

IMPROVED CENTER DRAFT TONGUE FOR REAPERS AND MOWERS.

The invention represented in the annexed engraving is a device for equalizing the side draft of side-draft reaping or mowing machines. It consists in a tongue, constructed in sections and so arranged that the point of draft is transferred from the whiffletree to the pivot of the sections, enabling the horses to be kept clear of the standing grain, and, at the same time, preserving the proper position of the apparatus. The construction is also such as to allow of turning the machine with much greater facility.

Fig. 1 shows the tongue with its draft section in position, to equalize the draft. Fig. 2 shows the same in position for turning the machine. A is the fixed tongue, to prevent which from exercising a side draft on the carrying wheels, the section, B, is pivoted thereto at C. The inner end of the draft pole, B, is confined in an open cross strap, D, and the former carries the whiffletree, which has a swiveling movement thereon. A spring, E, is secured to the side of the draft pole, B, and extends into and bears against the guide strap, D, thus serving to hold the end of the draft pole outward, and out of line with the fixed tongue.

It will be seen that, as the horses pull in an oblique direction away from the standing grain, and by reason of the pivot heretofore described, the side draft is necessarily equalized because the direct draft is not at the whiffletree but at the pivot, C. This counteracts the side-dragging effect of the cutting apparatus, the off horse is relieved from the strain on his shoulder, and the machine moves forward in a straight line.

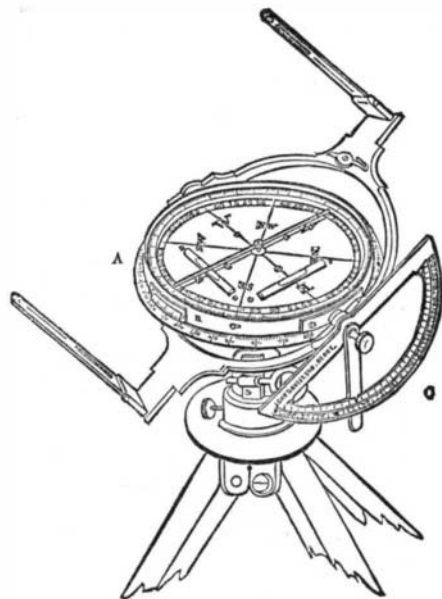
The action of the spring, E, is to keep the rear end of the pivoted pole about four or five inches out of a right line with the tongue and toward the machine. The strap, D, also acts as a purchase and lock to the inner end of the draft pole, in turning corners, thus avoiding the necessity of stopping the apparatus in so doing.

Patented October 15, 1872, and now owned by Mr. Jacob Kready, of New Pittsburgh, Wayne county, Ohio, who may be addressed for further particulars regarding sale of shop rights, etc.

IMPROVED MINING DIAL.

We publish an illustration of an instrument which is claimed to possess many advantages over the ordinary dial. In this latter the vernier cannot be used in conjunction with the needle, without first clamping the body of the dial, which involves a loss of time, while the repeated operations of clamping and unclamping induce wear, and throw the instrument out of adjustment.

The improvement in this dial consists in the addition of a plate under the body of the instrument, which projects beyond the body, and the circumference of which is divided



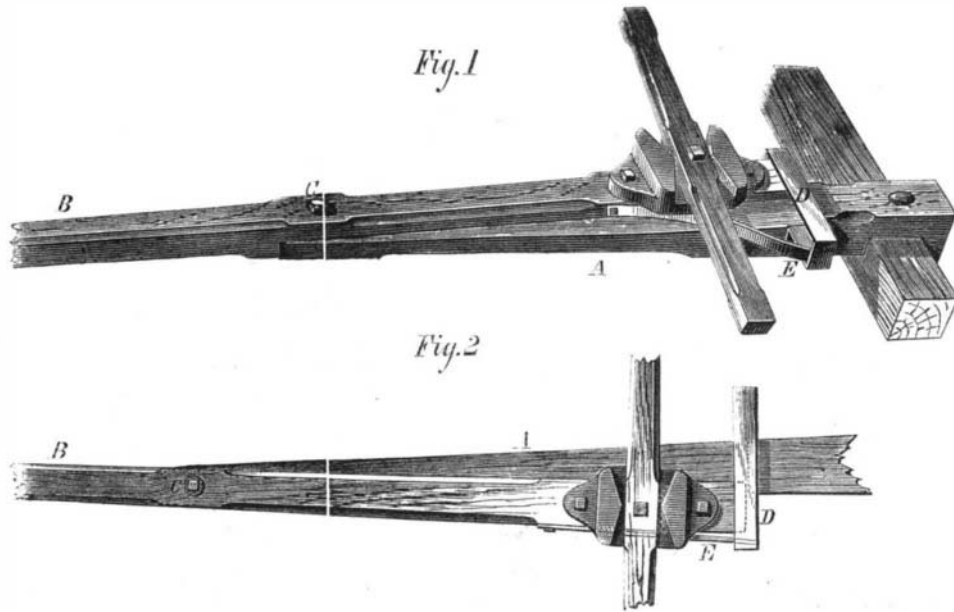
into 360°. This plate is clamped to the ball and socket joint, and remains rigid. The swing sights move on axes fixed to the body, on the outside ring of which is attached a vernier, which reads upon the plate, A, to three minutes. By this arrangement, on taking a sight the angle can either be read from the vernier or the needle. The figuring of the needle ring is reversed, that is, the east and west points change places, so that the angles are read off correctly, and the figures on the vernier ring are so arranged that the reading of the needle and the vernier ring coincide. An effective mutual check is thus established, and any error arising from incorrect reading, or from any local attraction, is readily detected. Accurate surveying with this instrument can thus be relied upon, so far as the magnetic bearings are concerned.

The arc shown at C works as in the ordinary dial, being fixed at the side of the instrument, so that it can be easily read at any time, and is not in the way. One great advantage possessed by this arrangement is that, if the instrument be out of adjustment, the error is at once detected by comparing the needle and the vernier readings. Messrs. Davis & Son, of Derby, England, are the inventors of the improvement.

Influence of Temperature on Magnetization.

M. Caugain states that, in investigating the above subject, he first magnetized several small bars of steel varying from 0.12 to 0.24 inch in diameter by placing one of the extremities of each for a few moments in contact with one of the poles of a permanent magnet. He then noted their magnetic condition by determining some points of their curves of demagnetization.

Placing the bars a second time in contact with the magnet, he heated them with an alcohol lamp, and when they had cooled detached them, and once more determined their



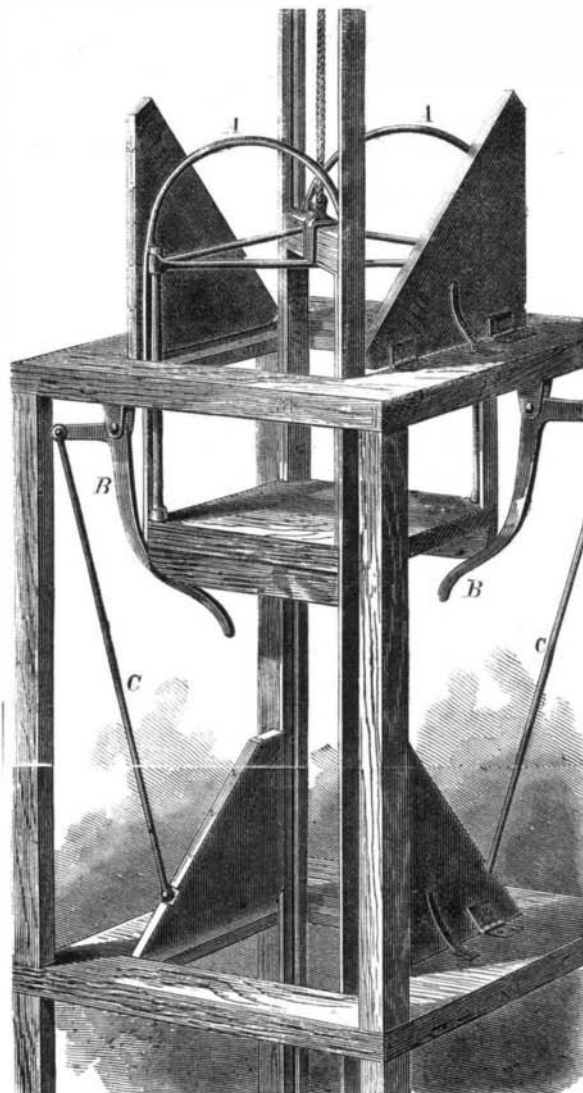
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condition. In the second case the magnetization was found to be greatly the stronger, and in certain experiments the heat doubled the value of the currents of demagnetization.

This increase, however, it was found, was produced only when the bars were permitted to cool while attached to the permanent magnet. If separated before that time, instead of their magnetic properties being augmented, the same were decreased.

REID'S AUTOMATIC HATCHWAY.

We illustrate herewith a new and simple arrangement for hatchways, which is so constructed that the ascending or descending carriage automatically opens the hatch covers and subsequently gently closes the same. The device is one which might be readily applied to any building, as it requires the addition of but a few inexpensive pieces and a slight alteration of the top of the ordinary carriage



The hatch covers are separated diagonally and are lifted as the car ascends by the curved upper portion, A, of the latter. As the car continues its upward course, the covers are kept raised by means of the bell crank levers, B, connected thereto by rods, C, which levers press against the sides of the car and ease the fall of the doors. In descend-

ing the bottom of the car strikes the ends of the levers, and thus, as indicated in the engraving, opens the hatch below. Patented July 22, 1873. For further particulars address William Reid, 126 Eleventh street, Brooklyn, N. Y.

New Process of Manufacture of Fatty Acids.

M. Bock has demonstrated that the greater part of the neutral fatty bodies are composed of small fat globules contained in albuminous envelopes of from 1 to 50 per cent of the weight of the bodies. The excesses of alkali, of pressure, or of heat necessary to decompose these bodies are in reality applied in order to destroy or eliminate the albuminous envelopes.

The coloring matter of the fatty bodies, or that which forms during their decomposition, is attributed to the envelopes, and for this reason M. Bock proposes to break or partially destroy the latter by the action of a small quantity of sulphuric acid at a determinate temperature and during a limited time. The fatty matter is then boiled with water, for several hours, in open vessels. The water charged with glycerin is then decanted, and the glycerin separated and pumped.

It remains then to remove the albuminous envelopes and the coloring matter, which is done by submitting the material in the vessels to the action of weak solutions of oxidizing agents. When the reaction has continued for a sufficient period, the substance is left quiet, and subsequently decanted, washed, and pressed.

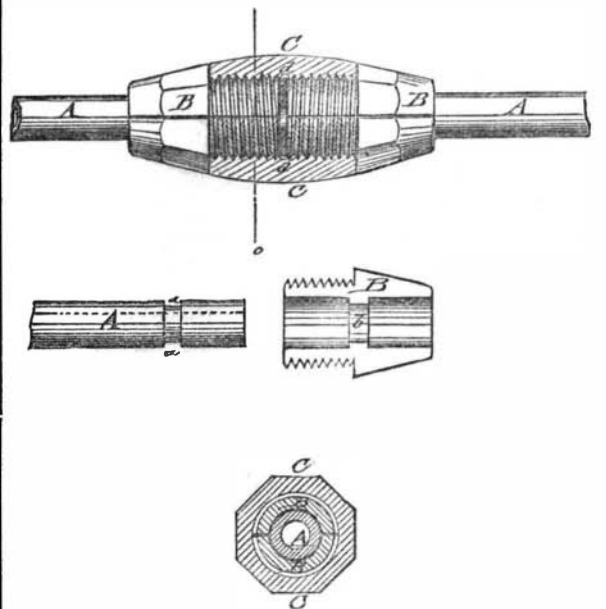
One of the advantages of this process, according to the inventor, is that all the operations are performed in open vessels, the contents of which are raised to ebullition by steam, not exceeding in pressure 37 lbs. per square inch.

Models by Mail.

By provisions of the new postal law, now in vogue, models and merchandize of various descriptions, in packages not exceeding four pounds in weight, can be sent by mail at the rate of 8 cents per pound, or half a cent an ounce. This is a wonderful convenience for the public, especially for residents in distant places inaccessible by rail. But in sending models by mail, our correspondents should remember that the box or package must have openings in it, so that the contents may be observed by the postmaster; otherwise, or if the package is sealed, letter postage, or six cents an ounce, is chargeable on delivery. A little care will, therefore, save the sender considerable money.

IMPROVED PIPE JOINT.

Mr. W. P. Valentine, of New York city, whose invention we herewith illustrate, informs us that, by the use of this device, water, steam, and other pipes may be joined at any



angle by simple mechanical means, without the use of fire and solds. He employs sockets made of two half shells, B, fitted by means of a projecting shoulder to the recessed ends of the adjoining pipes, A. The sockets are cut with an outer screw thread, and firmly connected, when placed on the pipes, by a sleeve, C, with right and left hand thread, which is arranged to be screwed over it without altering the position of the pipes. A leather or rubber washer, d, in the sleeve, C, secures the tightness of the communication.

Patented through the Scientific American Patent Agency, January 20, 1875. For further particulars address the inventor, at 4 Amity street, New York city.

Comfortable Fishing.

A Western paper thus speaks of an improved method of fishing at the lakes in its district: It consists of a small house, built on runners like those of a sled, in which is placed a small stove, while in the floor a small aperture is left through which to drop the lines. Holes are cut in the ice, the houses are moved over them, and the fishermen sit by a warm stove while drawing in the fish.