quite largely attended. Mr. James S. Zerbe, of Ohio, was chosen permanent president, Charles M. Travis, of Indiana, and G. Burleigh, of Mass., secretaries. Some very stirring speeches were made, and resolutions passed, touching the rights of inventors and the duty of Congress to aid and encourage them. We give in another column a brief report of the organization and resolutions.

One of the contributions sent to the convention was an able and important letter from the Hon. Benjamin Butterworth, the present Commissioner of Patents. He shows how greatly the country is indebted to our men of genius, who as inventors and patentees are the leading spirits in the development of industry and progress. We give extracts from the Commissioner's letter elsewhere. We also give quotations from the proceedings of various other meetings, from letters and contributions sent to us, which speak for themselves and require no comment. We greatly regret our inability to give all these in full.

EXTRACTS FROM THE LETTER OF THE HON. BENJAMIN BUTTERWORTH, COMMISSIONER OF PATENTS, TO THE CINCINNATI CONVENTION OF INVENTORS.

UNITED STATES PATENT OFFICE,
WASHINGTON, March 23, 1884.

I feel a deep interest in the proceedings of the meeting. I realize the possibilities for good which wait upon its action. Careful investigation has made me more fully to realize how greatly this country is indebted to the inventors, and their practical coworkers the manufacturers, for its unexampled prosperity. A study of the facts warrants me in saying that no equal number of men have contributed more, if so much, as the inventors in building up our great industries, and yet no equal number of men have exerted less influence in the political field, where the needs of various interests are discussed, and the legislation in that behalf suggested and moulded.

. . . I want to notice for a moment the objection urged against the patent system by some of those who are most interested in sustaining it. I refer to the agriculturists.

I submit that no man need use an article of modern improvement, unless he finds it to his interest to do so. We may still plow with a wooden mouldboard. We may still drop corn with the fingers, and cover it with the hoe. We may still sow wheat 'broadcast,' and eschew the drill. And we may cut grain, wheat, and oats with the sickle, or, if our opposition to improvements is not radical, we may use the cradle. We may leave the reaper and mower, the raker and binder, severely alone if we choose. We may then resolutely thrash the grain with the flail or tramp it out with horses. We are under no obligation whatever to use a thrasher, and not the slightest to use a cleaner and separator.

We may still haul our crops to market in jolt-wagons. There rests upon us no legal obligation to utilize the railroad. None of us are compelled to use the telegraph. We may in case of sickness send fifty miles by messenger on a horse for a doctor, and bring him back in the same manner; and if the patient dies before he arrives, the relatives and friends need not be summoned by telegraph, nor come by railroad; they can be advised by the postman, and come in the old way, if at all. And in the mean time the corpse can be kept on ice, provided the ice is not manufactured by one of those patent ice machines. It is the right of the citizen to drown, if he prefers it, to being saved through the instrumentality of one of those patent life saving contrivances which are in common use along the coast. It is my lawful right, if I own a coal mine, to draw the coal up with the old fashioned windlass, instead of using steam power and modern appliances. I have an equal right to toil up seven stories in a hotel, instead of riding up on one of those patent elevators. I can pay a dollar a rod to fence my farm with posts and boards, instead of using barbed wire at half the cost.

What I want to show is, that the blood-bought privileges of sticking to the old way remain to us in spite of the patent law.

Had we better do this? Better stick to the old way, or encourage the genius of invention, and improve our methods, lighten our labors, increase our comforts, embellish our homes, and add thus to the sum of our happiness?

But those patents levy on the people. Yes, they levy a dime, and in return give a dollar, and often ten. I can mention half a dozen inventions which alone have saved more to the people of the United States than our whole population have paid in the shape of tax and royalty to inventors since the foundation of our government, and more than they will pay in the next century. I may name the cotton gin, the spinning jenny, the power loom, the locomotive, the telegraph, the reaper and mower. Then let me add the power printing press. All except one, with their aids and auxiliaries, produced and perfected in less than a generation —less than fifty years. By the old method there are not adult laborers enough *in all the Southern States* to prepare the present cotton crop for the loom. By the old methods it would take *all the adult laborers of the North* to plant, tend, and gather the crops. *Not a shop or factory* could be spared a man or woman.

These assertions are not guesses nor wild assumptions, but the result of careful investigation.

I am astonished at the continual complaint made, that the agriculturist is oppressively taxed and burdened by our patent system; and this in the face of the fact that but for the hives of industry, the busy marts of our great cities, which have their origin and growth in the production of the machines, implements, tools, and appliances which are the fruits of the inventor's study, research, experiment, and labors, the business of farming would not be worth following—there would be no market.

The Cincinnati Convention.

The convention of the National Association of American Inventors was called to order by Mr. J. S. Zerbe on Tuesday afternoon, March 25, at 3 o'clock, in Music Hall, about 250 delegates being present, duly accredited. He explained the object of the association to be a united organization to work for the interests of inventors as regards legislation in Congress and for their mutual benefit. Hon. C. P. Lesher, of Lansing, Mich., was appointed temporary president of the meeting, and in his remarks, thanking those present for the honor conferred, he referred to the demagogism now exercised by certain members of Congress in regard to the subject of invention. Mr. G. Burleigh, of Massachusetts, was appointed temporary secretary. He tersely remarked that the object of the union of inventors was a noble one, and he trusted it would meet with grand success.

The roll of States was called, and the following were found represented: New York, Massachusetts, Wisconsin, Nebraska, Missouri, Iowa, Illinois, Indiana, Ohio, Pennsylvania, Kentucky, Tennessee, Georgia, and Mississippi.

The evening session was opened by President Lesher, in Dexter Hall, who announced that the first order of business was to read the report of the Committee on Permanent Organization. It was announced as follows:

For President, James S. Zerbe, Ohio; Secretaries, Charles M. Travis, Indiana; G. Burleigh, Massachusetts; John G. Geghan, Ohio, Sergeant-at arms. Vice-Presidents, John W. Lane, Maine; John F. Wood, Massachusetts; Fred. Grinall, Rhode Island; Frank Pratt, Connecticut; Leonard Hinkle, New York; Wm. Goddard, New Jersey; A. J. Nellis, Pennsylvania; John Fehrenbatch, Ohio; Chas. P. Lesher, Michigan; C. P. Jacobs, Indiana; J. T. Donguir, Illinois; J. E. Baker, Wisconsin; John. E. Buckston, Minnesota; John Zerr, Iowa; C. F. Hyde, Kansas; Dr. N. N. Horton, Missouri; W. F. Evans, Arkansas; L. L. Heeber, Kentucky; J. C. Ogletree, Tennessee; C. D. Campbell, Mississippi; George R. Platt, Louisiana; O. J. Parker, Florida; E. V. Caldwell, Alabama; K. D. Davis, Georgia; Miss Georgie Fay, Virginia; Irvin M. Scott, California; O. H. Cornelius, Oregon; Walcott Boardwell, Nevada; General F. M. Cass, Colorado; W. E. Wood, Texas; L. Deane, District of Columbia.

President Zerbe was escorted to the chair, and in taking his seat, expressing his thanks, took the opportunity of making a long speech, which touched upon the history of patents in England and in the United States, and explained at length the objectionable laws which were being legislated upon by the present Congress, two having been passed by the House, and one by the Senate.

The following resolutions were unanimously adopted:

"*Whereas*, The incentive and rewards given inventors by the Constitution of the United States and the laws of Congress passed thereunder have done more perhaps than any one cause to advance our whole country to the front rank in wealth, resources, and industries, among all nations of the world; and

"*Whereas*, Any material change in those laws would, in the opinion of this association, seriously retard our material progress as a people. Therefore,

"*Resolved*, That our Senators and Representatives in the United States Congress are respectfully requested to oppose the passage of any bill which would have the effect to discourage inventions by impairing the value of patented property or imposing any conditions on the owners of such property in prosecuting and maintaining their rights to the full value of their said property, which are not equally applicable under the laws of Congress to the rights of all property and the remedies provided to protect the same for all citizens of our entire country.

"*Resolved*, That the inventors, patent owners, brain workers, hand workers, and citizens of the United States, in convention assembled, where patent interest antagonize no other, but benefit all classes of the community alike, demand the continued protection of our present patent system unimpaired by Congress.

"*Resolved*, That, since the money derived from the fees paid by the inventors to the Government is ample to pay all the cost and charges, it is the imperative duty of Congress to provide sufficient force in the Patent Office to do the work well, and to keep it up to date, and in all details and particulars to thoroughly equip the Patent Office for its work, by providing sufficient accommodations for its force, an ample library of books and publications pertaining to patent and scientific matters, and full and complete digests of inventions in all the classes, and rooms and means to enable the inventor and patentee to search into the novelty of any device, or the state of the art in any given direction.

"*Resolved*, That the dignity and importance of the business of the Patent Office demand that it should be severed from the Interior Department and made a department by itself, with a head duly recognized as a member of the Cabinet.

"*Resolved*, That since the matters adjudicated in the Patent Office are in a very large degree legal in their scope and bearing, it is the evident necessity of the case that there should be a distinctly legal bureau or division of this office, clothed with the authority to hear and decide said matters and enforce its decisions.

"*Resolved*, That though there have been nearly 300,000 patents granted, there have been scarce a score of patents which the public has objected to, and no patent based on a wrong, which the courts have not finally held invalid."

We shall continue the report in our next.

Resolutions of the Erie, Pa., Board of Trade.

A meeting of manufacturers and inventors to take action upon bills pending in Congress which, if enacted, will affect the existing patent laws, was held on Friday evening, March 21, at the Board of Trade rooms. President Adams, after briefly stating the object of the meeting, called upon J. W. Wetmore, Esq., chairman of the committee appointed Thursday night to draught resolutions expressing the sentiment of Erie people concerned in changes of patent laws. Mr. Wetmore read the following:

Resolved, That we look with alarm at such legislation as is proposed in Congress by House bills Nos. 3,925, 3,934, 3,617, and Senate bill 1,558, relating to patents for inventions, and we, therefore, petition the Senate and House of Representatives not to enact those bills into laws. We believe them to be the embodiment of temporary prejudices, not the result of fair consideration of the constitutional provision on the subject and the true interests of the country. We do not ask for any favoritism in the legislation by Congress. The titles of the entire landed property of the United States and Territories are founded on discovery. Laws have been and are constantly being enacted to make such titles perpetual. The discoveries of inventors received no such favors even from the wise statesmen who adopted the beneficent policy in the Constitution. The title of the author of any book had three times the length of the term of the letters patent. With this early discrimination against inventors they still were stimulated to exertion, not with profit to themselves in the vast majority of cases, but with unbounded advantage to progress in manufacturing, transportation, and agriculture, and all the other elements of our wonderful material prosperity. Their rights as secured are not monopolies in the offensive sense of the term. They have less monopoly than the owners of other kinds of property have secured to them by law.

The inventors have richly returned compensation for the limited protection received, and the disposition to lessen that protection or take it away is an agrarian device held out to flatter people with false hopes of improving their rights and property by destroying those of others. New and unusual laws, specially tending to impair the rights and titles of inventors and manufacturers holding patents and to paralyze the motives to improvement by annulling the patent laws, are but the beginning of a crusade against all rights of property.

We therefore petition the Houses of Congress, that after defeating these attacks on the policy of the Constitution, they increase the scope and efficiency of the patent laws, while placing proper guards against their abuse.

Resolved, That copies of these resolutions be sent to the Pennsylvania members of the House and Senate in Congress.

Professor Thomson, when the president called for remarks on the resolutions Mr. Wetmore submitted, urged the necessity of making a decided protest at Washington. "If the bills become laws," said he, "I as well as others will be injured; I would not give a whistle for all the patents that can be obtained or all now owned. The proposed patent law changes authorize the stealing of the results of brain work. They are as bad as if a law were to be made prohibiting a man who worked ten years to pay for a farm from owning it longer than five years. The effect will be to destroy talent. We should employ every means to defeat these abominable bills."

The Electric Light and Gas.

When the electric light was introduced the city of Boston was paying $2 per 1 000 feet for gas, and private consumers were paying $2.80. Now the city pays $1.30, and private consumers $1.80. Boston has been a liberal patron of the electric light. Its streets have probably been lighted more brilliantly, for the past two or three years, than those of any other large city. And the police department of Boston has borne testimony to the value of this extra lighting as tending to prevent crime. But the gas has not been entirely crowded out of the streets, and it is now proposed to light the city again with gas, on the ground of its being more economical. It is suggested that large gas lamps, using about 100 feet per hour, be substituted for the former small ones. But the electric light folks show that such a lamp would cost the city $496 a year, against $237 now charged for an electric light of greater power. It is stated, however, that the gas folks only measure the large lamp at 26 feet per hour, in order to make it cheaper than the electric light, so that, with such cutting of rates on both sides, Boston is likely to be well and cheaply lighted. But neither the electric light nor any other cause seems to have any effect on the managers of New York gas companies. The latter are at liberty to use naphtha in making water gas at a cost of about fifty cents a thousand feet. while the Boston gas men have been compelled to make their gas of coal at a higher cost, but still the New York monopolists charge $2.25 a thousand feet.

An Aid to Curing Alcoholism.

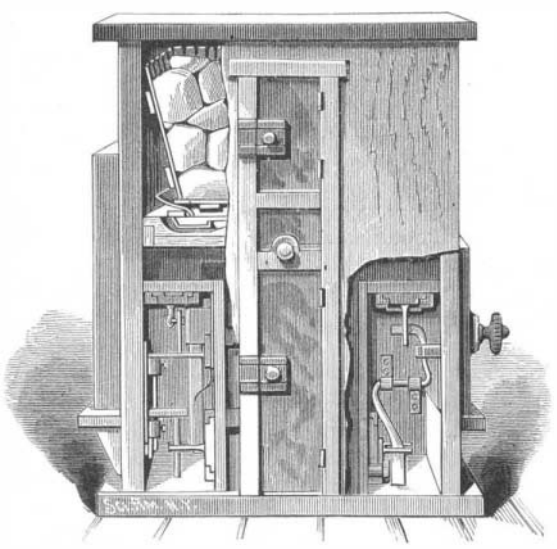
We believe the best authorities are generally skeptical as to there being any sure cure for confirmed habits of inebriety unless the effort in that direction be aided by a strong exercise of the will of the unfortunate subject of the bad habit. There are, however, many remedies recommended as aids in diverting or in a minor degree satisfying the appetite for strong liquors, which are undoubtedly of great advantage in some cases, and one of these is thus recommended by a self-styled "rescued man": "I was one of those unfortunates given to strong drink. When I left it off I felt a horrid want of something I must have or go distracted. I could neither eat, work, nor sleep. Explaining my affliction to a man of much education and experience, he advised me to make a decoction of ground quassia, a half ounce steeped in a pint of vinegar, and to put about a small teaspoonful of it in a little water, and to drink it down every time the liquor thirst came on me violent. I found it satisfied the cravings, and it suffused a feeling of stimulus and strength. I continued this cure, and persevered till the thirst was conquered. For two years I have not tasted liquor, and I have no desire for it. Lately, to try my strength, I have handled and smelt whisky, but I have no temptation to take it. I give this for the consideration of the unfortunate, several of whom I know have recovered by means which I no longer require."

IMPROVED REFRIGERATOR.

In the refrigerator illustrated in the annexed engraving, the air passages leading from the main chamber to the side air chambers are opened and closed from the outside, thereby excluding the warm outer air from the main and also from the ice chamber when the doors of either of the side air chambers are opened. It is formed with a central and two side air chambers, each of which has a door or window communicating with the outside.

The chambers at the sides of the central chambers are each formed with a side and top wall provided with openings that are closed by slides, in order to prevent the outer air from reaching the chamber and the ice chambers when the doors are opened. These slides may be operated in the same manner as those described, or they may be connected to a door or window by rock shafts so that opening the latter will close them at its first movement, while closing the latter will open them at its last movement.

Above these is the ice chamber, in the bottom of which are air passages that may be closed to cut off all communication between the ice and provision chambers before opening the door of the main chamber, the object being to shield the ice from the current of warm air which would otherwise rush in to fill the vacancy caused by the cold air rushing out. These air passages are opened and closed by slides connected together by pivoted arms operated by a rod projecting through the refrigerator wall; the rod is graduated in order that the amount of cold air can be regulated. In this refrigerator, the cold air not escaping while it is open, it requires but little ice and keeps the temperature even.

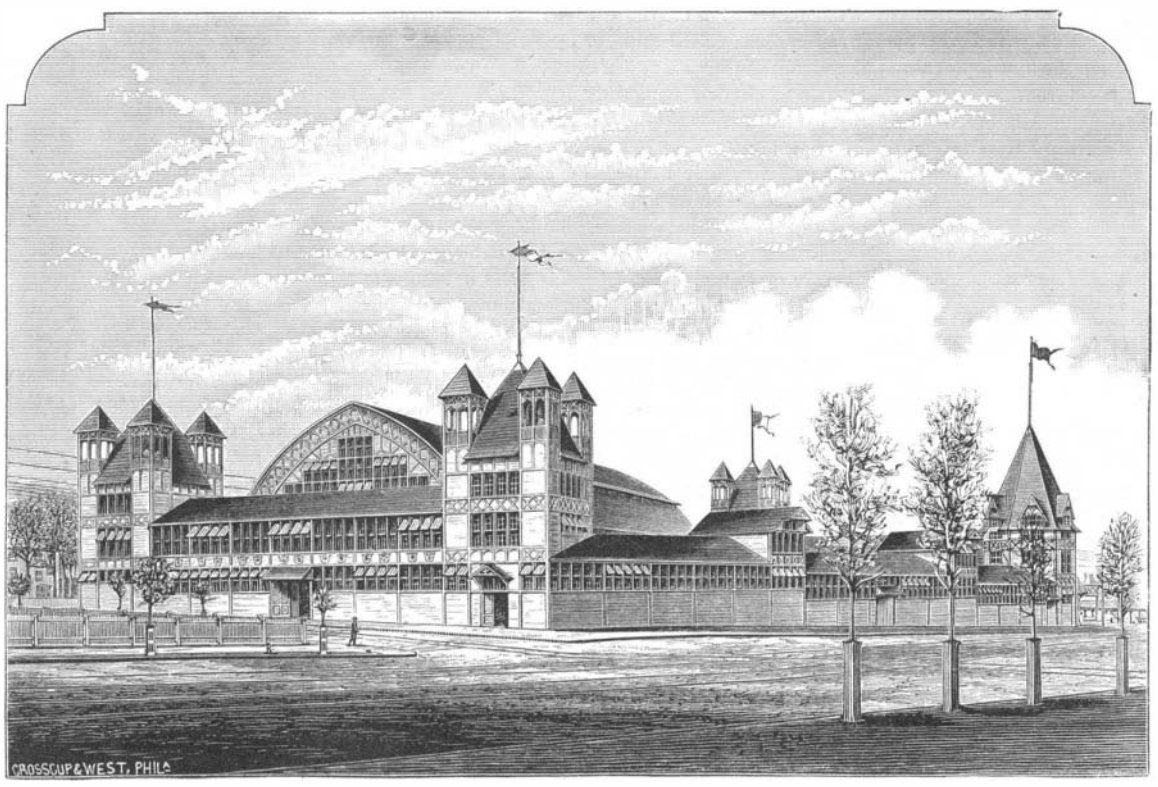


BERENS' IMPROVED REFRIGERATOR.

The engraving shows two other chambers in which provisions may be put temporarily. The wall separating these chambers from the main chamber can be readily removed for cleaning. This invention has been patented by Mr. Charles J. Berens, of Washington, Indiana.

THE INTERNATIONAL ELECTRICAL EXHIBITION.

As has already been announced in the columns of our paper, an International Exhibition will be held at Philadelphia next autumn, under the auspices of the Franklin Institute, of the State of Pennsylvania, for the Promotion of the Mechanic Arts. The exhibition will be formally opened on Tuesday, Sept. 2, 1884, and will remain open until Saturday, Oct. 11, 1884.



BUILDING FOR THE INTERNATIONAL ELECTRICAL EXHIBITION AT PHILADELPHIA.

The accompanying plate is a view of the exhibition building, which is now in process of erection, and which, by the terms of the contract, will be finished by the 15th of June. The building is being erected by Mr. Jacob R. Garber, from the plans of the architects, Messrs. Wilson Brothers & Co.

The following brief description will give a general idea of its character:

The main building will be rectangular, having a length on Foster Street of 283 feet and a breadth of 160 feet, extending from Foster Street to Lancaster Avenue on Thirty-second Street, and part of the distance from Foster Street to Lancaster Avenue on Thirty-third Street. A tower sixty feet high will be situated at each of the four corners of this building. One central arch of 100 feet span and 200 feet in length, of the Gothic style of architecture, will cover the greater portion of the space occupied by this building, while two smaller ones, having a span of thirty feet and running parallel to it on either side, will join the towers. The building will have second story apartments at its ends on Thirty-second and Thirty-third Streets respectively, with stairways leading up in the towers from the ground floor. The towers themselves will be three stories high. Two long and narrow hallways will afford communication between these apartments. The remainder of the ground will be inclosed by a large triangular building, one story in height and joined in the main wall. The main entrance will be at the corner of Thirty-second Street and Lancaster Avenue, another at Thirty-third and the Avenue, and one at each of the other towers. Five exits are provided for on the plans, but desirable changes may hereafter be made in the number and situation of both entrances and exits before the work is completed.

The meeting of the American Association for the Advancement of Science, which will be held this year in Philadelphia, and the expected presence of many representatives of the British Association, which will meet this year in Montreal, will attract a numerous and influential scientific gathering in Philadelphia during the time of the holding of the exhibition; and in order that so exceptional an opportunity to promote the interests of science shall not be lost, Congress has been requested to authorize the holding of a National Conference of electricians, to convene in Philadelphia at this time. Should Congress, in its wisdom, make the proper provisions for holding such a conference, the results promise to be of much value.

A comprehensive scheme of classification has been carefully elaborated; a system of rules and regulations to govern the internal management of the exhibition has been adopted; provisions have been made in the interest of intending foreign exhibitors, to relieve them of all trouble in respect to the passage of their exhibits through the Custom House, and the proper reception and care-taking of the same on their arrival; and arrangements have been made with a number of the leading transportation companies to return, free of charge, goods on which freight charges have been paid one way.

The above information, expressed in detail, has been published in the form of a twelve-page pamphlet, which, with a blank form of application for space, has been issued in the English, French, and German languages, and extensively circulated in the United States and throughout Europe.

There are evidences at this time, even, that the exhibition will be one of unusual interest and value. The active participation of several of the scientific bureaus of the United States Government and of all the leading electrical companies is assured. Numerous inquiries both from official and private sources have been received from abroad, and interesting and valuable contributions from European countries are confidently anticipated.

The circular of information herein referred to, with blank forms of application for space, may be obtained in the English, French, or German language by addressing a request therefor to the Secretary of the Franklin Institute, Philadelphia, Pa.

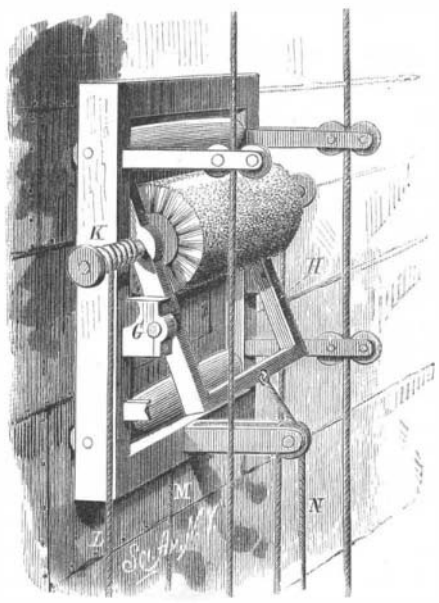
We are indebted to the courtesy of the *Journal* of the Franklin Institute for the cut which accompanies this article.

A Plan for Controlling the Spring Floods.

A Canada correspondent suggests that, instead of one great reservoir, that would be dangerous as well as expensive, it would be better to build a system of detaining works on all the small streams. The idea is to begin at all points where a four inch pipe will discharge the average water, and there make a two-foot bank to hold back the surplus, building "hundreds of thousands" of these small dams, at a cost of from five to ten dollars each.

IMPROVED SHIP CLEANER.

In the frame, which is made strong and light, are journaled two parallel curved rollers, which keep the frame about an inch from the bottom or side or the ship. From near the corners of the frame project four arms, and in the end of each are placed two wheels, between which the tightly drawn guide ropes pass. The frame is easily raised and lowered on these ropes, and brought against the surface to be cleaned. A frame, H, is pivoted in the blocks, G, projecting from the sides of the main frame. In the upper part of this frame is journaled a brush made with bristles of steel wire about six inches long. The shaft, K, of the brush projects beyond the sides of the frame, and is worked by means of two ropes, L, coiled reversely upon the projecting parts. When the brush is revolved in one direction by pulling on one rope, the other rope will be wound on the shaft and so on alternately, the shaft being revolved in opposite directions. The lifting rope, N, is secured to the end of the frame, H, passes over a pulley in an arm on the lower bar of the main frame, and then extends to the deck or to a boat at the side of the vessel. By pulling on this rope the lower end of the frame, H, will be lifted from the side or bottom of the ship, and the brush will be pressed against it. The degree of pressure can be regulated at will, and barnacles, rust, paint, etc., can be removed from a ship in a short time. The machine is rigged for work by extending a rope between suitable supports, and from a pulley on this rope are hung the guide ropes, which extend under the ship and over the gunwale on the other side.



COOPER'S IMPROVED SHIP CLEANER.

This invention has been patented by Mr. J. L. Cooper, and further particulars may be had by addressing Mr. James O. Cooper, No. 165 Fourth Street, Portland, Oregon.