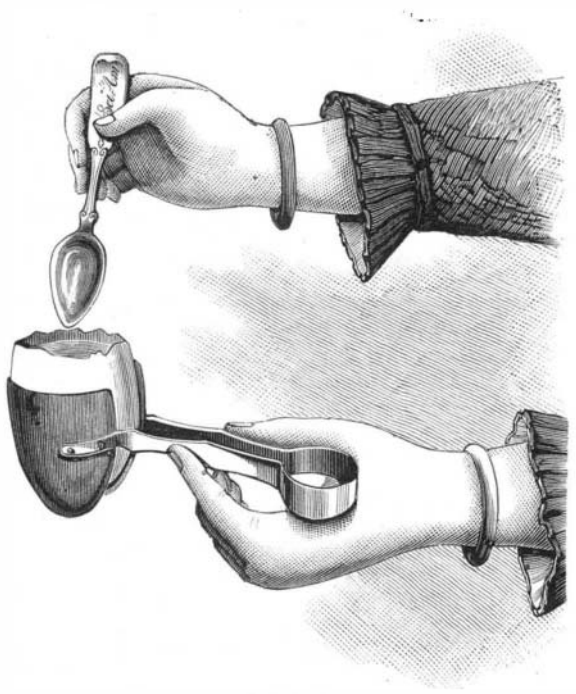
will come when none other but the machine-made goods may be had. The manufacturers, some of whom are named, are said to be now exporting largely, and thus in foreign markets they are cultivating the American liking and preference for these goods. This is not to be wondered at, because the quality, the appearance, the fit, are all they ought to be to win and keep customers.—*British Trade Journal.*

NEW EGG TONGS.

The annexed engraving represents a neat and inexpensive egg tongs recently patented by Mr. R. P. H. Koska, of East Saginaw, Mich. It is one of those devices that is likely to come into general use, as it is as simple as anything well



KOSKA'S EGG TONGS.

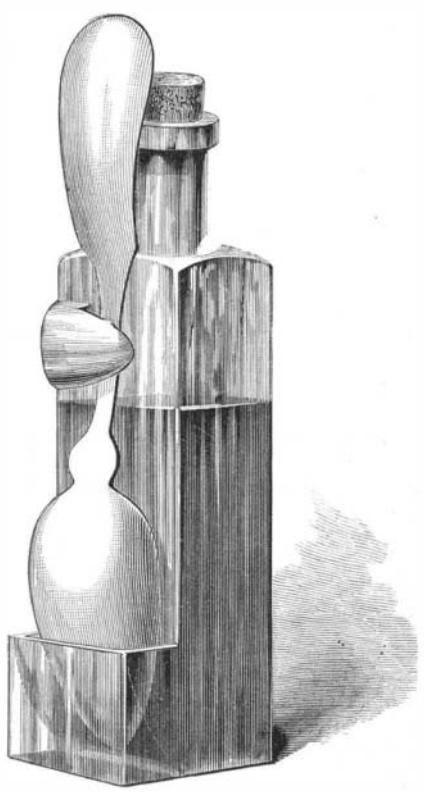
could be for the purpose; it forms a handsome article of table furniture, and will be of great utility, as eggs are now generally eaten soft boiled. This device does away with the egg cup and with inconvenience in handling and breaking the egg, and it affords a simple means of holding the shell while its contents are eaten with an egg spoon, the egg shell forming the cup.

The construction of the device will be readily understood from the engraving. The concave receptacles at the end of the spring handle are of such shape and size as to inclose something more than half of an egg. Each cup carries a small spur, which pierces the shell and assists in holding it.

Further information concerning this invention may be obtained from Mr. R. P. H. Koska, Bancroft House, East Saginaw, Mich.

IMPROVED MEDICINE BOTTLE.

The accompanying engraving shows an improved medicine bottle designed to receive and support the spoon used in taking the medicine.



EARLE'S MEDICINE BOTTLE.

The bottle has upon one side a socket or cup of suitable size and shape to receive the greater portion of the spoon bowl, and near the top of the bottle there is a clip for holding the spoon handle. This device is the invention of Mr. J. H. Earle, of Fall River, Mass.

Engineers.—Their Value.

Under this heading the *Boston Journal of Commerce* comments on the engineer who solves problems—not the man, adds the editor, who opens the throttle valve of a locomotive that goes racing over the track from one city to another, or of him who sets in motion one of the Corliss monsters that drives its thousands of spindles and looms or other machinery—but the civil engineer, who lays out the work that employs the others, deals either in one or the other of two separate and distinct realms—absolute fact or supposition. In the first he is often made to doubt his own sagacity and capability, for he must often change his course of action by reason of deductions drawn from experiment in which all his ideas of strength, elasticity, or economy have strangely departed. If he deals in the second he becomes, as too many have done, egotistical, and by very lack of knowledge or through force of circumstances, is constantly taking up untenable positions, making expensive, unsatisfactory and unsuccessful experiments—in other words, father of failures. Too much of this has been and is done. In many cases the parties are sooner or later involved in an outlay of thousands of dollars, and then comes the legitimate outgrowth of an attempt at the impossible—disagreement, disappointment, law suits, bitter feeling, loss of time, money, production, loss to every one involved; and yet it is a matter of every-day occurrence, and one which would have been avoided by the employment of a competent engineer for a day or two at the cost of fifty or a hundred dollars. Men who know nothing of proportion, strength, elasticity, pressure, torsion, volume, or density, get out an idea and patent it, or advise it and get it introduced, and then users get the effect by adoption.

Engineers are not always consistent, we had almost said not honest. They deal sometimes in vagaries or in elements of uncertainty without careful consideration or consultation of authorities who have preceded them, and give opinions or make out tables or results from preconceived ideas of matters to which they never give an hour's consideration in an honest, careful way. In this way they have in a measure detracted from their usefulness and the respect due them. Such a one, however, is always found out sooner or later, and finds his level. A man to do his work in a successful way should be careful in all his statements, and if he does not know a thing for a *sure thing*, say so, and not assume one thing or the other, for it is in engineering as with law—common sense is a pretty sure guide, and will lead you right a thousand times where it leads you wrong once.

In dealing with earth, iron, water, steel, steam, or any of the natural elements or created forces, we must remember that we are only capable, at least, of an approximation; that we must reason and investigate—and if we live to the extreme allotment of life, we are still learners. The profession has in the last decade done much to attract the attention and merit the admiration of men who never think deeply, clearly, or upon forces or matter other than to see results that are the outcome of close reasoning. There is too much of the superficial, too little of the real; to progress we must look closely at all elements, simple or compound; and when we have learned our own insignificance, we have commenced building upon a "bed rock" that does not "heave or settle."

The Delaware Ship Canal.

The surveys of routes for the proposed Chesapeake and Delaware Ship Canal were completed in December last. Six routes have now been estimated for, as shown in the following table:

No.	Name.	Length in miles.	Length of canal proper.	Cost in millions of dollars.	Relative time of transit in hours.	Saving in distance in miles.
1	Choptauk	149·81	37·67	16½	19⅛	175
1	Choptauk (inland	138 91	30·00	18¼	18	186
2	Wye	128 42	42·99	26⅜	17¾	196⅛
3	Queenstown	107 29	53·78	37¼	17	217¼
4	Centreville	106 38	50·95	41½	16⅛	219
5	Southeast Creek	115 78	38 35	25	15¾	209¼
6	Sassafras	129·25	16·20	8	15 1/16	195¾

The lengths given are respectively from Baltimore to a common point at sea, twelve miles outside of the Delaware breakwater. The distance from Baltimore by the route now used to the same point is 325 miles, or 33¼ hours, allowing a speed of 10 miles in open water and 8 miles in dredged canals.

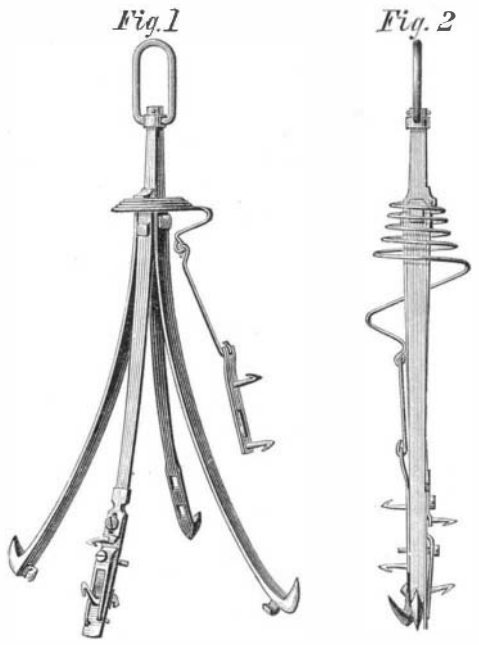
Mr. N. H. Hutton, under whom these surveys were made, reports that the Sassafras route is the shortest in time and the cheapest; but it has very expensive approaches to maintain and very serious conditions to be overcome if it is to be used during the winter. The Centreville and Queenstown routes are the most direct, rate second as to time, but cost largely in excess of other routes; have expensive approaches to maintain on the Chesapeake side, and are, as the Sassafras route, liable to obstruction by ice during the winter. The Choptauk route rates slightly below the Sassafras as to time of transit, and rates third in this respect, while it is second on the list in point of cost, its greatest advantages being in the matters of freedom from obstruction by ice and economy of maintenance of approaches.

More recently Major W. P. Craighill, of the Engineer Corps, has made a new survey of the Sassafras route and estimates its cost at half a million dollars more than Mr. Hutton's estimate. Major Craighill's estimate is for a canal 100 feet wide on the bottom, 26 feet below low water, side slopes one and one-half to one, with a berme on one side 12 feet wide and 30 feet above the bottom.

The other estimates are for a canal 100 feet wide at the bottom, 26 feet below low water. The width is to be 178 feet at low water; the locks to have chambers 600 feet long and 60 feet wide; tide locks only to be built, and these will probably be generally open and only exceptionally used.

IMPROVED ANIMAL TRAP.

The annexed engraving represents a novel animal trap, recently patented by Mr. William J. Taber, of Lookout Station, Wyoming Ter. It is especially intended for catching bears, wolves, and other large animals, and it consists of four curved spring bars provided with hooks, and having a catch and trigger which hold them together when the trap is set, as shown in Fig. 2.



TABER'S ANIMAL TRAP.

Fig. 1 represents the trap after it is sprung. In setting the trap the outer ends of the spring bars are pressed together and held in place by the catch or trigger. The latter is engaged by a bait plate connected with the spiral spring at the top of the trap. The bait is attached to this plate, and when the animal seizes it, the trigger is disengaged and the curved bars spring outward, thrusting the hooks into the sides of the animal's mouth.

The inventor states that the barbs or points cut the mouth of the animal so that it soon bleeds to death.

IMPROVEMENT IN JUGS.

A stone jug is almost the last thing we would expect to see improved, and yet our engraving shows an improvement in this article which possesses the merit of being both simple and efficient. It consists of a passage or vent formed lengthwise in the handle, commencing inside the jug and terminating near the mouth of the jug. In filling the jug air is permitted to escape through this vent, thus allowing the liquid to enter the jug with greater rapidity than it

IMPROVED JUG.

otherwise would, and in pouring the contents from the jug, air enters the vent and fills the space as the liquid escapes.

This invention was recently patented by Mr. Samuel A. Conrad, of Terre Haute, Ind.

THIS has been a bad winter for fur dealers, sleigh makers, ice monopolists, and coal retailers in New York and vicinity.