

## Correspondence.

## The Panama Canal.

To the Editor of the Scientific American:

As our papers do not often publish anything but unfavorable information regarding the canal, it may surprise your readers to be told that on Washington's birthday there was an opening of the Gatun section, and steamers proceeded from tide water to a point beyond Gatun, a distance of 11 miles; and by the end of this month the canal will be navigable for 15 miles (to Bohio) for vessels of 1,000 tons burden.

The excavating has gone on very rapidly of late, the excavation for first half of February being 384,521 cubic meters, while the usual amount for a whole month has heretofore averaged about 332,000.

The cut for the Chagres River is well under way, some 1,800,000 cubic meters of excavation having been made on this part of the work alone.

The American Contracting and Dredging Company are pushing their part of the work very rapidly, and between January 15 and February 15 contributed over 390,000 cubic meters of excavation to the year's work.

A. P. HOWARD.

Boston, March 7, 1888.

### Openings for American Trade and Enterprise in Venezuela.

To the Editor of the Scientific American:

As your valuable paper has a wide circulation among all classes, and as I have noticed that you give some prominence in your columns to what is going on in foreign parts, I have thought it would be a good idea to ask you kindly to insert the following remarks as a general answer to the many letters of inquiry with which this consulate is favored:

Every mail brings me a large correspondence, and there appears, I am glad to say, a tendency on the part of our people to make a peaceable commercial and industrial invasion of this part of South America.

I therefore take the liberty of intruding upon your space in order to explain in what way our countrymen may establish themselves in this section of Venezuela with but little risk of failure and a fair probability of success. It is a great pity that in the early days immediately after the independence of the South American states, we did not take steps to make our commercial influence paramount.

We, however, lost the opportunity, and to-day only are attempting to gain what should have been ours from the beginning.

For this reason it gives me pleasure to point out the various ways in which success may be tolerably assured to any one possessing the requisite capital and energy. For many reasons this part of Venezuela offers more inducements than any other section of the republic.

The progressive spirit of the people, the ready welcome given to foreigners, the eager desire for improvement and development, and the excellent government with which this division of the Venezuelan federation is favored make it a most promising field for enterprising and intelligent industry.

The natural resources are such that within the limits of the State of Zulia, of which Maracaibo is the capital, agriculture, mining, and stock raising can be carried on to exceptional advantage.

Commercially and industrially, Maracaibo is the most important point on the north coast of South America, and with its steady increase in population and the development of its industrial capabilities, it must some day become a busy metropolis.

I beg to give publicity through your columns to the more advantageous opportunities offered by this section, and particularly by the city of Maracaibo; and although this is intended as a general answer to numberless inquiries, yet I will gladly give further details, as far as may be in my power, to any one requesting them.

My attention has been called to the extensive business now being carried on in the United States in the matter of portable wooden houses, and I believe that Maracaibo would be a good field for their introduction.

Concessions of law for building purposes could be easily obtained from the municipal government, and should one of our manufacturing firms run up one or two blocks of the houses referred to, they could no doubt be at once advantageously rented or sold, and the business established on a good basis. This is an industry which, once introduced, would give excellent results, and is worthy of examination.

In connection with the following suggestions, it will be understood that the city would have no hesitation in giving land at a nominal price, sufficient for the necessities of any bona-fide industry, whose development would, moreover, be encouraged by exemption from imposts.

A first class foundry and shop for repair of machinery should pay well if managed intelligently.

A brick yard and tile factory, run by steam, and with all the modern appliances, could do a fine business. There are many kilns here, all, however, on a

small scale, and the demand for their products is large and constant.

The method of manufacture is of the most primitive character, and as excellent material is abundant and close at hand, there is no reason why one of our enterprising brick makers, thoroughly posted in his business, should not make large profits from the beginning.

A manufactory of pottery, from the most ordinary grade to the finer classes of ceramic work, would find an immediate and profitable market for its products. There exist almost within the city limits the finest grades of clay, and it only needs intelligence and capital to turn out work much superior to that now imported from abroad.

A furniture, window, and sash factory would meet with ample patronage.

To me, it is a matter of surprise that no one has ever thought of establishing, on a large scale, a first class tannery in Maracaibo.

From this port are exported large quantities of hides and skins, which are here abundant, cheap, and of excellent quality. The dividivi, which is used both in this country and Europe as a substitute for bark, is found in the immediate vicinity of Maracaibo, and in such quantities as to make it an important article of export. The consumption of leather is large, the importation being great, and I can scarcely imagine a safer line of business, or one with more probability of profit, than a thoroughly first class tannery.

A boot and shoe factory with the modern mechanical appliances would pay well. All shoes are hand made, dear in price, and not of the best workmanship.

The demand is great, and various shops, some on quite a respectable scale, do a good business. Should a manufactory be opened in this city, capable of turning out good machine work at a moderate price, the results could not be other than satisfactory. I may mention incidentally that the import duty on foreign boots and shoes is excessive, amounting to four dollars per kilogramme, primary duty, and about sixty cents secondary, resulting that the entire duty is about two dollars per pound.

This practically prevents foreign competition, and aids greatly the successful prosecution of this industry in Venezuela.

A dairy on a large scale with a vegetable garden attached would be well patronized.

Vegetables are scarce and dear, there being no truckers, and I believe that the business, once started, would give good returns. In connection with this industry, stock raising could be engaged in. Grazing land abounds and is free to all, and breeding has always been one of the most successful pursuits in this section.

On the frontier of the Goajira peninsula, at the extreme northwest of Venezuela, the business of stock raising is being carried on to great advantage, in spite of the proximity of the famous Indians of that section, and it is calculated that with ordinary good luck, the original capital invested may be doubled in four years. In the district of Perija, to the westward of this city, there are unrivaled facilities for the breeding of cattle, as on the extensive savannas there is an abundance of grass of various classes, and no lack of water.

The great wealth of this section consists, however, principally in its mineral deposits. Asphalt, petroleum, and bituminous coal abound, and serious efforts are about to be made to utilize these valuable products. Should a petroleum refinery be established on a sufficiently extensive scale to supply the domestic demand, the profits would be great, as the crude article is practically inexhaustible.

The fisheries of this coast would also richly repay their systematic development. Many persons now make a good living at the business, and were it taken in hand in a careful and intelligent manner, its importance would be vastly increased.

The sounds of the "curbina" are largely exported for the manufacture of gelatine, and command excellent prices abroad.

A first class hotel would receive good patronage in Maracaibo, as would probably also a good restaurant a la carte.

With the present rapid growth of the city, and its increase in population, an additional market has become a necessity, and it may be suggested to the manufacturers of portable wooden houses, that a contract for its erection, with favorable concessions, might possibly be obtained.

The foregoing remarks are intended to point out the more prominent industrial opportunities of this district, and, as I have already stated, it will give me pleasure to answer in detail any inquiries.

You will kindly excuse this intrusion upon your space, and accept my thanks for your courtesy.

E. H. PLUMACHER, U. S. Consul.

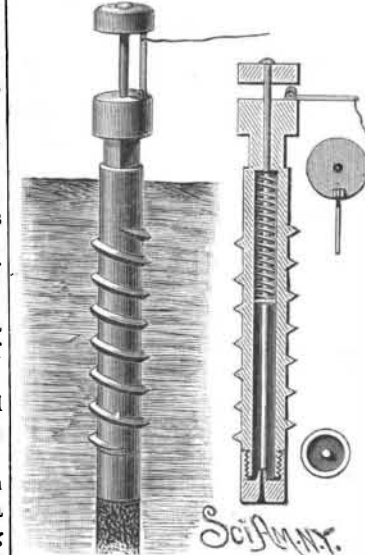
United States Consulate, Maracaibo,

February 14, 1888.

LIEUT. HUNTER.—A correspondent writes us that Lieut. Hunter, one of the "fathers of the American steam navy," is still living in New Orleans, La., 85 years of age.

## A DEVICE TO FACILITATE BLASTING STUMPS, LOGS, ETC.

A blasting plug intended especially for use in blasting wood, by which the ordinary tamping of rocks, etc., in the drilled blasting hole may be avoided, and in which no fuse will be necessary, is shown in the accompanying illustration, and has been patented by Mr. Alfred Winder, of Washington, D. C. The plug is exteriorly threaded, to facilitate securing it in the blasting hole, and has a central bore provided at its lower end with a threaded extension to receive the cap support. In this support, shown in one of the small figures, is a cap nipple or seat, from which a vent leads to permit the passage of the flash to the powder. The

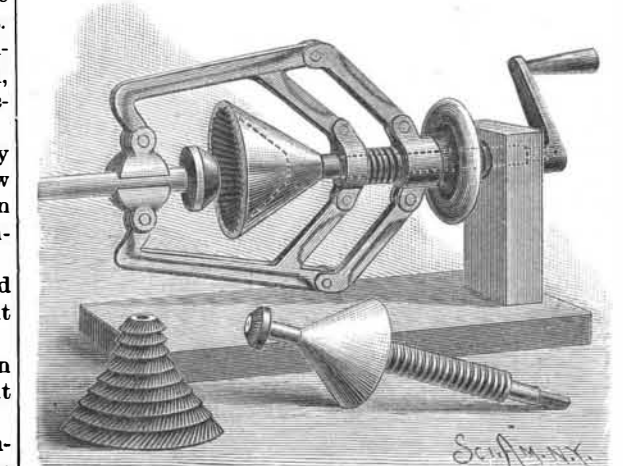


WINDER'S BLASTING PLUG.

hammer rod, extending through the bore, may be made sufficiently heavy to fire the cap by gravity, but in order to render the operation more certain, and to permit the device to be operated in a horizontal as well as a vertical plane, a spring is employed, bearing between shoulders on the hammer rod and within the bore. A detent or latch pivoted to the body of the plug serves to hold up the hammer rod, the latch being released by the operator, at a safe distance, pulling on a cord attached thereto, when the descending hammer rod fires the cap and explodes the charge.

## A MACHINE FOR TRUING VALVE PLUGS, ETC.

A device for centering a valve stem or valve casing, etc., providing also means for grinding or burring the plug or seat of the centered valve-stem or casing, has been patented by Mr. Daniel F. Dunn, and is shown in the accompanying illustration. Upon the end of an exteriorly screw-threaded stationary tubular spindle, suitably supported, are formed ear pieces to which are pivotally hung the ends of clamp arms having inward bends near their outer ends, with clamping jaws to embrace a valve stem. The clamp arms also have rear lugs pivotally connected by links with a sleeve fitting loosely upon the screw-threaded tubular spindle, there being an internally screw-threaded hand wheel to the rear of the sliding sleeve, by turning which the jaws of the clamp arms are firmly fixed upon the stem of the valve plug to be centered, which is thus brought in axial line with the spindle. The crank arm on the end of the burr shaft can then be forced inwardly for its conical burred opening to lie upon and around the end and edge of the valve plug, when, by rotating the shaft by means of the crank handle, the valve plug is ground perfectly true and concentric with the axial line of its stem. The mechanism permits the substitution of burr shafts having heads with grinding sur-



DUNN'S MACHINE FOR TRUING VALVE PLUGS, ETC.

faces of different characters or forms, suitable for use upon other articles clamped by the jaws, in which a valve casing or body may likewise be clamped and centered, with the axial line of its seat coincident with the axial line of the burr shaft, which is then provided with a conical shaped cutting or grinding head.

For further particulars with reference to this invention address Messrs. B. F. Dunn & Co., P. O. box 705, Columbus, Ohio.

IN Nebraska, where glandered horses are exterminated by order of the authorities, the State pays the owner for the value of the animal. It is said quite a profitable business is carried on by parties who take over the State line lots of diseased horses from Dakota, Iowa, and other localities for the purpose of receiving the bounty.