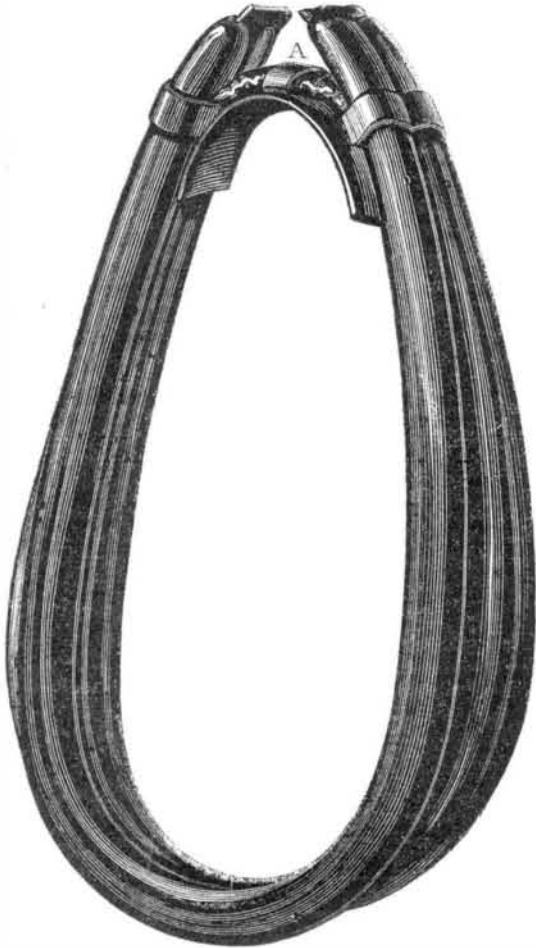


ALVORD'S ELASTIC HORSE COLLAR.

In the annexed engraving is shown an improvement in horse collars, patented Aug. 28th, 1866 by Clark Alvord, of Westford, Dodge county, Wis. It consists of an elastic coupling at the top of the collar, as shown at A. The first advantage resulting from such coupling is that the collar can be easily put over the horse's head when harnessing, and as easily taken off, no unbuckling to be done. Second, the coupling being elastic and fastened a short distance below the top of the collar, the bearing upon the neck is a spring which keeps the collar up to the lower part of the neck, yet not so rigidly as to choke the horse when drawing.



The top being open renders the collar adjustable, so that the movements of the shoulders of the horse when traveling do not cause the bearing of the collar to twist about upon, and when trotting, pound his neck. Hence no sore necks, as often happens with collars of the usual make.

For further information address the patentee, at Westford, Dodge county, Wis. See advertisement on another page.

THE ANTIQUITY OF MAN.

The New York Lyceum of Natural History were addressed at a late meeting by Prof. J. H. McChesney, of the University of Chicago, formerly United States Consul at Newcastle, Eng., who, just returning from a visit to the different European localities where evidences of great antiquity of the human race have chiefly been found, was enabled from personal investigation to present some new and interesting facts relative to this subject.

After referring to the flint implements found in the drift at Kempston and Biddenham, England, at St. Acheul, near Amiens, France, he spoke at some length of a locality in Italy not so well known as the preceding, but which furnishes almost indisputable proof of the presence of man upon the earth long ages anterior to the six thousand years which has generally been considered as limiting the period of his existence here. The evidence is the recurrence, in the drift stratification on the banks of the river Tiber, of flint arrow heads and implements which could only have been modeled by the hand of man. Now this accumulation of boulders and pebbles forming the drift is derived entirely from the Appenine mountains, and no trace exists in it of the Latin mountains, a chain now lying intermediate between the Tiber and the Appenines, but which is thus proved to be of later origin. Far above the drift is a layer of volcanic tufa derived from the latter chain, and this forms the foundation for towns which existed long before the building of Rome. Dating now from the latter event: from the known rate of disintegration of the rock forming this foundation, an approximate calculation can be made as to the period which has elapsed since the formation of the Latin hills, and it must be admitted that six thousand years is by far too limited a period to ascribe to the time of man's continuance on this mundane sphere.

In the discussion which followed the highly interesting remarks of Prof. McChesney—of which we have given above but the crudest summary—Prof. Hitchcock spoke of several cases which had come under his observation where so-called antiquarian traces might be easily explained away. The President replied that proof in the subject under consideration was cumulative; that while isolated cases might perhaps be explained, when the evidence is found in widely separated regions and under different conditions, it is but reasonable to acknowledge some connection existing between them.

Prof. Seeley called attention to the relation which this

subject of man's great antiquity bore to the most important question of the age, *i. e.*, the unity or diversity in origin of the human family. The early relics of the "stone age" are found in both Americas, Europe and Asia, but their rude form proves that they were fashioned by tribes not excelling in either ingenuity or skill, and it may well be questioned whether—supposing we admit the claims for the plateaus of Central Asia as the birth place of the race—they were possessed of sufficient enterprise to traverse Europe, or, on the other hand, to scatter through Asia and reach the New World by the perilous passage of Behring's straits.

FRANKFURTH'S FUNNEL HEAT RADIATOR AND DAMPER.

With all the improvements in the construction of stoves, furnaces and other heating apparatus, much of the heat is wasted by passing off through the chimney. When a rapid draft is desired probably this waste, or a portion of it, is unavoidable, but devices are in use which retard the passing off of the products of combustion and yield a portion of the heat which otherwise escapes. Of the many contrived the engraving accompanying this description represents one of which the patentee says that 1,400 have been sold and not one returned as not having given perfect satisfaction.

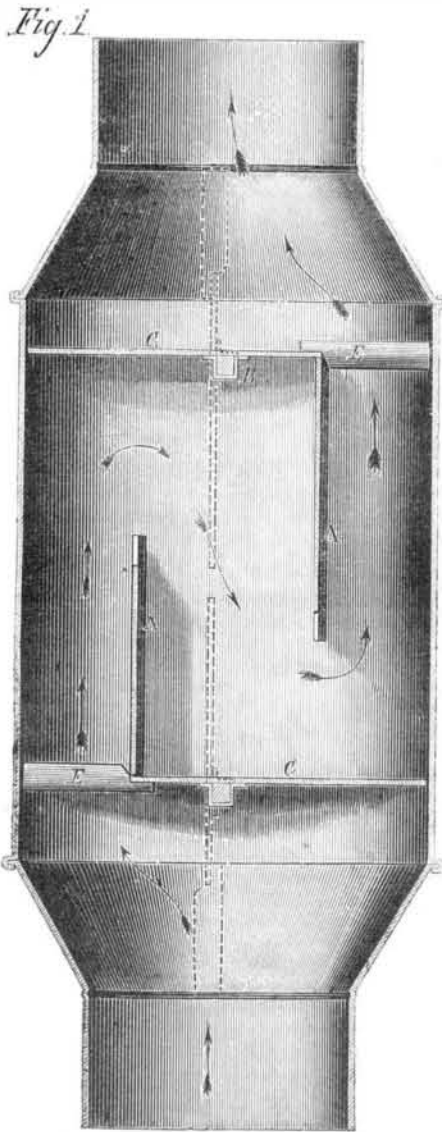
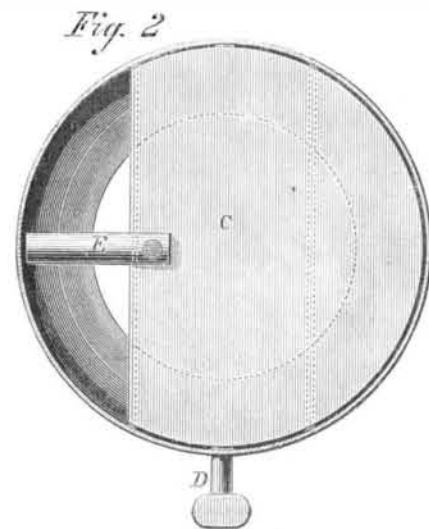


Fig. 1 is a vertical section of the drum containing the radiating partitions and dampers, Fig. 2 is a plan view of one of the dampers closed. The drum may be considered an enlargement of the stove funnel having longitudinal partitions, A, fixed midway between the axis of the drum and its exterior. B are shafts of the dampers, C, turned by the handles— one shown at D, Fig. 2. It will be seen that the dampers are



segments of a circle, the uncovered or open portion having attached a weighted bar, E—both figures—as a balance. When the dampers are closed as in Fig. 1, a space between the rim of the damper and the inside of the cylinder is free or open. The dotted lines in Fig. 1 show the position of the dampers when turned to give ample room for the escape of the gases, and those in Fig. 2 show the position of the per-

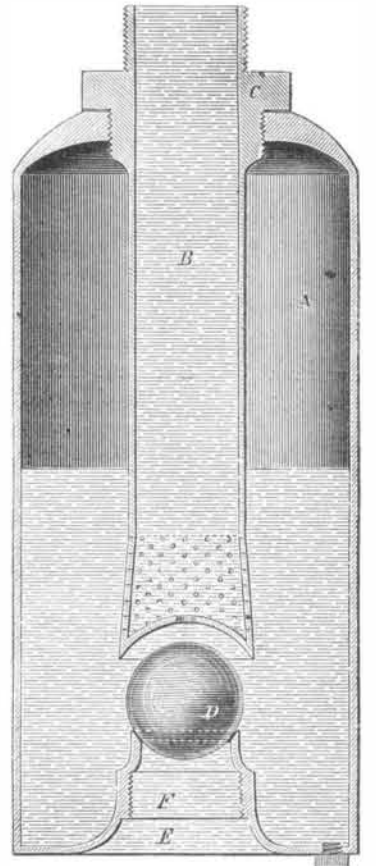
manent partitions. The arrows in Fig. 1 give the course of the up-rising gases.

When a fire is started in a stove or furnace to which this device is attached, the dampers, C, are opened to give the fullest draft. When the fire is well under way the dampers are closed and the gaseous products of combustion follow the direction of the arrows, and impinge on the inner surface of the drum, imparting their heat through this medium to the room. This device was patented through the Scientific American Patent Agency, January 24, 1865. All orders or communications relative to it should be addressed to Wm. Frankfurth, 306 Chestnut street Milwaukee, Wis.

HILTON'S IMPROVED AIR CHAMBER FOR PUMPS.

The object of the device exhibited in the engraving is to provide a method of procuring a steady and uniform current, and of straining the water from foreign matters held in solution or sedimentary deposits. The engraving presents a central vertical section of an air chamber showing the arrangement of the parts.

A represents the shell of the air chamber, and B an interior tube attached to the top of the chamber by an airtight connection, C. The end of the tube is perforated, forming a concave strainer directly over the ball valve, D, which has its seat on the conical chamber, E. The lower tube of the pump is connected to the section of pipe, F. The annular space around the conical chamber, E, is a place of deposit for the sediment, which may be removed at the screw plug.



The water or other liquid being forced into the chamber through the lower tube, raises the globe valve, and passes into the chamber until the compressed air between its level and the top of the vessel, by its reaction, forces it through the strainer out through the discharge pipe, B, the strainer preventing any foreign substance from passing into the tube, and the conical form of the combined valve and the inlet chamber facilitating its deposition on the bottom of the vessel. The concave bottom of the strainer secures the return of the globe valve to its seat after having been raised.

This patent was obtained through the Scientific American Patent agency, November 19, 1867, by Richard H. Hilton, assignor to Mitchell, Allen & Co., who may be addressed relative to the invention, at Newbern, N. C.

Protection of Life in Public Buildings.

A suggestion from the dramatist, Dion Bourcicault, in regard to the protection of life and property from fire in places of public entertainment, which we find in one of our city exchanges, is worthy of notice. He proposes a plan like this:—Above the stage, and co-extensive with it, there is a grid-iron floor, from which hangs the pendent scenery. Let the timbers of this floor, which is open work, be laid on their under-face with lines of small iron pipe, forming a gridiron pricked at every inch with holes; let this system be in communication with the water main. Let one lever which turns on the water be against the wall of the stage on the inside, another corresponding lever contiguous but on the outside, so that the water may be turned on by a person either outside or inside the building. The effect of this operation would be to let fall a continuous and even deluge, more effectual in checking fire than the jet from the hose, because it not only addresses itself to the seat of the fire, but to adjacent material. A similar gridiron process should be introduced underneath the stage; another on the rafters over the auditorium, and a fourth in all available places around the ceiling, so placed that the rain from such would fall or be projected on the wood-work of the boxes and stalls. Each of these systems should have a separate main, so that each could be brought into operation separately; yet the whole might be under the operation of one master main, by turning on which the whole theater, from the back of the gallery to the rear of the stage, could be deluged in a moment.

MESSRS. C. A. STEVENS & Co's., jewelry establishment on Union Square, this city is one of the most elegant and complete houses of the kind in the city. It is the pioneer establishment of that portion of the town, and is well stocked with fine jewels, plate, bronzes, etc. The firm have associated with them Mr. Emile E. Evers, well known from his former connection with Messrs. Ball, Black & Co.

In annealing hard cast iron or steel oxide of iron is useful. The scales of the forge should be saved for this purpose.