MYSTERIOUS VASE.

BY W. B. CAULK.

Tricks performed with ink and water have always been favorites with magicians, and they have devised means of keeping this trick fully abreast of the times, thus retaining its popularity. The manner of performing the latest ink trick involves such novel principles as to puzzle even those who are well posted on modern magic. The Mysterious Vase has been presented by but few prestidigitators, and the secret so well guarded that comparatively few people know how it is done.

The attention of the audience is called to a glass vase that is filled with water which is resting on a light stand. This vase resembles a large octagon celery glass. In the vase there are a few cut flowers, which the performer removes as he calls attention to the vase and the clear water it contains. The flowers are given to the ladies in the audience, as they have no further connection with the trick.

A lady's handkerchief is borrowed and the vase covered with it for a moment. On removing the handkerchief, the water that was seen in the vase appears to have changed to ink. While this rapid transformation is very startling, yet the most marvelous part of the trick is to come. The magician bares his forearm, that the audience may see that his sleeves have no connection with the trick, and then proceeds to remove from the ink in the vase six silk handkerchiefs and two lighted candles, each article being perfectly dry.

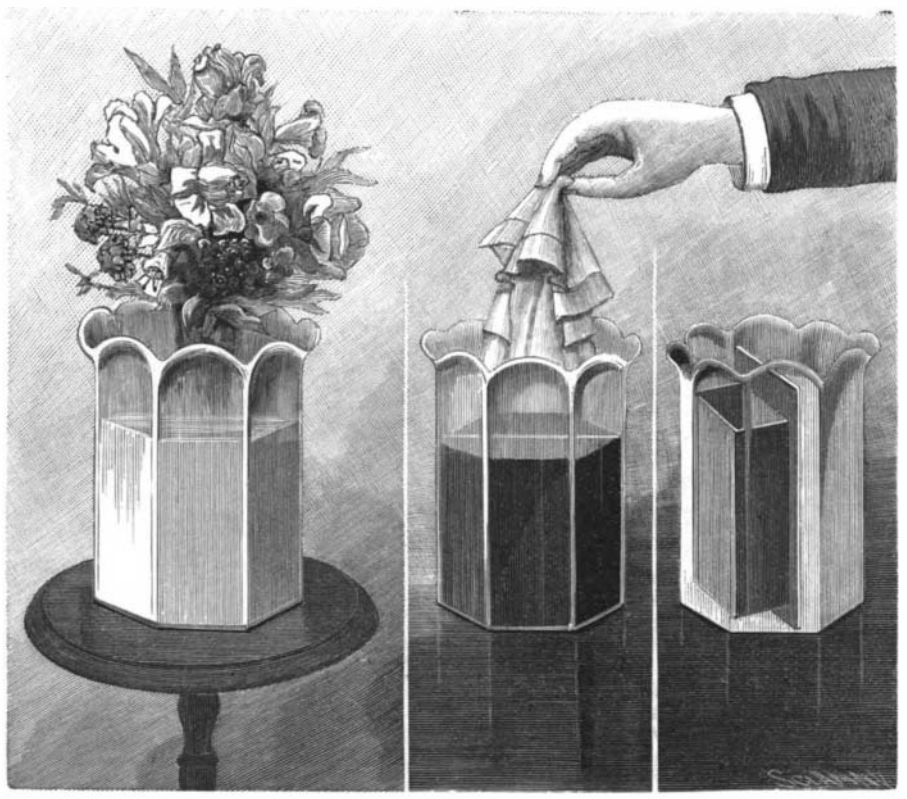
The means by which this seeming impossibility is performed are as simple as the trick is mysterious, as the following will show. In the center of the vase, reaching from side to side and from the bottom to within a half inch of the top, is a piece of polished mirror. The side edges of the mirror rest in the angles of the vase, and as the vase is only seen from the front, the edges are not seen. The front half of the vase being reflected in the mirror leaves the impression that one is looking directly through the vase, when in reality you only see one-half of the inside.

To the back of this mirror is attached a watertight tin box, in which are placed six small silk handkerchiefs and two candles. The exterior of the box and back of the mirror are painted a dead black color. Enough water is poured into the vase to reach the top edge of the mirror. In the water is dissolved a small portion of iron protosulphate. A few cut flowers are placed in the vase, which is then placed on the stand with the mirror side to the audience, and the candles lighted.

After the flowers are removed and a handkerchief borrowed, the magician secures possession of and palms between his fingers a small lozenge made of pyrogallic acid, which he drops in the water in front of the mirror in the act of covering the vase with the handkerchief. In a very few moments the lozenge dissolves, and the pyrogallic acid of which it is composed causes the water, which holds in solution the iron protosulphate, to change to a good black ink.

On removing the handkerchief with which the vase was covered, ink is seen to have taken the place of the water, and from the center of the vase the performer removes the silk handkerchiefs and candles.

The first section of our engraving shows the vase of water on the stand; the second shows the vase after the water has changed to ink, with the magician removing one of the silk handkerchiefs. The third illustration represents the vase with one side broken away, showing attached to the back of the mirror the tin receptacle that contains the handkerchiefs and candles.



THE MYSTERIOUS VASE.

The Value of Trade Marks.

The trade mark is essential; it is a protection to the honest maker and a menace to the dishonest maker; it is a protection to the buyer, and he realizes it even to the extent of, in many instances, paying more for the article bearing it, perhaps after his merchant has assured him that "here is something as good, or better, for less."

Two articles may look alike as two peas, but offer them for sale at the same time and place, for the same price, one bearing a well-known trade mark, the other unmarked, and every time the marked one sells first. Why is it? Because, in this day and age, imitation and fraud has invaded every line of business, and the buyer must, to a greater or less extent, deal on faith; but he is not going wholly on faith if he can help it. A trade mark is a mark of identification that cannot be mistaken, even by the ignorant, and when once well and favorably known, its merits are explained by father to son, mother to daughter, and the high standing of the article bearing it assured so long as the manufacturer is careful to keep it up to the standard and fully abreast of the times.—Machinery.

MRS. TYNDALL, the widow of Prof. Tyndall, has remitted to the Royal Institution a sum of £1,000 which she states that her husband desired her, at such time as should be convenient to herself, to present as an expression of his attachment to the institution with which he was so long connected, and of his sympathy with its objects.

RECENTLY PATENTED INVENTIONS.

Engineering.

STEAM ENGINE.—William F. and Eugene W. Cleveland, Rounthwaite, Manitoba, Canada. This invention presents an improvement on a formerly patented invention of the same inventors, relating more particularly to a locomotive or tandem engine, whereby a greater or lesser vacuum is produced in the exhaust ends of the cylinder by an induction or suction action of the piston exhaust of one engine on the valve or auxiliary exhaust of the other engine. The two cylinders have their main or piston exhausts and auxiliary or valve exhausts so arranged that the main exhaust of one engine cylinder produces a suction on the auxiliary exhaust of the other cylinder. The larger exhaust area, with prompter action and without dividing the steam, increases the velocity of the latter, or it is less retarded and heavier draught is produced.

ROTARY ENGINE.—Martin C. Kessler, Gilead, Ind. This invention relates chiefly to the wear surfaces and packing of rotary engines, and provides improvements whereby leakage of steam is prevented. The rotary piston hub has radial and lengthwise slots in which the pistons proper are slidably arranged, while segmental packing pieces arranged at the ends of the hub have radial grooves to receive the ends of the pistons. Each piston is supported and forced outward by pressure applied at its center only, so that its outer or wearing surface may automatically adjust itself to the contact or friction surface of the casing with the greatest facility and exactness.

RAILWAY WATER TANK.—William M. Stevenson and William K. Bailey, Honey Grove, Tex. This invention provides a simple construction by means of which a railway train may be utilized to lift water from a well to the tank, a large upright tube or barrel extending down into the well, and there being over the barrel a derrick-like frame affording guides for a crosshead to which is connected a plunger operating in the barrel, there being a tackle block at the top of the derrick, and a pumping cable adapted to be connected with the locomotive. A wire or rod line is supported at the side of the track in both directions, to form a guide for the pumping cable, which has a link or ring sliding on the wire. When a train stops, going either way, the locomotive is connected with the cable, and the pumping is effected as the train starts, lifting the plunger and a column of water, the cable being detached by a tripper striking a post.

Electrical.

ARC LAMP.—Edgard Weber, Paris, France. According to this invention the carbon holders are connected by a cord or small chain, one holder being heavier than the other to actuate them, and the cord passing around a disk mounted loosely on the spindle of which are armatures connected with a mechanical brake acting on the disk, and submitted to the action of a spring or counterweight, an electro-magnet arranged in shunt on the main circuit. When the voltage increases at the lamp terminals and the electro-magnet receives a proportional quantity of the current, the mechanical brake is released and magnetic braking is exerted upon the disk in such manner that the carbons approach each other slowly, regularly and without jerks, being slightly drawn back as soon as they have made contact.

Bicycles, Etc.

BICYCLE FRAME.—Amos B. Simonds, Youngstown, O. This invention provides novel means for establishing a spring connection between the frame and one of the axles, whereby the two may have a degree of independent movement, relieving the sides of jarring in riding over a rough road. Auxiliary frames are attached to the back stays and members of the rear fork, and admit of independent movement of the wheel in an arc struck from the crank axle, without interfering with the operation of the chain and sprocket driving gear.

Mechanical.

SELF-OILING WHEEL.—Ivor R. Titus and John W. Ensign, Huntington, W. Va. The wheel hub, according to this invention, is adapted to hold a quantity of oil in such a manner as to supply it to the bearing in sufficient quantity to properly lubricate the journal in the most economical manner. Means are also provided for the exclusion of dust from the journal, and for supplying oil without the removal of plugs and other devices, a better surface than the ordinary cotters being furnished to receive the wear on the end of the hub. The wheel may be quickly removed and replaced in case repairs are needed.

AUTOMATIC LUBRICATOR.—Alexander A. DeWitt, New York City. This lubricator is applicable to cylinders, pipes, chests and bearings of engines, its construction adapting it for use on a great range of machinery. It comprises a pump on the rod of which are two striking points or tappets, one movable relative to the other, an actuating cam revolving between the striking points, while a threaded rod mounted longitudinally on the piston rod engages and moves the adjustable striking point. The operator can govern the delivery of lubricating material to suit the machine with but little care and at the least possible cost for the lubricator.

METHOD OF PATCHING SAWS.—Michael D. Ahearn, Green Bay, Wis. To repair fractures in metal plates, according to this invention, the metal on one side is cut away directly across the line of the fracture, to form a lateral recess and reduce the edges of the fracture to a feather edge, a corresponding splice piece being then inlaid and brazed within the recess and across the fracture. The method is designed to insure a strong and permanent patch for the repair of broken, cracked or fractured mill and other saws or steel plates, or for the insertion of broken-out teeth, the crack having its edges so cut away that it does not have any tendency to creep to a greater depth, and the saws not being shortened.

COMBINATION IMPLEMENT.—Charles J. Ericson, Salt Lake City, Utah. An improved tool for mechanics is provided by this inventor, one adapted to be readily changed in adjustment to serve as a square, a bevel gage, spacing dividers, and a pencil compass. Its stock piece is formed of sheet metal and has side pieces held together by an integral web, the sides having right-angular flanges in the same plane and terminating at one end in laterally perforated ears, one side having a pointed toe at the end opposite the ear.

FLUID METER OR MOTOR.—John H. Dixon, Marietta, O. This invention provides an apparatus in which a casing incloses a rotary shaft having paddles or blades against which the incoming fluid may act, the apparatus being so constructed that it may also be used in connection with a meter to record the amount of fluid passed through it, the latter being effected by a simple system of gears and dials which may be readily adjusted with reference to the known quantity of fluid passing through.

KNIFE SHARPENER.—John W. Maillot, New York City. According to this invention a pair of blocks is formed with complementary wavy surfaces which are brought close together and are composed of an abrading material, the knife to be sharpened being drawn lengthwise in the angle formed between these surfaces. The blocks may be formed as a single block or as two separate blocks held together by an inclosing frame, and they may be made of vitrified emery throughout, or of clay, cement, or other material readily shaped and cheaply manufactured, their outer curved surfaces being of emery or other abrading material.

COLLAR FOLDING AND SHAPING MACHINE.—Antoninus Farina, New York City. This invention provides a machine designed to expeditiously and effectively fold collars without injuring them, the machine folding and shaping turn-down and roll collars, and shaping the wings of wing collars. In addition to ironing and shaping the collar, the machine smoothes down any parts of the fiber which may project in a torn state, thus making the collar regular at its crease and preventing it from irritating the neck of the wearer.

Miscellaneous.

RECOVERING ZINC OXIDES FROM SOLUTIONS OR ORES CONTAINING ZINC.—Edgar A. Ashcroft, Newcastle, N. S. W. To obtain zinc oxide from ores or solutions containing zinc, in a cheaper and more convenient manner than heretofore, this inventor provides a process for first obtaining from the ore or solution solutions of zinc sulphate, adding zinc oxide and stirring the mixture until a pasty consistency is obtained, and heating the product to convert it into zinc oxide, sulphuric or sulphurous acid being disengaged. In neutral zinc solutions the zinc salt is first converted into basic zinc salt by the addition of zinc oxide, carbon being then intimately mixed with the basic zinc salt, and the mixture heated to about the melting point of aluminum.

GAS LIGHTER.—Thomas N. McNish, Kearney, N. J. This inventor has devised a hand gas lighter which consists of a stationary taper-receiving tube in connection with a revoluble key independent of the taper-carrying tube, and adapted to be operated by the thumb of the hand grasping the handle of the device. The gas may be turned on and lighted without danger of marring or in any way injuring any ornamental work, and the device is simple and inexpensive.

MANIFOLDING CASH SALES BOOK.—John H. Murphy, New York City. This invention provides an improvement on a formerly patented invention of the same inventor, whereby the sales book or counter check book is arranged to enable the salesman or other person to quickly and conveniently produce three or more sales slips simultaneously. Each leaf of the book is formed into three or four separable slips or sections, the slips being folded over, and a corresponding number of transfer sheets being employed.

COLLAPSIBLE BOX.—Henry H Kinsey, Shoshone, Idaho. This invention provides a novel construction of "knockdown" boxes for the transportation of eggs, bottled milk, crackers, etc., the box being also designed to serve as a convenience in the household when desired. The end pieces have detachable hinge connection with the bottom piece, and the side pieces engage slideways in the end pieces, while the cover has flanges which engage over the end pieces, and is secured in place by removable fastening devices.

LACE OR RIBBON CABINET.—Charles H. Martin, Marshall, Ill. For holding and displaying ribbons, laces and similar goods, this inventor has devised a cabinet which is divided centrally and the rear portion hinged to the front, so that it may be swung to the side, thus exposing the inner portions to facilitate the removal or replacing of goods. The two parts of the cabinet are secured together by a latch, and brackets are attached to horizontal bars extending across the front and rear faces, both faces of the cabinet, between the horizontal bars, having glass strips, making it possible to see the spools in the cabinet and ascertain when the stock becomes reduced.

WAGON BRAKE.—Joseph A. Gilkey, Springfield, Oregon. According to this invention, a spring adapted to be attached to the hounds or other fixed portion of the running gear is so made and located that it will take up all the slack in the brake and its coupling, and when the brake is not applied the spring will act to carry and hold the brake beam and shoes or blocks away from the wheels, preventing the accumulation of mud on the shoes or blocks. The spring also prevents the brake bar or beam from swinging endwise, but does not interfere in any manner with the action of the brake mechanism.

GARDEN TOOL.—Libbie B. Smith, Belle Plain, Iowa. This invention relates to improvements in hoes, rakes and diggers of various kinds, and provides a handle having an adjustable head, so that a number of different kinds of garden implements may be attached thereto, the head being so made that the various tools when attached may be adjusted and yet be retained in such position that the lower or operating points or parts will be level when the implement is held in position for use. Any form of garden tool may be made to be attached to this head.