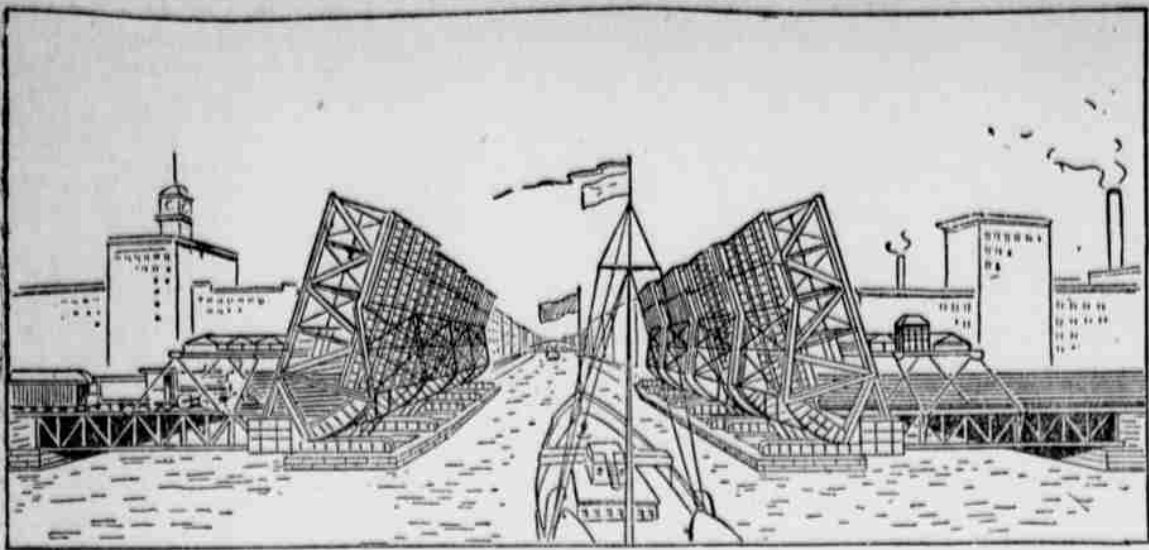


## AN EIGHT-TRACK ROLLER-LIFT BRIDGE.



The Marine Review prints a description of an eight-track roller-lift bridge to be erected over the Chicago drainage canal near its junction with the Chicago River. It provides a clear waterway for navigation of 120 feet between the piers, at right angles to the centre line of the canal. On each side of the waterway provided for navigation is placed a main supporting pier. These piers are each forty-eight feet wide. They rest on bed rock, forty-four feet below city datum. The

piers are not solid; in each pier there are four cavities, which materially reduce the amount of the required concrete and masonry. The bridge consists of four independent double track Scherzer rolling-lift bridges, placed side by side, with a clearance of six inches between the adjacent trusses. The spans may be operated either jointly or singly, as desired, by two operators, one on each side of the canal. When it is desired to open the bridge the centre pins are unlocked by

means of electrical devices, the spans are then rolled upward and backward upon the track girders. The movable spans are counter weighted so as to be at rest at an angle of about forty degrees. This greatly facilitates the opening of the spans, and also aids in closing them. The bridge is to be opened or closed in thirty seconds, by means of four forty-horse-power electric motors on each side of the channel. The electric motors are controlled by a controller in an operator's house.

## SURVEYING BY MACHINE.

The Orograph, Which Has Been Adopted by the Army.

Mention was made some time ago of the "Orograph," a new instrument which has been adopted in the United States Army, and is intended to take the place of the engineers' chain and level in the important work of making a profile of any road or stretch of country over which a surveying or reconnoitering party is passing.

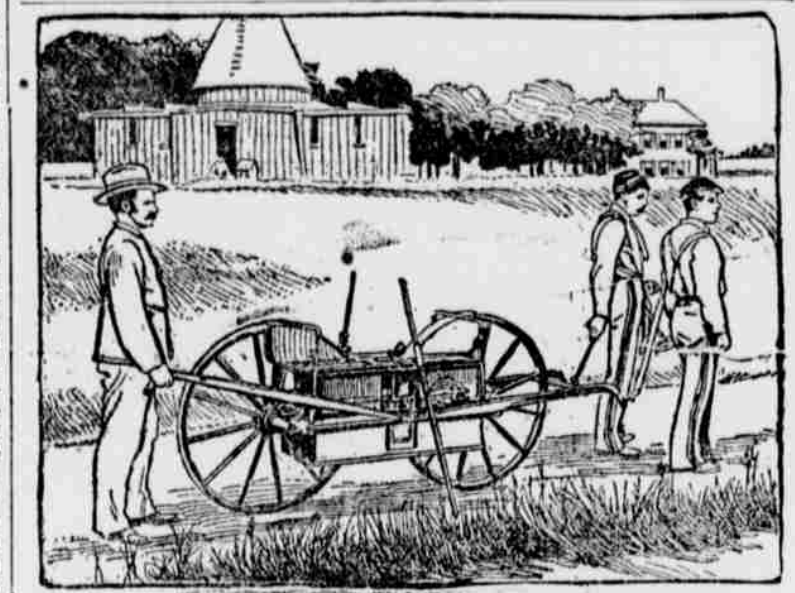
This machine is shown in the accompanying cut from the Scientific American. It consists of two substantial carriage wheels, one following the other in a single track, supporting between them, and on one side, a box of mechanism, and on the other a sort of cistern. This cistern is twenty-four inches in diameter and one-half inch deep. It is placed vertically and contains mercury. When in operation the "Orograph" must be held upright and not allowed to career to either side.

As stated, the object of the machine is to draw upon paper an accurate profile of the ground over which it is rolled, thus furnishing the army engineers with all the results of a survey excepting the courses and general topography. The principles upon which the machine is constructed are those of the perambulator, operating in conjunction with a lever maintained continually in a horizontal position by floating upon a cistern of mercury. This lever is twenty-four inches in length and one-half of an inch thick, with floats attached to each end, and has free motion in a vertical plane on a horizontal axis.

Know Not Whence "Yankee" Came.

At the monthly meeting of the Maryland Historical Society, Dr. William

ner. There is in contemplation a system of branch schools, where instruction may be carried to the farmers of the State. One day will be devoted to lectures on specific topics and one day



THE OROGRAPH, AN AUTOMATIC SURVEYOR.

to practical work in the field, where applications of the principles given during the first day will be made."—New York Tribune.

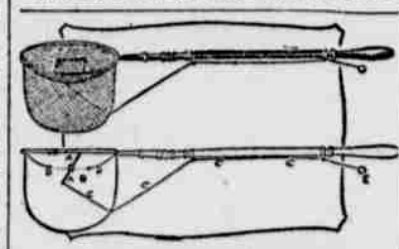
## LIKE A CORN POPPER.

Automatic Collection Basket is the Newest Thing For Church Use.

An automatic collection basket is one of the newest things for church use, and a trial was made of its merits upon a fashionable congregation at New York on a recent Sunday. According to the New York Evening Journal the device is reminiscent of a corn popper. In fact, it might well be called a "corn popper."

It has a long handle, hollowed, a wire box or pocket, with a trap-door arrangement, marked "A," which opens when the collector pulls on the ring marked "E," which connects with the cord marked "C," which runs in the hollow of a handle, and sets again when he loosens the cord. "DD" shows the depth of the shallow tray at the top of the basket.

The contribution when taken up, ac-



AUTOMATIC COLLECTION BASKET.

ording to the inventor of the popper, remains on the trap door until the collector has a chance to inspect it before it is dropped into the basket.

## Willie's Thirst For Knowledge.

It was on a steam railroad going from Washington to Philadelphia that I overheard the following conversation between a little boy, just at the interesting age, anxious to know, and his aunt, whose patience was severely tested by little Willie's questions. The first to attract his attention was a buzzard flying high in the air. "Oh, auntie!" he exclaimed, "look at that chicken way up there." "That's no chicken, Willie; that's a buzzard." "But, auntie, I don't hear him buzz." "Auntie, look at the man pumping the cow; is she punctured?" "He is milking the cow, Willie. Do be still for a while."

After a short pause, he spied several pumpkins in a field and asked: "Auntie, is a pumpkin a grown up orange?" "Auntie, look at the moon. Where did all the stars come from?" "I don't know, Willie. Don't ask so many questions." "Did the moon lay 'em, auntie?" And as darkness drew on little Willie began to nod and auntie gave a sigh of relief.—Philadelphia Inquirer.

The Austrian crown jewels contain a splendid emerald necklace and the largest single emerald in the world.



A BOXER, CAUGHT AND COLLARED.

—Harper's Weekly.

The Empress Dowager, who becomes more intensely anti-foreign as time passes, has been greatly annoyed by the work of the Germans in Kiao-Chau. She desires to use force to stop the reform movement, and is ready to defy the European powers.



## THE EDICTS OF FASHION.

New York City (Special).—This season the gown of cloth or silken stuff or voile may have its bodice made with a bolero of lace, over which, to properly incorporate the lace into the

without darts, and wateau back. It should be cut with a low, square neck that may be edged with lace or filled in entirely, as preferred. The sleeves should be loose puffs, reaching only to the elbow. A gown of this description made of black India silk can be worn all summer without becoming shabby, and no woman who has ever had one will allow a summer to pass without providing it.

## Gown For a Young Girl.

A pretty gown for a young girl is made of a rich red homespun. The skirt is made plain and stitched, and the short little Spencer jacket shows the broad black satin folded belt, which is almost a bodice in itself, and a long black satin scarf is worn over a white blouse.

## High Corset Girdles.

High corset girdles are worn with shirt waists, and dimity gowns as well. Formed of rows of lace, and embroidered insertion running around, they are especially pretty for the flowered muslins.

## A Touch of Fashion in Millinery.

A summer shade hat has its own "inlet" of black velvet ribbon high up on the crown, as near as possible to the small flat top, and matching the velvet binding of the brim. The inlet gives point to the hat, and is quite broad to match the very broad binding of velvet on the brim. The monture is of hellebore, shaded wondrously like the natural flower. It is arranged on the left side, reaching to the front. The flowers range from one black band at the brim to the "inlet" above.

## Incrustations of Black Lace.

The "dernier cri," as the French call it, is to have a garment decorated with incrustations of lace in which both black and white have part. One may beaver the other, and usually the black is on top. Black lace used over gis-



A NEW BOLERO.

design, there are laid strappings of the material. The lace bolero of our sketch is just such an instance, and might be made of guipure, with the strappings either of the material of the skirt or of silk or of panne to match that material.

## Dainty Costumes For Young Folks.

A dainty little red lawn dotted with



FROCKS FOR YOUNG GIRLS.

white is the fabric used for the charming frock on the left of the double-column illustration, from the Chicago Record. The gimp is of tuck muslin, the belt of white satin, and much lace is used in effective decoration.

The pretty Swiss gown on the central figure is black and white, with yoke of white net and broad lace straps to outline yoke. It has shaped ruffle and bands of lace above. The sash is of fine black net.

The modish little toilet to the right is of red and white China silk, having a yoke of fine needlework and deep bertha of lace. Belt and bands are of dark-red velvet, and the red straw bonnet is dressed with white satin ribbon and pompons of tulle.

## A New Development.

The so-called tucked flounce being introduced is by no means what is suggested by the name. Most people would fancy that the flounce is trimmed with one or more tucks arranged horizontally parallel with the hem. Instead of this, the new tucked skirt measures considerably less, about half at the top from what it measures at the bottom hem. The tucks are run up and down for about half the depth of the ounce. They occur at the top and end half way down. The tucks are introduced as a means of disposing of the excess fullness of the flounce, so as to make it swell and spread. It is a graceful scheme. You sometimes see a skirt tucked about the hips so that the fullness may be released below the waist and made a graceful skirt. The same idea has been adopted for the flounces. You would not desire to have more than one frock made this way, because there are other modes in fashions, besides the tucked flounce.

## Summer Silks.

The desirability of India and China silk for summer wear is not half understood. When one buys a good quality it wears excellently, and is cooler than any other fabric for either street or house gowns. Every woman who values comfort in summer should have an empire gown of India silk to get into when she enters the house hot and tired from walk or ride. The prettiest mode of making is the tight front,

toning white silk, such as a glace tafeta, is very fashionable, and some handsome costumes are built of these materials. More elegant than the entire lace dress is that encrusted with medallions of lace. It is more elaborate and, therefore, more costly.

## A French Tailor-Made Model.

This picture of an extremely smart tailor-made gown is presented to the fair readers to show its unusually stylish and effective treatment of machine stitching and applied bands of the same material. Another noticeable feature is the thoroughly French touch in its soft stock yoke and vest of silk muslin, in combination with its strictly tailor-made features of bands and stitching, so different from our English models of the severely plain tailor-made. The



A SMART TAILOR-MADE.

tout ensemble, however, is smart and novel in the extreme, whether strictly in accordance with our ideas of a tailor-made or not.

## A School of Farming

It Will Aim to Raise the Standard of Agricultural Methods.

WHEN the promoters of the School of Practical Agriculture and Horticulture looked about for a spot wherein to establish the institution various places were suggested, but it was finally agreed that Briarcliff Manor, one of the most beautiful parts of Westchester County, N. Y., would be



THE MODEL DAIRY.

the most suitable. It will be on a plateau overlooking the sixty-six acres which have been acquired, and also much of the land and many of the buildings on the Briarcliff Farms, which will serve not only as a beautiful picture, but as an inspiration for the students.

The object of the school is "to train men and women in the methods of horticulture, floriculture, gardening, poultry raising and allied branches, that they may become proficient in the manual from the main line to the farm, and by means of these the shipment of farm products is facilitated. Near the railroad are the neat homes of some of the farm hands, and a short distance beyond these, toward the ridge, are several large granaries; further away, on the main road, is the model dairy building. Of the 875 head of cattle on the place, about 400 are registered Jerseys. No other breed is allowed in the herd.

There are several milking stations, and from these the milk is taken to the dairy as soon as the cans are filled. All known safeguards against impurity are employed, and no milk is allowed to be taken from a cow until he has thoroughly cleaned his udder, and the hands of the milker are washed in the disinfectant. The school will aim to raise the standard of agricultural methods. Practical instruction will be given in the orchard, garden, greenhouse, poultry yard and dairy, and students will be taught "how to overcome and not be overcome by the many difficulties of beauty and usefulness."

Briarcliff Farms occupy a tract extending about four miles north and



THE BUTTER ROOM.

south and about three miles east and west. The railroad tracks have been washed his hands, and this must be done again before he begins with the second cow. The attendants wear

"We already have trees growing and small fruits for the use of students. Landscape gardening is a feature, as it may be applied to the beautifying of country homes in an inexpensive man-