

said bar from turning. After the carpet has been fully stretched, the clutch bar is carried over and behind the rear bar, out of the way, to provide for tacking the carpet down near the wall.

An improved spring lock earring has been patented by Mr. Fred R. Bassett, of Paw Paw, Mich. The invention consists in hinging the hook to the pendant, and providing a spring for holding the hook open or closed, the hook being formed with square faces at the pivot for the impingement of one end of the spring upon either one of said faces, accordingly as the hook is thrown open or closed. This improvement not only gives greater convenience in attaching, fastening, and removing the ring from the ear, but less gold wire is required for the hook, no eye is needed for fastening the end of the hook, and the hook is not liable to be broken, as it does not have to be bent every time the ring is inserted and removed from the ear, as is the case with the ordinary style of hooks.

An improved sofa bed, which is free from complicated devices to adapt it for use as a sofa or a bed, and which may be so adapted without unduly stretching or crowding its upholstery, has been patented by Mr. Herman A. W. Maercklein, of Hartford, Conn. In this improvement the hinged back and main frame of the sofa have combined with them hinged plates, which, when raised or closed, hold the back in a vertical position, and, when lowered, permit the back to occupy a horizontal one. The stationary sofa arms and the lowering back have also combined with them bolsters hinged to said arms at their rear ends and avoiding the appearance of a hinge joint at the sofa front. Furthermore, the back and seat are connected by hinges having pin joints on a line with the tops of the springs in the seat, whereby all undue crowding and stretching of the springs are avoided.

Mr. King G. Streeter, of Littleton, N. H., has patented a very neat and durable glove fastener. In this device a tubular shank, having an eye on its outer end, is secured to the glove on one side of the wrist opening. Through this eye is loosely fitted a wire bent in reverse directions at its opposite ends, which latter have knobs that prevent the wire from dropping out of the eye. In using the fastener, one end of the wire is passed through the button hole in the glove wrist, and said rod or wire then used as a lever to draw the parts of the glove wrist together. The other end of the rod is next passed through the button hole, and the rod afterwards adjusted to bring its central portion within the eye. The button hole is fitted with an oblong eyelet to prevent the glove wrist from being worn or torn around the button hole.

A simple and inexpensive fastening for hats and bonnets, which may be secured in position without the use of needle and thread, has been patented by Mrs. Josephine A. McK. Bouvier, of Denver, Col. The invention consists in a button having a portion of its back cut away to form an opening, and the remaining portion of said back provided with a keyhole slot, which communicates with said opening, and is adapted to receive a knotted cord. This cord, which may be elastic, being thus secured at its one end, without sewing to the button, may be attached at its other end to the hat by a clasp, and said button, when securing the hat to the head, be passed through a looped cord secured to the other side of the hat by clasp or otherwise.

An improved ore concentrator, which is designed to be connected with crushing rolls or other crushing machines, or to receive the ore directly from them, has been patented by Mr. William Thurmond, of Rosita, Col. In this concentrator a V-shaped box set slightly inclining from a horizontal position, and formed with an enlarged cylindrical chamber at its narrowest end, is connected at said end with an exhaust fan and provided at its opposite end with a current regulating slide. Within the V-shaped chamber of the box is a rocking or vibrating frame, having screens of various degrees of fineness for separating the different grades of crushed ore, while the dust and lighter particles are drawn out by the fan. Chutes in the bottom of the box conduct the graded ore to suitable receptacles, and a separate chute carries off the gangue. Ore concentrators thus constructed are said to perform their work perfectly.

An improved tire-tightener, which operates by expanding the felly of a wheel to completely fill the tire and thus firmly unites the felly and the tire, has been patented by Mr. Benjamin F. Carlon, of Red Oak, Iowa. The device consists of two arms having jaws and binding screws at their outer ends to receive and hold the felly, which arms are pivoted to a forked swivel head loosely mounted in the top of a capstan head on a screw which fits into a threaded aperture of a pedestal or base that rests against the hub of the wheel between the spokes. By turning in a given direction the capstan head of the screw the felly will be expanded as required, and washers can be passed into the joint to fill up the space between the ends of the fellies. This useful contrivance may also be used as a jack to lift wagons and other loads.

An improvement in photographic apparatus, which possesses both novelty and merit, has been patented by Mr. David H. Houston, of Cambria, Wis. The object of this invention is to facilitate taking a number of photographic views successfully and in a short time. The invention consists in a camera with a receptacle or box at its inner end containing a roll of sensitized paper or other suitable tissue, and an empty reel, upon which the sensitized band is wound as rapidly as it has been acted upon by the light, thus obtaining a number of views successively upon the same band,

which is afterward divided as required. Said band is arranged to pass from the supply roll to the take-up reel, over rollers at a suitable distance apart and through slots in front of the box. On the shaft of one of these rollers is a pointer for indicating the amount of tissue drawn to form one negative, and a perforator on said roller for indicating the dividing points in the band for a series of negatives. The end pieces of the front end frame of the bellows of the camera also is arranged to swing on the sliding side pieces of the bellows box.

Correspondence.

Curious Freak of a Dog.

To the Editor of the Scientific American:

Being a constant and close reader of your valuable paper, and having gleaned many curious and instructive facts of natural history from its pages, it has occurred to me that the following freak of a dog which we own would not be uninteresting to some of your readers.

"Simmons" (that is the dog's name) is very remarkable for her sagacity, and often excites remark by the "reasonableness" of her actions. She is a constant companion of the boys, and seems to consider herself one of them. She has been a mother three times; the third time some ten days or so ago. At her two former *accouchements* she did herself credit by the respectable size of the family she brought to light; but this last time she gave birth to but one pup. Two or three days before the birth of this pup there was a litter of kittens born on the place. Simmons, disgusted at the smallness of her family, and evidently thinking that the cat had more than her share, captured one of the kittens in the absence of the old cat, and carried it in her mouth to where she kept her pup, and deposited it in her basket. In a short time she was suckling both the pup and kitten, who were hard at work side by side. The next day the kitten was taken away in the absence of Simmons, but on her return she hunted up her adopted child and brought it back to her basket, where it has remained until now. Simmons has now been nursing the kitten for more than a week, the kitten seeming to be perfectly satisfied with her foster-mother.

This may not be an isolated case of the kind, yet it is nevertheless remarkable.

H. U. ONDERDONK, M.D.

College of St. James, Washington Co., Md., Nov., 1881.

Rain of Spider Webs.

To the Editor of the Scientific American:

I notice in the SCIENTIFIC AMERICAN of November 26, 1881, an article headed a "Rain of Spider Webs." This rain occurred in Wisconsin in the latter part of October. It might be interesting to refer to another locality and another date, where and when a similar shower was seen. In this place (Bloomington, Indiana), on October 9, about two o'clock, my attention was called to the number of spider lines streaming from a telegraph wire running from the house at a height of about eighteen feet from the ground. At this time I did not notice any in the air, but going along the road I observed some webs on the fences, but not in great numbers. Returning to the house a little before five o'clock, we found the telegraph wire almost fringed with them; every two or three inches, as far as we could see, there were streamers of cobwebs of from four or five inches in length to about fifteen feet, all directed nearly horizontally toward the south. We now saw in the air many lines detached, drifting southward in constantly varying curves. These lines were plainly visible at a distance of over two hundred yards, glancing in sunlight reflected from or inflected by them. We observed, also, several tufts or "parachutes" floating with the spider lines.

I find recorded in my notebook another instance of the same kind. It occurred September 20, 1874. Noticed the appearance about five o'clock. The air at this time was filled with dust, the season being very dry. The long waving lines of light, whose general direction was nearly vertical, were seen drifting from north to south nearly parallel to the ground. They could be seen at the same distance as those already described. We watched them till sunset; for a few minutes but few could be seen, then the number would increase, but upon the whole there seemed to be no diminution as long as the sun shone upon them. The tufts of gathered cobwebs were more numerous than in the shower of October 9.

T. A. WYLIE.

Bloomington, Ind., Nov. 22, 1881.

Cast Iron Flat Heads for Boilers.

To the Editor of the Scientific American:

As the question of the safety of cast iron "flat" boiler heads for cylindrical boilers appears again to have come to the surface, I give you below what has been the practice in past years by builders of high standing in proportioning such heads, and which have been used without accident.

The proportions of one builder are as follows: For boiler 24 inches diameter, heads $1\frac{1}{2}$ inches thick; for boiler 28 inches diameter, heads $1\frac{1}{2}$ inches thick; for boiler 30 inches diameter, heads $1\frac{3}{4}$ inches thick; for boiler 36 inches diameter, heads $2\frac{1}{2}$ inches thick; and of another extensive builder: For boiler 30 inches diameter, heads $1\frac{1}{2}$ inches thick; for boiler 36 inches diameter, heads $1\frac{3}{4}$ inches thick; for boiler 42 inches diameter, heads 2 inches thick.

I have also examined the heads of old boilers which had

been in use for years carrying 80 lb. steam, heads 36 inches diameter and $1\frac{1}{8}$ inches thick; and of others in use for years carrying 110 lb. steam, heads 36 inches diameter and $1\frac{1}{8}$ inches thick.

OBSERVER.

[The above data is furnished to us by an experienced steam engineer, and is brought out, we presume, by the recent publication, in the SCIENTIFIC AMERICAN SUPPLEMENT, No. 308, of Mr. W. Barnett Le Van's letter relative to the Gaffney boiler explosion, Philadelphia. In that letter Mr. Le Van states, among other things, that no competent engineer would approve of flat cast iron heads, especially 36 inches diameter and 2 inches thick. We think that Mr. Le Van is greatly mistaken. If the information we have received is correct a very large proportion of all the ordinary cylindrical boilers now running have flat heads, have been run for many years in safety, and were originally, and are still, approved by competent engineers.—Eds.]

An American Triumph in Electric Lighting.

To the Editor of the Scientific American:

SIR: I have been somewhat surprised to find that no mention was made, except in the foreign papers, of an extraordinary test of electric lights made during the Electric Exhibition at Paris. It was a test made for the *Credit Lyonnais*, the great French financial institution, who were negotiating for the Brush patents for France, and consisted in running two 40-light machines in series burning 38 lights each, 76 lights in all, on a twenty mile circuit, 16 hours a day for 30 days. The lights, during the whole period, burned with great steadiness, and the test was so satisfactory that, at its conclusion, the patents for France were purchased for between \$400,000 and \$500,000. This is the largest sum that has been paid, I understand, for any electric light patents of any American inventor. The French company, I was told in Paris, had already begun an immense manufactory for the manufacture of apparatus.

C. C. RUTHRAUFF.

Cleveland, Ohio, Nov. 25, 1881.

Fall of a Meteorite in England.

BY PROF. A. S. HERSCHEL, M.A., F.R.A.S.

A stonefall took place at 3:35 P.M., on March 14, 1881, a mile and three-quarters from Middlesborough, in Yorkshire, along the branch line of the Northeastern Railway from Middlesborough to Guisborough, at a place known as Pennyman's Siding, on the railway. The fall was accompanied by the usual thunder-like report, not heard at the place where the meteorite struck the earth, but as far off as Northallerton and Welbury, in Yorkshire.

Some workmen's attention on the railway was drawn for about four seconds to a whirring noise overhead, followed immediately by a heavy thud in the ground near them; and on searching in the direction indicated by the sound, they found the stone, about three minutes afterwards, at the bottom of a hole eleven or twelve inches deep, which had formed almost vertically through an inch of coke ballast and through thin growing turf and stony clay below at the foot of the slight embankment of the railway, four yards from the nearest line of rails, nineteen yards from the signal box of the siding, and forty-eight yards from the place where they stood when they heard the sound. The foreman narrated the occurrence, and placed the stone in the hands of the engineer of the Darlington district of the railway, Mr. Cudworth, in whose possession it now remains as property of the railway company; but it was submitted to me on March 25 for examination, and on Saturday, March 26, I visited the place of fall with Messrs. Cudworth and Ellinor, and the workmen under them, and with some scientific friends. A photograph of the site, and of the group of men finding the stone, has since been made, and steps are being taken for preserving the hole in the ground in a box fitted and screwed together round the earth about it, which will be thus bodily removed.

The stone weighs 3 lb. 8 oz. 83 grains, and is of a low pyramidal shape like an upper oyster shell, 3 in. thick and rather less than 6 in. x 5 in. in length and breadth. The interior is visible at points of the frayed edge and is gray, with very little interspersed grains of iron pyrites, and apparently no iron; and a magnet is not sensibly affected by the mass. Its specific gravity roughly determined is a little greater than 3.0. The flat back surface of the meteorite is covered with a rough brown crust, while the blunt conical front surface is deeply scored and furrowed radially from the center, and polished like fresh molten slag and of a lead-gray color.

The singular form and contour of the stone make it very desirable that, whatever provision is finally made for its preservation and mineralogical examination and description, it should not undergo more defacement from its original integrity than is absolutely necessary.—*Monthly Notices R. A. S.*

Lead in Bromide of Potassium.

Maschke has found bromide of potassium in the market which is contaminated with lead. It is soluble to a clear liquid only after addition of an acid; the larger crystals are remarkable by their transparency and their form, being a compound of octahedra and cubes. In testing for lead, sulphuric acid cannot be used, since the resulting sulphate of lead is soluble in bromide of potassium. But if hydrosulphuric acid or sulphide of ammonium is used, no doubt can arise.—*Pharm. Zeit.*