The annexed engravings are views of an improvement in the French turf wheel, invented by J. Jagger, of the city of Albany, N. Y., and for which a patent was granted on the 30th of last October (1852).

Figure 1 is an enlarged view of a part of the periphery of the wheel with some buckets; figure 2 is a profile section through the center; figure 3 is a perspective view of the wheel as set in its proper position, and figure 4 is a plan or horizontal section taken through x y. A being the fixed part or chute chamber, with the shutes, B, B, and C the wheel with its adjustable buckets, the same letters refer to like parts. The improvement consists in a sliding gauge or lip secured to the extremity of each bucket, as shown at a b c, in the figures, for the extension of the bucket, and fitted to the concave surface of the interior of the wheel by means of which the orifice of discharge, and its direction is regulated according to the head, under which the wheel works, and the amount of work to be done, and thus obtain the maximum effect with every varying head of water, also adapting the wheel to the work to be done, which in many cases makes a great deal. The lip is a rectangular plate of iron reaching from the top to the bottom of the bucket; its back surface next the bucket is curved so as to fit the curved surface of the bucket, its front surface being flat, and a chord to the curve of the back surface. This lip is secured in its place by a screw bolt, n, sliding through a slot in the bucket, and tapped into a lip and is regulated by sliding the said lip to or from the bucket directly in front of it, so as to diminish or increase the space between it and that bucket as shown in figures 1 and 3, where the lip, b, is shown as nearly closing the end passage, and the lip, c, as leaving the space between the buckets entirely open. A gate is placed between the chute chamber and the wheel, by which to regulate the supply of water to the wheel, so that there may be a due proportion between the quantity of water pressing into the wheel and that flowing out. There is also a movable cylindrical metal ring fitting accurately and occupying the center space between the outside of the chute chamber and the inner periphery of the wheel as shown in figures 2 and 4, at y. It is pierced with slots equal in size and corresponding in form to the external openings of the shutes, and has the edges of the slots bevelled so as to deliver the water with as little interruption as possible, in whatever situation they may be in reference to the openings in the shutes. The ring is moved or shifted round horizontally so as to close to a greater or less degree, the openings of the shutes, by any mechanical device.

A very important object is claimed and obtained in this patent, viz., the adjustable lip sliding on the inner face of the buckets to regulate the openings between the outer edges of the shutes, and thereby the flow of water from the wheel; thus adapting the lines of this turbine to the head of water and amount of work to be done, however varying these may be. The water is taken at the bottom of the wheel and every inch of head is made available. In some situations at different times of the year, the head and quantity of water vary greatly; this wheel is thereby adapted for such places. The wheel is simple, strong and durable, and not liable to be obstructed by ice. The inventor is of the firm of Jagger, Treadwell, Perry, and Co., of Buffalo, New York, and whose castings can be always assured, and from whom more information can be obtained by letter or otherwise. We would state here that we have seen some unsolicited letters from respectable persons who have been using this improved wheel, who speak in terms of the highest praise respecting its permanence.