

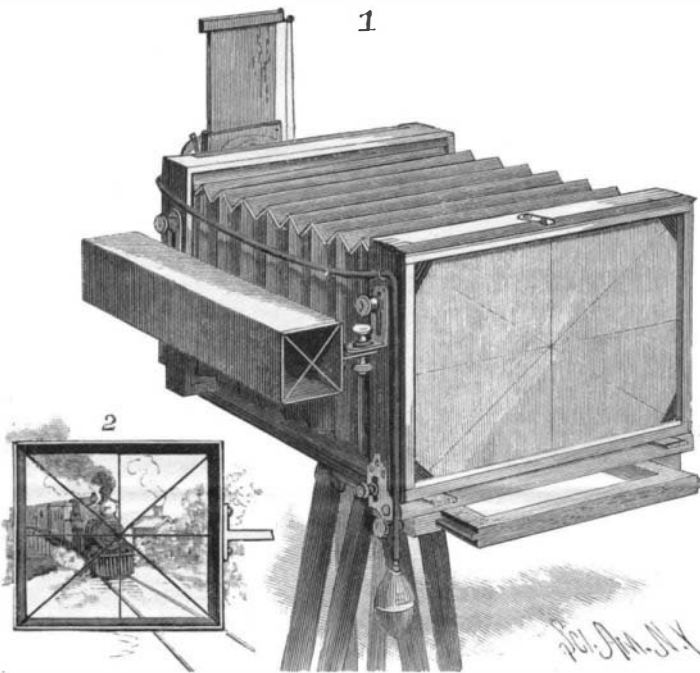
PHOTOGRAPHIC CAMERA FOR INSTANTANEOUS VIEWS.

The purpose of this camera is to place the object to be taken with unerring certainty in the center of the sensitive plate, and by it the operator is enabled to take pictures with increased facility while holding the camera in the hand, or even while walking. With a camera so fitted and provided with a drop shutter, pictures of moving animals and groups of people may be readily taken, the pictures being free from stiffness and true to life. The drop shutter of the instrument may have the usual spring handle, but instead of being released by a touch of the finger, which necessitates reaching the hand in front as far as the lens, it may be released by a pneumatic attachment connected by a rubber tube to a rubber bulb at the back of the instrument (as shown) within convenient reach of one hand. Pressure on the bulb instantly operates a piston which releases the shutter. The drop shutter may also be so constructed as to be operated by a slight pull on a string extending to the rear of the camera.

The attachment forming the main subject of this invention, which has been recently patented by Mr. Henry Correja, of 25 Avenue de Villiers, Paris, France, consists of a tube having, preferably, a square transverse section, and having such length, proportioned to the camera on one side of which it is arranged, as to protrude at both its ends through holes in the black cloth usually used on the camera. The forward end of the tube, near the lens of the camera, has cross hairs arranged a little distance within it. One of the cross hairs, which are narrow strips of metal or other material, is placed in a vertical and the other in a horizontal position, so that they divide the "field" in the tube into four equal parts. The back end of the tube is also divided into four equal parts by cross hairs arranged diagonally in relation to the tube. The inventor terms this tube the "finder." To one of its sides are secured two slotted bars arranged at suitable distance apart according to the size of the camera, while in grooves opposite them and connected with the camera are two other bars having corresponding slots; these bars slide up and down, and are secured by binding screws. Marked upon the ground glass of the camera are lines corresponding in arrangement with the cross hairs in the tube.

Before proceeding to take an instantaneous photograph, the object is focused on the ground glass in the camera in the usual way. The operator then looks

through the finder and moves it sidewise at either end, or up and down, by means of the slotted bars until the cross hairs occupy the same relation to the object focused as the pencil marks on the ground glass did. The tube is then locked in position by means of the binding screws, and the instrument is ready for use. After the object to be photographed has been properly placed in the field of the tube by the aid of the cross hairs, the operator releases the shutter with one hand while he

**PHOTOGRAPHIC CAMERA FOR INSTANTANEOUS VIEWS.**

carries the camera by its shut legs with the other hand. That the object will be properly placed on the sensitive plate with absolute certainty is evident from the fact that after the finder has been adjusted, the object will occupy the same relative position on the plate that it had in the field of the finder.

HOFFMANN'S NEW PLAN FOR A CEMETERY.

The question of cemeteries is one of very great importance, especially in large cities, and an unlimited number of moral, religious, sanitary, social, physical, and financial points must be considered. Cremation solves the problem, but prejudices prevent its early adoption.

A well known artist, Joseph Hoffmann, has designed a new cemetery, which is, no doubt, original. Its practical execution is very doubtful, but, nevertheless, the plan is of sufficient interest to be worthy of notice. Mr. Hoffmann does not intend to bury the corpses, but to place them in a gigantic mausoleum of sufficient size to receive many hundred thousand bodies. Each body is to be placed in a separate compartment, which is hermetically closed. The cells or compartments are each to be about 7 feet long, 3 feet wide, and 3 feet high, and are lined on the inside with glazed tiles, so that no infectious liquids, etc., can be absorbed by the masonry. The general shape of the mausoleum is that of a pyramid surrounded by smaller pyramids, pavilions, arcades, etc.

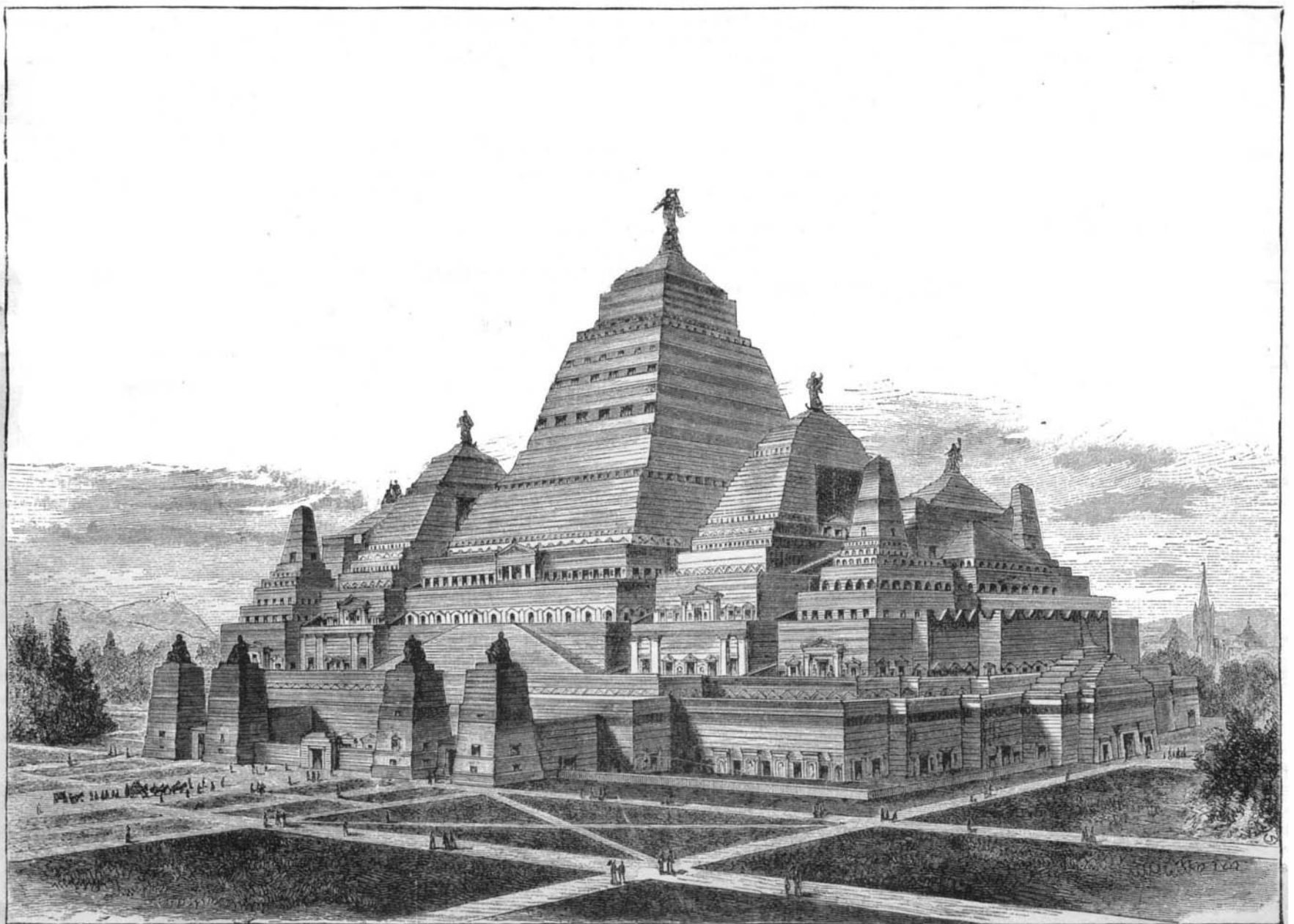
In the annexed cut, taken from the *Illustrirte Zeitung*, one of Mr. Hoffmann's designs is shown. This represents a structure of enormous magnitude, and as the entire building, from the foundation to the top, is honeycombed, or built with cavities, it is evident that a large number of bodies can be entombed therein. The cells are to be so cheap that even the poorest can have his own cell, and his bones need not be disturbed after a certain number of years, as is customary now in our cemeteries.

Phosphoric Acid from Slag.

Herr Blum, at Alzette, in Luxemburg, has a process for utilizing the phosphoric acid from the basic Bessemer process. Instead of adding lime to the iron during the blow, he adds carbonate of soda free from sulphur. This is introduced into the converter in a melted state, in the proportion of 5.13 parts to every one part of phosphorus, and 7.85 parts to every one part of silicon; then the pig iron is run in and blown as usual, when the slag is tipped out into an iron wagon. This slag contains phosphate and silicate of soda, and according to the nature of the lining it also contains more or less iron, manganese, lime, magnesia, and sulphur.

It may be used at once direct as a manure; or it may be treated first with cold water to extract phosphate of soda, which has a market for many purposes, after which silicate of soda may be extracted by hot water and used for making water glass, and the metallic residue may be used for making ferromanganese.

A pamphlet by the inventor undertakes to show that the process can be worked at a profit. At Creusot, in order to save carbonate of soda in working extra

**DESIGN FOR A CEMETERY, BY HOFFMANN, VIENNA.**

silicious pig iron, lime is first added to combine with the silica formed, and thus slag is removed, after which carbonate of soda is added and a second period of the blow takes place, the phosphoric acid combining with the soda as above. It is stated that vanadium to the value of several millions of francs is lost every year in the slags at Creusot, and that this could be separated from the first extract of the soda slags by cold water.

THOROUGHbred CATTLE.

During the decade ending 1880, the number of milch cows on farms in the United States increased 39 per cent, and then reached twelve and a half millions. A large portion of these cattle, except in a portion of the South and of the far West, had been greatly improved by the intermixture of thoroughbred blood from the choicest cattle of Europe, such as the Jersey, Alderney, Hereford, and more recently the Holstein, which are said to combine the excellences of both the Shorthorns and the Ayrshires. The importance of giving close attention to careful breeding has long been widely appreciated among intelligent farmers, in order to the development of sound constitution and symmetrical form, aptitude to fatten, quiet temper, and large milk yielding power; and the group of cattle herewith shown forms a picture which might well delight the eyes of any farmer or dairyman.

They are owned by Messrs. Buchanan Bros., of Chicago, who give us the following descriptions and explanations for publication. The young bull "Duke,"

of Niagara, 2030

H. H. B., was

calved July 2,

1883, sire "Cap-

tain" (546), dam

"Buda" (1140).

"Captain" is a

son of the famous

cow "Echo" (121),

and "Buda" was

from "Morning

Glory" by "Ma-

homet." He is a

fine, thrifty fel-

low, and bids fair

to make one of

the handsomest

Holstein bulls in

America. The

heifers are both

imported year-

lings of good size

and form. "Zee"

(5738 H. H. B.)

on the right, is a

remarkably hand-

somely animal. Her

dam has a milk

record of fifty-

eight pounds of

milk a day, as a

five year old.

Both her sire and

dam are registered

in the Netherland

Herd Book.

"Duskje" (5993

H. H. B.), on the

left, is very fine in

form. Her dam

also has a fifty-

eight pound record.

The entire herd now contains

about sixty head of pure bred Holsteins, of which the

above are said to be but fair samples.

Transformations of Paper.

The uses of paper, outside of its ordinary commercial purposes for printing, writing, and wrapping, are constantly increasing; its great cheapness suggesting its employment for widely differing purposes. Some of its latest uses, in view of its properties, as generally known, seem very curious, but are not more so than its employment as car wheels, in which it has been very successful. It is in fact one of the most adaptable products of the hand of man. One of the most remarkable uses is the manufacture of zylonite, which can be made in imitation of horn, rubber, tortoise shell, amber, and glass. Zylonite may be adapted to a wide variety of uses, but one of its most valuable is an imitation glass for cathedral windows.

The zylonite is much less brittle than either horn or ivory, and much more flexible. As imitation tortoise shell it can hardly be distinguished from the genuine article. In the manufacture of zylonite, plain white tissue paper, made from cotton or cotton and linen rags, is taken and first treated to a bath of sulphuric and other acids, in which it undergoes a chemical change. The next process is the washing of the paper to remove the acids, and it is then treated to another preparation of alcohol and camphor. Its appearance by this time is very much like parchment, and it can be worked up into plates of any thickness, and made

perfectly transparent, or can be dyed all the brilliant colors that can be given to silk.

SHEETS AND SHAMS.

A widely different use from the above is in the manufacture of counterpanes and pillow shams. These articles are composed of two sheets of No. 1 Manila paper. To hold the sheets together, and to strengthen the fabric, small gummed twine is used at distances of three or four inches. The sheets are also hemmed about the edges so as to prevent tearing. Handsome designs may be and generally are printed upon the upper surfaces of the shams and counterpanes. The articles are very neat, serviceable, and cheap. All wrinkles can be removed by hot flatirons. As the paper will prevent the escape of heat about as well as a woolen blanket, it can be made a very serviceable article of bed clothing, as it can be left upon the bed if desired.

Though paper pulp is not strictly paper, a glance at some of its uses is properly within the scope of this article. A recent use for which a patent has been granted is in the manufacture of sheathing and roofing papers. The sheathing paper is made from a pulp of spent tan bark, meadow hay, and mill waste as a center, with a layer of pulp on either side, composed of cotton or linen rags, waste papers, or a mixture of similar materials. The roofing paper has the same middle, but the covering is a pulp composed of satinnet and colored rags, shoddy, and straw. Both of these articles are said to be excellent for the purpose intended.

PAPER PULP FABRIC.

Perhaps the most important of the recent inventions

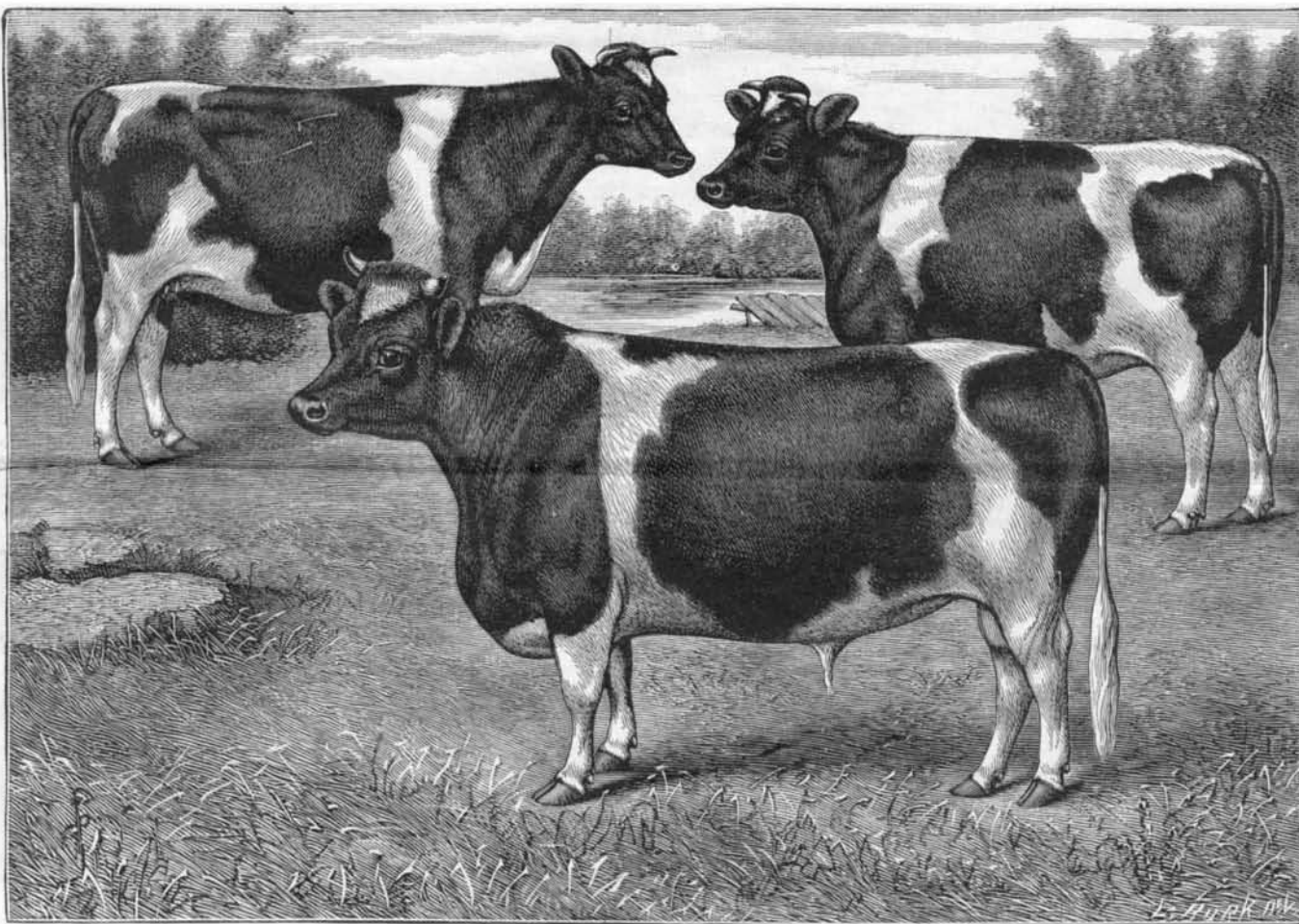
The fabric is afterward dried, and is then ready for use. Before being passed through the rolls and covered with the pulp, the wire cloth is waterproofed or not as desired.

The fabric looks exactly like paper of the same texture and quality. The surface of the fabric may be finished by painting, varnishing, etc., or by treating it with a fireproofing or waterproofing compound, or by covering it with finished paper, etc. As the fabric is a continuous sheet, pieces of the sheets can be easily cut into the proper shape for any use or for any article, especially those that can be formed without seam. The parts can be easily seamed together, however, if necessary, by paste or cement as in ordinary paper, and the joints may be united as perfectly as paper, as all the joints on the outer surface are of pulp.—*Com. Bulletin.*

A Rare Visitor.

The seventeen-year locust is making its appearance in great numbers in various parts of the country, though very few have been seen in Philadelphia as yet, says the *Inquirer*. For a long time after this insect had received its popular name, scientists were inclined to laugh at the theory that its visits were repeated at seventeen year intervals, but further study showed the accuracy of the unscientific observers. The harvest fly, as it is properly called—for it is not a locust at all—appears irregularly in different sections, but only once in seventeen years in the same section, and this because seventeen years are required to develop the perfect insect from the egg. There is another kind

which completes its period of development in thirteen years, but it is comparatively rare. The "locust" is not injurious, except to the small twigs of trees. It eats nothing while in its winged state, but the female punctures the twigs of various kinds of trees and lays her eggs in the wound, after which the twig usually dies, thus disfiguring and possibly injuring the tree; though in most instances the pruning thus effected is beneficial rather than the reverse. In about six weeks the eggs hatch out, and the young insects, in their grub or larval state, drop to the earth, into which they immediately burrow until they find a root. They attach themselves to this, and there remain



A GROUP OF HOLSTEIN CATTLE.

or applications of paper pulp is in the manufacture of paper pulp fabric. This material is designed for articles which require the characteristics of paper and, at the same time, much more strength than paper alone possesses. Paper pulp fabric in the past has been made by securing sheets of finished paper to sheet metal by means of a cement or an adhesive of some kind. This fabric was necessarily somewhat limited in area, as the area of the metal sheets were limited.

The latest paper pulp material is made in continuous webs or lengths in all desired widths. The fabric is composed of a wire cloth, of a desired fineness or coarseness, covered with paper pulp. It thus possesses all the strength of metal and all the flexibility, softness, and smoothness of paper. The continuous webs of paper pulp are combined with the continuous web of wire cloth, so that the pulp is forced through the meshes of the wire cloth, completely filling them and at the same time completely covering the wire.

METHODS OF MANUFACTURE.

The pulp is manufactured by an ordinary paper making machine, so as to deliver two independent and continuous sheets of paper pulp at certain points, from which the webs or continuous sheets are fed into suitable pressure rollers. A roll of wire cloth is placed in the line of feed near the pressure rollers and is fed into them at the same time, and between the two continuous sheets of paper pulp. The rollers press the three webs together, and in the operation the two webs of paper pulp fill the meshes of the wire cloth as well as completely enveloping it.

for seventeen years, living on the sap of the root, which they suck up through a tube something like that of the mosquito. When the appointed time arrives, they burrow upward again, and crawl up some tree or wall to the height of a few feet from the earth, where they shed their chrysalis coats and become perfect insects; after which their life is a short and merry one. They sing by night and fly about by day, but perish in a week or two, having run their natural course.

Designs for Carpets.

In the School of Designs, in South Kensington, there are several quotations which are regarded as axiomatic, and they unequivocally direct the efforts of the pupils. The following is the rule upon carpet design:

1. The surface of a carpet, serving as a ground to support all objects, should be quiet and negative, without strong contrast of either forms or colors.
2. The leading forms should be so disposed as to distribute the pattern over the whole floor, not pronounced either in the direction of breadth or length, all "up and down" treatments being erroneous.
3. The decorative forms should be flat, without shadow or relief, whether derived from ornament or direct from flowers or foliage.
4. In color the general ground should be negative, low in tone, and inclining to the tertiary hues.

In packing bottles in cases for transportation, India rubber bands slipped over the bottles will prevent breakage, and save considerable in packing material.