

SCIENTIFIC AMERICAN

A WEEKLY JOURNAL OF PRACTICAL INFORMATION, ART, SCIENCE, MECHANICS, CHEMISTRY, AND MANUFACTURES.

Vol. XVI.—No. 21
[NEW SERIES.]

NEW YORK, MAY 25, 1867.

\$3 per Annum.
[IN ADVANCE.]

THE PROPOSED GRAND NEW YORK HOTEL.

We transfer to our columns an engraving from the *London Engineering*, which represents Mr. Hiram Cranston's proposed new hotel, which was to have been erected on the Fifth Avenue, opposite the main entrance of the Central Park, covering the block of ground between 59th and 60th streets. The lots of ground, which were to have been the site of the structure, have just been sold at auction, and this has somewhat revived the interest felt in the undertaking. These lots were

to a moment when his vessel was caught in the ice, and its destruction made momentarily imminent:—

The scene around us was as imposing as it was alarming. Except the earthquake and volcano, there is not in nature an exhibition of force comparable with that of the ice fields of the Arctic Seas. They close together, when driven by the wind or by currents against the land or other resisting object, with the pressure of millions of moving tuns, and the crash and noise and confusion are truly terrific. We are now in the midst of one of the most thrilling of these exhibitions of

trembling in every timber from truck to keelson. Her sides seemed to be giving way. Her deck timbers were bowed up, and the seams of the deck planks were opened. I gave up for lost the little craft which had gallantly carried us through so many scenes of peril; but her sides were solid and her ribs strong; and the ice on the port side, working gradually under the bilge, at length, with a jerk which sent us all reeling, lifted her out of the water; and the floes, still pressing on and breaking, as they were crowded together, a vast ridge was piling up beneath and around us; and, as if with



PROPOSED NEW YORK HOTEL OF MR. HIRAM CRANSTON, AT CENTRAL PARK.

thirty-four in number. At the sale, eight lots on Fifth Avenue brought an average of \$21,012 each; eight lots on Madison Avenue \$8,420 each; nine lots on 59th street \$8,611 each, and nine lots on 60th street \$8,588 each. The aggregate amount of the sales was \$395,000; cost of the ground eighteen months since, \$350,000. The architecture of the hotel, as seen in the engraving, is noteworthy as being similar to that of public buildings, palaces, etc., in France and some other parts of Europe, but has not hitherto been adopted in this country.

Improved Sheep Feeding Rack.

It is well known that sheep waste about as much as they eat when they pull the hay through an ordinary rack, and to save this waste and keep their feeding places clean is the object of the invention exhibited in the accompanying engraving.

The slats are about four inches wide at the top and two at the bottom, and the hay is spread on the bottom of the frame, which may be either a partition or a wall rack. By partitioning the rack, roots may be fed to the animals on one side and hay to those on the other. The sheep cannot trample their food, and will not pull it through to waste it. There is a sliding trough for grain, seen in the engraving elevated, having a partition running lengthwise, which can be elevated while hay is being fed, or lowered when grain is given. While elevated, it is easy to arrange the grain or roots, and the trough is readily lowered by means of the cords and counterweights at the ends. In the use of this device the sheep cannot crowd nor waste.

It was patented through the Scientific American Patent Agency, June 5, 1866, by D. F. Sexton, of Whiting, Vt., whom address for further particulars. Parties will also receive attention by addressing J. H. Thomas, Orwell, Vt.

Vessel Caught in the Ice at the Polar Sea.

Dr. Hayes, in his narrative of the open Polar Sea, thus refers

to a moment when his vessel was caught in the ice, and its destruction made momentarily imminent:—

The scene around us was as imposing as it was alarming. Except the earthquake and volcano, there is not in nature an exhibition of force comparable with that of the ice fields of the Arctic Seas. They close together, when driven by the wind or by currents against the land or other resisting object, with the pressure of millions of moving tuns, and the crash and noise and confusion are truly terrific. We are now in the midst of one of the most thrilling of these exhibitions of

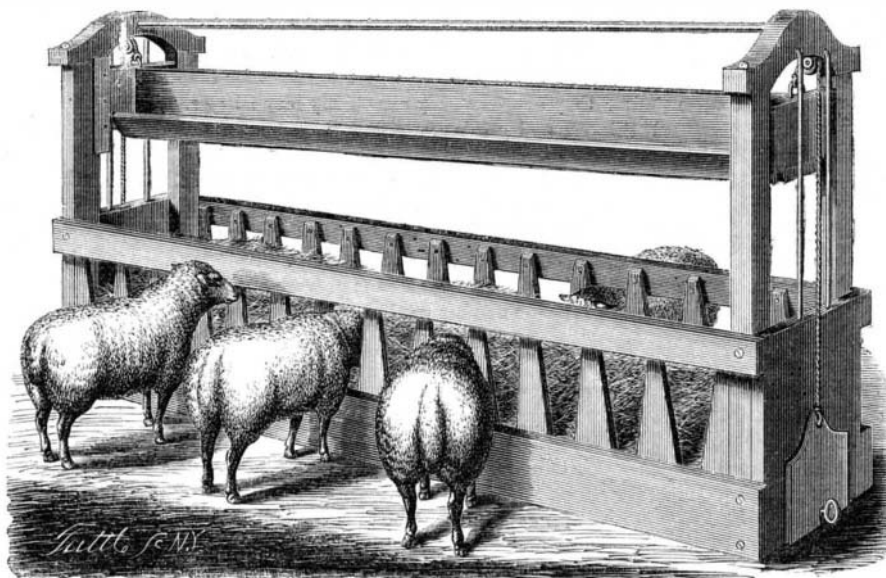
the elevating power of a thousand jack screws, we found ourselves going slowly up in the air.

New and Simple Dry Process.

At a late meeting of the London Photographic Society, Mr. William England described a dry process which he has found to fulfill better than any other the conditions required in a dry-plate process of photography. We may here premise that the pictures which were exhibited as having been obtained by means of the process in question were excellent, and in no way inferior to any that could have been produced by means of wet collodion from the same subjects. The plates are exceedingly sensitive, judging from the ordinary dry-plate standard; the certainty seems such as to satisfy even exigent experimenters, while the keeping properties may be deduced from the fact of one of the pictures exhibited having been printed from a negative kept seven weeks previous to development.

A plate is coated with ordinary collodion and excited in a forty-grain bath. It is then washed until all "greasiness" disappears, by being transferred first to a bath of distilled water, followed by a similar application of common water. Some plain albumen, to which a few drops of ammonia have been added, is now poured over the surface and made to travel over every part of the film, for which purpose it should be several times tilted backward and forward. The film is now washed, so as apparently to remove the albumen, some of which, however, will always remain, no matter how prolonged may be the washing to which it is subjected. The plate now receives a final sensitizing, by having poured over its surface a thirty grain solution of nitrate of silver to which a few drops of acetic acid have been added. The plate is now subjected to a final and thorough washing, and

is then dried. The exposure required is about three times that given to a wet collodion plate. A plain solution of pyrogallic acid, of the strength of two or three grains to the ounce, serves to develop all the details which are afterward strengthened in the usual manner (by citric acid and silver).



SEXTON'S SHEEP-FEEDING RACK.

little by little, and we listened to the crackling and crunching of the ice, and watched its progress with consternation. At length the ice touched the schooner, and it appeared as if her destiny was sealed. She groaned like a conscious thing in pain, and writhed and twisted as if to escape her adversary,

Mr. England prefers to fix with weak cyanide of potassium, although hyposulphite of soda may be employed for the same purpose.—*British Journal of Photography.*

THE GREAT MARKETS OF PARIS.

Translated for Every Saturday from the French.

There is in the heart of Paris a monument where 1,900,000 mouths seek daily food; in whose neighborhood are to be found street after street which wake when the other portions of the city prepare for sleep; a quarter traversed every night by 12,000 vehicles, and which from 4 to 10 o'clock, A. M., sees added to its 42,000 inhabitants a floating population of at least 60,000 souls; in one word, the Great Markets.

Six uniform divisions, marshalled in two ranks, are sheltered under an immense iron roof, which has a superficies of 20,000 yards. A forest of delicate and elegant small columns support this gigantic roof. Broad sidewalks planted with trees, extend around the vast parallelogram, which is crossed by three broad covered avenues. The six divisions have each their especial trade. One is devoted to fruit and flowers; another to vegetables; another to fish; this to eggs and butter by the wholesale; that to game and poultry; as for the sixth and last, so many different sorts of things are sold there that the Archbishop of Phris himself could not hear to the end the long enumeration of them.

It was when the new Great Markets were opened. Archbishop Sibour had at his elbow a cicerone, whose duty it was to inform him of the destination of the several divisions, as he blessed them one after the other. He had already blessed five of them. When he reached the sixth the cicerone said, "This is the division of retail butter." "I bless the division of retail butter," said the Archbishop, raising his hands. "And of bread," whispered the cicerone. "Of retail butter and bread," added the Archbishop, catching himself. "And of cooked meat." "Of retail butter and bread and cooked meat." "And kitchen furniture." "Oh!" exclaimed the good Archbishop, making a gesture of despair, "I bless everything."

Beneath the Great Markets visible are the cellars. There are thirty of them. As a general rule, each cellar is a basement floor which is an exact copy of the division above ground. There are the same lines of stalls, only instead of the stalls above ground there are lofty recesses, divided by iron railing, with numbers corresponding to the numbers of the shops above them. These recesses are the store rooms of the market people; they keep their stock and baskets in them. They are all alike; except that the fishmongers have, besides, reservoirs supplied with running water, where fishes are kept alive.

In the cellar of retail butter dealers several conscientious tradesmen are to be discovered giving their stock (which is sometimes a little rancid) the desired fresh taste. They mix by gas light on wooden boards their venerable butter, water it, add a little flour if the butter lacks consistency, and if it is too pale they add carrot juice of carmine, which in a few moments gives the palest butter the beautiful orange color so dear to all housewives.

In the next cellar are the poultry shambles. Around eight immense marble tables, placed equidistant from each other and in regular order, are men, women, and children, cutting, clipping, tearing, picking, pulling. They have all been at work since 11 o'clock, P. M., and they will not have ended their task before 5 or 6 o'clock, A. M.: for they have to prepare some 1,000 or 1,200 geese, turkeys, chickens, ducks, or pigeons for the market stalls. Everywhere in the neighborhood of this cellar one sees nothing but baskets full of feathers, baskets full of poultry under sentence of death, heaps of dressed poultry. Here is a line of ducks hanging by one leg, head downward. Presently a young girl comes with a huge knife. Her little hand slips the steel on the neck of the duck nearest her. You would think she was caressing it, she is so rapid and so light. She goes to the next, and to the next, and to the next; a second for each duck. She passes on, her task ended, as quietly as if she had been pricking apples for the oven.

The Great Markets are still quiet, but labor has begun its tasks even above ground. One detects faint glimmers of light through the iron railings of the divisions allotted to fruit and vegetables. If one goes near, one discovers women seated around lamps or lanterns. They are shelling peas. A large number of women earn their daily bread for six months of the year by shelling peas. One may form some conception of the number of peas required, when he is told that Paris consumes during these six months 600,000 bags, say 30,000,000 quarts, of the valuable vegetable. There are some vegetable preservers who employ every season 200 women to do nothing but shell peas for them. They get 30 sous for shelling a large basket which contains 25 pounds of peas. An active woman can shell 50 pounds in her 10 or 12 hours of labor; but then she must not dawdle.

The porters of the Great Markets are organized in an excellent association. Five or six hundred members belong to their society, and they unload and load not only in the Great Markets, but in several important markets. They are divided into gangs, which are subdivided into squads, each having a "boss" or head man. At the Great Markets are to be found the butter porters, the fruit porters, the meat porters, the flour porters, and the others. Markets in Paris have their porters: La Vallée porters, Le Mail porters, Le Marché Noir porters. A head "boss" is invested with the sovereignty over all of them, although he does not receive one sou more than any of them. He is the beau-ideal of the constitutional monarch. He is paid little or nothing, and personally has no power, neither to reward nor to punish. The butter porters and meat porters earn their 10 francs a morning. Next to them come the fruit porters, and the fish and flour porters. The latter earn at most 5 francs a morning; to make up this

disproportion, the police allow the flour porters to work for bakers, and the fish porters to unload peas. The people we see arranging long narrow bags in lines, like so many sausages, along the sidewalks, are porters of the Great Markets. While a squad work under the eye of their "boss," another squad, stretched at length on the sidewalk, take their rest. They sleep under the feet of passers, their heads covered with their striped cotton caps. Near them lies the white felt hat, with an immense brim, their classical headpiece, which is, however, merely an accessory of their costume, and is not, as is commonly believed, the essential element of it. The porter never wears this hat unless he has sacks to carry, for when he has baskets to carry he places them on a leathern cushion secured to his shoulder, and when he has back baskets to carry he places around his neck a wadded collar, to prevent the friction of the basket. When you see in the Great Markets a tall, stalwart fellow, with merely a moustache, with square shoulders and solid legs, calm, silent, and active, as a general rule you may be sure he is a porter. And when you see a little fellow, fat, well fed, clean shaved, looking like a retired tradesman who is sauntering for pleasure, but bends every moment under the weight of his abdomen and is constantly obliged to take a seat in order to support his own weight, be sure he is a "boss."

As we quit the porters we discover in obscurity the Awakener. He undertakes, for a trifling amount of money, to rouse at any given hour of the night whoever may confide the care of their interests to him. It is a grave question for the laborers of the Great Markets to be roused in due season. He goes about the streets in the neighborhood of the Great Markets from 10 o'clock, P. M., to 4 o'clock, A. M., bawling to this one, ringing up that one, and continuing to bawl and ring until the sleeper gives signs of life by bawling back or tapping on the window. Each customer pays him one or two sous a night, or between thirty sous and three francs a month, according to the distance he is obliged to come. Some customers give him as much as three sous; these are the hard sleepers, who must be pulled out of bed or be shaken by the arm. The Awakener is an enameller by trade, and he can make good days' wages; but he prefers poor nights ill-paid passed out of doors. His trade of Awakener used to bring him in on an average \$480 a year.

Near by, on stools, are several men; no shirts; their whole costume consisting of canvas pantaloons, secured by a strap around their waist. They throw vague objects into immense boilers. These strange workmen are artichoke boilers. An active, lively, healthy brunette, the mistress of the establishment, stimulates them by voice and gesture. Her name is Pauline Gandon. She is the largest artichoke boiler of the neighborhood. During four months of the year she does business to the amount of \$4,000. In the artichoke season, wagons full of them are daily emptied in front of her door. Women wash them and cut off the stalk. They are then sorted, according to size, and packed in the boilers, the several layers being separated by linen cloths. An immense wood fire is carefully kept up, during the whole period of time required to cook them, and which lasts till daybreak. From 5 o'clock, A. M., to 8 o'clock, A. M., there is quite a procession of green grocers, petty eating-house keepers, and vegetable peddlars coming to purchase their daily supply. In these three hours' time at least 3,000 artichokes are sold. There are not above three or four great artichoke boilers in the neighborhood of the Great Markets, because this business requires not only the appliances to carry it on, but a good many servants and large daily expenditure of ready money.

Let us return to the Great Markets. Already the market gardeners are beginning to spread their stack in trade. They come early to select their place—to secure a favorite corner; and then most of them bring articles which can be sold as soon as the bell announces two o'clock. Here are potatoes, there are salads, yonder are fruits or cresses taken out of the carts and placed on the market. After the marketmen and market-women count their baskets, they lie down in the midst of their vegetables. Some of them keep watch, wrapped in their thick cloaks.

Strange figures go to and fro in silence. These uneasy shadows belong to a strange corporation—the clan of vicious and good-for-nothing fellows, or, as it is called, *la Gouape*—vagrabonds driven nightly to the Great Markets for the sake of the shelter they afford. They are chiefly lazy fellows, professional thieves, and good-for-nothing workmen dismissed from their places.

Formerly vintner's shops were allowed to remain open all night for the sake of marketmen who come from a distance. But the disorderly scenes witnessed in them led the police to interdict their opening before 3 o'clock, A. M. To lessen the inconveniences of this measure, some men were authorized to hawk coffee among the market gardeners and other nocturnal laborers.

Observe those young fellows with aprons, moving actively from group to group. Each one carries a tin apparatus to which a great many tin boxes, that jingle as he moves, are suspended by hooks. A box contains spoons, and small papers which hold each two lumps of sugar. These are Sausserouses waiters.

Sausserousse is one of the characters of the Great Markets. He rises regularly at eleven o'clock, P. M., and goes to bed the next day at four o'clock, P. M. His establishment is in the Rue des Innocents, and is the rendezvous of all the market-gardeners. They go there to await the opening of their respective markets; they sleep or take a bowl of coffee in this house, which is an old establishment. It is higher than it is wide. It consists of a cellar, ground floor above, and first story, placed one on the other. A circular stair case goes to the first story, while a stone ladder goes to the cellar. Each story has its individuality. The first is a dormitory till day-

break. Market men and market women lay pell mell on the floor—these lying lengthways, those sideways, others anyway between the legs of chairs and tables. The fifteen or twenty leagues they have travelled to bring us vegetables are their excuse. Some of them spend all their time on the road, and often pass two months without sleeping in a bed. On the ground floor the customers sleep, seated or standing, but they have not courage enough to acknowledge that they are sleeping. They would persuade themselves that they are eating or drinking. Leaning against the wall, or the shoulder of a good-natured brother market-man, their hand on their cup of coffee, or chocolate, they look as if they would defy sleep; but invaded by the warm vapor which arises from the immense kitchen range built in one of the angles of the room, the movement of the waiters or the momentary elevation of voices, they are unable to keep sleep at a distance.

At Sausserousse's the meal consists of ten sous of meat, five sous of wine, and two sous of bread. There is not much sleeping in the cellar; nevertheless, sonorous snores are occasionally heard mingling with the clatter of plates and forks. The principle section is half filled by two immense copper boilers. It is in these boilers that Sausserousse makes his coffee, and chocolate. He sells about one thousand cups a day at four or six sous each. At least five hundred cups are sold out of doors by those active waiters with tin vessels above mentioned. They go their beats around the market several times during the night and until seven o'clock A. M. After ten o'clock the establishment is entirely empty; and if it still remains open half the day, it is partly to give customers time to pay their nights expenses. The majority of them rarely pay cash. They pay after market hours.

Day is breaking. It is time to quit Sausserousse's, if we would witness the Great Arrival. Up to this hour the market men were few and silent as they drove up and discharged their vegetables. They become every moment more numerous. The noise increases; the carts multiply; and all the neighboring street are crowded with them. The quarter is now surrounded by policemen, who allow no vehicle other than market-carts to enter the environs of the market. There are twelve thousand market carts in Paris and the neighborhood which regularly bring vegetables to the city; about six thousand come every day. The apparently inevitable disorder formerly produced by such a throng of market vehicles—to say nothing of purchasers—has been abated by the present organization of the Great Arrival, which was introduced only two or three years ago. At present, every market-man has his particular entrance, his place of unloading, and his particular exit. The road followed by the market-men is regulated beforehand; their vehicles move with perfect order, which is a little surprising when one considers the few policemen on duty. The ingenious organization of the present arrangement is due to the Inspector General, who may every day be seen, between three and five o'clock, A. M., directing the manoeuvres like some military commander. "Halt, water-cresses!" "To the left, cauliflowers!" "Go ahead, turnips!" "This way, ye gardeners!" "Put out that hack!" The rustic vehicles move in good order before his eyes. Each market-man as he enters makes a declaration at the clerk's office of the number of bags or panniers he brings, and of the superficies of square yards he wishes to occupy. The cost of the stands is three cents a yard on the outside sidewalks, and six cents a yard on the covered sidewalks. The clerk gives him a ticket, which is his title to possession. He then goes to the portion of the market where the sale of the sort of provisions he brings takes place. There the porters unload his vehicle, and see if the number of bags or baskets is the same as the number stated on his ticket. Then the vehicle is taken to one of the empty vehicle stands. There are no less than fifty-seven empty vehicle stands in the neighborhood of the Great Markets. Formerly the municipal authorities levied the toll for occupying these stands; at present they are leased to a company, which pays \$46,600 for the toll. As market men, busily engaged in arranging their stock, would find it inconvenient to drive their vehicles to the proper stand, men have undertaken the business for them. These drivers are twenty in number, under command of a "boss," to whom they pay over their receipts. Their wages are forty cents a day, and the market-men commonly give them one cent for each vehicle. These drivers give the empty vehicles to the watchmen.

The watch is composed of men and women, who take care of the vehicles confided to them. They form quite a numerous army, in the pay of the company which farms the stands. They not only take care of the vehicles, but of the heaps of provisions temporarily left on the sidewalks by the greengrocers, hawkers, and the like. They are distinguished by the metal badge they wear on the left arm and the steel chain which hangs from their waist. There is at the end of this chain a pair of pincers, closed by a key, and which retains the counterfoil of the little green, white, yellow, or red tickets they deliver for receipts. The color of these tickets serves to designate the sort of heap or the kind of vehicle confided to them. The majority of these watchmen are women. They are for the most part good creatures, and are on excellent terms with their customers, who refuse to call them by their numbers, which they have borne since their new organization. They give them their old nicknames which were in vogue before they were organized by the company which has enlisted them. This one is called "Green Peas," that one "Planks Marie."

At four o'clock, A. M., the market bell rings to announce the opening of the market. None but vegetable dealers have the right to begin to sell as soon as they begin to unload. All the others are forbidden to enter into negotiations with purchasers before this bell rings. Sellers are looking sharp, purchasers are examining the provisions; some men, who seem to be loitering idly, are watching a basket as a cat watches