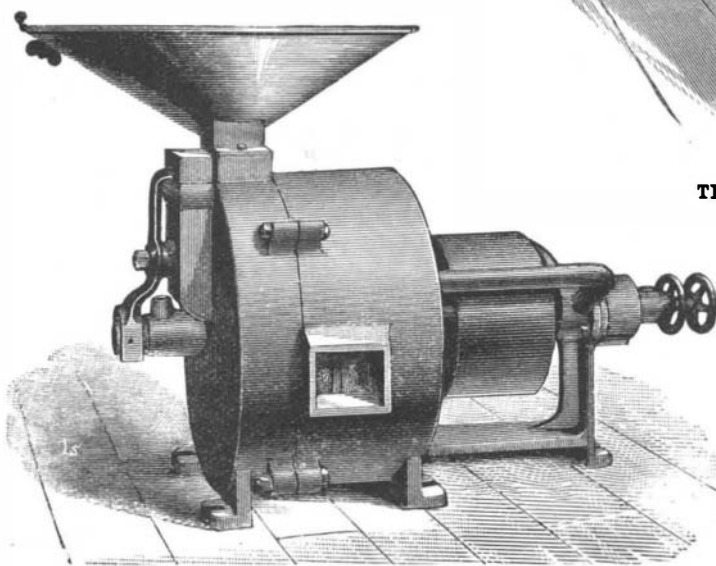
These mills are made by Leonard D. Harrison, No. 135 Hallock Avenue, New Haven, Conn.

## TRIAL OF A GAS TRAMCAR.—A tramway company



THE HARRISON FLOUR MILL.

near London is trying a new car on a portion of its route. The car is known as the Luhrig gas car, and is a German invention, propelled, as its name implies, by means of gas. It is self-contained and has a running capacity for about 15 miles. Refilling can take place in about 70 seconds through an ordinary India rubber delivery hose fastened on to a nozzle in the body of the car. There is no smell or vibration and very little evidence of the waste gas going into the atmosphere. From experiments carried on by Professor A. B. W. Kennedy, it has been



THE HARRISON GENERAL GRINDING MILL.