[From the N. Y. Dispatch.]

M'Culloch's Shot Tower in Center Street.

The origin of the art and mystery of making round shot has been ascribed to a woman's dream, who having witnessed many experiments of her husband to perfect those petite pellets used by sportsmen for the purpose of securing small game, very considerately went to sleep one night, and, upon awaking in the morning, detailed minutely the whole process. It had been revealed to her during the visions which darkness engenders, and, up to the present time, but little improvement has been made in the original method.

At all events, such a statement has been gravely promulgated in various scientific works, and although the name of the lady has now escaped the writer's memory, yet the fact of the statement itself is probably familiar to many who will peruse this article.

According as the story goes, the husband, who was a mechanic of considerable ingenuity, had long endeavored, fruitlessly, to produce round shot by some more expeditious mode than the tedious process of casting, but although his efforts approximated perfection, there were still many serious difficulties in his path which he never could overcome until this mysterious revelation from the spirit world put him in possession of the important secret, which at once paved his way to fame and fortune.

How far the tale may be truthful, or how far apocryphal, it is not the present purpose to inquire, it being sufficient to indicate that the manufacture of those little spherical bits of lead in use among gunners to shoot birds and the smaller animals, is based on a purely natural operation, aided by the appliances of art, and directed by science. As natural as it is for the rain to fall in drops, or the hail to descend in globules, the round shot of the sportsman is formed, and in view of the extreme simplicity of the process, the method is one of great interest and beauty.

The liquid metal is merely poured through a sieve-shaped vessel, the holes in which divide the lead into minute drops, which, falling through a space of still air for a hundred feet or more, assume a perfectly spherical conformation, and become cooled or congealed in the descent, are received in a large reservoir of water, the latter being used for the purpose of preventing the pellets from infringing on one another too forcibly, after they have fallen so swiftly and so far.

The manufacture of sporting shot is, therefore, as will be seen by this brief description, nearly indentical with the production of summer hail, the principal difficulty being a sufficient height of tower to cool the molten drops before they reach the vat or reservoir.

In the construction of such a tower, the cost is, of course, a considerable item; and this objection, joined with the fact that all the lead, and fuel for melting the same, must be raised to the top of the structure, thence to be returned by its own gravity, has induced many subsequent experiments for the purpose of providing a substitute for the immense height necessary in the successful prosecution of the manufacture.

It was, at one time, thought that the problem had been solved, by the erection of a shaft of comparatively moderate elevation, and forcing a current of air upward through its center, it being claimed that with the air ascending with the same velocity as the descending metal, a fall of fifty feet was equal to one of one hundred through a still atmosphere. The theory was plausible, but it must have eventuated in a partial failure, since the tower now under consideration is of recent origin, and it is not to be supposed that the McCulloch Shot and Lead Company would be at the trouble and expense of erecting a column reaching nearly two hundred feet toward the stars, when a building one-quarter the height would have answered as well.

In the production of round shot, it seems to be one of the terms of the proposition that the larger the pellet, the further it must fall; and there appears to be even a limit in this respect, beyond which it is impossible to go. Musket balls, rifle bullets and buck-shot are still cast or pressed, it being impossible to form them of sufficient spherical accuracy by any other method. There are physical difficulties intervening which never have been overcome, and probably never will be; but if one wishes to witness the modus operandi by which the smaller descriptions of leaden hail get their shape and proportions, undoubtedly no where in this country can such curiosity be more conveniently or pleasantly gratified than by an hour or two spent in the inspection of the various operations and manipulations each day going forward at the iron tower of McCulloch's Shot and Lead Company, in Center street, near Pearl.

During a recent visit made to this establishment, every facility was extended for a minute survey of the entire premises, and seldom has an afternoon been spent more profitably and agreeably.

Iron buildings are a recent invention, or rather the adaption of cast iron to architectural purposes scarcely dates back into the first half of the nineteenth century, and the innovation was approached, for some years, with exceeding caution. The first structure now recollected was erected in this city, on the corner of Center and Daune streets, where it still remains, a striking monument of the enterprise and skill of its projector, Mr. Bogardus. But the community were slow to adopt the material, fearful, perhaps, of the effect of atmospheric changes peculiar to this climate on the expansive and contractile properties of the brittle metal. The prejudice, however, is gradually disappearing, and not only girders and store fronts are now fabricated in the iron foundry, but several bell-towers, for the purposes of fire alarms, at the present day rear their graceful proportions high in air—light, open structures (consisting of sets of columns upreared, one upon the other) yet, withal, firm and stable as the ancient hills whence the adamantine substance originated.

The success attending these initial efforts undoubtedly induced Mr. McCulloch to contract with Mr. Bogardus for the erection of the beautiful and substantial tower, shaft or column which now graces the lower part of the city, and which, lifting its white, chaste proportions far above all the surrounding objects, forms a remarkable feature in the architectural embellishments of New York city, whether viewed from points upon the Island itself, or from the adjacent shores of Jersey, Staten Island and Long Island.

Entering through an archway in Center street, and passing back, in the direction of Broadway, twenty paces or thereabout, brings the visitor to a gate of wooden palings, which bars further progress in that direction. A short turn to the right, however, through a narrow door, and one stands in the business office, surrounded by kegs and bags of the finished shot, regularly marked and labeled, for the wants of the trade. In the room beyond, a neat and compact steam-engine is noislessly performing its ceaseless labor, a quiet, but most efficient helper in the various operations of hoisting the metal and coal to the summit of the Tower, pumping water and propelling the machinery for screening, polishing, &c.

Further on, and immediately surrounding the base of the main shaft, is the finishing room, the packing department, and an immense cauldron filled with the seething, fluid lead, which several operators are industriously ladling into moulds, for the purpose of forming buck-shot, so called, and which perform an important item in the service charge of the American musket, three of these effective and dangerous customers being dropped upon the bullet in most of our army musket cartridges. These buckshot are manufactured very fast, the moulds forming over one hundred at a time. They can be filled several times in a minute, the matrices opening like the fingers, and dropping the shot into boxes underneath.

In other parts of the room rectangular boxes, manufactured of boiler plate, are revolving, when the smaller sized pellets are being polished, or rather covered with a coating of plumbago, and which gives them that peculiarly smooth and greasy feeling, while all around are scattered the other machinery and appliances of this mammoth manufactory—a concern that uses 300 tons of lead per month, and whose principal business is the formation of destructives of animal life.

The Tower itself has its foundations within this room. It is twenty feet in diameter at the base, and reaching up—up—up, one hundred and eighty feet, is reduced to a diameter of fourteen feet, there it terminates in a deck, surrounded by an iron rail.

A small spiral staircase winds from the ground to the summit, and, as one ascends this corkscrew arrangement, a continued hissing of the falling shot is eternally at the elbow, so close, in fact, that the outstretched hand might reach the semi-molten stream!

It is a long, a weary and a dizzy journey, this climbing and climbing, around, around, twisting and turning, and soaring, seemingly, forever! but, once aloft, the magnificence of the prospect repays all the labor.

The Tower proper is a ten-sided obelisk, fabricated of iron columns and cross-ties. These columns are each some fourteen or fifteen feet in length, and weigh nearly a tun a-piece—the total weight of the iron being more than 100 tons. They are firmly bolted to each other at the ends, and form a skeleton structure of immense strength. The spaces between the columns are filled in with a wall of single bricks, only four inches in thickness, the uses of this wall being, not to add to the stability of the structure, but simply to guard the falling shot from the action of the wind, which otherwise might swerve the metallic shower from the necessary perpendicular descent, and be productive of waste or loss.

Well, toward the top is another big melting kettle, in which the lead is kept in a state of constant fusion by a fire underneath. An iron vessel, nearly the size of a half bushel measure with its bottom punched full of holes, is hung beside the pot of liquid lead, and into this affair the molten metal is dipped, nearly as fast as one operative can work, while his companion fires up and feeds the caldron with great pigs of lead, as heavy as a stout man can lift. The gleaming mass drips through the perforated bottom of the receptacle, and falls prone down the well-shaped passage, in a never-ceasing shower of shining rain, a hundred and fifty feet, more or less, until it plunges, with a hissing scream, into the extensive reservoir below. So swift is its descent, after the first second or two, that the eye can only detect a stream of falling particles, chasing each other with an indescribable velocity, while the sibilatory hum is incessant and almost painfully deafening.

Gazing down the well hole, and seemingly immediately beneath the drip of this fearful hail, is seen the pigmy form of a man, foreshortened into an unrecognizable lump. He is busibly engaged with a long-handled copper scoop, removing the cooled shot from the reservoir to an inclined platform, where they are left to drain awhile before they undergo the other process. A sort of queer, wierd sensation creeps through the frame, as the eye becomes partially accustomed to the great distance down below, which this occupies, and for a moment, one forgets that the operative is upon the surface of this mundane sphere, while he, himself, stands so high aloft; but rather, that the man with the scoop is far down in the bowels of the earth; a sort of subterranean worker in the realms of the Plutonian; and there is something akin to a temptation to jump into the metallic current for the purpose of making the stranger a flying visit. The experiment however, would not be a safe one precisely, and the freak flits as rapidly and strangely as it came.

It is a lonesome place, up there with those two busy but silent workmen. The heavy pigs go into the caldron with a sullen plunge, and the act of dipping out the fluid galena is performed noiselessly. There is no splash of consequence; but ever and anon a ladle full is returned to the melting pot, to be replaced with a hotter quantity, and the work progresses with unremitting industry and regularity.

Thus are round shot manufactured, almost precisely as the rain-drops are made globular, viz: by falling through a space in the atmosphere, which, if it be sufficiently destitute of calorific influences, freezes the tidy sphere into a hailstone. Probably electrical action has something to do with the formation of the raindrop in the clouds since it has never yet been ascertained that the storm-king keeps that perforated vessel up aloft to sift his showers of blessings down, in a way similar to the method of the man in the Shot Tower, but barring this difference—the rain globules and bird shot are manufactured on similar principles. Indeed, all natural objects of a plastic constitution seem inclined to resolve themselves into spherical shapes, when left free to move untrammeled, and the pellet of melted lead, which, while falling through air, assumes the form of a globe, is probably governed by the same laws which operated when the sun, moon, our own earth and the other planets, emerged from chaotic masses into their present regular and beautiful proportions.

But the process of manufacturing shot is, by no means, the most interesting feature of the Iron Tower.

Located in the midst of one of the most densely populated neighborhoods in New York, and lifting itself high in air, above all the surrounding spires or workshops, the view from the summit is most instructive and exciting. Far below, and apparently uprising like ghostly amanations, are the pugs from the exhaust pipes of hundreds of steam engines, the white vapors piercing roofs innumerable, with regular, intermitting impulses, living for a moment like tiny clouds, and then melting into thin air, as the process of condensation destroys their opacity.

One looks down inquiringly into the very throats of countless chimneys, their black muzzels foaming and smoking with the fires in the laboratory of the artisan, or those burning upon the hearth-stones of domestic life, while all street objects are dwarfed into mere atomies. The railway cars appear like slow creeping cigar boxes, drawn by Queen Mab ponies, and humanity resembles specks of dubious locomotion. Quarters of beef, hung beside a street butcher's stall, dwindled to the proportions of squirrel meat, while the carcasses of sheep might be mistaken for skinned mice.

As the vision ranges further, the city seems covered with a Russ pavement of variegated roofs, with here and there narrow channels, indicating the course of streets, but looking, in reality, like grooves, cut to prevent horses from slipping. Lines of light flashing in the sunbeams, point out the positions of the East River and the Hudson, while far in the Southwest, a broad and gleaming area dotted with steamers and ocean craft, betrays the locality of the bay, even far below the Narrows. Beyond lie the hills of Staten Island, and still further to the right Newark Bay, with the city itself in the distance, and as the eye sweeps still further Northward, Jersey City, Hoboken, Weeawken, and all intervening objects pass in rapid review, until the sight is bounded by the Highlands, behind Fort Lee.

The Crystal Palace is in full view, with the Latting Tower, (now shorn of one-third its height) standing like a gigantic sentinel, beyond it, and, in the far North-east, the old Shot Tower seems to keep watch over Turtle Bay with a guardian eye, also to the Penitentiary buildings on Blackwell's Island.

Astoria, Bushwick, Williamsburg, (with the Cypress Hills Observatory looming up, far over the spires of the latter) and finally Brooklyn, with its forests of steeples, are all mapped out, the entire panorama being presented with instructive fidelity and minuteness.

Certainly, if a stranger, or one of our own citizens, even, wished a correct idea of the whole of New York city and its suberbs, the Iron Tower of Center street, will, from its summit, afford a more comprehensive survey than any other point of observation, and it is only from this or similar elevations that one can understandingly realize the immense proportions and business capacities of this, the Metropolis of the Western Continent. From the Center street Tower, nearly all public buildings in New York and its vicinity can be located and identified, and although the noise and clamor of travel and traffic may come up to his airy perch with a subdued hum, yet enough can be heard, seen and felt, to satisfy the most exacting seeker after the exciting, the sublime and the magnificent.

The eye may tire but the sense is not sated with hours of earnest gazing, and the final corkscrew descent to terra firma is, apart from the annoyance of its bewildering twistings, a journey of soberness and regrets.

The final testing of each particular pellet (before it is packed away for the market) for the purpose of determining the perfectly globular form of the shot, is curious, but, like all the other operations, extremely simply. A long table of hard wood, with one end raised a few inches, is the principal agent. At the upper end of this table, a scoopfull of the petite spheres is scattered upon the surface. Those that are round, plump, and properly formed, roll immediately down the slight incline, and drop into a box, placed for the purpose. The imperfect ones on the other hand, do not roll at all; or at best, take zigzag pathways, and are brushed back into a receptacle at the upper end, to be taken aloft, re-melted, and sifted down again. Their mission has been only partially performed, and they must try it over!

Emerging into Center street, after a few hours spent in the Tower, one feels himself an imperfect shot—a faulty pellet—a globule that will not glide freely and straight forward, since his mission has been only half accomplished!!! There was more to inspect than the brain could well sustain in the experience of a single visit. He should be brushed back, and sent again aloft, if he aspires to come down, perfectly spherical and au fait, in the mysteries and panoramic views to be witnessed in and from McCulloch's Shot Tower in Center street.

Written for Louisa F. Wells,

On the death of her Son, John Brigham, who died in G. S. L. City, June 9th, 1856, aged 10 years, 3 months, and 13 days.

I know that he is happy, that he dwelleth
with the blest,
That he's free from pain and sorrow with
which this earth's oppress'd;
But, O my heart is lonely, I miss him everywhere;
Lord give thine handmaid comfort, and let me
not despair.
I feel that all is right, and that I should not
grieve,
But then my wounded spirit, the burning tears
relieve;
And when my little ones come prattling round
my knee,
And I feel that he is absent, whom I was wont
to see;
Oh, 'twere a heart of stone that would not
shed a tear
To the memory of him whose presence was so
dear.
My first born, yes, when clouds did round my
pathway lower,
His bright and happy smiles cheered many a
lonely hour;
A thousand dreams of love and hope blend
with that childish face,
But now I may not fold him in a mother's fond
embrace.
He's gone, I'd not recall him; I know that we
shall meet
In the resurrection morning, and our joy will
be complete.
His loss to me on earth, Lord teach me how to
bear,
And give me consolation when I come to thee
in prayer. EMELINE.

Answer to Charade in No. 19.

If you ad(d) you will surely increase,
And "vice" will keep you from heaven.
"Advice," such is human caprice,
Is not so oft taken as given.

Answers.

Short becomes shorter by adding a syllable;
Decapitate plague and it becomes 'ague.'
Add or prefix S to IX and it makes SIX;
From XIX take X and nine remain;
And from XIX take XI and ten remain;
Then add XI and X which make XIX.
ANNA MARIA.

E—begins Eterity; it end timE and spacE;
It begins every End and ends every placE.

Question.

A lady asked a gentleman his age. He replied, It is what you do in everything.
How old was he?