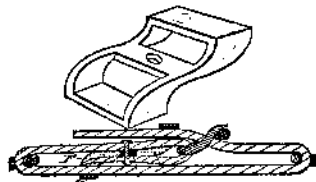


RECENT INVENTION.
Improved Harness Loop.

This invention belongs to the class of loops having two openings for the strap or straps formed by an intermediate plate to which the strap is riveted, and it consists in a metallic double loop with the top plate and the bottom plate, located aside from the plane of the rivet, which is inserted through an intermediate plate. The side plates may be made narrow to save material, or they may be made broad



enough to cover the edges of the strap. When made broad they will add materially to the strength of the loop, and at the same time present a surface which may be rendered highly ornamental to the harness. In attaching the strap to the loop, one end of the strap is to be doubled upon itself as shown in the sectional view, so as to include the intermediate plate between the folds, and the rivet is then to be passed through the folds and said plate and secured in the ordinary manner. The heads of the rivet will thus lie in contact with the yielding leather, and will be less exposed to the danger of being wrenched off than when in contact with the metallic plate. The strain upon the strap or trace, as the case may be, will thus be thrown upon the center of the rivet instead of one end, and being thus equalized, there is less danger of the parts separating under strain. This invention has been patented by Mr. Henry A. Pott, of Cape Girardeau, Mo.

Effects of Iron on Digestion.

In an inaugural dissertation published at Berlin, Dr. A. Düsterhoff records the results of some experiments bearing on this subject. One gramme of fibrin was added to twenty c.c. of artificial gastric juice, and during digestion equivalent quantities of various preparations of iron were also added. At the end of the process the undigested fibrin was dried and weighed, and the quantity of soluble syntonin in the solution was also estimated. The time of digestion was in one case three hours ten minutes, in another it was seven hours and a half. In the first series 0.0614 gramme of metallic iron was in each case added, in the form of pyrophosphate, perchloride, and protolactate respectively. In the second series various other preparations were used, the amount of metallic iron being in each case equivalent to 0.0077 gramme. Other experiments were made with white of egg, the amount of albumen precipitated by boiling after digestion being estimated. The outcome of the experiment is, that the organic salts of iron seriously hinder and check peptic digestion. Probably the hydrochloric acid of the gastric juice displaces the organic acids from the iron salts and so is used up; while the free organic acids in the digestive fluids are far less powerful digestive agents than the hydrochloric acid. But this cannot be the only cause at work, for perchloride and phosphate also tend to hinder digestion. Even reduced iron has a similar effect, for it partially dissolves in the juices, forming chlorides. Its solubility, like that of the phosphate, is however not very great. Ferrous salts seem to interfere less with digestion than ferric salts.—*Practitioner.*

Proposed Improvement in Soda Manufacture.

A very interesting and exhaustive paper on the present position of the soda industry was read before the London Section of the Society of Chemical Industry on January 8, 1883, by Mr. Walter Weldon, F.R.S., chairman of the section. In the course of his remarks the author referred to the conversion of coal into coke by the user, and the utilization of the by-products and gases in the following terms:

There has come to me from Newcastle a very bold but, I venture to think, quite practical suggestion, the result of which can hardly fail to be of enormous importance, not only to the soda industry, but to almost all industries whatever. That suggestion is that the soda makers should entirely cease to use raw coal as fuel, but should convert all his coal into coke, collecting for sale the oil and ammonia evolved during its conversion into coke, and himself using for heating purposes the gases evolved during the coking operation and the coke itself. It is believed that in the Newcastle district, at any rate, by this mode of proceeding the soda maker would obtain his fuel virtually for nothing. In that district there is produced per annum some two millions of tons of very small coal or "duff," which is almost a waste product, and which, singularly enough, yields more oil than the more costly kinds of Newcastle coal, while at the same time yielding a very fair coke, sufficiently good, at any rate, for use in the furnaces of chemical works, especially when its combustion is assisted by that of the gases from the ovens in which the coke is produced; and the value of the oil and ammonia obtained when this "duff" is coked in ovens to which the Jameson system is applied, is greater than the cost of the "duff," plus the cost of coking it. And it is probable that improved condensing arrangements will render the yield, if not of oil, at any rate of ammonia, so much greater than the yield hitherto actually realized as to enable the same result to be obtained in the case of ordinary steam coal, not only in the Newcastle district, but in the Lancashire district also. If so, the cost of producing Leblanc soda in both districts will be diminished by almost the total amount of the present cost of Leblanc soda for fuel. I say "almost," because, so far as one can

see, the use of raw coal for "mixing" in the blackash process must still be continued. And it seems to me that this idea cannot but be as applicable to almost all other industries as to the soda industry; while the result to the material well being of mankind of its general application, it is utterly beyond the power of any imagination adequately to conceive. This idea means, among other things, cheaper fuel for all purposes, an enormously increased supply of agricultural produce, and the entire suppression of smoke even in the busiest centers of industry. It means that manufacturing towns by and by shall no longer deserve such names as that which Mr. Matthew Arnold recently applied to St. Helens, and may even become tolerable in the sight of Mr. Ruskin. And for my own part I venture to think that the same idea might be applied even to the fuel required for domestic purposes, rendering London absolutely free from smoke, and pea soup fogs only things of tradition. I think that the time will come when our gas works will be replaced, at least to a large extent, by establishments in which coal will be treated for the production of coke, illuminating oils, ammonia, and heating gases: the coke to be burnt in our domestic fire places, the oils to be used for lighting the interiors of our houses, the ammonia to be employed in agriculture, to cheapen and render more abundant our supplies of food, and the gases to be burnt for raising steam for driving dynamos for lighting our streets by the electric arc.

Awards for Inventions to Workmen.

In respect to a scheme of awards to workmen which has been established by Messrs. Denny in their shipbuilding yard at Dumbarton, we learn, says *Iron*, that the committee's annual report for the year just closed is gratifying. The committee state that during the year 1882 they have had under consideration twenty-seven new and four postponed claims. Of these twenty-one have been considered worthy of award, seven have been rejected, and three are still under consideration. When compared with the preceding year, there is a slight decrease in the number of claims received; but, on the other hand, the awards made are all but equal, while some of the inventions are of even greater merit and value than any previously brought forward. The committee also state that the total sum paid in grants is about one-half more than last year, owing to the greater value of some of the claims, and the more liberal scale of payment adopted by the committee, as was intimated at the beginning of the year. The joiners, as in former years, take the first place in the list of the successful claimants, about one-half of the awards going to that department alone. Since the awards scheme was started two and a half years ago, the committee have received seventy-one claims for adjudication, of which number fifty were considered worthy of award; the total sum paid amounting to £171, being £18 in 1880, £62 in 1881, and £91 in 1882. In contradiction to the belief entertained by many that the workmen would soon exhaust their resources in the matter of invention and improvements, the report goes on to show that the reverse is the case, as the past year has witnessed better results than any preceding one. Some of the improvements have evinced considerable inventive talent, and in two cases the highest award the committee are empowered to make was granted.

[According to the above account, fifty useful inventions have been made, for which \$855 have been paid, being an average of a trifle over \$17 for each. Rather poor encouragement, that, for genius.]

American Fruit for England.

Consul King, writing from Birmingham to the State Department, says: Large quantities of American produce continue to be sold here, and many American "notions" are to be found. One or two firms seem to do a good business in selling American stoves and ranges; and I think that the dealers in American meat find the prejudice against it has generally disappeared, now that, for a time, the supply has been uncertain.

I have spoken before of American apples and have suggested more careful packing, but I venture to urge this again. These apples are generally admitted to be better than European apples, and the taste for them is general, yet several dealers here have told me that they must cease to deal in them, because they arrive in such a condition that it is necessary to put a price upon the few that remain sound which purchasers object to paying.

I have frequently wondered if our grapes, by careful packing, might not compete with Spanish grapes in the English markets. Enormous quantities of Spanish grapes are sold in this country. Very fair ones can be bought at retail at sixpence a pound. They come carefully packed in sawdust, but they are tasteless, and I feel sure that if American grapes could be offered for sale here in as good condition, the variety and superiority and individuality of their flavor would recommend them, even at a slightly higher price.

MR. E. F. LOISEAU, inventor of the process and machinery for manufacturing the pressed fuel from anthracite coal dust, who two years ago lost the sight of one eye from a cataract, has been again unfortunate in suddenly losing the use of the other eye from the same cause. Recently while returning from the works at Port Richmond; he was nearly run over by a cart, and had to be taken home by a gentleman who volunteered to accompany him.

Birds and Telegraph Wires.

Some very curious observations have been made on the German telegraph lines at the instance of the Secretary of the Post Office. Herr Massmann stated in a paper read before the Electrotechnic Society of Berlin, that in districts where there are no trees he found that the smaller birds of prey, such as crows and magpies, are very fond of roosting on telegraph poles, while sparrows, starlings, and swallows frequently alight on them in great numbers. Swallows like to build under the eaves where wires run into telegraph offices, and sometimes cause an "earth" contact.

Contacts between wire and wire are frequently caused by large birds, such as bustards, storks, swans, and wild ducks. They cause the wires to swing and sometimes to break. Accidents of this kind were frequent when the wires ran by highroads, along which young geese were driven to their pastures. Smaller birds, even partridges, are generally killed by the shock of striking the wires. They do not cause much damage to the lines. Holes are often pecked through the poles by woodpeckers (the *Picus martius*, or black woodpecker, the *P. viridis*, or green woodpecker, and the *P. major*, or piebald woodpecker). These birds spare no kind of wood, unprepared pine and oak poles, as well as poles treated with sulphate of copper, chloride of zinc, or sublimate of mercury. Some even state that they will attack creosoted poles. The theory that the birds mistake the vibrations of the wires in the poles for insects humming is doubted by Herr Massmann, who states that they often find insects in the dry poles.

The Latest Electrical Discovery.

The Rev. Mr. Gilbert, during an address at Christ Church the other night, remarks the *Otago Times*, while speaking of the telephone, asked his audience if they would be astonished if he were to tell them that it was now proved to be possible to convey by means of electricity vibrations of light—to not only speak with your distant friend, but actually to see him. The electroscope—the name of the instrument which enabled us to do this—was the very latest scientific discovery, and to Dr. Guirah, of Victoria, belonged the proud distinction. The trial of this wonderful instrument took place at Melbourne on the 31st October last in the presence of some forty scientific and public men, and was a great success. Sitting in a dark room, they saw projected on a large disk of white burnished metal the race course at Flemington with its myriad hosts of active beings. Each minute detail stood out with perfect fidelity to the original, and as they looked at the wonderful picture through binocular glasses, it was difficult to imagine that they were not actually on the course itself and moving among those whose actions they could so completely scan.

Spencer B. Driggs.

Spencer B. Driggs died at his residence, 3 East Forty-first street, in this city, on January 26, 1883. He was born near Auburn, N. Y., on January 5, 1822. In 1855 he came to New York city and organized the Driggs Patent Piano Company, his instruments containing valuable improvements. Mr. Driggs will be best remembered by his success in draining the Hackensack meadows, which comprise that great swampy region lying between Jersey City and Newark, N. J., a task which others had attempted and failed in accomplishing. He laid nine miles of iron dike around a part of the meadows, bought by the late S. N. Pike, of Cincinnati. After the land was drained a part was sold to the Pennsylvania Railroad Company, and the round houses and workshops now standing on the meadows were built on the drained land. The railroad company paid \$1,200 an acre for the swamp which Mr. Driggs had paid \$25 an acre for. Tobacco, corn, potatoes, and hay are now grown in other parts of the meadows which were once a salt marsh. Mr. Driggs' mind was full of novel plans. At the time of his decease he had just completed a new system of running gears for railway cars, that he expected would greatly reduce the costs of transportation.

Archaeological Discovery in Asia Minor.

A discovery has been made lately by a Bavarian archaeologist, Herr Sester, at the point where the Euphrates bursts through the Taurus Range. Here, in a wild, romantic district, lying between Madatieh and Sanisat, he found a line of megalithic monuments, averaging between 55 and 60 feet in height, and bearing inscriptions. They are in a remarkable state of preservation, and Herr Sester has no doubt that they formed a part of some great national sanctuary, dating back some 3,000 years or more. There was formerly at this place a necropolis of the old Commagene kings, so that it seems reasonable to attribute these colossal monuments to this ancient people, the hereditary foes of the Assyrians. Very little is known about them. The classical writers allude to them only in casual passages, and the arrow-headed inscriptions, although mentioning them very often, have hitherto yielded scanty information.

THE new five-cent piece just issued is a little larger and thinner than the old one, and possesses the same lead appearance. On one side is the head of Liberty, the date, and the usual thirteen stars. On the reverse is a V in a wreath of cotton, wheat, and corn, surrounded by the inscriptions, "United States of America" and "E pluribus unum." The letter V in the center does not indicate if the value of the coin is five cents, or five dollars, which seems to be an unfortunate oversight.