

# INDUSTRY AND MECHANICS

## HANDY FOR FILLING BOTTLE

Apparatus Pumps Liquid Into Them and Gas Does Not Escape—Avoids Certain Amount of Waste.

Very many people who are fond of good wine will appreciate the value of the invention of a German for filling bottles. The dealers will be grateful because it enables them to fill bottles more rapidly and without waste, and the consumers will rejoice that the



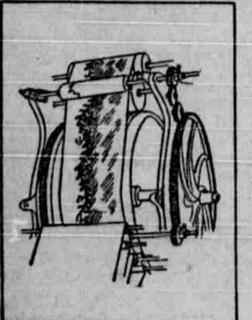
For Filling Bottles.

liquid comes to them in the same condition that it is in the keg. The apparatus consists of a pump arrangement the bottom end of the pipe of which fits into the bung-hole of the cask from which the bottles are to be filled. At the top of the pipe is a spigot, which fits into the neck of a bottle. The bottle rests on a strong spring, which keeps it always closely pressed to the spigot. In the middle of the pipe is a pump, and by working the handle of this air is pumped into the bottle. Where a bottle was filled from a cask by the crude method of letting the liquor run into a funnel there was always a certain amount of waste.

## CUTS THE PAPER IT PRINTS

New York Man Invents Machine That Performs Double Duty at Single Operation—How Done.

Recently there has come into wall-paper fashion a type of border that is cut along the bottom to follow the lines of the design, usually vines, leaves or the like. Against a plain wall paper such a border is particularly effective, as all who have seen it can testify. At first this border had to be cut out after the design was printed on the paper, but a New York man has invented a machine which does the printing and the cutting at the same operation. Generally speaking, the machine resembles an ordinary press for printing wallpa-



Cuts Paper It Prints.

per, but, in addition to the rollers that stamp the design on the paper, there is another roller, spaced apart from the former, that has on it a cutting edge, conforming in shape to the imprint on the paper. As the paper is passed under this roller the cutting edge trims the decorated strip from the other part as neatly as anyone could wish.

## TOTAL QUANTITY OF CEMENT

Total Production in United States in 1909 was 64,196,386 Barrels, a Big Increase.

The total quantity of Portland, natural and Puzzolan cements produced in the United States during 1909 was 64,196,386 barrels, valued at \$51,332,979, an increase over 1908 of 31 per cent. in quantity and 15 per cent. in value. The Puzzolan cement is made by mixing blast furnace slag with slaked lime, but its output decreased from 557,252 barrels in 1907 to 160,646 barrels in 1909. One of the newer developments in cement manufacture, says a late bulletin of the geological survey, is the production of white non-staining Portland cement. This supplies a growing demand for ornamental work and surface finish.

**New Test for Materials.**  
The cutting and wearing power of a steam of blown sand, long since utilized for various purposes, has been employed for testing building materials at the Gross-Lichterfeld Institute in Germany. Granite, pine wood, linoleum, and other substances used in the construction and furnishing of buildings are subjected for about two minutes to the action of a blast of fine quartz sand, under a pressure of two atmospheres. The results show the resisting powers of the substances tested to the effects of wear. This form of test is applicable to road building materials.

## STEAM AND WATER FOR HEAT

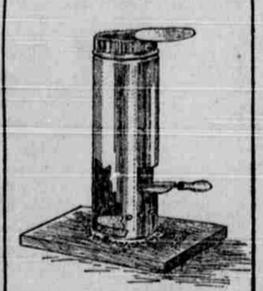
Indications Are That Some Method Will Be Developed to Discontinue Use of Radiators.

The main objection to the use of steam and water for heating in the use of the radiators, the appearance of which must necessarily occupy the most conspicuous place in the room. The indications are that this will be met at no distant date and some method developed which will dispense with the use of radiators. The Romans heated their villas by a system of double walls and floors, between which the heat found its way and the apartments were maintained at a comfortable temperature. An attempt to heat a house by an entirely new method will be made in the Cosmopolitan club house, now being erected at Cornell University. Steam pipes are laid in channels left in the upper surface of the floor around the edge of the room. After the pipe is laid the opening was filled with a weak concrete and covered with a decorated tile. Heat rises and the efficiency of heating the room by radiation from the floor is evident. Cold concrete floors have been held up as a bagaboo, and the method suggested eliminates this drawback.

## HOME-MADE TINNER'S STOVE

Large End of Piece of Ordinary Stovepipe Can Be Used—Metal Lid Controls the Draft.

The large end of a 5 or 6 inch ordinary stovepipe cut so as to form three-cornered notches about 1 inch deep. The remaining parts of the metal are turned out and nailed to a board as shown in the illustration. The bottom part is filled with a 3-



Charcoal Soldering Iron Heater.

inch layer of clay and a few 3/4 inch holes made in the metal just above the clay for the draft. Three sides of a rectangular piece, 2 inches wide and 3 inches long, are cut in the pipe and the metal within turned down. This forms the door and hearth for the soldering irons. A circular piece of metal laid over the top controls the draft.

## FIND SUBSTITUTE FOR COAL

Papyrus and Other Weeds Cut and Dried and Used for Fuel in Egypt and the Sudan.

British ingenuity has been finding a substitute for coal in Egypt and the Sudan, and at the same time departing far from the aboriginal turf of Ireland. In the upper reaches of the river Nile the channels in many sections are so choked with papyrus and other weed growths that steamboats cannot make their way without dredging.

Recently the experiment of cutting these sedge growths, drying them, cutting them to chaff, and making briquettes of the substance has proved that a brownish substance of 50 per cent. the density of coal and carrying 66 per cent. of the heat of coal can be produced at 40 per cent. less than the cost of coal. It is imperative for several reasons, that the Nile channels be held open and this disposition of the dredges seems to have forced an unexpected economy in the steam traffic of the great river.

## Substitute for Blasting.

A new method for blasting is being practiced in German coal shafts that does away with dangerous blasting, while also avoiding much of the risk of spontaneous explosion of coal dust. Deep holes are bored in the coal body, as for shots, but water is introduced into them by pipes, under heavy pressure. The water finds its way through the coal fissures and opens them up until the mass is loosened, when it is readily removed while wet, without any dust, or the use of any tools other than light pick and shovel.

## Cost of Concrete.

As one means of determining the comparative cost of wood and concrete for the purposes of dwelling construction, two typical houses, alike as far as it was possible to make them, were erected, and it was found that the concrete structure cost about \$200 less than the other, and at the same time was generally voted to be the more pleasing in appearance.

# INDUSTRIAL AND MECHANICAL NOTES

American coal production in 1910 was nearly 490,000,000 tons. Pressed sheets of aluminum are used for wall covering in a machine of paper. The city of Paris owns a machine which can grind out nearly a quarter of a million wooden paving blocks a day. The asphalt deposits of Cuba, when developed, are expected to prove superior to all others throughout the world. The collection of dust from vacuum cleaners and selling it for fertilizer has become a recognized business in Paris. Sumatra is famous the world over for its cigar wrappers, and tobacco plantations have spread to neighboring islands.

# New News of Yesterday

By E. J. EDWARDS

## Earned Fortune With His Pen

Prof. Elias Loomis of Yale Made More Than \$300,000 by Writing Textbooks Which Had Great Sale.

One of the largest, if not actually the largest, bequest made to any American university by an officer of the university was the estate which by his will Prof. Elias Loomis, who died in 1889, bequeathed to Yale University.

Professor Loomis was an eccentric and yet very greatly respected member of the Yale faculty for more than a generation. There is no alumnus of Yale whose degree was received between the early sixties and the late eighties who does not recall affectionately and yet with a slight smile of humorous recollection this quaint and eccentric professor vastly learned in natural philosophy, mathematics and especially astronomy. Among men of science the world over Professor Loomis ranked with Dan, the great geologist; Hadley, the Greek scholar and father of Arthur Hadley, president at this time of Yale; and Shillman, one of the world's great authorities upon chemistry. The United States government recognized Professor Loomis as the foremost meteorologist of the United States, and when the government established its first weather bureau this was not done until after consultation with Professor Loomis.

Professor Loomis was a man of singular taciturnity. If he could express his thoughts in a single word, he would do that. Moreover, he led almost a hermit's life. The world of Yale University saw nothing of him except at chapel, at Sunday services, and in the lecture room. After lectures were ended or the recitations brought to a close, Professor Loomis would depart quietly, always unaccompanied, from the lecture room, crossing New Haven green to his lodging room, which faced the green. He always wore a conspicuous black and white checked necktie, gathered into a bow knot of mathematical accuracy; his linen was immaculate.

Within the time specified by statute after the death of Professor Loomis his will was offered for probate. It contained only two bequests, and one of these was a partial one. He bequeathed his entire estate to

## Only One Postmaster Then

Until Grant's Second Term the Persons in Charge of Offices Were but Deputies of the Postmaster General.

"Do you know that until the latter part of Grant's second administration there was only one postmaster in the United States?" The questioner was James Henry Marr, who had entered the postoffice department as a clerk under Amos Kendall, Jackson's last postmaster general, risen to first assistant postmaster general under President Grant, and at the time he put this question was chief clerk to the first assistant postmaster general in Cleveland's first administration.

"Yes," continued Mr. Marr, from the foundation of the federal government until the latter part of Grant's second administration—nearly 100 years—the country had but one official postmaster.

"But at one time during that period, there were many individuals who were that postmaster. The postmaster of the United States during all that time was always none other than the postmaster general.

"But at one time during that period, if it had not been for John C. Calhoun, the law which designated the postmaster general as the postmaster of the United States would have been regarded as a dead letter and treated accordingly.

"A short time after Mr. Calhoun had resigned the vice-presidency of the United States and been elected senator from South Carolina—that was in 1832—he one day entered the office of the postmaster general, Amos Kendall. Mr. Calhoun's long, dark hair was brushed straight back from his forehead; his eyes looked like two burning coals of fire. I was with Mr. Kendall; Mr. Calhoun spoke most courteously to me—he was courteous to everybody—and then turned to the postmaster general.

"Mr. Postmaster General," he said, "I have just noticed a disposition to make out improperly commissions to those appointed to take charge of post-offices throughout the country. Mr. Postmaster General, you are the only postmaster in the United States; your successor will be the only postmaster; all men appointed to take immediate charge of the various postoffices throughout the country are, under the law, deputy postmasters, and nothing more. The man in charge of the postoffice at New York is a deputy postmaster; so is the man in charge of the postoffice at Philadelphia. Let us say that, probably by inadvertence, a commission has just been made out appointing a man postmaster. I desire to have that corrected. No man under the law can qualify or take charge of a postoffice under the designation of 'postmaster.' Until now, so far as I know, no commission has been made out since I have been in public life by which any one has qualified to take charge of any postoffice in the country except under the title of 'deputy postmaster.' And if it is possible for me to prevent it, no commission shall be made out in any other way."

"Mr. Kendall thanked the great Calhoun for calling the matter to his attention, and assured him that all commissions to appointees to take charge of postoffices should be made out in strict accordance with the law; and that they were made in every case, to his personal knowledge, as long as Calhoun lived.

"Furthermore, I had occasion not long ago to look over the records relating to the appointment of men to take charge of postoffices. I found that as late as Gen. Grant's second administration the postmaster general was the sole postmaster of the United States, all the so-called postmasters throughout the country being set down in the records as deputy postmasters. But in Grant's second administration the law was changed so it became legal to drop the word 'deputy,' and the unique distinction that the postmaster general had enjoyed for nearly a century of legally being the country's only postmaster was lost to him."

## Came to McKinley's Aid

Friends Relieved His Financial Distress, but It Was Messages of Confidence That Kept Him in Public Life.

One of the well-known incidents in the career of William McKinley was his financial failure during his first term as governor of Ohio. Out of the difficulties of that disaster he was helped by his friends; and how his friends flocked to his assistance, and what was the thing that really kept McKinley in public life at this time, when he was seriously thinking of retiring under the burden of his personal misfortune, are made plain by the authority of E. Prentiss Bailey, the veteran newspaper proprietor and editor of Utica, N. Y., who now holds the record for the longest consecutive service in the office of any one daily newspaper in the United States. For years Mr. Bailey has enjoyed the confidence of leading men of both great political parties.

"One day in 1853, when I was dining at my hotel in New York city," said Mr. Bailey, "there walked into the room and sat down at my table my old friend, H. H. Kohlsaat of Chicago, then part owner of the Inter-Ocean of that city. We were in the midst of breakfast and the morning newspapers when, suddenly, Mr. Kohlsaat threw down the paper over which he had been glancing, exclaiming as he did so: 'This is dreadful news—dreadful! Then, though he was so excited that he could hardly speak, Mr. Kohlsaat told me that he had just read a dispatch from Columbus, Ohio, which reported that Governor William McKinley was bankrupt—that his own fortune was lost and that of his wife had been greatly impaired—and that the governor had decided to give up public life and to turn everything that he possessed over to his creditors.' 'No man who knows William McKinley as I do can have the slightest doubt that if financial ruin has come upon him he has not been himself responsible for it,' declared Mr. Kohlsaat, adding, 'His friends must now come to his support.' 'With that, Mr. Kohlsaat rose from the table and left the room. After a while he returned and explained that he had just telegraphed his sympathy to McKinley and told him that 'one-half of all I have in the world is yours, yours in whatever way may best serve you in this great emergency.' Mr. Kohlsaat was still greatly agitated, and without resuming his breakfast, shortly excused himself and went away.

"The next time I saw him—a few years later—he told me of McKinley's experience immediately following the publication of the news that he had lost his fortune. Telegrams by the hundred poured in upon the governor. Many came from Democrats who were his bitter political enemies; many others were sent by persons with whose names McKinley was not familiar; and all offered financial assistance, almost every one urged him not to give up public life, and every one of the dispatches—and the letters that soon began to flow in—assured him that he stood high in the estimation of the American people, and that his misfortune would speedily make that fact apparent to him.

"Several men of financial ability, as is well known, undertook the management of McKinley's affairs and financed him out of his embarrassment. Undoubtedly, many persons believe that it was the action of these men that persuaded McKinley to remain in public life. But it was not, and I have Mr. Kohlsaat's word for it. It was, rather, the many messages of confidence that came from all parts of the country that persuaded McKinley that it was his duty to remain in public life as long as the people wished him to continue there. After these messages had poured in upon him, and he had had time to realize what they meant, he felt that he could not justly resist those touching evidences of widespread confidence in his personal integrity."

## The "Taint of Civilization"

One Part of the Earth Which Has Escaped, According to Writer in Outing Magazine.

About thirty miles east of the canal zone, in an irregular line, running from the Atlantic almost to the Pacific, begins the habitation of the most peculiar tribe of people, I believe, living in the western hemisphere today. Their country comprises the numerous, beautiful and fertile islands along the Atlantic coast between Puerto Bello and the Gulf of Uraba, and extends inland, approximately dividing the eastern end of the republic of Panama. Within this territory, civilization has cast no lights nor shadows, nor introduced new customs, nor gathered thither for the propagation of foreign superstitions, nor taxes for governments of questionable integrity. These people still hunt with the bow and arrow and have the poisoned dart in reserve for their enemies. The attention of the writer was

first attracted to this part of the Isthmus by rumors of unlimited game in the country and lurid pictures of gold, which is said virtually to "pave the beds of the streams." So, though it is known in all parts of the republic that the San Blas Indians permit no strangers, white men particularly, within their territory, we decided to try to explore it anyway by traveling at night in mid-stream in cayucas resembling their own and concealing ourselves in the jungle during the day—From Outing.

How to Do It. Kenneth was trying to write the word "tree," says the Chicago Record-Herald. He knew how to make the first two letters, but could not remember the "ee." Russell, two years older, and who is fond of boating, essayed to help his little brother thus: "Kenneth, why don't you just pull out that line and the two knots in it?"

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