

PHOTOGRAPHIC NOTES.

Adhesives for Mounting Purposes.—Many photographers use nothing but rather thin glue, which, however, should be made from a material free from any elements of putrescent fermentation, and not acid. The glue sold as French medal glue is generally clear, not in a state of incipient decomposition, and free from acidity. Half a pound in a quart of water is a convenient strength. Milk may be used instead of water, and is said to keep the glue from becoming brittle. An addition of sugar—say one-fourth of the weight of the glue—is perhaps more effective. The use of glycerine is open to objection. The following preparation is useful for gumming large sheets of paper, which may be kept on hand ready for use; when wetted they will stick well on glass: Starch two drachms, white sugar one ounce, gum arabic two drachms, to be boiled with a sufficient quantity of water. The same mixture can be used in making adhesive mounts upon which moist prints will adhere by pressure only.—*Photo. News.*

Mounting Prints.—There are three systems by which prints may be mounted, all of them possessing advantages peculiar to themselves.

That in general use is the time-honored one of applying paste by means of a brush to the back of a wet pile of prints placed one on top of the other as a matter of convenience, and then deftly transferring each print thus treated from the top of the pile to the mount, upon which it is laid down in position and pressed into contact by a pad or rubber. No special precaution or care is requisite in carrying this system into effect beyond seeing that the paste is free from hard particles and is freshly prepared. Glue or gelatine, which is employed by some as a mountant in preference to starch or paste, requires more dexterity in its employment.

A second system, introduced about sixteen years ago, consists in sizing the mounts with any suitable adhesive of the gum or dextrine class, these being kept in a state of preparation always ready for use. The print requires no pasting or other treatment, but may be taken while simply in a wet or moist state and laid down in its place on the dry mount, followed by the rubbing requisite for insuring contact. This system is very convenient in many cases, especially for one who desires the occasional mounting of a few prints without having to experience the trouble of preparing paste and going through the whole operations consequent upon the act. We are glad to know that mounts ready gummed are now commercially procurable. Those who desire to prepare mounts for themselves must be careful in selecting a gum of a suitable nature. It may be applied by a sponge or large flat brush, although preferably so by a little machine for the purpose, introduced by a Halifax firm, and exhibited at some of our societies a few years ago.

The third system is one which is adopted much more extensively in America than in this country, and is highly suitable when large quantities of prints are to be mounted. As witnessed in operation in the States six years ago, when many thousands of prints were undergoing this process, we specially noticed its neatness, the rapidity of its action, and the impossibility of producing cockling. The backs of the prints are coated with ordinary starch paste and allowed to dry. The prints are then trimmed and laid *in situ* on the paper (or card) mounts to which they are thenceforth to be permanently attached, which mounts, however, have first been rendered slightly damp. A number of prints thus prepared are then run through the rolling press, and the operation is complete.

Arrival of Great Steamship.

The new and magnificent ocean steamer City of Paris arrived at this port on the 11th inst., on her first trip, having made the voyage from Queenstown in the remarkably quick time of 7 days, 11 hours, 39 minutes. It is believed her speed will be increased after a few more voyages have been made and her machinery becomes a little worn. As it was, the vessel made 498 miles as her fastest single day's run. The Paris is a younger sister to the City of New York, which was finished, and made her first voyage last season. Both ships are substantially similar in size, construction, and machinery.

Length over all, 580 ft.; length on water line, 525 ft.; breadth, extreme, 63½ ft.; and depth, moulded, 42 ft.; the gross registered tonnage being 10,500 tons. The vessels have very fine and graceful lines, and their beautiful appearance is in nowise impaired by the clipper bows with which they are provided. Each ship is propelled by two sets of triple expansion engines, and they are supplied with twin screws, so that if one engine or propeller should become disabled, they can proceed with the aid of the other. This provision has already been found of great value.

THE *Electrician* reports a rumor from Berlin to the effect that a means has been discovered of using electricity for ascertaining the true north, instead of the magnetic needle; that, in short, the new means will be superior to the compass and is likely to supersede it.

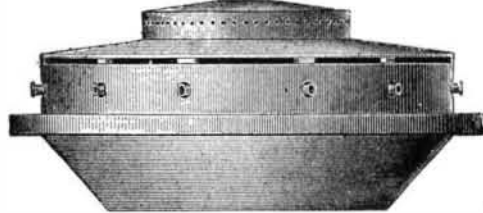
Correspondence.

The First Inventor of the Monitor Turret.
To the Editor of the Scientific American:

Paragraphs substantially the same as the one published under the above head line in your issue of April 6, p. 216, have appeared at intervals since January, 1863. Had you not expressed your approval of assertions made by a correspondent of the *Washington Star*, who "rightly says" that "Theodore R. Timby is the real inventor of the monitor revolving turret," and that large royalties were paid "for the use of his invention," indicating that even you entertain a mistaken notion, no notice, just as in the recent past, would have been taken of the erroneous statements.

The following extract from one of Captain Ericsson's contributions to historical literature, bearing on Mr. Timby's claim to priority of invention, is instructive:

"The most important object, namely, the rotating turret, will now be considered; but before describing this essential part of the Monitor system, it will be well to observe that the general belief is quite erroneous



Side Elevation of a Floating Revolving Circular Tower, Published by Abraham Bloodgood in 1807.

that a revolving platform, open or covered, is a novel design. So far from that being the case, this obvious device dates back to the first introduction of artillery. Sixty-four years ago the writer was taught by an instructor in fortification and gunnery that under certain conditions a position available from all sides should be defended by placing the guns on a turntable. Long before building the Monitor I regarded the employment of a revolving structure to operate guns on board ships as a device familiar to all well informed naval artillerists. But although constructors of revolving circular gun platforms for naval purposes, open or covered, have a right to employ this ancient device, it will be demonstrated further on that the turret of the monitors is a distinct mechanical combination differing from previous inventions. The correctness of the assumption that revolving batteries for manipulating guns on board floating structures had been constructed nearly a century ago will be seen by the following reference to printed publications.

"The *Nautical Chronicle* for 1805 contains an account of a 'movable turning impregnable battery, invented by a Mr. Gillespie, a native of Scotland, who completed the model of a movable impregnable castle or battery, impervious to shot or bombs, provided with a cannon and carriage calculated to take a sure aim at any object.' It is further stated that 'the invention proposed will be found equally serviceable in floating batteries. Its machinery is adapted to turn the most ponderous mortars with the greatest ease, according to the position of the enemy.' Again, the transactions of the Society for the Promotion of Useful Arts in the State of New York, 1807, contains an illustration representing a side elevation of a circular revolving floating battery constructed by Abraham Bloodgood.

"The guns of this battery, as the inventor points out, 'would be more easily worked than is common, as they would not require any lateral movement.' It is also stated, as a peculiar feature of this floating battery, that 'its rotary motion would bring all its cannon to bear successively, as fast as they could be loaded, on objects in any direction;' and that 'its circular form would cause every shot that might strike it, not near the center, to glance.' Thirty-five years after the publication of the illustration and description of the circular floating revolving tower of Abraham Bloodgood, Theodore R. Timby proposed to build a tower on land for coast defense, to be composed of iron, with several floors and tiers of guns, the tower to turn on a series of friction rollers under its base. The principal feature of Timby's 'invention' was that of arranging the guns radially within the tower, and firing each gun at the instant of its coming in line with the object aimed at during the rotary motion of the tower, precisely as invented by Bloodgood."

It is interesting to learn that Mr. Timby got his idea of a revolving tower from seeing the land defense on Governor's Island, and, perhaps, it will interest your readers to be informed that Captain Ericsson's conception of what became the Monitor was during a visit at Portsmouth (1828), when being rowed past the "wooden walls" which were regarded as England's bulwarks, he remarked to his companion, Count Adolf E. Von Rosen: "It has just occurred to me how all these stately ships could be at the mercy or destroyed by a single opponent," and got the curt response: "Then, for God's sake, keep it to yourself if you want to succeed in England." This mind image was never lost sight of; it was simply held in abeyance for opportune development.

The statement that \$5,000 was paid to Mr. Timby "for the use of his invention in the construction of that vessel" (the Monitor), "and a like sum for each turret constructed . . . in building of the other ironclads for the government," is erroneous.

The Monitor engaged the Merrimac March 9, 1862. Previous to the issue of the first patent to Timby (dated July 8, 1862, the last being dated September 30, 1862) Mr. John A. Griswold and others made a discretionary agreement with him by which they could purchase at a stipulated price his patents for the United States, should he obtain any. Having in view their important contracts, they felt bound to protect themselves against any delay in the completion of the monitors, then greatly needed by the government, should legal complications arise. October 6, three patents were assigned to Mr. Griswold, and Mr. Timby was ultimately paid \$15,000.

Captain Ericsson frequently had occasion to refer to this transaction, and maintained that the principal object of the preliminary arrangement to secure the Timby patents was to enable Mr. Griswold and others (not including himself) to control the erection of revolving forts on the coast of the United States, and that his (Captain Ericsson's) strong opposition to the scheme and its failure, attributed to his interference, was the cause of a somewhat unpleasant feeling between himself and one of the associates in the Monitor undertakings, and he emphatically denied that Timby's patent claims in any manner affected the principal or detail of the monitor system, and that Timby did not receive to the amount of one cent royalty on account of the original Monitor, nor on the monitors that immediately followed.

Now fifty-six turrets were built by the different contractors, hence, according to the *Washington Star* correspondent, Mr. Timby received the handsome sum of \$280,000 for his embryo!

The numerous communications on this subject received by Captain Ericsson and the claims of a host of inventors made him somewhat callous. He was, however, once much amused by the extraordinary demand of a colored man for compensation, because he had, he said, suggested the Monitor, both turret and hull, by the peculiar manner he folded a table napkin when waiting upon Captain Ericsson, at a dinner in the old Moffat House restaurant.

S. W. TAYLOR, Private Secretary.
New York, April 6, 1889.

Harvey F. Gaskill.

It is with profound regret we learn of Mr. Gaskill's decease, at Lockport, N. Y., on the 8th inst., at the age of 44 years. Mr. Gaskill was a distinguished engineer and inventor, the active head of the Holly Manufacturing Co., and the real author of the well known Holly water works system.

Among the thirty or more patents secured by Mr. Gaskill, and which are of indispensable value to the Holly Manufacturing Company, are the Gaskill horizontal and the perpendicular engines, the Gaskill triple compound pumping engine, a number of water meters, conceded to be the best in use, steam pump, pump valves, engine valves, motion water motors, Gaskill hydrants, etc. The *Lockport Daily Union* says: "When it is taken into consideration that one single individual is the inventor of a set of waterworks and pumping machinery that beyond the power of contradiction excel all other inventions in this or any other country, it is wonderful, and in the demise of Mr. Gaskill not only Lockport, but the world at large, has lost one of its greatest benefactors. Untold millions of property have already been saved by this superior class of pumping machinery, and its value is all the time increasing, as new works are being completed in all parts of the country."

Electrical and Industrial Exhibition at Birmingham.

An electrical and industrial exhibition is to be held in Birmingham during the months of August, September, and October. A very large amount of support has been promised for it, and there is every prospect that it will prove a success. The electrical department will be divided into three sections, the first including all kinds of machinery and apparatus for electric lighting, the second relating to complete displays of electric lighting on various systems, and the third comprising telegraphs, telephones, phonographs, electric bells and clocks, electric welding and smelting, electrotyping, telpherage, and miscellaneous apparatus. The industrial section will consist largely of Birmingham manufactures and manufacturing processes, although it will include many other subjects.

Estimated Amount of Fire Hose Pipe Now in Use in the United States.

Cotton	2,766,250
Rubber	1,777,000
Leather	246,650
Linen	259,590
Unclassified	469,750

Total feet of fire hose in service 5,619,200