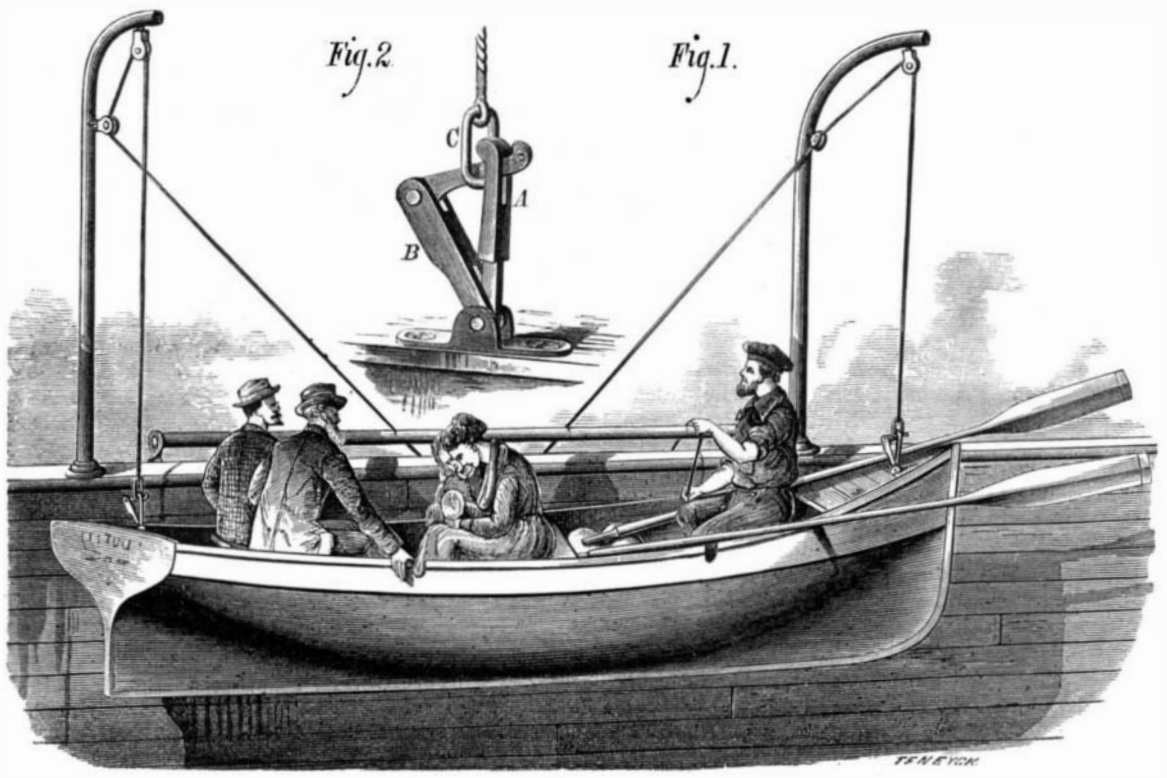
IMPROVED BOAT-LOWERING APPARATUS.

We illustrate herewith a new boat-lowering apparatus, in which the inventor seeks to use the buoyancy of the boat as a means of detaching it from the falls. He has contrived the hooks, whereby the latter is fastened, so that they will open when the weight of the boat is taken by the water. The release is thus automatically effected. In order to secure the even lowering of the boat, the inboard ends of the falls are wound about a drum bolted alongside the bulwarks, and the rotation of the drum is governed by a pawl and ratchet or other simple mechanism. The hook which forms the essential feature of the invention is illustrated in Fig. 2. It consists of three parts two of which, A and B, are pivoted in lugs attached to the boat, and a third, C, is pivoted to one of the aforesaid parts, and enters a slot in the other. Over the part, C, the ring at the end of the fall passes; and so long as there is any weight suspended by the hook, its parts will maintain their relative position as shown in Fig. 2. When, however, the stress of the weight is removed, the part, C, falls from the upper portion of the slot where it engages by the shoulder formed upon it, and is drawn out by the part, B, which falls flat, the part, A, doing likewise. The falls are thus instantly released, leaving the boat free. To hook the boat on for hoisting, it is simply necessary to insert the part, C, through the ring, and catch it in the slot. The parts are then held together until the weight of the boat rests on the hook, when no further attention is required. The inventor provides a safety cord, which, as the boat descends, comes out of the hole at the end of the small hook. This is intended to prevent all danger of the boat being lifted accidentally, and so released before the proper time. Fig. 1 shows the invention complete, as attached to a boat.



BRICE'S BOAT LOWERING APPARATUS.

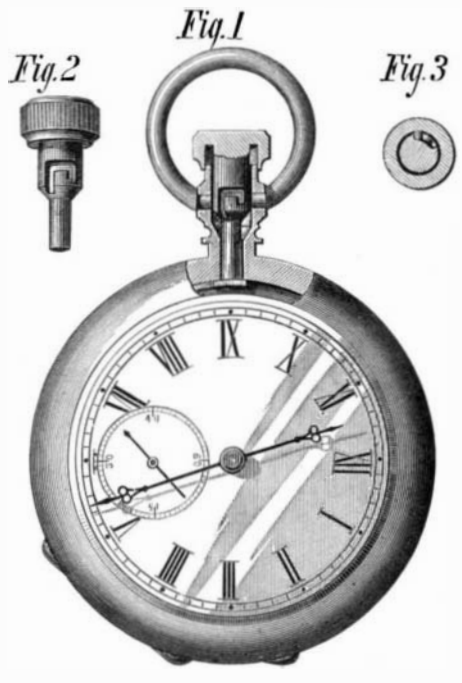
Patents pending through the Scientific American Patent Agency in this country, Great Britain, and France.

Mr. W. C. Brice has also invented an actinometer, or photographic testing plate, to be applied to a camera, for the purpose of determining the quality of the chemicals employed, and for discovering where the trouble lies in foggy and undefined pictures. It consists of a frame with a sliding glass, to which are applied fixed pieces of transparent material, superposed in layers in regular succession, to produce a graduated obstacle to the passage of light. Patents have been applied for on this improvement in the United States and several countries of Europe.

For further particulars address the inventor, W. Alexander Brice, care R. C. Poulter, 4a Middle Temple Lane, London, England.

DUEBER'S IMPROVED WATCH CASE.

The obvious advantage of the stem-winder watch is that, as its winding apparatus is contained in the case, there is



no necessity for carrying a separate key. But many consider that the annoyance of lost or mislaid keys is of less importance than the liability of stem winders to get out of repair and their higher first cost, so that probably the majority of people prefer the older-fashioned system.

In the invention herewith illustrated, the object sought has been to combine a key with the case, making it form a part thereof in the place where the stem-winding apparatus is usually located. The key, however, is detachable, and is used to wind the watch in the ordinary way.

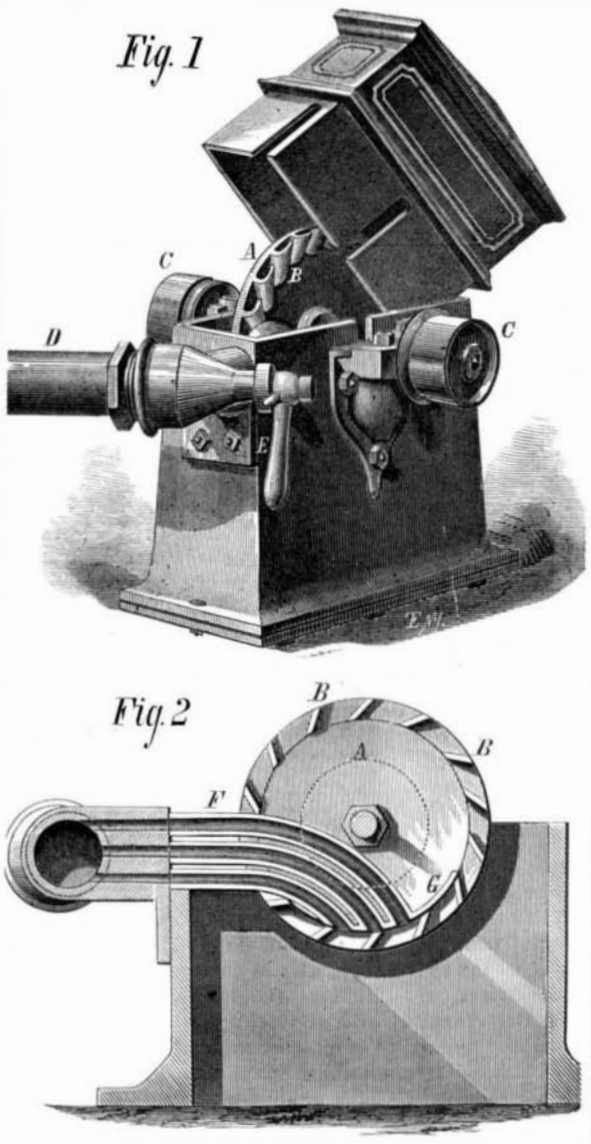
In the engraving the key, Fig. 2, is shown inserted in Fig. 1. A small projection inside the pendant enters slots cut in the side of the key, as represented in Fig. 3, and hold it in place. It suffices, in order to remove the key, to push it in and turn to the left; the reverse operation re-fastens it in place.

It is claimed that this arrangement involves but very little extra cost, and that the key cannot get lost misplaced, or filled with dirt.

For further information address the Dueber Watch Case Manufacturing Company, 175 West Fourth street, Cincinnati, Ohio.

IMPROVED WATER MOTOR.

The invention herewith illustrated applies water to a wheel of a novel construction, whereby the whole centrifugal force of a jet of water is concentrated on the center of the buckets From these it is immediately discharged, thus avoiding any friction or dead lift, and imparting to the wheel not



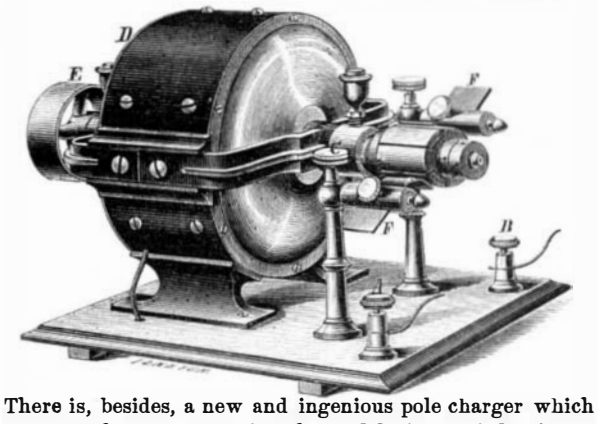
only a greater impetus but, it is claimed, a very high degree of power, considering the pressure and the size of the stream used. Although adapted to all purposes where water is used as a motive power, this invention is more particularly designed for use where the supply of water is limited or variable; and this is believed to be a desideratum, as streams of water are liable to much fluctuation at different seasons of the year. More especially is it designed for use in propelling light machinery, such as printing presses, sewing machines, lathes, etc., wherever water can be taken from a hydrant. It is also claimed to be well adapted for heavy work.

The disk of the wheel, A, Fig. 1, is made of brass of various sizes, and, together with the buckets, B B, is of a peculiar construction and of a capacity to correspond with the size of the stream and the power required. C C are the belt pulleys; D the supply pipe; E a self-packing faucet or stop-cock, which is the subject of another patent obtained by the same inventor. This faucet is capable of supplying one, two, three, or more streams of water of different dimensions through the pipes, F, which are firmly held in position at the point of delivery of the water on the buckets by a shoe, G. The pipes are provided with bushings at their extremity, which can be removed at pleasure, and others of a different capacity inserted. The waste pipe, of course, can be arranged as required, either from the sides or bottom of the casing. The communication between supply pipe and buckets is shown in section in Fig. 2. Patented June 13, 1876. For further particulars address the Little Giant Water Motor and Self-Packing Faucet Company, Glen's Falls, Warren county, N. Y., Frederick J. P Chitty, manager.

THE WESTON DYNAMO-ELECTRIC MACHINE.

Our engraving represents a new electric machine, adapted more especially for electroplating. It is of simple construction and, we are informed, requires very little power. The illustration gives an exterior view; the mechanism is as follows: From the interior of an iron ring or cylinder, a number of radial magnets point to a common center. These, as well as the ring, are wound with wire. In the central space is a shaft which carries a series of armatures, the outwardly projecting ends of which are so arranged as, when reversed, to approximate closely to the extremities of the magnets. When the armatures are thus rapidly carried past the magnets, currents of electricity are induced in the wires surrounding said armatures. Instead of making the commutators with as many springs or brushes as there are insulated strips to connect their currents—a cause of loss and of frequent readjustment—a device is provided in which all the strips which convey currents of like kinds are united in the commutator itself, and it is only necessary to use the springs or brushes to collect the currents from all the armatures, no matter how many magnets or armatures may be employed. Only two springs or brushes are used, one being always in connection with one of the projecting pieces of one half the commutator, while the other is always in connection with the other half. Hence one transmits the positive and the other the negative currents.

When the machine is set in motion, a current is produced which flows through the halves of the commutator. then passes through wires to the coils which surround the magnets, and through the coils surrounding the iron ring. This circuit, small at first, rapidly excites the magnets, producing the maximum effect. The current is then led through any desired circuit and is returned to the machine through a spring into one half of the commutator, then into the other, completing the circuit from the coils surrounding the armatures, and then back to said cores. The entire current generated in or by all the armature coils is passed through the magnet and ring coils, and none of the armatures are set apart for generating a current for excitation of the magnets.



There is, besides, a new and ingenious pole charger which prevents the currents being changed during periods of rest, so that no preliminary examination of the currents is necessary before at once setting the apparatus in operation.

Four sizes of the machine are made, and one of medium dimensions is capable of running 200 gallons of nickel solution. The apparatus will be found at the Centennial, at west end of Corliss engine avenue, B 78. Patented by Edward Weston, July 18, 1876. For further particulars address Condit, Hanson, & Van Winkle, 236 Market street, Newark, N. J.