FATTENING CHICKENS BY MACHINERY.

It seems to be generally admitted by *gourmands* that no chickens of mechanical fattening have such exquisite flavor as those submitted to the process. In the Gardens of Acclimatation at Paris, this is very scientifically practised under the direction of M. Odile Martin. "Its advantages," say the authorities, "do not consist in the rapidity of the process alone, but above all in the special quality of the meat thus produced. It is solid, very tender, exceedingly fine-grained, not overfat (which would not be an advantage), very white in color, and of a flavor quite exceptionally excellent."

If this is so, of course there is no help for the chickens. They must perforce enter their *épinettes*, and be mathematically crammed. Behold here the ingenious contrivance of the Gardens of Acclimatation for manufacturing this "exceptionally excellent" flavor!

It is a huge cylinder with fourteen faces, each in five stories of three compartments each. It holds, therefore, 210 fowls. The cylinder is hollow and empty, except for the axis on which it turns. This hollow construction renders it easily ventilated and kept clean. Before it is a box for the operator. This box, or carriage, moves up and down by pulleys. The *gaveur*—that sounds less offensive than crammer—operates thus: Commencing at the bottom of one of these fourteen faces, he seizes with the left hand the neck of the chicken; and pressing on each side of the beak, the bird is forced to open its mouth, as any lady knows who has doctored a sick chicken or canary. The *gaveur* then introduces the metallic end of the rubber tube into the throat of the chicken, and by a pressure of the foot on a pedal the food rises, and at the same time the amount passing through the tube is indicated on a dial in front of the operator. It is therefore a skillful operation; for the *gaveur*, whatever other motions are necessary, must pay strict attention to the needle on the dial, or he will give his chicken too much or too little. The three chickens duly fed, he turns the cylinder on its axis a little, and the next face of it is before him. When he has completed the round he turns the crank, and the carriage rises to the next story; and so he goes on to the top. Having completed the upper circuit, every chicken in that *épinette* is duly fed. Then he turns the crank in the other direction, and the carriage descends to the floor, where it rests on a railroad. It is then moved along before the next *épinette*, and the whole operation on 210 more chickens is repeated. A skillful operator will *gave*, or cram, 400 chickens in an hour! That is less than nine seconds to each one; for the time to move the cylinder, to move the carriage up, down, and to the next *épinette*, must be counted out.

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Under this *épinette* régime, it requires an average of fifteen days to fatten a duck, eighteen for a chicken, twenty for a goose, and twenty-five for a turkey. The food used for chickens is barley and corn meal mixed with milk into a dough so thin that no other liquid is necessary. The ordinary quantity given is from ten to twenty centiliters, or from seven tenths to one and four tenths of a gill each time; but this quantity is reached gradually. When the maximum that any chicken can assimilate is found, the number indicating this quantity is placed before its compartment, and the *gaveur* must measure it exactly on the dial.

Truly this is an age of wonders. What a labor-saving invention this *épinette* must be to the chickens! Maybe it is not wise to give these details. What if some enterprizing American should be thereby tempted to invest his whole fortune in a grand improved automaton steam power *épinette*, warranted to feed ten thousand chickens a minute! —*Harper's Magazine.*

JUPITER'S SATELLITES.

M. Camille Flammarion, the distinguished French astronomer, says in *La Nature* that on March 25 last the planet Jupiter offered in the telescope the curious aspect of being unaccompanied by any of his satellites. The first was concealed behind the disk. The second and third passed over the face of the planet, accompanied by their shadows, and the ourth was at its greatest elongation and hence far out of the field. The appearance of the planet is shown in our

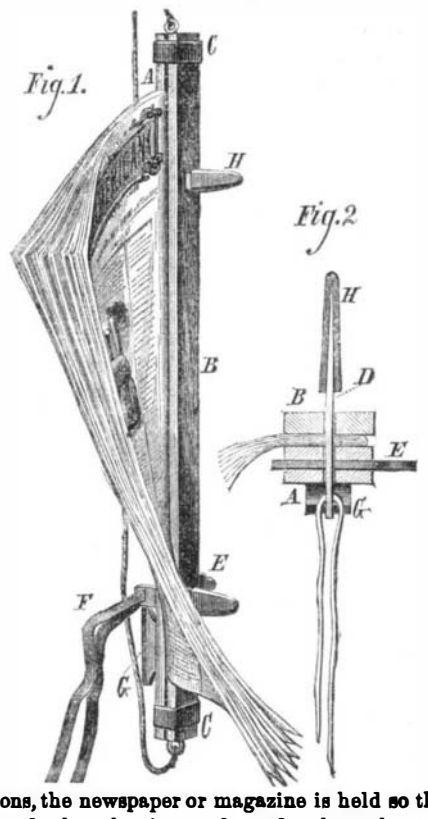
illustration, the disk being divided into parallel zones, the darkest of which extended below the equator for some 20°. Above this was a broader and lighter band, and then a white region, terminating at about the 50th degree of latitude in a gray zone. On the white belt was projected a black spot, No. 1, near which was a second circle, No. 2, of a grayish color. A third point was with difficulty discernible at 3, passing along the upper limit of the gray band. By noting the changes in position of these spots, M. Flammarion reached the conclusion that No. 1 was the shadow of the third, and No. 2 of the second satellite, both of which were passing over the planet, and that No. 3 was the third satellite itself. Consequently at the period of observation there must have been upon Jupiter two total simultaneous and contiguous eclipses of the sun.

The various shades of the spots lead to the determination of some curious and important facts regarding the satellites. The second satellite was evidently more luminous than the third, since it remained invisible on the white zone; while the third was even darker than the gray belt over which it traveled. The latter in fact was hardly brighter than the shadow of the second. Stranger still, the shadow of the third was blacker than that of the second. This cannot be ascribed to the 0·5″ difference in size, or to the effect of the penumbra, for the latter is practically nothing; and hence M. Flammarion considers it due to refraction produced across an atmosphere enveloping the second satellite. It is well known that in certain eclipses of the moon the refraction produced by the terrestrial atmosphere is so considerable that even the central region of the lunar disk is not totally darkened, and remains red like the entire moon.

The third satellite, ordinarily white, appeared darker, and hence must either have become changed in the physical condition of its atmosphere or else have turned another side. Dawes, Lassell, and Secchi have, however, all distinguished spots on the body; and to the exposition of these, its clouded appearance was probably due. Hence it revolves, but, unlike our moon, in a period different from that of its revolution around the planet.

THE NE PLUS ULTRA NEWSPAPER AND MAGAZINE FILE.

In the ingenious form of file represented in the annexed



illustrations, the newspaper or magazine is held so that each page succeeds the other in regular order throughout the entire volume, similarly to the pages of a book. Every journal is clamped securely in its place, and after the numbers, making a volume, are complete, binding by tapes may be quickly and easily effected without necessitating the displacement of a single paper. For libraries and reading rooms, where many periodicals are received which are subsequently bound for preservation, we think that this invention will prove quite convenient, as it saves the necessity of re-arranging the copies after removal from the files, and of the somewhat tedious process of piercing each one in order to pass through the tapes which temporarily hold the sets together for the binder.

Fig. 1 of our engraving gives a perspective view of the file with papers clamped therein. There are two bars of wood or other suitable material, A and B, of which the rear bar, A, is the thickest. These are held together by rubber bands, C, which, secured to bar, A, slip over the ends of the bar, B. Any other convenient and similar fastening may be employed. Through both bars, at a suitable distance from each end, are slots, through which pass blades, D, the forward ends of which are made lancet-shaped, to enable them to pass readily through the papers. As shown in the sectional view, Fig. 2, these blades are secured in the rear bar by pins, E, which pass through said bar and through holes in the blades. The rear ends of the latter project, and have eyes through which tapes, F, are threaded. At G are rubber blocks, which serve as fenders to keep the projecting extremities of the blades from marring the wall against which the file may be suspended. Sheaths, H, of wood or other material, are also provided to protect the sharp ends of the blades, and there is a cord attached, as shown, for hanging up the device.

In using the file the caps, H, are removed, and bands, C, slipped off. The bar, B, being removed, is laid in proper position upon the back margin of the last page of the paper, when both the latter and the bar are pressed against the points of the blades, so that the same pass through the slots in the bar. The bar and paper are then pressed back against the bar, A, and the bars and caps replaced. When the file is full, the pins, E, are removed, and the blades and tapes drawn through the bars. The bar, B, is then detached as before described, the papers are removed, and the tapes are tied behind, forming a volume ready to be laid away or sent to the binder.

Patented through the Scientific American Patent Agency, March 24, 1874. For further information regarding proposals to manufacture, royalty, etc., address the patentee, Mr. Alexander L. Whitehall, Watseka, Iroquois county, Ill.

THE WONDER CAMERA.

A "wonder camera" is a sort of magic lantern, so contrived as to enable one to use opaque objects for projection upon the screen instead of glass transparencies. For example, if a photographer wishes to show his customer how an enlargement from a carte will look, he simply has to put the carte in the "wonder camera" and "throw it up." Many enlargement scales may be made in this way. Any person may make a "wonder camera" for himself on a plan given by Mr. T. Carter. He says:

"After experiment I have succeeded in making the above

FIG. 1.

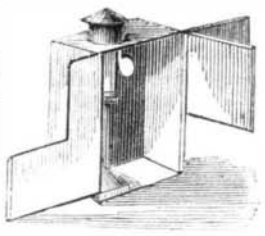
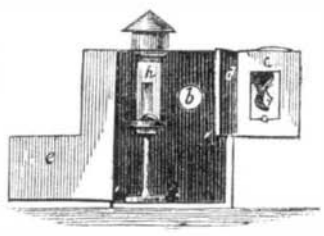
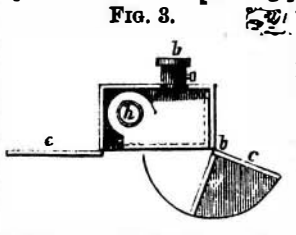


FIG. 2.



instrument in a very simple manner. It consists of a wooden box, with a top made of tin or sheet iron; the chimney is made of the same material. The lens is the same as used upon a camera for making photographs. At the back of the box (as will be seen by reference to the elevation and plan Figs. 2 and 3) are two doors placed upon hinges.

FIG. 3.



When the box is in use, the door, *e*, is kept closed. The other door consists of two parts placed at right angles to one another; the object of this is to fill the opening in the door, *e*, while the pictures are being attached to *c*; when *c* is swung into position opposite, the lens, placed at *b*, *d*, is carried to one side. If stereoscopic views are to be shown, a slit may be cut, at *e*, through which they may be inserted without opening the box. The door, *e*, should be cut off a little at the bottom so as to admit air. The light is placed at *h*, as nearly opposite the picture as possible. It should be a strong light; an argand burner is the best. At the back of the light is a piece of tin, bent into the form of a reflector. The light coming from *h* strikes *c*, and is reflected through the lens upon the screen. The plan of the box is represented with the top removed. I have given no dimensions, as they will depend upon the focal distance of the lens and hight of the light. Care must be used to have the distance from the lens to *c*, when closed, equal to the focal distance."—*Photo. News.*

IN India, a timber bridge of 205 feet span has been erected, principally of satinwood.