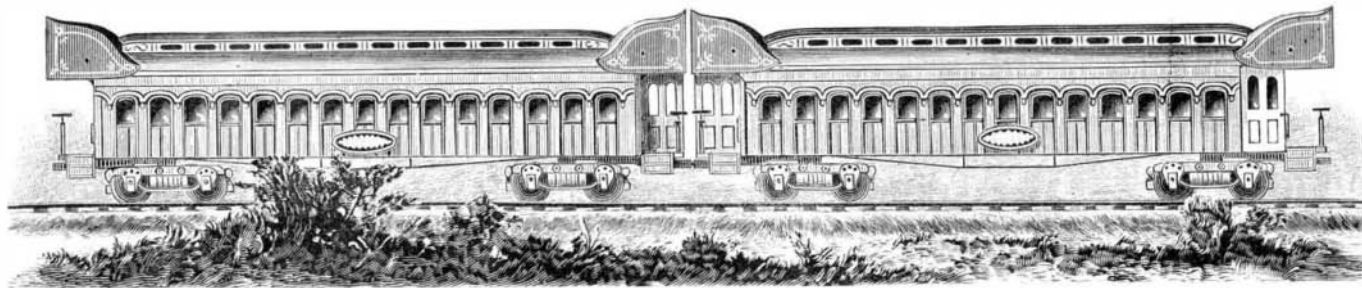


AUTOMATIC GUARD AND PLATFORM DOORS FOR RAILWAY CARS.

The accompanying illustration shows a construction designed to prevent smoke, dust, cinders, etc., from passing down between cars in motion, and also to protect the steps and platform from rain and snow. Each guard is a little wider than the top of the car, the body portion of the guard being formed with an upwardly curved or flaring forward end, while the rear end is cut out and adapted to fit closely around the rounded top of the car, so that the wind cannot get under and



GILLHAM'S GUARD FOR RAILWAY CARS, TO KEEP SMOKE, DUST, ETC., FROM ENTERING THE DOORS.

raise the end. The guard also has downwardly projecting side flanges, with a slight curve upward at the meeting ends, to give the air an upward direction. There are doors, intended to be either sliding or flexible, to cover in and protect the spaces between the cars, to which may be attached fenders that will completely cover the car steps, these devices not only keeping out snow, wind, etc., but serving to prevent accidents from passengers falling off the platforms.

The guard is mounted in its operative position on the end of the car by a transverse rod, or by bolts which pass through the side flanges, making a pivotal bearing in which the inner ends of the guards toward the center of the coach will just overbalance the outer ends. When the train is in motion, the air passing under the raised forward end of the guard on the forward end of each coach will raise the rear end of the guard, and allow the free passage of smoke, dust, etc., through the space between the body of the guard and the top of the car, the pressure of the air at the same time forcing the inner end of the guard at the rear end of each car down tightly against the car roof, causing the smoke, dust, etc., to pass up over the guard.

This invention has been patented by Mr. R. J. Gillham, of Orlando, Orange County, Fla.

The Impossible.

Prominent among the many quaint devices and curiosities in which the writer's native city abounds were two large stone ornaments, serving as guards to seats of honor in one of the public buildings. One of these posts showed a picture of a party going out to a day's sport in a boat with flying pennants and all outward signs of merriment, while on the companion pillar appeared the same boat turned toward home, and the people on board looked dejected and sad. The representation bore the significant inscription: *To please everybody is impossible.*

Since then we have often recalled those marks, and have wondered how deep-rooted must have been the conviction which thus caused an attestation to be put up in lasting granite for the benefit of passers-by.

Indeed, it is impossible to please everybody, should you try ever so hard.

The truth of it is felt by the newspaper man, and especially by him of a trade paper.

If you make your paper large and of many pages, people assert that you are greedy and presumptuous; while if you cut down its size, they say that you have met with reverses, and will be compelled to close up soon.

If you print your journal in large type, the people say that you are at your wits' end, and don't know where to get reading matter while if you use small type, they say that there is so much in the paper, that they do not know whether to begin reading or not.

If you publish a great many suggestions and hints, you are called tedious; and if you look to chronicling affairs and happenings of the day, you are trifling and flippant.

If you give selections, your subscribers will complain that they are treated to second hand stuff; and should you confine yourself to original articles, they will be sure to say that there is the spice of variety lacking in your journal.

If you speak of anybody or anything, people will declare that you have been bribed to do it; and if you never give a complimentary notice, you will be voted a mulish, good-for-nothing blockhead.

If you add to your paper, critics declare that you are playing at a game of bluffing; and if you keep going your easy way, you are denounced as stingy and uncommercial.

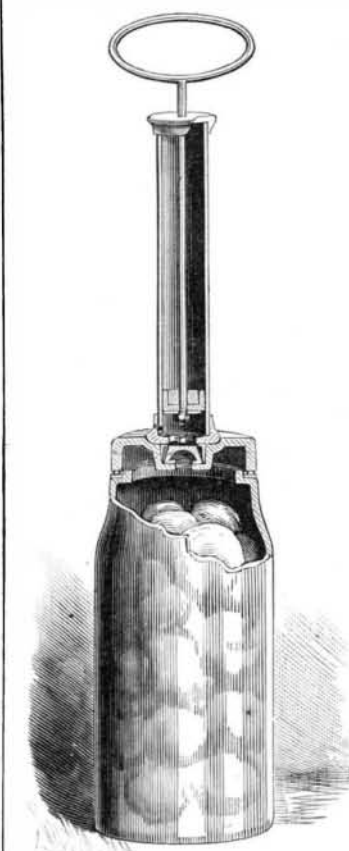
If you stick to your duties, people call you haughty and proud; and if you mingle with the crowd, the verdict will be that you do not attend to business properly.

In view of all this, *To please everybody is impossible.*—*American Lithographer.*

A FRUIT JAR COVER FITTED WITH AIR PUMP.

As the exclusion of air is a most important element in the preservation of canned goods, all methods of

canning provide some means of attaining this object with more or less completeness. The illustration herewith shows a simple method of reaching the desired end, by making the jar cover in the form of a cap, to be held firmly in its position by the pressure of air on the outside, fourteen pounds to the square inch, the



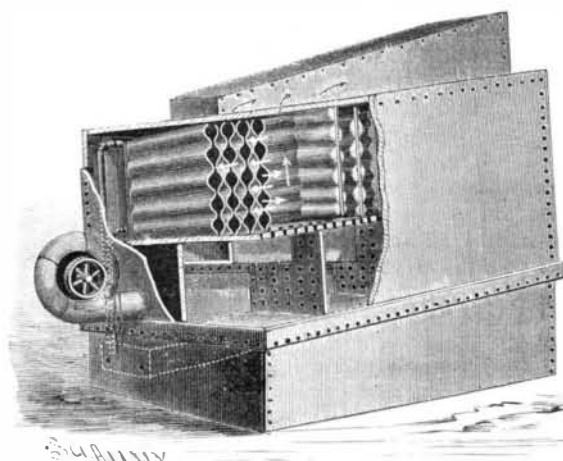
DOHERTY'S JAR COVER.

air within the jar having been previously exhausted by the air pump, shown in place for such sealing on a jar, partly broken away at the top, giving construction of cover. The outer rim of the cover fits upon a packing ring of the jar, no screwing on of the cover being necessary. The operation of the air pump will be readily understood from the illustration, a rubber cushion carried by it fitting in a recessed portion of the top of the cover. It is obvious that in this way a can may be very tightly sealed, and the cover is so made that the can may be opened as easily as the spring cover of a watch. It can also, with the air pump, be quickly sealed as effectually as at first, so that part of the contents may be taken out from time to time as desired.

This invention has been patented by Mr. John Doherty (care of Holly Mfg. Co.), of Lockport, N. Y.

SURFACE CONDENSER.

This condenser is especially designed for steam traction engines, such as are used for plowing, thrashing,



BENSON'S SURFACE CONDENSER.

and other similar uses to which steam may be put where scarcity of water makes the saving of water by condensing the steam a consideration of great importance. It may also be used for the heating of houses. The condenser proper is composed of a number

of thin parallel corrugated plates, which are so arranged that the hollows of one plate face those of the other, thus forming, practically, a vertical series of horizontal tubes. The ends of the plates are so connected as to form a continuous passage through which the steam flows. Alternate cells are designed for the passage of air, which is forced through by a blower, and serves to cool the plates, and thereby condense the steam. The steam cells open into a space at one side of the case, and at the other side they have nipples that open into pipes leading the condensed water down into a trap chamber in the base. A condenser constructed in this manner has a cooling surface of great area for the steam to come in contact with, is very light, weighing, it is claimed, only 50 lb. to the horse power of steam to be condensed, the plates being made of light sheet metal. It is further quite small and compact compared with the surface it contains. The air after condensing the steam is conducted to the ash pan, where it serves to support combustion.

This invention has been patented

by Mr. B. S. Benson, 52 East Monument St., Baltimore, Md.

Diffusion Applied to Cider Making.

La Revue Agricole de la Region du Nord has just published a memoir by Mr. C. Fossier on the diffusion process as applied to the manufacture of cider. After making known the principles upon which the extraction of juices by diffusion is based, the author says:

"I have established a cider manufactory at Ham, in which I make an exceedingly practical application of dialysis to the exhausting of fresh apples. I operate upon apples in the form of slices, as in the case of beets prepared for diffusion—a process employed in the manufacture of sugar for extracting beet juice, and which has pretty generally replaced hydraulic presses. My apples are placed in an exhausting apparatus, the elements of which are twelve open tuns, that are arranged in a line with each other in a horizontal plane. These tuns are provided with trunnions, so that they can be easily inverted for emptying them when the apples that they contain are exhausted.

"*Produce.*—By this mode of operating I obtain every bit of juice that the apple contains, in a maximum state of concentration—that is to say, without the addition of water, and at such a density as I may determine in advance. The loss in the residua is none, since from each 220 pounds of apples treated I get, practically and regularly, 212 pounds of pure juice, at a minimum. As this is all that the apple contains, there is, in this respect, no comparison to be established with the product obtained by other processes, all of which leave a certain amount of juice in the residua.

"*Manual Labor.*—With two men, I daily produce as many as 2,600 gallons of cider. I can do more, since these two men constitute my sole force. Outside of the manufacture, properly so called, it is their duty to do the carting of the apples and cider between the works and the railroad, and to do the storehouse work, and so forth. A small one horse power steam engine (Hermann-Lachapelle type) actuates the pump that furnishes me with the large amount of water required, and likewise actuates the apple cutter. The making of 2,600 gallons, and even more, of cider with two men is, I think, a considerable saving in the expense of manufacture.

"*Quality of the Cider.*—After three years of practical and industrial experience, without counting the years that were passed in testing the efficiency of the process before putting it in practice, I can now assert, to my full knowledge, that none but the cider obtained by dialysis is perfect. Fermentation is easily set up, and proceeds rapidly. The deposits that it causes are dense, and of slight bulk. They speedily collect in a mass, and it is rare to find more than a quart of turbid cider at the bottom of the 110 or 120 gallon casks in which I have submitted it to fermentation. After fermentation, the cider is as limpid as it was when it came from the apparatus; an odor of the raw pomace has developed, or, rather, it is not concealed; the taste is truly vinous, and the beverage is a healthy one, which, even before fermentation, does not possess the laxative properties of the mash produced by the press or alembic. In a word, it is a beverage comparable with wine, taking into account, of course, the alcoholic richness, which has the same influence upon wine as upon my cider. It keeps perfectly in casks and bottles. It remains limpid in the latter, and, in case it has been put into them when somewhat new, it produces but a slight deposit, which is heavy, and easily masses, so that the cider remains limpid, as occurs with wine. Like wine, too, it can be carried to a distance without undergoing alteration. This is an important property for consideration, especially from the standpoint of consumption, which it is possible to extend to cities and countries devoid of apples, to the great benefit of districts that are privileged in this respect."—*Le Genie Civil.*