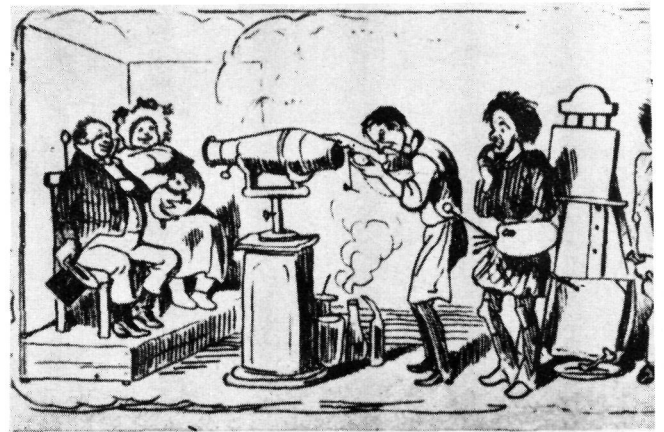




PETZVAL CAMERA, given Eastman House by Willoughby Camera Stores.

AT THE OFFICIAL ANNOUNCEMENT of the Daguerreotype process in 1839, Austria was represented by Professor A. F. von Ettingshausen. He was so impressed with the possibilities of photography that upon his return to Vienna, he induced his friend and colleague the mathematician Joseph Petzval to undertake the design of a wide-aperture lens suitable for portraiture. Petzval, then 33 years old, devoted himself enthusiastically to the problem and was amazingly successful. He used a well-corrected telescope objective the right way round for his front component, and added an airspaced doublet behind it, the rear doublet being mathematically designed to give sharp definition and to flatten the field.

The formula was handed to the old-established Viennese optician Voigtländer, who first supplied the lens to a focal length of 150 mm and an aperture of  $f/3.6$ , mounted in a conical metal camera having a circular ground-glass focusing screen 94 mm diameter with a focusing magnifier permanently installed behind it. The whole rear portion of the camera could be unscrewed and replaced by a circular plate-holder to take a photograph. It is interesting to note that Petzval was awarded only the silver medal by the "Society of Encouragement" for his invention, the platinum medal going to Chevalier; yet Petzval's Portrait lens was one of the most successful lenses ever to be designed. Over 8000 were sold in the first ten years, and countless thousands must have been made before its popularity began to wane 70 years later.



"THE UNHAPPY PAINTER," caricature by Theodor Hosemann, 1843. Collection of Erich Stenger.

Joseph Max Petzval was born on January 6, 1807, in Hungary of German parentage; he died 84 years later in September 1891. Being a member of the mathematics faculty of the University of Vienna, he naturally approached the problem of lens design from a mathematical rather than from an empirical standpoint, which probably accounted in part for his success. He actually designed two lenses in 1839, the Portrait lens which he immediately commissioned P. F. von Voigtländer to make, and the Orthoscopic lens which was not manufactured until 1856. Petzval's interest in optics continued throughout the rest of his life, and he reported in 1843 that "by order of the General-Director Archduke Ludwig, he was assisted in his calculations for several years by two officers and eight

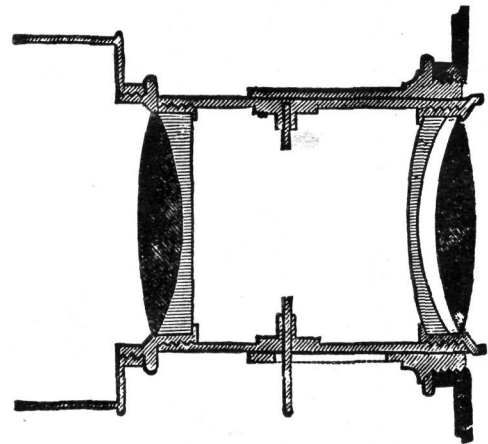


DIAGRAM OF THE PETZVAL PORTRAIT LENS.

diers of the Austrian Bombardier Corps who were skilled in computing, and also by his assistant Reisinger." None of his other lenses was as good as the Portrait lens, and they are now quite forgotten.

Since Petzval and Voigtländer had no legal protection for their Portrait lens other than an Austrian patent, it was immediately copied by opticians in all countries under the name of the "German Lens." Unfortunately, Petzval soon afterwards quarrelled with Voigtländer, perhaps because he did not receive an adequate financial reward for his invention, and in 1845 he broke off all connection with the firm. He even set up a small home workshop where he made a few lenses with his own hands. In spite of all these optical activities, however, he did not neglect his mathematical work, and between 1851 and 1859 he published a 1000-page treatise on the solution of differential equations. In 1856 he became allied with the optician Dietzler of Vienna, who proceeded to make very good portrait lenses in competition with those of Voigtländer, but in 1862 Dietzler ran into financial troubles and soon failed. Joseph Petzval married in 1869, but his wife died four years later. On his seventieth birthday he retired from his professorship, and withdrew from the world. He died in 1891, a lonely and embittered man. He was awarded many honors during and after his lifetime, and he may rightly be regarded as one of the fathers of photography.

*This is the third article by Dr. Kingslake in a series on the history of photographic lenses.*

## VISIT WITH CARL TH. DREYER

*by James Card*

CARL TH. DREYER, the great Danish director of *The Passion of Jeanne D'Arc*, *Day of Wrath*, *Leaves From Satan's Book*, and a dozen other extraordinary films, is quite probably the only living director who steadfastly refuses to make any film other than that which completely absorbs him at the moment. For at least five years, Dreyer has been planning a Christ film to be shot in Jerusalem.

Arriving in Copenhagen, it was both disappointing and cheering to learn that Dreyer was not to be seen, as he was leaving early in the morning for London to make final arrangements for the production of his long-deferred "Life of Christ."

But later that day, lingering over one of the late and memorable Danish meals in the reknowned Fiskehuus with Ove Brusendorff, Director of the Danish Film Museum, we made a pleasant discovery: Dreyer sat in a secluded corner having a farewell supper with his family.

Dreyer's shyness is becoming legendary; it is as genuine as Garbo's. Only the persuasive charm of Brusendorff brought Dreyer to our table to talk about *Jeanne D'Arc* and *Vampyr*.

Dreyer's masterpiece, *The Passion of Jeanne D'Arc*, has been newly released with synchronized music. Throughout France

and Germany it is creating great excitement among the generation of cineastes who were not even born when the film was first released in 1928.

"But," said Dreyer sadly, "they are not seeing the original version. Their cutting has weakened many scenes." Here is a vicious weakness of the cinema: the creative artist must so often—almost always—sit back helplessly and see his work, if it survives at all, shown to the world in mutilated versions.

Dreyer smiled wistfully as we discussed the fantastic *Vampyr* made almost as a lark after the exhausting achievement of *Jeanne D'Arc*. *Vampyr* was financed by Baron Nicolas de Gunzberg who, under the name Julian West, acted the lead. Dreyer was delighted to learn that the Baron is a very successful art director in New York City—well known in all the fashion magazine circles as Nikky de Gunzberg, and scarcely at all as the producer of Carl Th. Dreyer's first sound film.

Writers have speculated about Carl Th. Dreyer's aims and his personality, for dreadful cruelty, inhumanity and persecution run in crimson themes through most of his unique films. A great artist is certain to be misunderstood. Amateur psychologists have fancied pathological sadism as the motivating force behind Dreyer's insistent return to the scaffold and the stake in his film work.



"PASSION OF JEANNE D'ARC," the film that made its director, Carl Th. Dreyer, world famous at its premiere in Copenhagen, 1928.

But Carl Th. Dreyer is a compassionate human being whose love for mankind is so great that the eternal tragedy he sees and must lament in his films is man's satanic and ageless compulsion to torture and persecute his own kind.

This is the enduring sorrow of all human history and one which may perhaps have its fullest expression when Carl Th. Dreyer finishes his film on the Life of Jesus Christ.