## AN IMPROVED WRENCH.

The illustration represents a simple and durable wrench, patented by Mr. Charles H. F. Kraft, in which the jaws may be quickly and conveniently adjusted for different sized work. Fig. 1 shows the tool in perspective and Fig. 2 is a side sectional view. The fixed jaw on the outer end of the handle consists of a $U$-shaped removable piece held in position by a pin, and the movable jaw is mounted to slide on an inclined tongue of a head held longitudinally adjustable on the wrench handle, and adapted to be locked on it. The jaw is wedge-shaped, and in moving it in or out in its guideways it moves nearer to or farther from the fixed jaw.


## Kraft's wrench.

The movable jaw is held in place by a pin held transversely in its sides and engaging a slot in the tongue of the head. In the front face of the tongue of the head and in the under side of the jaw are recesses containing a spring to hold the jaw in an innermost position, as shown in Fig. 2. The movable head is locked in place on the handle by a toothed dog having a tongue engaging a slot in the lower end of the head, while on the opposite edge of the handle, is an eccentric cam mounted on a pin supported in lugs projecting from the head, and when the handle on the eccentric is swung away from the wrench handle, the head carrying the movable jaw can be readily moved along the handle. This wrench, while being a superior tool for pipe work, is also designed to have great efficiency for general use. The jaws being parallel allows it to grip any square nut or-bolt head, and when once adjusted to the size required it cannot be changed by being moved on the bench. It is a strong wrench, and its quick and easy release from a pipe makes it very convenient in use. Further information relative to the improvement may be obtained of the Kraft Ideal Pipe Wrench Co., Bat tle Creek, Mich.

## AN IMPROVED TRACTION ENGINE.

The machine shown in the illustration, patented by Mr. James A. Stout, can be propelled at a high or low rate of speed, and readily changed by the engineer from one speed to the other without removing or rear ranging any of the parts. Fig. 1 shows the engine in
tudinal keyway, is a second drivingpinion, $B$, adapted to slide longitudinally on the hub, such movement being effected by a shifting segment by means of a handle in ready reach of the operator. The gear wheel, A, forming part of the gearing for the traction mechanism, is in alignment with the first small driving pinion, C , but is adapted to be engaged by the larger driving pinion, $B$, when the latter is shifted trans versely. For this purpose the gear wheel, $A$, is mounted on a stud held on a bearing sliding in a segmental guideway formed on a pillow block, a pin on the bearing being connected with an upwardly extending lever, as shown in Fig. 3, by moving which the bearing can be shifted so that the gear wheel, A, is moved in orout of mesh with thesmall driving pinion, C. The gear wheel, A, does not move out of mesh with the traction gearing when the lever shifts the bearing, and the friction pulley in its normal position is always in contact with the belt pulley, being pressed thereon by springs in line with the driving shaft. When the engine is used as a power for thrashing machines, the belt can be-readily tightened or loosened by running the traction engine a short distance forward or backward at a slow speed.
Further information relative to this improvement may be obtained of the Harrison Machine Works, Belleville, Ill.

## The "New Mesmerism."

Within the past few months most wonderful tales have appeared from time to time in the dailypress concerning certain mesmeric performances in the Paris hospitals. It was gravely stated that Dr. Luys, of La Charite Hospital, had obtained such a development of hypnotic suggestion as to bring about a transference of sensibility to inanimate objects. For example, a person in the hypnotic state would receive a suggestion that a glass of water was part of himself and was capable of sensation. Then the glass would be taken out of his sight, and when the contained water was agitated the patient would be visibly disturbed or even give evidence of acute suffering. Other inanimate objects were capable of receiving like impressions, and there was apparent danger that this "externalization of the sensations," as it was called, would come to be regarded as an accepted fact by not a few prominent scientific men with more imagination and credulity than sound common sense.
Mr. Ernest Hart, when in Paris recently, had his attention drawn to these seemingly astounding manifestations of occult force, and was so impressed with what he saw that he determined to seek out the cause. It took him but a very short time to see that the subjects of these hypnotic experiments were impudent impostors, and that Dr. Luys was the victim of gross fraud. He suggested to the doctor the employment of certain simple tests, such as the substitution of inert substances for the drugs in sealed tubes which were supposed to act upon the subjects when brought near the body. Dr. Luys, however, declined to act upon this suggestion, saying that he could perform the experiments only in his own way, and if they failed to convince he could only express his regret. Mr. Hart then procured the attendance of five of these subjects in his own apartments and repeated the experiments in the presence of a number of Parisian and foreign medical men. The same phenomena, he says, in a communication to the London Times, "were reproduced with sham magnets, with substituted figures, with misnamed medicinal substances, and with distilled water, and with sham 'suggestion,' opposite suggestion, or none at all. Every one was able to convince himself that all the results so shown were, without exception, simulated, fictitious, and fraudulent. That some of the patients were hypnotic and hysterical in a high degree does not alter the fact that from beginning to end they all showed themselves to be tricksters of the most barefaced kind; some of them very clever actors, possessing dramatic powers which might have been turned to better purposes, most of them utterly venal and some of them confessing that they played upon the credulity of Dr. Luys for their own purposes."
It is strange to think that men of scientific me-
perspective, Figs. 2 and 3 being partial plan and side dical training can be so thoroughly duped in this clos- $\mid$ views. On the main driving shaft is a small driving pinion, C, bolted to the hub of the belt pulley, and on the inner surface of the rim of the belt pulley acts a friction pulley having a hub turning loosely on the hub of the belt pulley. On the outside of the hub of the friction pulley, and secured by a key in a longi-
ng decade of the nineteenth century, and we may well pause to ask ourselves whether, after all, the world is any less credulous than it was in the good old days of witchcraft and diabolism. There may be a greater number of hard-headed skeptics abroad, but a large i- portion of mankind is still hungry for the incompre-


THE LOVELL DIAMOND CYCLE.
unning parts, and are fitted to both wheels, crank shaft pedals and bead. These bearings are constructed alike. The balls are adjusted by an adiustable cone on one side and a stationary cone on the other, the bearings adjusted by the former. Removable hardened steel ball cups and ball-retaining washers are used. A leading feature in these bearings is that, in the

