MENEELY'S BELLS.

The bell has ever been a subject on which the poet can dwell with delight, for its music is so inspiring and its associations are so rich that any man not having a heart as hard as the clapper must be affected with its melody and the stories which it rings out over the crowded city or sequestered vale. Longfellow was in his happiest vein when he wrote "The Belfry of Bruges," and Poe is most strange and fantastic in his poem on "The Bells." And so we might go on indulging in the train of thought that our engraving suggests, and which represents a new method of hanging bells, so that a common bell cast with horns can be turned upon its vertical axis without unhanging, so as to present a fresh surface to the blow of the clapper when when desired. The methods hitherto proposed to effect this purpose have required some alteration in the shape or form of the horns, or have required only one bolt to suspend the bell, which is not so safe as a number of bolts. With this system the horns have not to be altered in shape, and there may be any number of them. The security of the yoke-fastening in a bell of considerable size is of great importance, since the fall of such a ponderous body from so great a hight as the belfry of a church, when the ringers are directly under it, is almost sure to produce some disastrous consequences. A single bolt may be made large enough, but it is impossible to tell what flaws there may be in the metal, and hence the small bolts are preferable. The bell may be turned once in two years, or not so often, and the small amount of trouble is not be mentioned when compared with the increased durability of the bell, from the tendency to crack and wear unevenly being so much diminished.

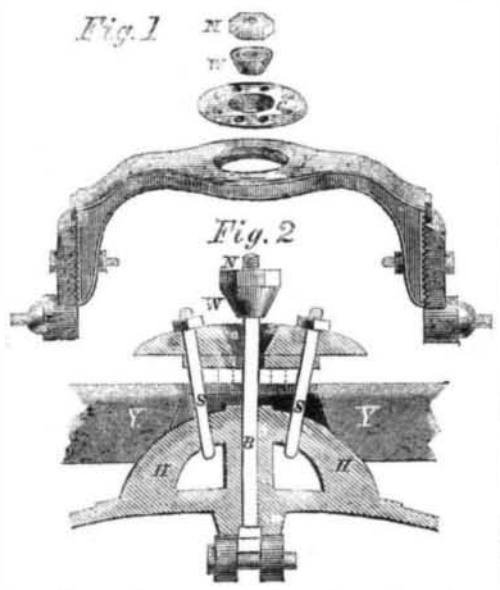


Fig. 1 shows the separate parts of the device and Fig. 2 a section of a bell and the hanging attachments. The ends of the yoke, Y, are notched externally, and the notches fit in corresponding ones in the pivot arms to which they are secured by a screw and nut. Should the bell, when first mounted, require too much labor to ring it, then, by raising the arms, thus bringing more of the weight above the axis to counterbalance that below, the force required may be diminished at pleasure. This may be done when the bell is hung. The turning of the bell is effected by means of the cap, C, which rests on Y, being raised from it in the illustration to show the projecting rim on the under side by which it fits snugly into Y, and yet is free to be turned. This rim and the outer flange of the cap form a shoulder having a vertical and horizontal bearing, which gives it a firm support; the bell being held up by the four U-shaped bolts, S, which pass under the horns, H, and also by the center bolt, B. All that is necessary in order to turn it is to screw back the nuts of these bolts a little, so that the horns do not bind in the yoke; then, by taking hold of the edge or putting a lever in at the horns, it may be turned; the cap, C, turning with it entirely round the circuit of its circumference, or as far as may be desired. This being done, first screw down the nuts of the staple bolts; then turn back the clapper and spring to their former position at right angles with the yoke, and again screw down the nut, N, upon the washer, W. This washer being tapering and roughed, and fitting in a corresponding recess in the cap, C, it is firmly bound in its position when the nut is screwed down upon it; and having a hold upon the bolt, B, which passes through and fits the squared hole in its center, the clapper and spring, which are held by the bolt, B, cannot get out of their proper position.

The inventor is G. R. Meneely, of West Troy, N. Y., and a patent was obtained Sept. 7, 1858. Bells mounted in this manner are manufactured and sold at the well-known West Troy Bell Foundry, Andrew Meneely & Sons, agents, who should be addressed for further information.

PULLEYS ON SHAFTING.

Belting and pulleys form the most simple, universal and convenient method of conveying power to drive machinery, and for varying its speed. It is exceedingly desirable to know how to arrange shafting and set pulleys so as to obtain any number of revolutions required in the machine to be driven, and also to vary the revolutions so as to give one hundred, two hundred, or any number, as may be desirable. Thus, on a large turning-lathe there are several pulleys, called a *cone*, each of a different diameter from the other, secured on the mandrel-shaft, and these are arranged relatively to another set of cone-pulleys, usually called *drums*, on a driver-shaft above. The two gangs of pulleys are of such diameters that the belt which passes over each pair communicates a particular number of revolutions to the mandrel of the lathe. Recently we have received quite a number of communications asking information as to the relative size of pulleys, so as to obtain any number of revolutions wanted. We will give a few rules on this subject, which will meet (as we understand them) the interrogatories of many of correspondents.

1. To find the number of revolutions of the driver-shaft from the diameter of the driver and its revolutions. *Rule*—Multiply the diameter of the driver-pulley by its number of revolutions per minute, and divide the product by the diameter of the driven pulley; the quotient will be the number of revolutions imparted to the latter. *Example*—The driver-pulley is 8 inches in diameter, and makes 100 revolutions per minute; the driven pulley is 5 inches: how many revolutions will it make?—$8\times100\div5=160$ revolutions; or, one and six-tenths, a greater number according to the relative diameters of the two pulleys.

2. The diameter and revolutions of the driver-pulley being given, to find what shall be the diameter of the driven pulley to make any number of revolutions in a given time. *Rule*—Multiply the diameter of the driver by the number of revolutions, and divide the product by the revolutions of the driven; the quotient is the diameter of the driven. *Example*—The diameter of the driver is 12 inches, making 100 revolutions per minute: what shall be the diameter of the driven to make 200 revolutions in the same time? $12\times100\div200=6$ inches in diameter.

3. As it is sometimes necessary to alter driver-pulleys to suit the size of permanent metal pulleys on the lathe, the following is the rule for this operation. *Rule*—Multiply the diameter of the driven pulley by the number of revolutions which you wish it to make in a minute, and divide the product by the revolutions of the driver-shaft, the quotient is the diameter required for the driver-pulley. *Example*—The pulley on the lathe-spindle is 10 inches in diameter, and it is desired to drive it at the rate of 300 revolutions per minute: what must be the diameter of the driver-pulley, its shaft making 100 revolutions per minute? $10\times300\div100=30$ inches.

Each pair of opposite pulleys on a gang must be so arranged that one belt shall drive the whole. The relative speeds of the pulleys being in proportion to their diameters, these must be made to correspond with the length of belt.

In our next number we shall give a description, with an illustration, of the method of constructing and arranging cone-pulleys.

AN OLD PAPER.—The Newport (R. I.) *Mercury*, on the 11th June, commenced its one hundred and second volume. On the 12th of June, 1758, James Franklin (brother of Benjamin) issued the first number, and with the exception of an interval of a few months, the *Mercury* has been regularly served to its patrons, week after week and year after year, whilst all but two of the papers which were then in existence have "gone by the board." We have had the pleasure of seeing the old Franklin press upon which the *Mercury* was first printed. It is now in the office of that journal.

BATE'S LARD-RENDERING APPARATUS.

The method generally adopted at present for rendering lard is to heat the lard kettles by placing a fire underneath them or by injecting steam into the material itself. The objection to the first method is that it is liable to burn the material, and all the lard and oil cannot therefore be extracted from it; and lard produced by the last mentioned method is liable to have a steam flavor and become quickly rancid. To obviate these difficulties, John J. Bate, of Brooklyn, L. I., has invented and patented his improved lard kettle, the patents being dated Sept. 29, 1857, and July 13, 1858.

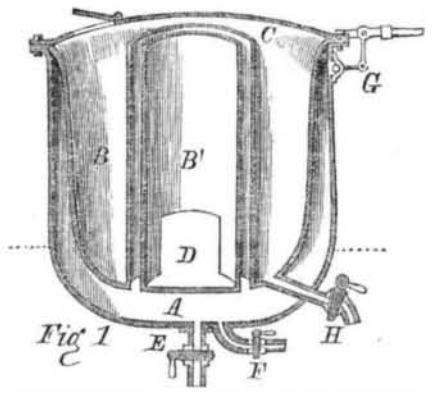
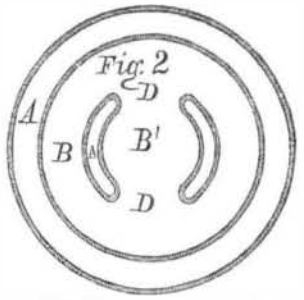


Fig. 1

Fig. 1 shows a vertical and Fig. 2 a horizontal section, It consists of a double outer shell or jacket, A, into which steam is admitted from a suitable boiler by a pipe, E; in the interior of A is a space, B, which forms the kettle, and into which the lard is placed. There rises up in B a double-walled cylinder, B', which communicates with the steam space, A, and its space, a, is always also full of steam, so that it heats the lard in the center while the steam-heated surfaces, C and B, heat the exterior portions. Two passages, D D', are made in B',



so that the lard inside the cylinder and that outside in the kettle can communicate and intermingle to distribute the heat and become of equal fluidity. These kettles have been in use, and some of the first lard-renderers speak highly in their praise for the quality of lard they produce, the speed with which they can be worked, and their cleanliness and safety from accident. The lard is drawn off at a faucet, H, and should any steam condense, it can be drawn off at F. G is a safety valve for the steam in the kettle, so that no accident can happen should the steam in the boiler become too highly heated. Further information can be obtained from M. Haskell, No. 103 Fulton-street, New York.

ENGLISH AND FRENCH PATENTS FOR SALE.—Who has not heard of the "Old Dominion" Coffee and Tea-pots, and what good housekeeper on our continent has not the articles in daily use? Among our acquaintances we do not know of one who has not the "Old Dominion," and who would not as soon think of dispensing with his tea-kettle altogether as doing without that desideratum. Messrs. Arthur, Burnham & Gilroy, of Philadelphia, are the manufacturers of the "Old Dominion," and their hands are full of orders. The invention has not to any extent been introduced on the other side of the Atlantic, although the patents were secured there, through the agency of this office, sometime ago. We believe the patents are good and valid in England and France, and that a fortune might be made by the purchaser in either of these countries. See advertisement in another column.

MECHANICS' FAIRS.—We are continuing to receive the circulars of approaching Mechanics' Fairs. We have now before us the rules and regulations of the coming fair of the Maine Charitable Mechanics' Association, which opens on the 1st of September. This fair, we have no doubt, will be one of interest, and should any of our readers desire to consult the rules they may do so on application at our office.