Correspondence.

Call for a Bottle Labeling Machine.

To the Editor of the SCIENTIFIC AMERICAN:

When in Milwaukee recently I inspected the plant of the Pabst Brewing Company. As I was admiring the many kinds of complicated labor-saving machinery I was greatly surprised to see women pasting the labels on beer bottles by hand. There may be machines for doing this work, but as there is none used in the largest brewery in the world, I conjecture that there is none. As many millions of beer bottles have to be labeled annually, it would seem that a rich harvest would be reaped by the inventor of such a machine. HOLLIS CORBIN.

St. Johns, Mich.

A Letter from Senator George—A New Invention Called For.

To the Editor of the SCIENTIFIC AMERICAN:

Because I think your large acquaintance with the inventors of this country will enable you to bring the matter of this letter before the proper persons, I address it to you.

There is great need of the discovery or invention of a cheap machine for the pressing of oil from cotton seed. The cotton gins of the South are now almost universally run by steam or water power. Each of the large plantations is always provided with such a gin. The smaller farmers send their seed cotton to a gin in the neighborhood. What is needed is a machine which, with an engine with twenty or forty horse power, used to gin the seed cotton, will press the oil from the seed, either while the gin is being run or after the ginning is over. The economy of this over the large oil mills is evident. The transportation of the cotton seed to the large mills is a large item of expense compared to value of seed, the seed being worth at good prices rarely more than one-half cent per pound at the gin. The transportation of the oil cake or meal back to the farm for fertilizing is another large expense which will be saved. Another economy comes from the use, in pressing out the oil, of the gin engine after the ginning is over, and when it would otherwise be idle. Another great advantage would be the making of combinations among the oil mills to depress the price of cotton seed impossible.

I desire to call your attention to this matter, as involving in its successful solution not only great wealth to the inventor, but great pecuniary advantage to the producers of cotton. Can't you find a man who will make the invention? Very respectfully,

J. Z. GEORGE.

Committee on Agriculture and Forestry, United States Senate, August 24, 1894.

P. S.—To any inventor wishing to test this device, I will be glad to offer all necessary facilities in the way of power, seed, house room, rough labor, etc., at my plantation in Le Flore County, Mississippi.

Sunflower Paper.

To the Editor of the SCIENTIFIC AMERICAN:

An article appeared in your valuable paper, issue of May 26, 1894, entitled "The Sunflower and its Uses." In that part of the article touching the use of the stalk for paper making, the writer wishes to make a few corrections and elicit some facts not generally known.

During the summer of 1893, Mr. Peter Hinkel, of Chicago, Ill., president of the Salina Paper Manufacturing Company, was out visiting his plant, and while out riding in the country his attention was called to the immense growth of the sunflower. He was at once impressed with the idea that the stalk, if properly treated, could be used in making paper. Following up his "foolish idea," as his friends called it, he procured a bundle of stalks and took them to Chicago. After boiling them for several hours he arranged a flatiron in his lap and with a hammer commenced reducing the stalks to a pulp, from which he produced a sheet of sunflower paper, and possibly the first paper that was ever made from the sunflower stalk. About the same time the writer began experimenting with an improvised bleach and succeeded in making the pulp a light manila. After comparing results with Mr. Hinkel, he determined to make a test on a larger scale, with regular paper-making machinery, and on the 27th day of October, 1893, a practical machine test was made on 1,800 pounds of pulp, which produced about 1,500 pounds of finished paper, on some of which the Salina Daily Republican was printed. It may be proper to state right here, in order not to mislead any one, that the paper in question was rather a coarse heavy sheet resembling straw paper, such as is used by butchers and grocers.

In reference to the statement that the Salina mills are now running and producing "express and hardware papers," must say the statement has no foundation; the mill has not produced one pound of sunflower paper since the day of trial. Conditions arose in the final experiment that would have to be overcome by especially devised machinery, and to go into detail on this branch is not the intention of this article.

The production of a fine grade of wrapping paper from the sunflower stalks can never be accomplished without the introduction of some longer fiber, for the reason that the fiber made from pure stalks is too short and contains entirely too much wood. If say thirty per cent of sulphite fiber or good rag stock could be incorporated with the fiber, there is no reason to doubt the possibility of the production of a very tough sheet of paper. Until the exhaustion of other materials used in producing fiber for paper making, it is my honest opinion the sunflower stalk will have to be relegated to the rear. The other virtues claimed for the sunflower plant are various and many, but in Kansas I see no great future for the plant, unless it be for its brilliant yellow flower, which is seen during the period from August 1 to October 1 each year.

Salina, Kan., August, 1894. I. S. BOWER.

Oil Fuel.

F. U. Adams, chief smoke inspector of Chicago, writes to the Marine Review as follows regarding tests with oil for fuel on harbor tugs:

"I have not yet made an official report, but shall do so in a short time. I will give you a brief report of what we have done with fuel oil. The City Council leased from the Vessel Owners' Towing Company the tug Black Ball No. 2, for the purpose of making experiments. I secured from the Treasury Department at Washington a permit allowing us to burn oil from tanks located one foot or more from the firebox of the tug. Two tanks were placed in the tug partially filling the space occupied by the coal bunkers. These tanks hold 650 gallons of oil. They are so constructed as to prevent the swashing of oil. A small pump in the engine room forces the oil from the tank into a small pressure tank, holding twenty gallons, from which it leads to the burners. In the first experiment two burners were used and sprayed oil through the furnace door. This was not the success we desired, and was objectionable on account of the noise, and we had difficulty in maintaining the required amount of steam. The burners were then dropped below, running up through the ash pan. This gave us enough steam, but the noise was increased. The burners were then taken out and placed in what is technically known as the front end of the firebox and were so arranged that they threw the oil toward the furnace door, striking against an arch, which deflected it back toward the flues. This solved the problem so far as the steam capacity was concerned and there was an entire absence of smoke.

"In a recent test the Black Ball made a trip to Waukegan and return, a distance of 70 miles, in competition with the Bob Teed, of the Dunham Towing Company's line, for the purpose of ascertaining the consumption of oil and of soft coal and the relative cost of each. The Black Ball consumed 650 gallons of oil, worth $11.62, and the Teed burned 6½ tons of coal, worth not less than $21. Both boats maintained a full capacity of steam during the entire trip, and as the Teed is the faster boat she averaged a little over 12 miles an hour as against the Black Ball's 11 miles and a fraction. Because of this, certain papers friendly to the soft coal interests attempted to construe the result as a victory for soft coal.

"The Black Ball is now fitted with an extra burner, a very small one, which is used to maintain steam when the boat is not running. We can hold steam at 85 pounds, for any length of time, with a consumption of less than two gallons of oil an hour, or about 70 cents per day. To do the same work requires about 1½ tons of coal, worth not less than $5, to say nothing of the smoke nuisance, ashes caused by firing, and other expenses incident to the use of coal. A more accurate report will be prepared later."

[FROM THE ARCHITECT, BUILDER AND DECORATOR.]

The Steamer Northwest's Electric Equipment.

There are some very interesting matters in connection with the new steel passenger steamship Northwest, of the Northern line, especially in reference to the vessel's use of electricity, that have not been published. In preface it may be said that on no vessel in existence is there such general use of the electric fluid as on this greyhound of the great lakes. When is considered the wonderful extension in the employment of electricity on modern ships of war and on the latest Atlantic liners, this statement may seem almost a piece of insular pride and prejudice, but it is made on authority that cannot be charged with such prejudice.

The vessel is lighted by 1,800 incandescent globes, every one of which is hidden behind ground glass. This number, it is claimed, is 300 more than is in use in any of the Atlantic ships, even though the largest of them are 200 feet longer than the Northwest. The Campania and Lucania, of the Cunard fleet, embodying the very latest in marine development, have about 1,350 lights each. The Northwest's lighting equipment is driven by three direct coupled engines, each dynamo having 600 light capacity. The vessel has electric elevators between the freezing rooms in the forehold and the kitchens and cafe. She has electric signals everywhere. When the lookout, pacing the foredeck, sights a ship or wants to call the attention of the wheelhouse to any matter, he does not call out, but steps to the rail and touches a button; immediately an answering ring assures him that his signal has been heard and heeded.

As the vessel approaches her dock there is a noticeable absence of the usual shouted orders from deck and bridge. It is all done by the electric bell, which was never known to swear or to be tempted to use language that would not be permissible in a parlor, something the man in charge of the deck has the reputation of doing occasionally. When the captain on the bridge wants to give an order to the wheelhouse, or the engine room, or the stokehole, or anything else, he merely turns to the second officer beside him, gives the order, and the latter presses a button. There are no less than six methods of signaling from the bridge to the different parts of the ship, and of these all but one are electric. The vessel's red and green side lights, than which nothing on the entire ship is more important, are not the universal oil lamps, but are high power incandescent globes, and with them is a little instrument that audibly records in the wheelhouse any accident that befalls the lights.

When the ship's big whistle is to be blown, instead of tugging at a whistle cord, the officer touches a button, and if it is desired that the whistle blow consecutive blasts at intervals for any desired length of time, a switch is turned. Not only is the whistle sounded, but on a continuous strip of paper is printed the time and duration of every blast, a record almost invaluable in cases of collisions in fogs, where conflict of evidence as to the proper signals is almost sure to arise. There are electrically driven fans in various parts of the ship, closets, kitchens and inner passages everywhere, but these are particularly notable in and about the fire rooms. Every one knows what an inferno the ordinary stokehole of a large steamship is from the descriptions that have often been given. In this part of the Northwest it is so cool that, with the fan aperture half closed, it is actually uncomfortable to stand near the bunkers. So far from being naked demons in a little hell, the firemen actually wear clothes. This is an innovation that ocean ship builders could very acceptably follow. The ship carries a search light that will pick up a pilot boat letter 12,000 feet distant. There are many other novel features in the electric installation of this most modern of all the modern vessels, but those indicated are the more interesting and new.

D. E. WOODBRIDGE.

Piperazine.

As a remedy for uric acid poisoning, attended by such troubles as rheumatism, gout, muscular and articular pains, dyspepsia, etc., piperazine is recommended. Dr. J. Allen Osmun, of Newark, N. J., regards it as perhaps the best uric acid solvent now known. This remedy, he says, has no toxic or corroding effect, and can be taken for any length of time without disarranging the digestion or any vital organ. A solution of piperazine in cold water will dissolve twelve times as much uric acid as the same quantity of lithium carbonate. One other important item is, that piperazine always forms a neutral salt, no matter how long it is administered, or in what quantities, which makes it an exceedingly safe thing to use.

I merely mention in passing that piperazine is soluble in cold water to almost any extent, and a good prescription is as follows:

R—Piperazine (Schering's), gr. v.
Solve in aqua, ʒv.
Sig.—Tablespoonful in glass of Vichy two or three times a day.

The Removal of Iron Parts Shrunk on Hot.

A method for instantaneously removing iron parts shrunk on hot, like a crank on a shaft, has been communicated by M. Raffard to the Bulletin Technologique of the French Societe des Anciens Eleves des Ecoles Nationales d'Arts et Metiers. An endeavor had been made to take off the outer hoop of a Laval turbine by heating it with a gas blowpipe; but the heat was communicated too quickly throughout the whole mass to give a sufficient difference of expansion in the hoop alone, so as to loosen it; and there appeared no alternative but to cut it. In such a case, M. Raffard recommends that molten lead be run round the part to be detached—a method he applied with success in 1860, at the Soho Foundry, Melbourne, in removing a crank that had been shrunk on a shaft 8 inches in diameter.

A Large Blast.

A large and successful blast was made July 29 in the quarries of the American Cement Company at Egypt, near Allentown, Pa. The blast consisted of 22 charges of dynamite in holes drilled 20 feet deep. There was a total of a ton of dynamite. It was all set off simultaneously by electricity. The report was loud and the earth shook a trifle, but not a mishap occurred. The result was unexpectedly successful. It is calculated that the enormous amount of 12,000 tons of cement rock was dislodged by the blast.