

IMPROVED STILL COLUMN.

We illustrate herewith an improved column for refining stills, which is designed to take the place of the so-called French column, now in common use. The practical working of the invention is the same as that of the French column, but its mechanical construction, as will be seen from the following description, is entirely different, and it is claimed to possess many advantages. The apparatus may be located in one story of ten feet in height, instead of requiring three stories twenty five feet high, thus effecting a large saving in room and copper plates. Easy access may be had to the interior, for making repairs; leakage is prevented, and a finer spirit is produced with less steam pressure. The essential feature in the device is the arrangement of the chambers, which, instead of being placed vertically one above the other, are situated side by side, as shown in the engraving.

A is the common refining copper still, above which is located the column in which the chambers, B, are formed by semicircular horizontal plates, C, extending alternately from opposite sides, and by vertical partition plates, D, near the center. Between the partitions, D, small spaces are left in order to establish communication between the chambers. Overflow pipes, E, at both sides of the column connect the chambers of each series, and gradually convey the exhausted liquor back into the still, A. Near the bottom of each chamber is a drain pipe, F, provided with a suitable stopcock, which communicates with the overflow pipes so as to allow of the easy emptying of the chambers for cleansing, etc. The overflow pipe from the lowest chamber passes directly into the still.

The operation is as follows: After being filled with liquor the still is heated. The alcoholic vapors are quickly eliminated and pass over the first vertical partition, D, into the lowest chamber, striking against the adjoining partition plate of the next chamber above. The vapors are then forced through the liquor in the lowest chamber, and thence pass up from chamber to chamber, gathering additional strength from the contents of each, until they reach the goose condenser, G, where partial condensation occurs, and the vapors are returned to the uppermost chamber of the column. The strongest vapor passes over the worm, and, being condensed to liquid form, is drawn off at the tail of the latter. The liquor falls from the highest chamber to the next below, and so on, until the bottom of the still is reached through the overflow pipe of the lower chamber being completely exhausted of alcohol.

It will be seen that the intercommunicating arrangement of the chambers virtually produce two columns in one. All the overflow pipes are at the outside, and thus are very easily repaired. The cost of the apparatus, the inventor states, is reduced to one half that of the French column, while the operation of the device, as he has proved by practical experience, is such as to produce quicker and better results.

Patented through the Scientific American Patent Agency, November 16, 1875. For further particulars address Mr. Edward Melchers, 103 Monroe street, Toledo, Ohio.

IMPROVED BARREL FAUCET BUSHING.

We illustrate herewith a new faucet bushing for beer or other barrels, which, while firmly holding a cork or stopper, allows of the same being pushed inward on the faucet being inserted, without any leakage. The exterior of the device shows a perfectly flat surface adapted for the reception of the tax stamp, which the introduction of the faucet necessarily tears and cancels.

The thimble, A, has a flange provided with suitable apertures, through which the securing screws may be inserted, and also an external screw thread which attaches it to the barrel. B is a plug fitted to close the inner end and to prevent the escape of the liquid during transportation. C is a tubular nut or second thimble, having both an internal and external screw thread, the latter permitting it to be attached to the internally threaded outer portion of the thimble, A, thus acting to prevent the cork from being forced outward. The internal screw thread gives a means of attachment of the faucet as shown. The nut, C, has a flange on its outer end, which is let into a countersink in the thimble, A, so that, when the parts are in place, a flat exterior surface is afforded.

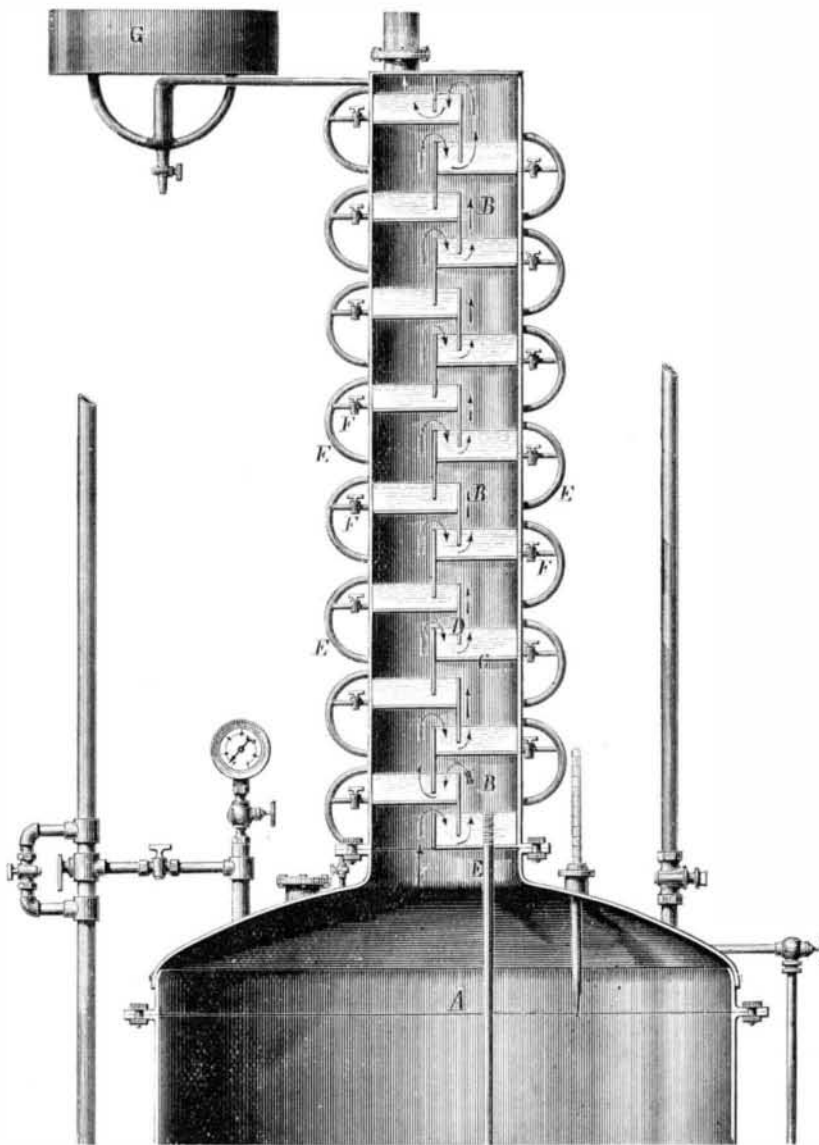
The entering faucet shank forces the plug, B, out of the bushing, and the liquid then escapes through the openings, at D, at the end of said shank. The lateral apertures also permit of the passage of the fluid, should the plug remain over the inner end of the bushing. The invention is claimed to fit more tightly and to be less expensive than the similar devices commonly employed. It will prove of much convenience to grocers, liquor dealers, apothecaries, and others.

Patented December 8, 1874. For further information ad-

dress the inventor, J. F. Mantey, Industry, Austin county, Texas.

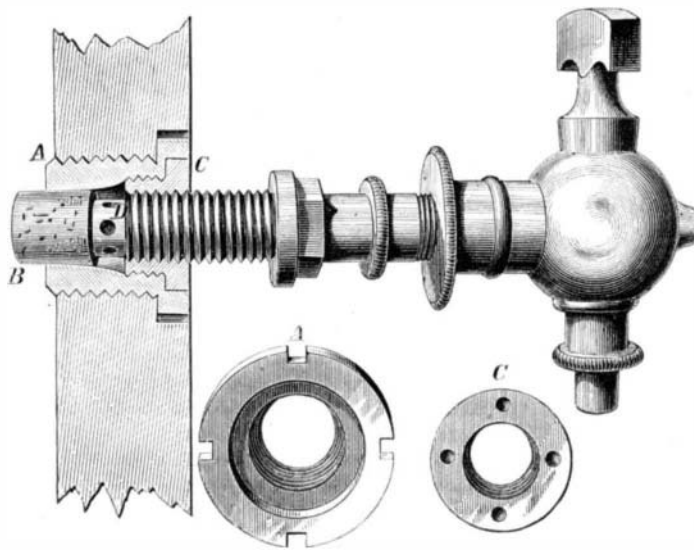
A Hint to Young Mechanics.

Two things are uppermost in almost every industrious young man's mind, the desire to make and save money, and to be established in business for himself. Now as an encouragement to persevere in that industry, also in faithfulness, close attention to business, and also in improvement of the mind, we suggest that a few dollars placed at interest will grow in amount wonderfully fast, if the interest is also invested and a few dollars regularly added to it. The evenings usually spent in idle ways, if devoted to scientific,



DEYMANN AND MELCHERS STILL COLUMN.

practical books and papers, will, in a few years, make a young man educated and prepare him for directing an establishment of his own. Remember it is the most skillful, artistic, and finished workman that rises above his fellows. When you have mastered your trade and find your mind stored with useful hints and thoroughly scientific knowledge, then turn to a partnership or part interest in business with your employers. Your standing and the little capital saved will help you wonderfully. If such a part interest is not practicable, select another industrious co-laborer and commence in a one story, one roomed office, with a particular specialty of which you are thorough masters. Push to completion in perfect workmanship such small orders as you



MANTEY'S BARREL FAUCET BUSHING.

can persuade the public to extend to you. Remember that personal application, integrity, and industry will in a few years bring their reward. They always have and they always will.—*Mechanical Journal.*

A GOOD bronze for ball valves, and for pieces to be brazed is made of copper 87 parts, tin 12, antimony 1.

The Manufacture of Rough Leather.

There is no good reason why female hides should be purged of their gelatin, while those of the male are plumped by all the methods known to the tanner's art. The practical tanner may urge that the female hide is intended for upper, while that of the male is used for sole and belt leather, and (when used for these purposes) he may insist that it should be treated in the manner indicated. But this assumes a necessity which it is our purpose to dispute.

In all the countries of Southern Europe, the full grown cow hides are manufactured into sole leather; indeed, with the exception of the ox and steer hides brought from South America, the whole supply of sole leather in those countries comes from their cowhides, for they do not raise oxen, but use cows, both as beasts of burden and also to supply the food of the people. This fact shows that cowhides, when properly manufactured, may serve a very useful purpose for sole leather. Besides, it is conceded that cow hides do make a finer-textured leather than ox hides, and they are largely used in the manufacture of "union crop" leather, thus making a large proportion of the finest sole leather for women's and children's shoes. Until within a few years, a greater part of the finer grades of women's shoe leather was thus made from cow hides. When, therefore, female hides, either in France, Germany, or the United States, are used for sole leather purposes, the tanner finds no difficulty in suitably plumping them, and in making weights which approximate those made from steer or ox hides.

The practical and important economic problem, therefore, arises, whether our tanners are justified in purging and depleting these valuable pelts down to an upper leather substance, even conceding that such a process does make good tough stock. We say: No. We insist that such a tannage is wasteful, and should be abandoned. The boot and pebble grain leather manufacturers have adopted a system of expanding the fiber and plumping the substance, which overcomes, to a great extent, the waste here referred to. These manufacturers long since learned that they could not get a round, plump, firm, and fixed grain on a leather depleted in the bath, and tanned with weak, sour liquor. The grain and fiber were too soft and yielding to furnish a grain leather that would hold the impression made by the board or the die. This defect induced the Woburn tanners, long ago, to prepare leathers specially for their grain and buff purposes. This special method was confined to that section of Massachusetts for several years, but has now extended to all manufacturers of this description of leather in the country. It consists in suspending the sides in liquor, and tanning them while in this position.

The Woburn tanners tacked the sides on frames, and still continue that practice, as far as we are advised, but many other tanners merely suspend the sides over sticks, and agitate the liquor, either by rocking the sides on frames or plunging them into the liquor, by hand or other power. By either method the same result is reached. The side is plumped in shoulder and offal, and a smooth, round grain is formed, which takes a lasting impression. These qualities add so materially to the economic value of the stock in cutting, whether for shoe or bag purposes, that ordinary upper leather tannage is driven out of competition, and is now seldom used except when, as at present, oak rough tannages are held in excess, and are selling at a loss of three or four cents per pound.

There can be no doubt that boot grain, made from a depleted tannage, will crimp and possibly wear better than leather raised and tanned as above described; but when enough of the fiber is retained with the grain, as is the case where an eight or even a six ounce substance is retained, then it is very doubtful whether the old-fashioned tannage presents any advantages over the new. The case is, however, far different where these raised tannages are split down to a light grain or buff substance. In some of these goods, little more than the grain itself is retained, while the great bulk of the fiber is split off and goes into trunk and carriage leather. We need not dwell on this practice, nor insist on its damaging effect on the trade.

The custom of coloring and partially tanning on frames suspended in the liquor has improved of late the union crop tannages almost beyond conception. This improvement consists in plumping and making fine the bellies, shoulders, and pates. We assume similar advantages would result to the hemlock and oak rough leather tannages if thus carried on. There is no more difficult task than to find oak rough leather suitable for fine harness and bridle purposes, and much of this difficulty arises from this deficiency of plumpness and fineness in the shoulders and offal. If oak rough leather tanners will adopt our suggestion, and color and partially tan their stock in a suspended state, they will at once overcome this difficulty, and improve the durability as well as the appearance of their oak rough leather.—*Shoe and Leather Reporter*