THE SONG OF STEAM.

[The following fine poem, which *Blackwood's Magazine* has pronounced to be the best lyric of the century, is by George W. Cutter, of Covington, Ky.

Harness me down with your iron bands,
Be sure of your curb and rein,
For I scorn the strength of your puny hands
As a tempest scorns a chain.
How I laughed as I lay concealed from sight
For many a countless hour,
At the childish boasts of human might,
And the pride of human power:

When I saw an army upon the land,
A navy upon the seas,
Creeping along, a snail-like band,
Or waiting a wayward breeze:
When I saw the peasant reel
With the toil that he faintly bore,
As he turned at the tardy wheel,
Or toiled at the weary car!

When I measured the panting courser's speed,
The flight of the carrier dove,
As they bore a law, a king decreed,
Or the lines of impatient love,
I could but think how the world would feel
As these were outstripped afar,
When I should be bound to the rushing keel,
Or chained to the flying car.

Ha! ha! ha! they found me at last,
They invited me forth at length,
And I rushed to my throne with a thunder blast,
And laughed in my iron strength.
Oh! then ye saw a wondrous change
On the earth and ocean wide,
Where now my fiery armies range,
Nor wait for wind nor tide.

Hurrah! hurrah! the waters o'er,
The mountains steep decline;
Time—space—have yielded to my power—
The world! the world is mine!
The rivers the sun hath earliest blest,
Or those where his beams decline,
The giant streams of the queenly West,
Or the Orient floods divine.

The ocean pales wherever I sweep
To hear my strength rejoice,
And monsters of the briny deep
Cower trembling at my voice.
I carry the wealth and ore of earth,
The thought of God-like mind;
The wind lags after my going forth,
The lightning is left behind.

In the darksome depths of the fathomless mine,
My tireless arms doth play,
Where the rocks ne'er saw the sun's decline
Or the dawn of the glorious day;
I bring earth's glittering jewels up
From the hidden caves below,
And I make the fountain's granite cup
With a crystal gush o'erflow.

I blow the bellows, I forge the steel,
In all the shops of trade;
I hammer the ore and turn the wheel
Where my arms of strength are made;
I manage the furnace, the mill, the mint,
I carry, I spin, I weave,
And all my doings I put in print
On every Saturday eve.

I've no muscles to weary, no breath to decay,
No bones to be laid on the shelf,
And soon I intend you may go and play,
While I manage the world myself.
But harness me down with your iron bands,
Be sure of your curb and rein,
For I scorn the strength of your puny hands
As the tempest scorns the chain.

Great Eastern Railway Company's New Station, London.

The terminus of the Great Eastern Railway Company at Liverpool street, if not partaking altogether of the palatial, will be unmistakably a great improvement upon many of the London termini, and will be one of the largest; the area comprised within the retaining walls—this being a low level station—is more than ten acres in extent, and is some 2,000 feet in its entire length. The general character of the design is gothic, broadly treated in the several elevations.

The area occupied by the various lines of platform is covered by a roof in four spans, the two central ones being 109 feet each, and the side spans 46 feet and 44 feet. The whole width covered in is 314 feet.

The roof trusses are principally comprised of wrought iron with ornamental details of cast iron, and the effect is extremely pleasing. The columns are double in the center, and have also to act as down pipes for the conveyance of water from the roof. The covering is chiefly glass, with a small proportion of boarding and slates. The length of the roof over the main line on the east side is 730 feet, and that over the local platforms 450 feet long and 76 feet above platform level. The platforms are arranged so that the advantages of the end-on system, as at Charing Cross, as well as those of the sidelong, as at King's Cross, are retained. The main line platforms are 1,000 feet long and 32 feet in width, while the local platforms are 550 feet in length, and vary in width from 10 feet to 21 feet. Lamp rooms are provided below the platform, connected with each by a subway and hydraulic lift.

The arrangements for traversing carriages across and along the main line, and the whole of the turntables, eleven in number, are worked by hydraulic power.

Communication is also obtained with the Metropolitan system by a junction with the railways, besides subways from the platforms under Liverpool street for passengers. The whole of the signaling and multifarious working of the points is connected at Primrose street, into one box, which contains more than 100 levers for the purpose of interlocking and other arrangements.

The whole of the works have been designed by Mr. Edward Wilson, C. E., the company's engineer, and executed by the well known firm of Messrs. Lucas Brothers.—*The Engineer.*

THE IRISH-AMERICAN RIFLE CONTEST.

The international contest, between the American team o six of our best known crack shots and an equal number of skilled Irish riflemen, has resulted in a victory for the Americans, gained by 38 points. Three ranges, respectively of 800, 900, and 1,000 yards, were fired over, fifteen shots at each distance being allowed to each competitor. The targets were six feet in hight by twelve feet in breadth, and were divided off, with a center six by six feet, inside of which a bull's eye three feet square was painted. A shot, by striking the bull's eye, counted four, on the center, three, and, if hitting outside the latter, two. From this it will be seen that sixty was the highest aggregate possible for any set of fifteen shots, one hundred and eighty for any competitor's entire score of forty-five shots, and one thousand and eighty for the shots of the whole team. Out of the last mentioned total, the Americans made 967, and the Irish 929. The annexed diagrams show the best shooting at each range.

Fig. 1 was made by Mr. Pollock, of the Irish team, at 800 yards, and counted 59, every shot, with one exception, striking the bull's eye. Fig. 2 is Colonel Bodine's (American team) target, which also counted 59. Fig. 3 is Mr. James Wilson's (Irish team) target, which indicates 55.

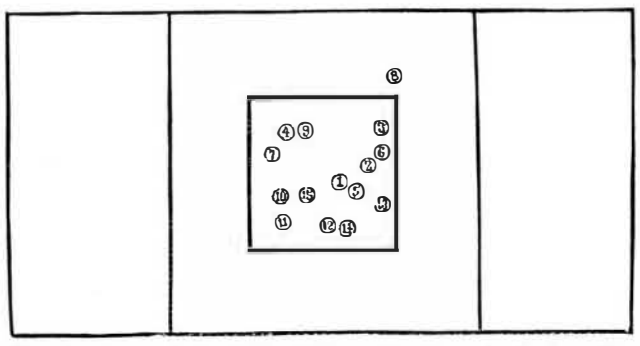

FIG. 1.—4—4—4—4—4—4—4—3—4—4—4—4—4—4—4——59.

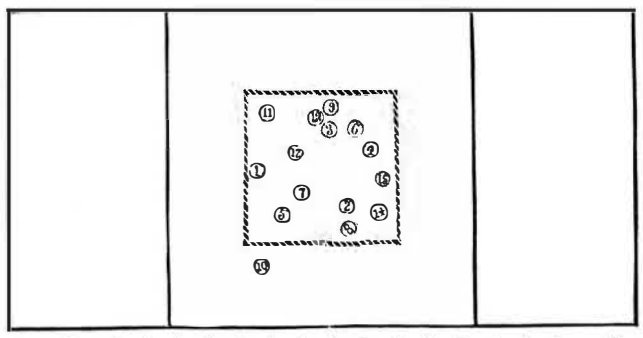

FIG. 2.—4—4—4—4—4—4—4—4—4—3—4—4—4—4—4——59.

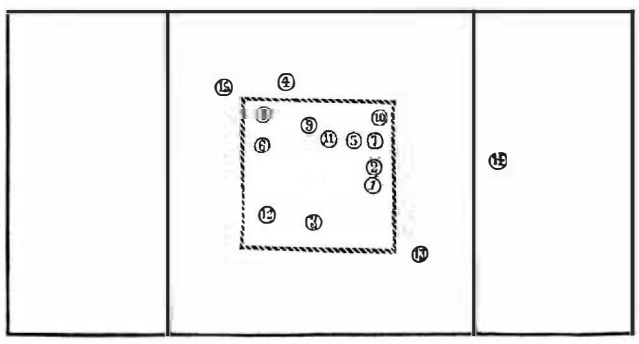

FIG. 3.—4—4—4—3—4—4—4—4—4—4—4—4—3—2—3——55.

It is difficult to appreciate fully the magnificent marksmanship which these scores prove, especially with regard to the long ranges, at which the Americans gained largely. One thousand yards is equal to about eleven avenue blocks in this city, including the widths of the streets; and hitting a three-feet square target at that distance amounts to about the same as (if the buildings were out of the way) standing at Trinity church and sending a ball into a window of the SCIENTIFIC AMERICAN office. The bull's eye would appear of about the same size as a dot half an inch square held at a distance of some three yards from the eye.

To Kalsomine a Wall.

Buy the best bleached glue if the walls are to be white or some light tint (if dark, it is immaterial, so the glue is clean), and use it in the proportion of a quarter of a pound of glue to eight pounds of whiting. Soak the glue over night; in the morning pour off the water, as the glue simply swells while soaking. Add fresh water, put it in a tin pail, and set that in a kettle of boiling water. When dissolved, stir into it the whiting, adding enough water to make it, after mixing, of the same consistence as common whitewash. It may be tinted to any color desired, and is applied with a whitewash brush. If the color is rubbed smooth in a little water first, and then mixed with the wash, it will be more even. If the walls have been previously whitewashed, scrape away all that will come off, and wash with a solution of white vitriol, two ounces in a pail of water. The vitriol will be decomposed, forming zinc white, and plaster of Paris, to which the kalsomining easily adheres. It is important to dissolve the glue in a hot water bath; for if scorched by too great heat, its tenacity is impaired or destroyed. Whiting is simply chalk freed from impurities, and reduced to a fine powder, and, is also known under the names of Paris and Spanish white, though the latter is really a white earth found in Spain.

There is a great difference in whitewash brushes; and the beauty of the work, as well as the ease of performing it, depends very much on a good brush, making it well worth while to pay the difference between a good one and a cheap one. For the inexperienced, it is more difficult to lay on tints evenly than pure white.

For those who have not had experience in using or dissolving glue, it is well to say that the dry glue should be spread in a broad flat basin, like a shallow milk pan, and cold water enough poured on it to fairly cover it; then let it lie over night, or for a day, when, if the water be not all absorbed in the swelling glue, the excess should be poured off, when fresh water will be added, in which you boil the glue, to be mixed with whiting.—*D. S. C., in the Maryland Farmer.*

Centennial Notes.

A definite project for a huge hotel, to accommodate five thousand of the people who will flock to Philadelphia during the Centennial, has been agreed upon. A number of citizens have taken steps to erect a gigantic wooden building, ten stories in hight and containing a thousand double-bedded rooms. It is proposed to complete the work in five months, an undertaking, the magnitude of which will be realized when it is considered that there will be thirty miles of wall to plaster. The structure will be about four times as large in capacity as the Continental Hotel in Philadelphia.

A correspondent, Mr. John L. Geissler, of West Chester, Pa., writes us that he has invented a remarkable clock, which, with a single pair of hands, indicates simultaneously, on one dial ten feet in diameter, the time not only of the place where located, but of the principal cities of the world. He has offered to place the clock on the wall of the Centennial structure for $500, this being the actual cost of its construction; and he says such a timepiece would doubtless meet with much approbation from foreign visitors, as it would enable them to learn their home time to a fraction of a minute. While it probably might be of interest for the average Briton to note the fact that 2 in the afternoon at Philadelphia corresponds to about the hour at which he would begin his daily onslaught on underdone joints and Bass' ale, we fear that the Italians, who count up to twenty-four o'clock and mark their dials accordingly, and the Chinese, the hands of whose timepieces travel backwards, would not gain much useful information from Mr. Geissler's huge clock. However, the idea is a good one, because the Centennial should certainly have a timepiece connected electrically with clocks in all the principal cities in the United States, so that, at 12 o'clock Centennial time on the momentous 4th of July, the entire country might join in unanimous celebration. Mr. Geissler offers a curious clock for a small cost, and the Centennial authorities would perhaps do well in adopting his suggestion.

It is proposed by the managers of the Centennial to appoint an electrician who shall have the supervision and direction of the electrical department. This is a very important and responsible position, and should be filled by no person save one whose talents and qualifications are of the highest order.

We notice that the *Telegrapher* suggests the name of Mr. David Brooks, in which nomination we heartily concur. Mr. Brooks has had valuable experience in the foreign expositions, is a thorough expert in all matters electrical, and enjoys a wide acquaintance among the electricians and telegraphic engineers of Europe. We trust that the Centennial managers will see the wisdom of appointing Mr. Brooks.

Recent American and Foreign Patents.

Improved Spring Bed Bottom.

Joseph Fowler, New York city.—Springs are attached to the bedstead and to the cross bars by means of the contracted coils of springs, which allow a rivet to take hold of the coils and draw the spring downward. The head of a rivet rests on the lower contracted coil of the spring. The bed is suspended on the springs in this manner, and the bolts or rivets form a substantial connection. The devices improve another invention, patented to same inventor January 26, 1875.

Improved Shirt.

John C. Dunham, Buffalo, N. Y.—This invention consist of a shirt front detached from the body, except at the top and for a certain distance downward, sufficiently to keep it in place, by which the front is preserved smoother and neater. The invention also consists of the upper end of the front narrowed by rounding the corners to diminish the breadth of the connection with the yoke, by which wrinkling of the front is prevented when the arms are raised.

Improved Toy Gun.

William H. Martin, Mobile, Ala.—This invention consists of a longitudinal slotted barrel, with ball or arrow propelling slide piece working freely therein by means of springs attached to a cushioned collar at the muzzle of the barrel. The hook or arrow shaped rear part of the slide is locked by spring jaws, and released by a trigger and slide piece.

Improved Sliding Gate.

John P. McMurray, Oregon, Mo.—The gate rests outside of the gate post, so that it may be readily moved longitudinally about one half its length, and then it may be swung round on a bracket to open the full gateway. It also can be moved on the rolls longitudinally, and may be elevated to swing clear of snow in the winter season

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