

NOVEL CATTLE RINGER.

The engraving represents a new cattle ringer recently patented by Mr. Horace E. Barnes, of Lee's Summit, Mo.

A is the fixed jaw, which may be similar to the corresponding jaw in an ordinary punching tool. It is provided at the point where the punch engages it with a cushion of rubber or leather. The movable jaw is made in two parts, B, arranged to work side by side, and both pivoted to the jaw, A, as if made in one piece. The part, B, is extended into a handle, corresponding with the handle of the fixed jaw, A, and its tip carries the punch, D, which is similar to that of an ordinary punching tool. The movable part of the jaw, B, corresponds in shape with the fixed part for a portion of its length. The front portion or tip is extended beyond the tip of the fixed part and formed into a ring, through which the punch, D, works, and its rear portion is provided with a slot, of ellipsoidal form, in which works a thumb screw, C, the threaded portion of which screws into the part, B. The handles are thrown apart by a flat spring attached to one handle and bearing against the other.

In using the instrument the handles are pressed toward each other just sufficiently to prevent the punch from protruding beyond the surface of the ring. The screw, C, is then turned so as to place the thumb piece transversely across the widest portion of the slot, which holds the parts in such position that the distance between the ring and cushion on the opposite jaw corresponds with the thickness of the gristle between the nostrils of the animal. The instrument is then applied to the nose, and when the punch and ring are at the point where the hole is to be made the thumb screw is given a quarter turn, so that it can work in the slot. This allows the punch to protrude beyond the surface of the ring so as to punch the hole as desired when the handles are pressed toward each other. When the handles are released the spring forces them outward, so as to withdraw the punch, D, within the surface of the ring, and the thumb-screw, C, is again turned so as to hold the parts in the former position. The tool is then partly withdrawn from the nose with one hand, and the nose ring placed in position with the other hand. By this construction provision is made for punching a neat hole and for inserting and withdrawing the instrument without unnecessarily cutting the animal or marring the extremities of the hole as punched, and also for clearing the punch from the hole by means of the ring.

IMPROVED FEED-WATER REGULATOR.

We give an engraving of an improved feed-water regulator, lately patented by Mr. Charles H. Kuhne, and is being manufactured and introduced by the Kuhne Regulator Company, Limited, of Corry, Pa. Fig. 1 is a perspective view of the regulator with a portion broken away to show internal parts; Fig. 2 is a vertical section of the steam and water cylinders; and Fig. 3 is a detail view of the steam valve which is operated by the float. The larger cylindrical vessel or float chamber is connected with the boiler above and below the water line by two horizontal pipes, each provided with a valve by which communication with the boiler may be stopped.

The float in this vessel is connected with a lever connected with a valve for opening communication between the float chambers and the larger of two cylinders, placed axially in line with each other and above and at one side of the float chamber. These two cylinders are accurately bored, and are each provided with a piston attached to opposite ends of a common piston rod. The upper cylinder is provided with a water-supply pipe at the top, and two lateral pipes placed one above the other. The upper of these two pipes leads to the water space of the boiler, the lower one is the overflow. A guide rod extends from the float downward into a pipe terminating in a small cock, which may be opened from time to time to keep the pipe clear.

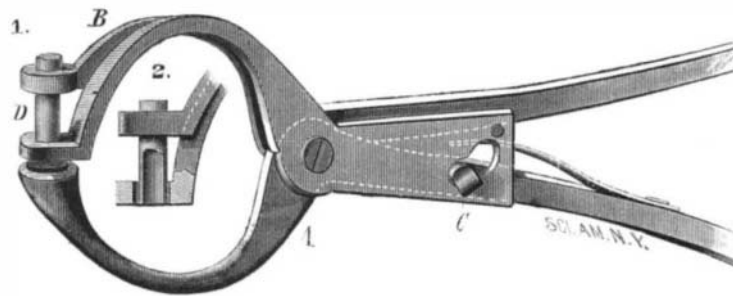
The apparatus is attached to the boiler, so that the float is on the water line. When the water in the boiler falls a small distance below the usual working level, the float drops, and opening communication between the steam space of the float chamber and the space below the piston in the larger cylinder above, the piston is forced upward and carries the smaller piston with it, closing the overflow pipe, when the water forced in by the pump passes through the upper or feed pipe into the boiler, and is retained by a check valve. When the float is raised by the increase of water in the boiler, so as to shut the steam from the lower side of the piston, the pressure of water on the smaller piston pushes it down so that the water passes out of the overflow instead of going into the boiler.

Should it be desirable to use water from the street mains the upper lateral pipe will be dispensed with, and the opening into which it is screwed will be plugged. The pipe which was used as the overflow will now be taken to the boiler, and the feed water will be taken in at the top of the

regulator. When the pistons rise the pipe leading to the boiler will be closed, and when the pressure is removed from the lower piston, the water pressure forces both pistons down, and opens communication between the supply pipe and the boiler feed pipe.

Every engineer knows the advantages of having an equable supply of water. It obviates danger from low water, insures dry steam in a properly constructed boiler, and saves fuel and labor.

The inventor informs us that this device has been in successful use for some time past, and is considered more reliable than any attendant can be. It is compact and simple, requires no packing, and needs little attention. It will be seen that the water supply is controlled entirely by steam,

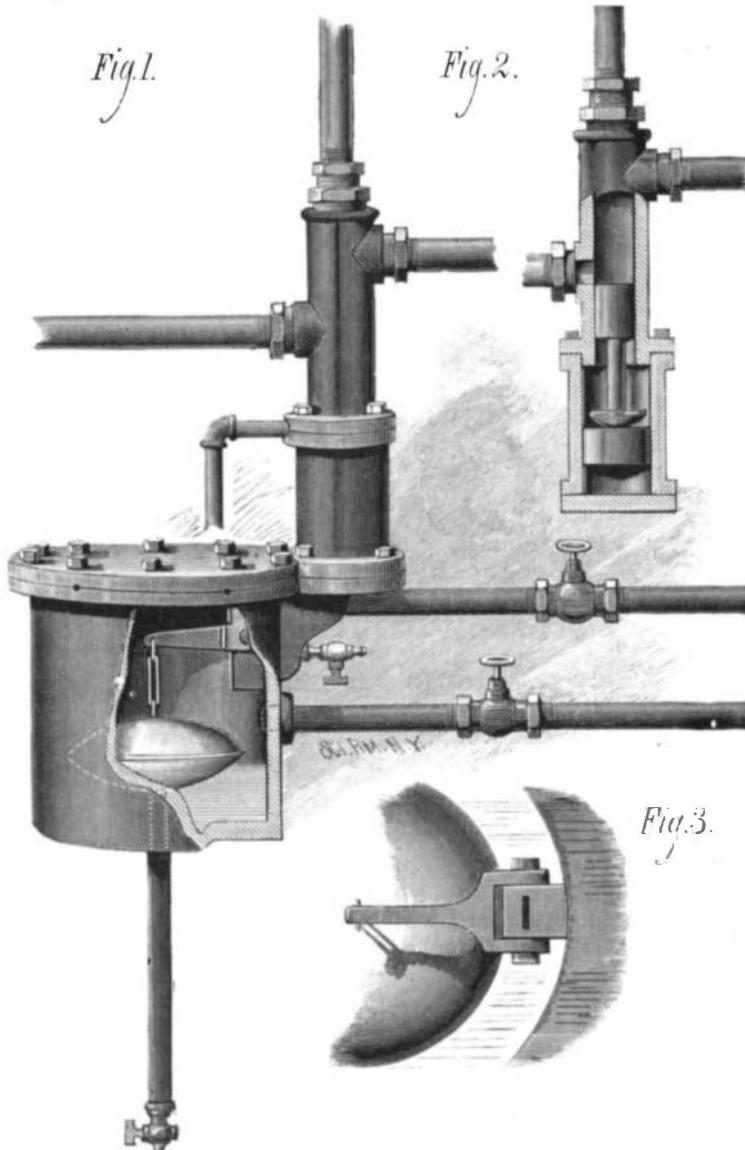
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and that the duty of the float is simply to turn the steam on and off from the actuating mechanism.

Further information may be obtained by addressing the Kuhne Regulator Company, P. O. box 606, Corry, Pa.

MECHANICAL INVENTIONS.

An improved milling cutter has been patented by Mr. Alfred Muir, of Manchester, County of Lancaster, England. This invention is applicable to cylindrical milling-cutters and globe-shaped cutters, and to cylindrical cutters having curved, rounded, taper, or flat ends, also to face cutters and to reamers. The teeth are formed on the cutter or reamer in the usual way, and then spiral grooves are made around it, thus dividing the faces of the cutting edges. In making the

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spiral groove the edge is undercut to make clearance at one side, and afterward the other side of the groove is cut out, thus giving clearance at both sides of the cutting edges.

Mr. John Grein, of Maine Prairie, Minn., has patented an improved wrench for use in oiling carriages and for other purposes, which is so constructed as to hold the nut when removed in such manner that it can be replaced without soiling the hands.

Mr. John Hyslop, Jr., of Abington, Mass., has patented a machine for cutting, shaping, or finishing the heads of tacks, nails, and rivets, which is so constructed as to make all the heads uniform in shape and size.

Summer Conventions.

Among the important conventions recently in session are several at such a distance that only the briefest accounts have been telegraphed.

The American Society of Civil Engineers began its thirteenth annual meeting in Montreal on the 15th. The members were welcomed by Mayor Beaudry and Principal Dawson, of McGill University.

The Associated Maltsters of the United States met at Niagara Falls the same day.

The American Railway Master Mechanics met for their fourteenth annual convention in Providence, R. I., June 14, nineteen States being represented at the opening session. The secretary's report showed a membership of 197. A

paper was read from Reuben Wells, of Louisville, Ky., upon the manner of riveting boilers, favoring button-set riveting above hand riveting. The paper was generally approved. A report from Jacob Johann, of Springfield, Ill., favored a straight style of boiler rather than the wagon top. A committee was appointed to consider the propriety of adopting a standard gauge. A committee was appointed to report on the most economical plan for running locomotives. The next day Mr. James M. Boon, of Fort Wayne, Ind., reported for the committee on the best means of producing combustion of bituminous coal in locomotives. Mr. W. Woodcock, of New Jersey, for the committee on the best form of locomotives, reported in favor of the American eight-wheel as best for express passenger service.

The fourteenth annual convention of the Master Car Builders of the United States and Canada began in this city on the 14th. A large number of delegates were present. The first session was devoted chiefly to the discussion of proposed amendments to the constitution relative to membership.

The chief interest centered on a proposition to make eligible for representative membership any person having a practical knowledge of car construction, and to give to such a member all the privileges of active members, and in addition thereto in all measures pertaining to the adoption of standards for car construction, or the expenditure of money, one more vote for each thousand cars owned by the company he represents. It was contended by those favoring the pro-

vision that it would gain for the association the active interest of the heads of the various railroad companies, and by those who opposed it that too much power would thereby be given to the wealthier corporations. The matter was finally referred to a committee of five, to be reported on at the next annual meeting. The remainder of the morning session was occupied by the discussion of the report of the committee on brake-shoes. The afternoon session was devoted altogether to discussion of the rules governing the interchange of freight cars between roads. The rules relate to the condition of cars, inspection at the time of interchange, and payment for repairs and for cars destroyed while in the custody of other roads. Among the important subjects to be reported on by committees appointed last year at Detroit, are, "How to Prevent Accidents and Injury to Train-men," "The Best System of Train Brakes for Freight Cars," "Standard System of Screw-threads for Nuts and Bolts." An interesting feature of the convention is an exhibition of recent inventions relative to improvements in rolling stock.

The American Pædological Society convened in this city on the 13th. President T. C. Duncan, M.D., of Chicago, read an important paper on "Pædology as a Specialty," in which he urged a larger attention to those diseases which occasion the terrible mortality of children under five years of age. Dr. S. Lillenthal, of New York, read a paper on infantile eczema. Other infantile diseases were discussed, such as tonsillitis, gastro-enteritis, capillary bronchitis, etc. The officers for the ensuing year are: President, Dr. S. Lillenthal; Vice-President, Dr. W. B. Chamberlain; Secretary, Dr. W. P. Armstrong; Board of Censors, Dr. George F. Foote, Dr. T. C. Duncan, Dr. M. Deschere, of New York; Dr. E. M. Jones, of Taunton, Mass.; and Dr. D. Foss, of Newburyport, Mass. The president then appointed the following gentlemen to prepare papers to be read at the next convention of the society: Prof. Dr. W. Owen, of Cincinnati, on chronic eczema; Prof. Dr. M. Deschere, on capillary bronchitis; Prof. Dr. W. C. Earle, of Chicago, on diphtheritic croup; and Prof. Dr. J. P. Mills, of Chicago, on elementary infantile foods.

The American Institute of Homeopathy began its thirty-eighth annual session at Brighton Beach, Coney Island, June 14, with a large attendance. In the usual address the president, Dr. J. W. Dowling, of Brooklyn, said that there were 6,030 physicians in the United States whose practice was according to the homeopathic law; there were 11 homeopathic medical colleges, no less than 38 homeopathic hospitals, 29 dispensaries, 23 State societies, 93 local societies, and 16 medical journals. In a paper on personal hygiene as to fluids drunk, Dr. George M. Ockford, of Burlington, Vermont, spoke of the need of caution with regard to the use