

**THE CABARET DU NEANT.**

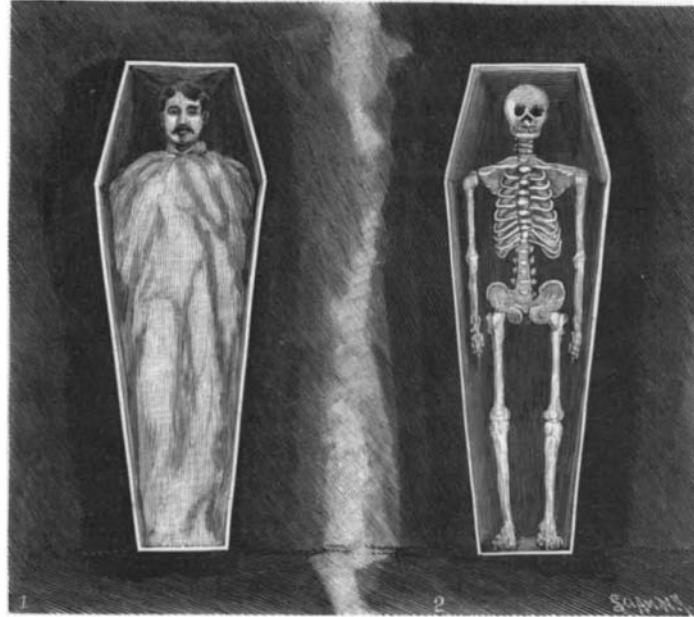
A most interesting performance, based upon the principles of the well known "Pepper's ghost," is now on exhibition in this city, with sundry somewhat fantastic accessories and developments justifying the title of "The Cabaret du Neant," or "Tavern of the Dead" ("non-existing"), which has been given to it by its proprietors. It is a recent importation from Paris. While the principal interest of the exhibition centers in the ghost effects, which we illustrate, a word or two may be said of the sequence of acts.

The spectators pass through a long hall hung with black and find themselves in a spectral restaurant. Along the walls coffins are placed for tables, and on the end of each coffin is a burning candle. From the center of the ceiling hangs a what is termed "Robert Macaire's chandelier," made to all appearances of bones and skulls. The spectators are here at liberty to seat themselves at the tables and are served with what they desire by a mournful waiter dressed like a mute with long crape hanging from his hat. Around the walls of the room are placed pictures to which the spectator's attention is called by the lecturer. Seen by the light of the room these pictures are ordinary scenes, but a new aspect is given to each when lights directly behind it are turned on; the figures in it appear as skeletons, each picture being in fact a transparency giving a different effect as it is lighted from the rear or as seen simply by reflected light. The second chamber is now entered; it is hung with black throughout. On the walls tears are painted, and in close juxtaposition are two somewhat incongruous inscriptions, "Requiescat in pace," and "No smoking." The reason for the latter admonition, which is also given by the lecturer, is that for the success of the illusion an absolutely clear atmosphere is essential. At the end of this second chamber, at the back of a stage, is seen a coffin standing upright, in which one of the audience is requested to place himself. Entering the stage by the side door, he is conducted by an attendant to the coffin and placed in it. Blocks of wood are placed for him to stand on in quantity sufficient to bring his head to the right height so that the top of it just presses against the top of the coffin, and the attendant with great care adjusts his height according to the predetermined position. Two rows of Argand burners illuminate his figure, which is then wrapped in a white sheet. Now, as the spectators watch him, he gradually dissolves or fades away and in his place appears a skeleton in the coffin. Again, at the word of command the skeleton in its turn slowly disappears, and the draped figure of the spectator appears again. The illusion is perfect to the outer audience; the one in the coffin sees absolutely nothing out of the common. His interest, if he knows what is going on, is centered in watching the changing expression of the spectators, being increased by the fact that at their period of greatest astonishment he is absolutely invisible, although directly before them and seeing them more plainly than ever. After the restoration to life one or more auditors are put through the same performance, so that the recent occupant of the coffin can see what he has gone through.

The third chamber is now entered, somewhat similar to the

second, but on its stage is a table and seat, all the walls being lined with black. One of the auditors is invited to seat himself at the table on the stage. He does it, and, as before, sees nothing. While the description of the lecturer and the appearance and

When exhorted to help himself to the liquid, the performing spectator's idle gestures show that he certainly does not see the glass, through which his hand passes unobstructed. Or perhaps it is a woman who appears and makes the most alluring gestures toward him who never sees her. This concludes the exhibition which as accessory has the strains of a funeral march, the ringing of deep sounding bells as room after room is entered, and the appearance of a brown robed Charon to introduce the spectator to his place in the coffin. In one of our illustrations we show, side by side, the coffin with its living occupant draped in a sheet and in the other the skeleton which appears in his place. Two other cuts show the scenes between the spectator at the table and the specters, illustrating how active a part the specters take, they being no mere painted appearances, but evidently living, moving things. Our large illustration shows precisely how it is done and so clearly that an explanation is hardly needed. The floor of the stage is represented. To the left are seen the spectators and the performer at the piano discoursing his lugubrious melodies. To the right is seen Charon, and directly in front of him the coffin with its living occupant. When lighted up by the burners shown near him, the other burners being turned down, the coffin with its occupant is all that is seen by the spectator. Directly in front of the coffin, crossing the stage obliquely, is a large sheet of the



THE SUBJECT AND HIS SKELETON.

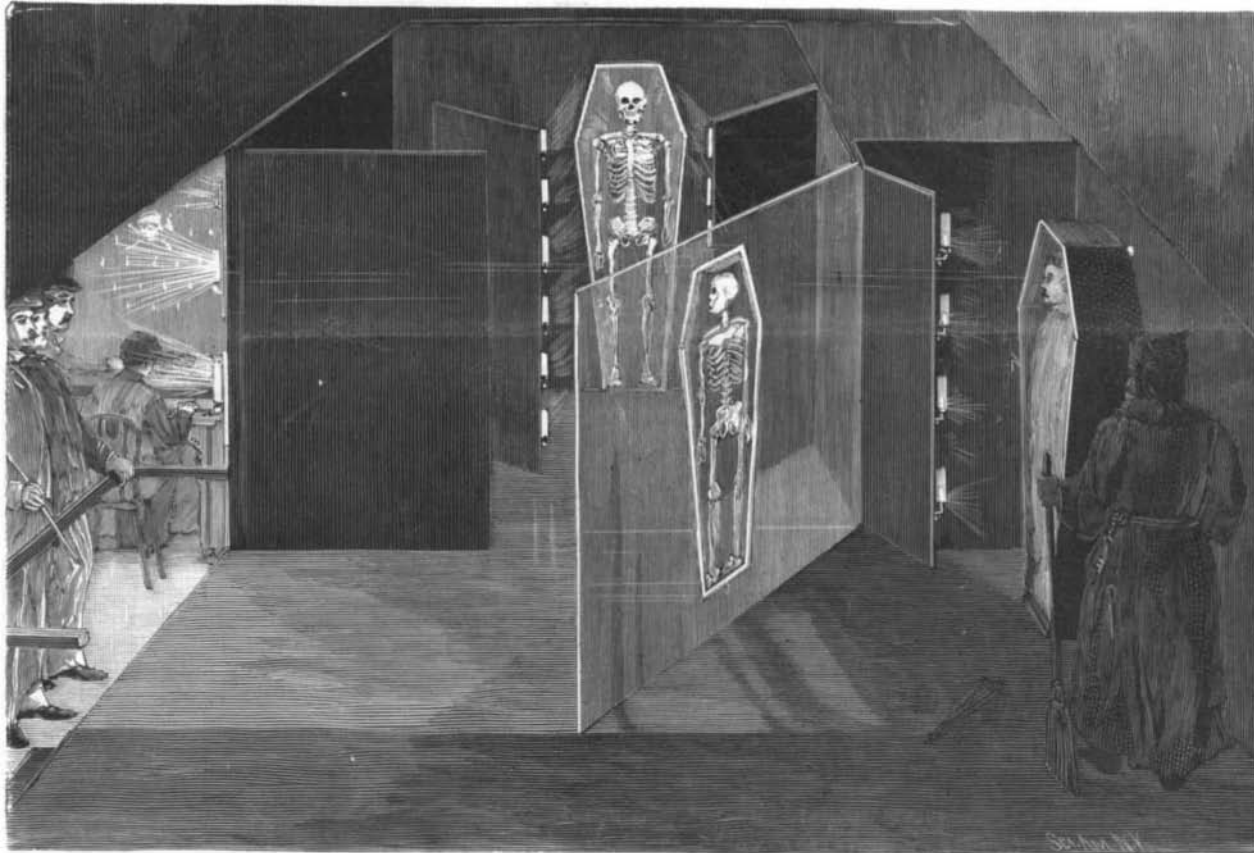
comments of the audience tell him that something very interesting is going on, the remarks will probably disclose to him the fact that this time at least he is never out of their sight. He leaves the stage and his place is taken by another, and then he understands

clearest plate glass, which offers no impediment to view of the coffin with its occupant, when the latter is fully illuminated. At one side of the stage, in the back of the picture, is a painting of a skeleton in a coffin with its own set of Argand burners. It is screened from view. When strongly illuminated, and when the lights of the real coffin are turned down, the spectators see reflected from the glass a brilliant image of the pictured coffin and skeleton. By turning up one set of burners as the others are turned down a perfect dissolving effect is obtained, skeleton replacing spectator and vice versa at the will of the exhibitor.

The magic lantern operator always realizes that to secure a good dissolving effect perfect registration is essential. In the securing of this lies the secret of the coffin exhibit of the Cabaret du Neant. By the blocks on which the occupant of the coffin stands, and by the adjustment of his head by the attendant, the head is brought into perfect registration with the reflected head of the skeleton. The wrapping;

with the sheet, presumably the enveloping in a shroud, is done with a purpose. It covers the body from the shoulders down and extends to the very bottom of the coffin, covering the blocks also, thus doing away with all defects of registration which would be incurred in the persons of spectators of different heights. In other words, the exhibition fits out everybody with a skeleton of precisely the same height, however tall or short he may be, the draping of the sheet and accurate position of the head concealing from the spectators this inaccuracy, the skull occupying precisely the place of the head, the rest taking care of itself.

Still referring to the large cut, it will be seen that it serves to explain the exhibition in the other chamber. Instead of the coffin there is the table and chair, and in place of the pictured



AN X RAY ILLUSION UPON THE STAGE—CONVERSION OF A LIVING MAN INTO A SKELETON.

the nature of the drama in which he has been an unconscious participator. He sees the other spectator seated alone at the table. Suddenly a spirit, perhaps of an old man, appears at the other side of the table, while a bottle and glass, are seen upon the table.



THE SHEETED GHOST.



THE FEMALE SPIRIT.

skeleton a live performer is placed. In this act there is no dissolving effect; by turning up the lights at the side of the stage any object desired and performers dressed as spirits are made to appear upon the stage, being reflected from the glass plate. The spectators simultaneously see their companion sitting at the table and the reflections of the ghosts apparently executing their movements about him.

From the scientific as well as scenic aspect, the exhibition is most interesting, and to one who knows how it is performed, the interest is vastly enhanced. To properly enjoy it, the stage position should be taken during one or both performances.

The Roentgen rays are utilized in the advertising matter also, although John Henry Pepper, of the old London Polytechnic, may lay some claim to discovering the full utilization of the rays actually used in the Cabaret du Neant.

**A MINER'S TOOL AND CANDLESTICK.**

For holding a miner's candle in place on his cap, or for attaching the candle to the walls of a mine, the device shown in the accompanying illustration has been devised, the same implement being also adapted to cut fuse, crimp cartridges and tamp blasts. The improvement has been patented by Adolph O. Sjöholm, of Negaunee, Mich. The device has a nearly circular handle, on a screw-threaded projection of which is mounted the cartridge crimper and fuse cutter, the rotative member of which lies clamped in folded position when not required for use. A sharpened point projects from one side adapted to be inserted in a crevice of the wall or in a timber to hold the candle, a thumb nut then locking the device in the desired position. A screw-headed sleeve on the body of the device supports a hook adapted to be inserted in the miner's cap or hat, and the hook is held in position by engagement with a bent spring metal band which forms a socket to receive the candle. In the opposite end of the handle is a socket piece adapted to receive and hold a pin or peg of wood or other soft material to be used for tamping charges, the peg being swung back into the handle when not required for use. The whole device may be folded to take up but little space, when it may be conveniently carried in the pocket.

**PRACTICAL EXPERIMENTS FOR THE DEVELOPMENT OF HUMAN FLIGHT.**

BY OTTO LILIENTHAL.

Whoever has followed with attention the technical

treatises on flying will have become convinced that human flight cannot be brought about by one single invention, but is proceeding toward its perfection by a gradual development; for only those trials have met with success which correspond with such a development. Formerly men sought to construct flying machines in a complete form, at once capable of solving



SJÖHOLM'S MINER'S TOOL AND CANDLESTICK.

the problem, but gradually the conviction came that our physical and technical knowledge and our practical experiences were by far insufficient to overcome a mechanical task of such magnitude without more preliminaries.

Those proceeding on this basis therefore applied themselves, not to the problem of flying as a whole, but rather divided it into its elements, and sought first to bring a clear understanding into said elements which should form the basis of final success. For example, take the laws of atmospheric resistance, upon which all flying depends, and regarding which, until very recent years, the greatest uncertainty has existed; these have now been defined to such an extent that the different phases of flight can be treated mathematically. Besides which, the physical processes of natural flight of the creatures have become

the subject of minute investigation, and have in most cases been satisfactorily explained. The nature of the wind, also, and its influence on flying bodies, have been carefully studied, thus enabling us to understand several peculiarities of the birds' flight hitherto unexplainable, so that one can apply the results thus obtained in perfecting human flight.

The theoretical apparatus needed for the technics of flying has been enriched so much by all these studies within the last few years that the elements of flying apparatus can now be calculated and constructed with sufficient accuracy. By means of this theoretical knowledge one is enabled to form and construct wing and sailing surfaces according as the intended effect renders it desirable.

But, with all this, we are not yet capable of constructing and using complete flying machines which answer all requirements. Being desirous of furthering with all speed the solution of the problem of flight, men have repeatedly formed projects in these last few years which represent complete air ships moved by dynamos; but the constructors are not aware of the difficulties which await us as soon as we approach the realizing of any ideas in flying.

From a raised starting point, particularly from the top of a flat hill, one can, after some practice, soar through the air, reaching the earth only after having gone a great distance.

For this purpose I have hitherto employed a sailing apparatus very like the outspread pinions of a soaring bird. It consists of a wooden frame covered with shirting (cotton twill). The frame is taken hold of by the hands, the arms resting between cushions, thus supporting the body. The legs remain free for running and jumping. The steering in the air is brought about by changing the center of gravity. This apparatus I had constructed with supporting surfaces of ten to twenty square meters. The larger sailing surfaces move in an incline of one to eight, so that one is enabled to fly eight times as far as the starting hill is high. The steering is facilitated by the rudder, which is firmly fastened behind in a horizontal and vertical position. The machines weigh, according to their size, from fifteen to twenty-five kilogrammes (thirty-three to fifty-five lbs.) In order to practice flying with these sailing surfaces one first takes short jumps on a somewhat inclined surface till he has accustomed himself to be borne by the air. Finally he is able to sail over inclined surfaces as far as he wishes. The supporting capacity of the air is felt, particularly if there is a

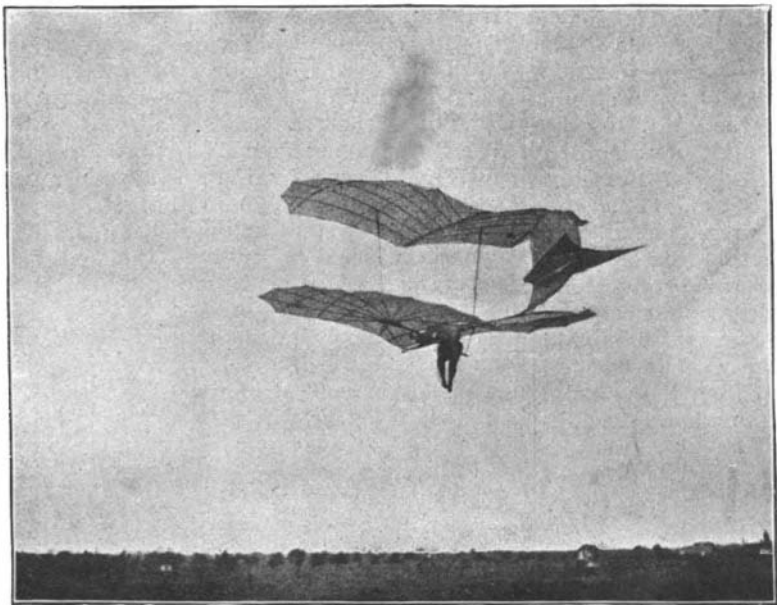


Fig. 1.

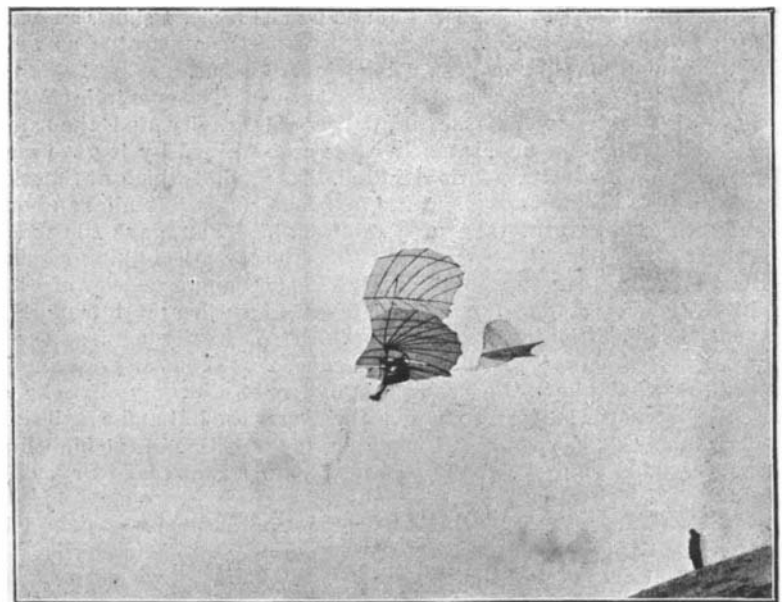


Fig. 2.

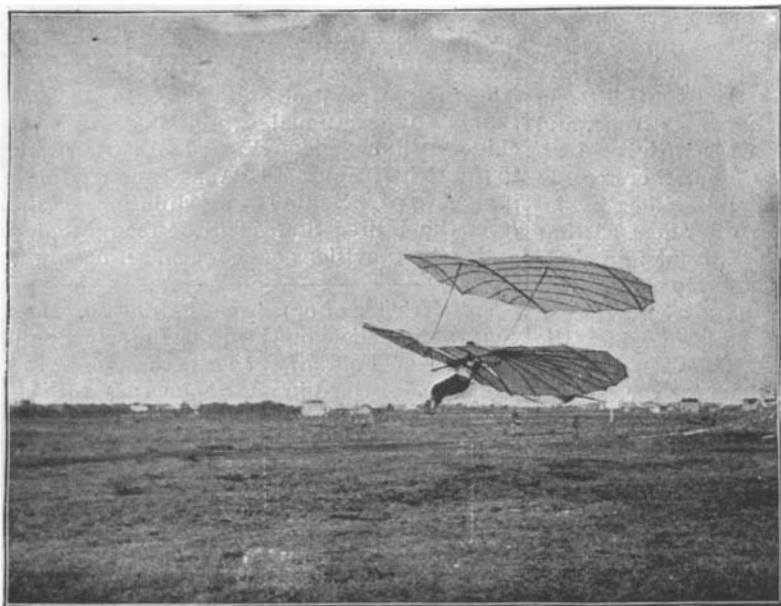


Fig. 3.

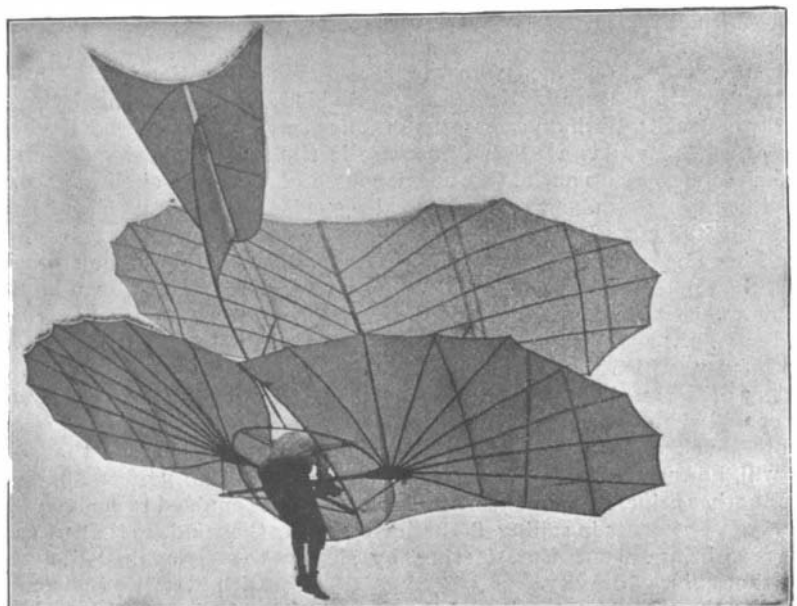


Fig. 4.

**OTTO LILIENTHAL'S LATEST FLYING MACHINE.**