



#### IDEA STILL USED

*Leonardo da Vinci, famous as painter and sculptor, was a great inventor and military engineer as well. One of his inventions, that revolutionized field artillery in his day, was the device for rapidly changing the elevation of a cannon, and for shifting its horizontal aim also. In modern blitzkrieg weapons, the same fundamental idea is used. This model and those pictured on the facing page are part of a special exhibition of the scientific work of the great Florentine genius now being shown in New York at the Museum of Science and Industry.*

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CHEMISTRY—INVENTION

## German Invention for Gasoline From Water-Gas Revealed

### New Method Just Patented in United States Claims To Increase Production of Fuel 60% Over Older Methods

**R**EVELATION of a means by which gasoline is possibly being obtained in Germany for the airplanes that make the nightly raids on England is contained in a patent just issued by the U. S. Patent Office. Its number is 2,220,357, and it was issued to Michael Steinschläger, of Moers, Niederrhein, Germany, who has assigned his American rights to the Koppers Company, Pittsburgh.

Water-gas used for fuel and illuminating purposes, is obtained by passing steam over glowing coal. Chemical processes have been used in the past, by which such gases have been chemically changed into liquid hydrocarbons, of which gasoline is an example.

Herr Steinschläger claims that his method increases production of the

liquid materials from a given amount of the original gas by 60%, but the fuel consumption is increased only 10-15%. He accomplishes this by storing some of the ordinarily wasted heat, and re-treating some of the waste gases that have gone through the first stage of the process.

#### Patent on Invisible Glass

Two patents, Nos. 2,220,861 and 2,220,862 were granted to Dr. Katharine B. Blodgett, physicist of the General Electric Company, for the "invisible glass" which she invented, and which has attracted a great deal of scientific attention in the past year or two. Both patents were assigned to her employers.

The first is for the method of treating a glass surface with a film, its thickness

equal to one-quarter of the wave-length of the light falling on it. With such a thin film, the surface reflects practically no light, but it all passes through. Many applications are possible in optical instruments, such as photographic lenses, periscopes, range-finders, etc., to increase their efficiency by eliminating wasteful reflections of light between the various lenses.

Films prepared in this way are easily rubbed off. The second patent provides a means of making this permanent. Thin layers of glass containing metals, thus increasing their power to bend light rays, are fastened to both sides of a sheet of another kind of glass. By chemical treatment of the outer layers of the sandwich, a durable film, with the proper reflection-reducing properties, is formed on their surfaces.

#### Readymade Bathroom

When you build a house, it may soon be possible for you to order from the wholesaler a complete bathroom, stamped out of metal, like an automobile, and all ready to place and connect to the plumbing. Patent 2,220,482, granted to Richard Buckminster Fuller, New York architect, provides a method of making such prefabricated units. They are to be built in several sections, each of which can be carried through ordinary doors to aid in their installation when a house is already built. This patent is assigned to Phelps Dodge Corporation of New York.

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ASTRONOMY

#### Home-Made Projector Shows Positions of Stars

**A** HOME-MADE projector used in the Berkshire Museum, costing only \$250, shows visitors the arrangement of the stars and planets at different times and places, thus serving some of the purposes of the elaborate and expensive projection planetarium used in five American cities.

Unlike the big instrument, this "stellarium," as it is called, makes no effort to reproduce the actual appearance of the heavens, for the pictures are projected on a flat ceiling, instead of a dome.

The stellarium was built by three young electrical engineers, Willard F. M. Gray, Stephen C. Leonard and Guiles W. Bradshaw. A drum, two and a half feet in diameter, contains all the mechanism.

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