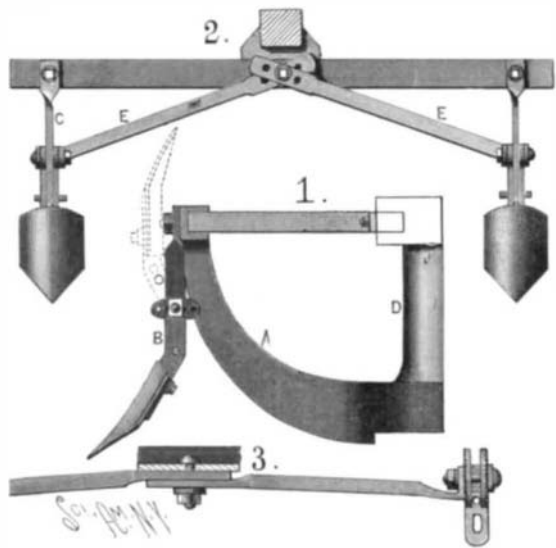


**A LISTER ATTACHMENT FOR PLANTERS.**

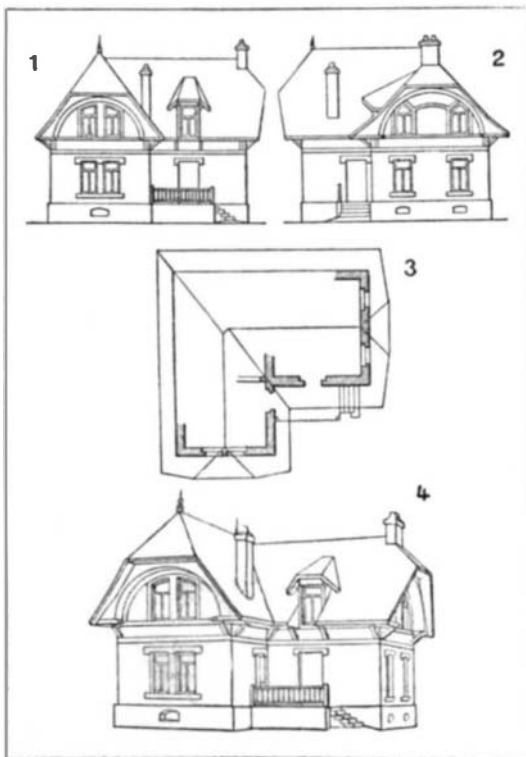
A patent has been issued to John L. Pate, Jr., Wau-neta, Kas., for an invention which provides adjustable and folding lister-standards so proportioned relatively to the runners or shares that a deep furrow will be made for the seed. Fig. 1 is a side elevation of the runner of a planter with the attachment applied. Fig. 2 is a vertical section through the tongue of a planter. Fig. 3 is a horizontal section through the upper part of



**A LISTER ATTACHMENT FOR PLANTERS.**

a lister-standard and through a portion of the front beam of the planter-frame.

In the illustrations, *A* represents the runner of a corn-planter, and *D* the boot for conducting the seed to the bottom of the runner. The lister-standards are placed against the front upper portions of the runners and bolted near the ends of the front cross-bar of the planter-frame. Each standard comprises an upper section, *C*, received by a forked lower shovel section, *B*, adjustably connected by means of a segmental head formed with apertures through which pins are passed. Any desired inclination can be given to the shovels by passing the pins through any one of the apertures. When not needed, the shovels can be swung in the dotted position shown in Fig. 1. The lower section, *B*, of each lister-standard is composed of a straight



**Fig. 3.—Nos. 1, 2, 3.—PLANS OF A VILLA USED FOR THE REPRODUCTION SHOWN IN No. 4.**



**Fig. 2.—PERSPECTIVE VIEW OF THE COURSE OF THE RHONE EXECUTED FROM A MAP.**

upper portion to which an inclined shovel-carrying lower portion is secured by a pin which, when an impassable obstacle is encountered, breaks and allows the shovel to swing back under the planter. The lister-standards are braced by-bars, *E*, which are secured to the standards by pins connecting the upper portions, *C*, with the lower portions, *B*. The braces cross below the tongue and are adjustably attached to the cross-beam. The attachment, it is therefore evident, can be applied to any planter whatever may be the distance between the runners, without interfering with any check-row appliance that may be used.

The length of the lister-standards is such that the points of the shovels extend below the level of the bottom of the runners, *A*, so that they open a deep furrow. When the earth falls upon the seed, a ridge is left at each side of the furrow, and the earth constituting these ridges at subsequent cultivation can be thrown upon the young plants to protect them at the roots and simultaneously to level the field.

**APPARATUS FOR MAKING PERSPECTIVE DRAWINGS.**

Every kind of structure, architectural, mechanical, etc., must, as is well known, be preceded by a detailed study, the result of which is expressed in the form of what is called a geometrical drawing, without which engineers, architects and machinery manufacturers could not get along. Now, such a drawing, which suffices to give specialists a clear idea of the structure projected, is not enough to satisfy those who have not pursued particular studies. What such persons require is a perspective view.

Unfortunately, the making of such a view, with the precision that is necessary, is not always easy, and requires in all cases a mathematical knowledge of operations that are quite lengthy and sometimes so arduous even that a number of skillful draughtsmen would be unable to perform them. This is why the invention of a relatively simple instrument, capable of automatically effecting such work with rapidity and perfect accuracy, would be of a nature to render important services to those who are called upon to perform it.

Such an apparatus, of wonderful simplicity, has been recently devised by Prof. Von Ziegler, an ingenious drawing master of Geneva. In closely studying the technique of perspective, this gentleman reached the conclusion that it would be possible to convert all the mathematical operations to which we have just alluded into a mechanical movement. Then, passing from theory to practice, he succeeded in constructing the apparatus represented in Fig. 1, which he styled the "Perspecteur."

We have seen it in operation, says *La Nature*, and have been astonished at the facility with which any inexperienced person can use it. It seems to us that this new invention is destined to become extremely popular, because of the manifold applications that may be made of it. Being given any geometrical drawing whatever, the latter serves as a basis for obtaining a perspective drawing in a few minutes, so that not only engineers and architects, but also geographers and painters will be able to derive genuine advantages from it, in applying it to the infinitely varied objects of their study.

It is a question, upon the whole, of a sort of pantagraph, which, instead of exactly reproducing drawings upon a larger or smaller scale, converts them from a geometrical into a perspective form.

Thus, to give two very striking examples, we present a view of a villa (Fig. 3, No. 4) obtained from the plans shown in Nos. 1, 2 and 3 of the same figure, and a panorama of the course of the Rhone, in the canton of Geneva (Fig. 2), made by the instrument from the map of the Swiss federal atlas of Siegfried.

Everyone may, from these examples, judge of the scope of the applications that may be made of the instrument, after a very little practice on the part of the user.

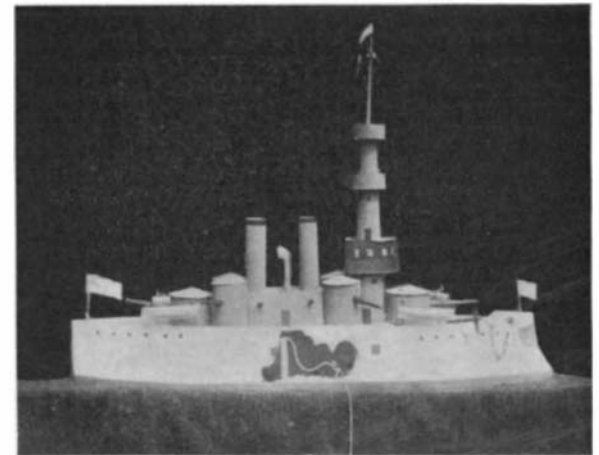
THE greatest precautions are being taken to protect visitors at the Paris Exposition. The prefect of the police has been at work for months in devising measures for the protection of life and property. He now has the most complete rogues' gallery in the world, and all classes of criminals will be looked after by specialists, who know them by sight or by reputation. Printed placards are to be placed in all public places warning visitors against confidence games, etc.

\*The apparatus is fixed upon a table. *A* is placed the paper upon which the perspective is to be drawn. *C* is a board on which is fixed the horizontal plan of the object to be represented. This board is mounted upon the frame, *E*, by means of the slide, *D*, and may be moved by the micrometric screw, *F*. *G* is the elevation board. *H*, *I* and *J* are compasses, of which the legs, *H* and *J*, are so jointed that the axis, *I*, is constantly the bisectrix of the angle that they form with each other. The two legs are telescopic. The directing leg, *H*, terminates in a point that is moved over all the parts of the geometrical drawing, while the leg, *J*, furnished with a pencil and an extension spring, traces the perspective of the same drawings upon the paper.

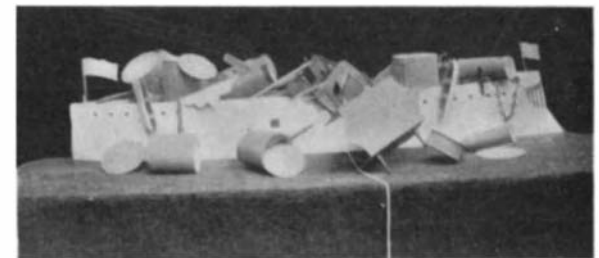
**A SIMPLE INGENUOUS TOY.**

The destruction of the battleship "Maine" has been cleverly reproduced in a simple toy invented by Mr. Charles M. A. Wichman, 130 W. Bay Street, Jacksonville, Fla.

The toy is made to represent a battleship which is provided with a central detachable deck-portion on which the turrets, separable masts, smoke-stacks, davits, and other deck-fixtures are loosely placed. Secured to



**TOY WARSHIP ASSEMBLED.**



**TOY WARSHIP AFTER EXPLOSION.**

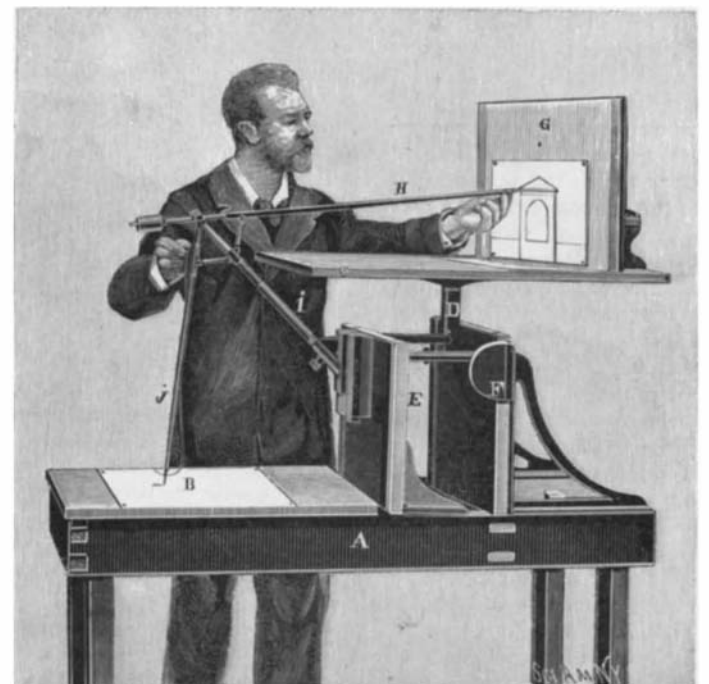
the bottom of the deck, within the hull, is a small powder receptacle provided with a percussion-cap holder. A strongspring is secured to a support within the hull, its free end being held in a catch to which a cord is secured. Upon pulling the cord, the spring, released from its catch, flies up, strikes the percussion-cap, and produces an explosion which completely demolishes the vessel. Within a few minutes, however, the parts of the toy can be reassembled for another explosion.

The vessel is made chiefly of cardboard. Strips of wood are used for the deck and the bottom. The material used, although light, is durable enough to withstand many explosions.

**Further Information Regarding the Prize for Aeronauts.**

In addition to the information which we published on page 216 in our last issue, regarding the \$20,000 prize offered for an airship test, we take pleasure in informing our readers that the prize must be won within five years, during which period 3,000 francs annually will be distributed to competitors toward defraying the expenses of their experiments.

THE Ferris wheel, one of the great attractions of the World's Fair of 1893, is now located at Ferris Wheel Park, near the depot of the North Chicago division of the traction system. The view from the wheel in its present location is most beautiful.



**Fig. 1.—THE MECHANICAL PERSPECTIVE DRAUGHTSMAN.\***