

Three Awards at the World's Columbian Exposition.

TENTH EDITION. PART II.

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# CATALOGUE

OF THE

# GUNDLACH OPTICAL Co.,

ROCHESTER, N. Y.

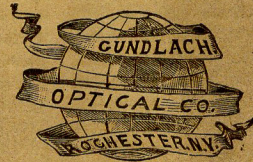
MANUFACTURERS OF

MICROSCOPES, . . .

TELESCOPES, . . .

PHOTOGRAPHIC . . .

LENSES . . . . .



AND OTHER

OPTICAL APPARATUS.

HENRY H. TURNER  
President.

JOHN ZELLWEGER,  
Vice-Pres.

JOHN C. REICH,  
Sec. and Treas.

DESCRIPTIVE CATALOGUE  
OF  
PHOTOGRAPHIC LENSES, ETC.,

MADE BY THE  
GUNDLACH OPTICAL CO.,

761, 763, 765 South Clinton Street,

ROCHESTER, N. Y.

MANUFACTURERS OF  
PHOTOGRAPHIC LENSES, MICROSCOPES,  
TELESCOPES, ETC.

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SPECIAL OPTICAL WORK MADE TO ORDER.

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OCTOBER, 1896.

We publish our Catalogue in three parts, as follows :

Part I. Microscopes and Accessories.

Part II. Photographic Lenses.

Part III. Telescopes.

Parties sending for Catalogues will kindly state what part or parts are wanted.

## PREFACE.

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WE present herewith, a new edition of our Photographic Lens Catalogue. There has been many changes in both lenses and shutters which has improved their general excellence and popularity. The prices throughout will be found very reasonable, and we guarantee the workmanship and optical performance to be unsurpassed. We solicit a comparison with any lenses in the market.

## TERMS.

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We are willing and anxious to place our optical work in competition with any manufactured elsewhere, and will send goods on approval to responsible parties. When applicants are unknown to us, and no satisfactory reference is given, our terms are strictly C. O. D. Money will be refunded if goods are returned uninjured within ten days.

On all goods ordered by express C. O. D., by parties not known to us, a remittance of at least sufficient to pay expressage both ways is required with the order.

We assume no responsibility for goods ordered sent by mail.

All goods are guaranteed just as represented.

GUNDLACH OPTICAL CO.

## Anastigmat Lenses.

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THE introduction of Anastigmat Lenses marks an epoch in the history of Photographic lenses. That they are immensely superior to any of the older style lenses cannot be doubted or, if one be skeptical, the most superficial comparison will convince the greatest skeptic. We take pleasure, with this issue of our catalogue, in presenting a list of the Turner-Reich Anastigmat. For a long time past we have carried on an elaborate series of calculations and experiments and are happy to announce that the resulting lens is fully up to our most sanguine expectations, and has advantages over any other anastigmatic lens in the market. This lens was patented in the United States, May 14th, 1895, and patents in principal European countries have since been granted.

A comparison of this lens with others of the same type will demonstrate that they are unsurpassed.

The astigmatic errors are entirely corrected with the full aperture so that for the given size of plate they need not be diaphragmed, and the image will be as sharp on the edge as in the center.

The field is absolutely flat for the size of plate covered.

The combinations are symmetrical and either combination used alone gives a beautiful image. In fact a single combination of this lens works to the very finest advantage as a single lens.

The glasses used are from the Jena factories, and are of the very finest quality. Owing to the peculiar nature of one of the glasses used it is impossible to obtain it free from a few small bubbles.

The lenses are mounted in brass and are fitted only with iris diaphragms.

Aluminum mounts will be furnished at an additional cost.

The full opening of these lenses is  $F : 7.5$ , and with that opening they will cut the size plate claimed.

This lens is the only anastigmat lens which has been invented and is controlled in this country. All others are of European origin and are controlled by European concerns.

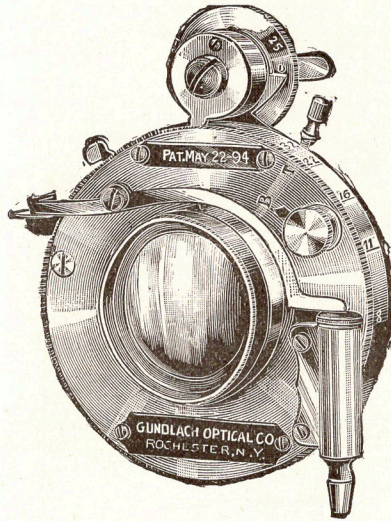
## SERIES III.



## Turner-Reich Anastigmat, F : 7.5.

No.	Equivalent Focus.	Diam. of Lenses.	Plate Covered Sharply with Opening of			Price with Brass Mounting.	Price with Aluminum Mounting.
			F : 7.5.	F : 15.	F : 60.		
1	6 in.	$\frac{1}{2}$ in.	4 x 5	5 x 7	5 x 8	\$35 00	\$38 00
2	7 $\frac{1}{4}$ "	1 "	5 x 7	5 x 8	6 $\frac{1}{2}$ x 8 $\frac{1}{2}$	40 00	44 00
3	8 $\frac{1}{2}$ "	1 $\frac{1}{4}$ "	5 x 8	6 $\frac{1}{2}$ x 8 $\frac{1}{2}$	8 x 10	50 00	55 00
4	10 $\frac{1}{2}$ "	1 $\frac{3}{8}$ "	6 $\frac{1}{2}$ x 8 $\frac{1}{2}$	8 x 10	10 x 12	75 00	80 00
5	12 "	1 $\frac{5}{8}$ "	8 x 10	10 x 12	11 x 14	85 00	90 00
6	14 "	2 "	10 x 12	11 x 14	14 x 17	110 00	115 00
7	17 "	2 $\frac{1}{2}$ "	11 x 14	14 x 17	17 x 20	160 00	166 00
8	21 "	3 "	14 x 17	17 x 20	18 x 22	250 00	257 00
9	26 "	3 $\frac{3}{4}$ "	17 x 20	18 x 22	22 x 25	350 00	358 00

## SERIES IV.



## Turner-Reich Anastigmat, F : 7.5.

No.	Equivalent Focus.	Plate covered with F : 7.5.	Price.
1	6 in.	4 x 5	\$36 00
2	7 $\frac{1}{4}$ "	5 x 7	45 00

This series of Anastigmat lenses is constructed especially for use with hand cameras. They work with the same aperture as the lenses of Series III., and with that opening will cover the plate fully. It is impossible to fit a shutter between the lenses of Nos. 1 and 2 of Series III., hence the lenses of Series IV. are constructed to accommodate a shutter between them. Their construction does not admit of covering so large a plate as the Series III. lenses, but the light circle is fully large enough to cut the plates for which they are listed, and on those plates we guarantee them to be fully equal to the lenses of Series III., and being intended for hand cameras the smaller light circle is no objection. The price given above includes the lens fitted to one of our improved shutters and iris diaphragm. This is the finest and most compact shutter in the market.



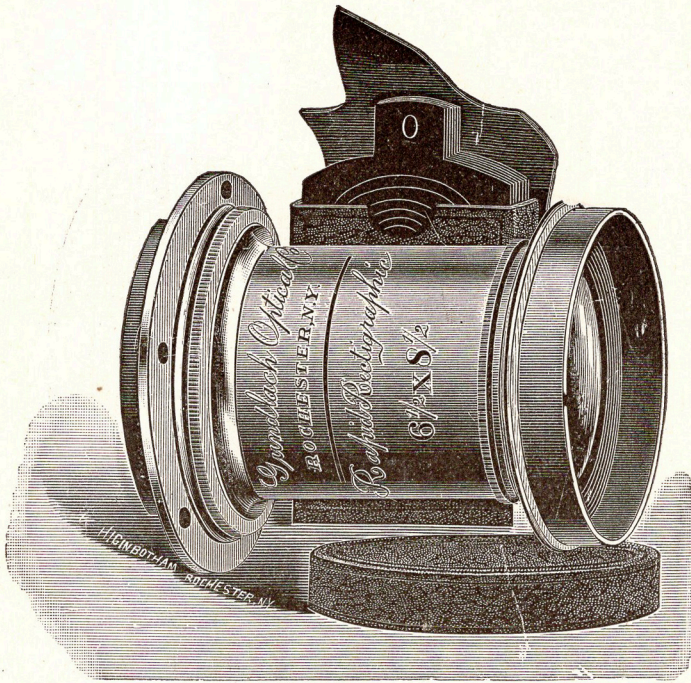
## The Rectigraphic and Perigraphic Lenses

Have been before the public for so many years, and their merits are so well known that we need not enter into a lengthy discussion of them. We may say, however, that during the last year we have made some changes in their construction which has greatly improved their general performance. The two combinations are of different focal length, the back lens having much shorter focus than the front lens, and the relative curvatures are so calculated as to secure perfect optical symmetry of the compound, and, at the same time to form perfect achromatic and aplanatic objectives for themselves if used singly. This novel plan offers the important advantage that these lens, in fact, consist of three objectives of different focal lengths, in the following approximate proportions:—

<i>Equivalent of Compound,</i>	-	-	2
<i>Back Lens alone,</i>	-	-	3
<i>Front Lens alone,</i>	-	-	4

thus giving, on the same plate, pictures differing in size about as 2 to 3 to 4. To use the back alone the front lens should be removed and the hood screwed into its place. To use the front lens alone the back lens is to be removed and the front lens screwed into its place; *i. e.*, the place of the back lens. The focal length of the compound and of each combination are engraved in the mounts.

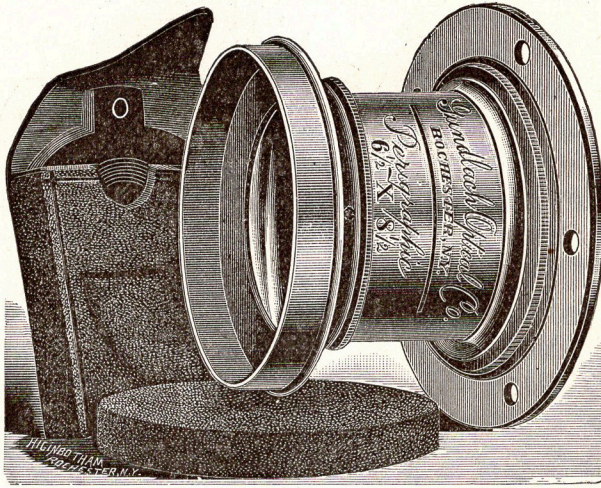
These lenses are fitted with iris diaphragms.



Description and Prices of the  
**Rapid Rectigraphic.**

No.	Size of Plate.	Diam. of Lenses.	Equivalent Focus.	Focus of Back Lens.	Focus of Front Lens.	Price.
0	3 1/4 x 4 1/4	1 3/8 in.	5 in.	8 in.	11 in.	\$14 00
I	4 x 5	I " "	6 1/4 " "	10 " "	13 1/2 " "	18 00
I 1/2	4 1/4 x 6 1/2	I 1/8 " "	7 " "	11 " "	14 3/4 " "	20 00
2	5 x 7	I 1/8 " "	8 " "	12 1/2 " "	17 " "	22 00
I 3/4	5 x 8	I 1/4 " "	8 1/2 " "	13 1/2 " "	18 " "	24 00
3	6 1/2 x 8 1/2	I 1/2 " "	11 " "	17 " "	23 " "	30 00
4	8 x 10	I 3/4 " "	13 " "	20 1/2 " "	28 " "	38 00
5	10 x 12	2 " "	16 " "	25 1/2 " "	34 " "	45 00
6	11 x 14	2 1/4 " "	18 1/2 " "	29 1/2 " "	39 1/2 " "	60 00
7	14 x 17	2 3/4 " "	22 " "	34 3/4 " "	47 " "	85 00
8	17 x 20	3 1/4 " "	26 " "	41 " "	56 " "	100 00

Nos. 0 and 1 can be had in matched pairs at an additional cost of \$2.00.

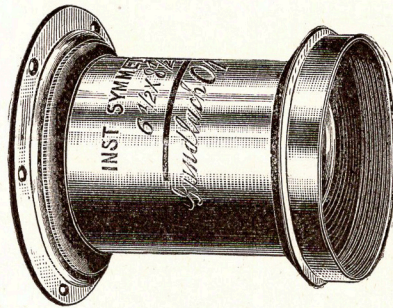


Description and Prices of

## The Perigraph.

No.	Size of Plate.	Diam. of Lenses.	Equivalent Focus.	Focus for Back Lens.	Focus for Front Lens.	Price.
0	4 x 5	$\frac{3}{4}$ in.	$3\frac{3}{4}$ in.	$5\frac{7}{8}$ in.	8 in.	\$18 00
1	5 x 7	1 $\frac{5}{8}$ "	5 "	8 "	11 "	26 00
2	$6\frac{1}{2}$ x $8\frac{1}{2}$	1 $\frac{5}{8}$ "	$6\frac{1}{2}$ "	10 "	$13\frac{1}{2}$ "	30 00
3	8 x 10	1 $\frac{5}{8}$ "	$8\frac{1}{2}$ "	$13\frac{1}{2}$ "	18 "	35 00
4	10 x 12	1 $\frac{5}{8}$ "	11 "	17 "	23 "	42 00
5	11 x 14	2 $\frac{3}{8}$ "	13 "	$20\frac{1}{2}$ "	28 "	52 00
6	14 x 17	2 $\frac{5}{8}$ "	16 "	$25\frac{1}{2}$ "	34 "	64 00
7	17 x 20	3 $\frac{1}{8}$ "	$18\frac{1}{2}$ "	$29\frac{1}{4}$ "	$39\frac{1}{2}$ "	90 00

Nos. 0 and 1 can be had in matched pairs at an additional cost of \$2.00.



## Instantaneous Symmetrical Lens.

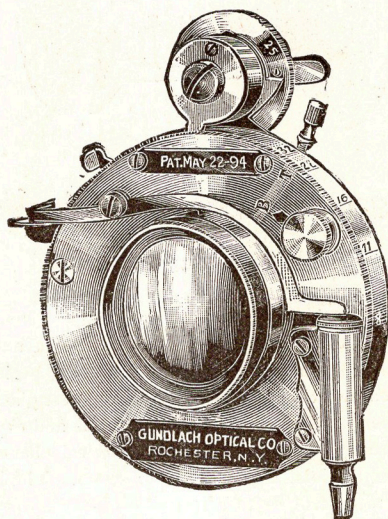
These lenses, as the name implies, are made after the well known "Symmetrical" plan, and they are not surpassed by any lenses in the market made after that plan. After the most careful experiments, extending over a long period of time, we have selected the glasses used in their construction from the best glasses which the world has yet produced. The glasses used are of a high grade and expensive variety, and make possible the correction of chromatic and spherical aberrations to as high a degree as has yet been attained in photographic lenses. The lenses are not cheap in any sense of the word, except as to price, which latter is very low. In addition to using the very finest glass, the best workmanship is put into their construction. What we claim for these lenses is that they are as fine as it is possible to make a lens on the symmetrical plan, and we are anxious to have them compared with lenses of the same style of any other make, regardless of price.

Iris diaphragms are supplied with this lens.

### DESCRIPTION AND PRICES.

No.	Size of Plate.	Diameter of Lenses.	Equivalent Focus.	Price.
1	4 x 5	1 in.	6½ in.	\$12 00
1½	5 x 7	1⅝ "	8 "	15 00
2	5 x 8	1¾ "	8½ "	18 00
3	6½ x 8½	1½ "	11 "	22 50
4	8 x 10	1¾ "	13 "	28 00
5	10 x 12	2 "	16 "	40 00
6	11 x 14	2¼ "	18½ "	52 00
7	14 x 17	2¾ "	22 "	70 00
8	17 x 20	3¼ "	26 "	80 00

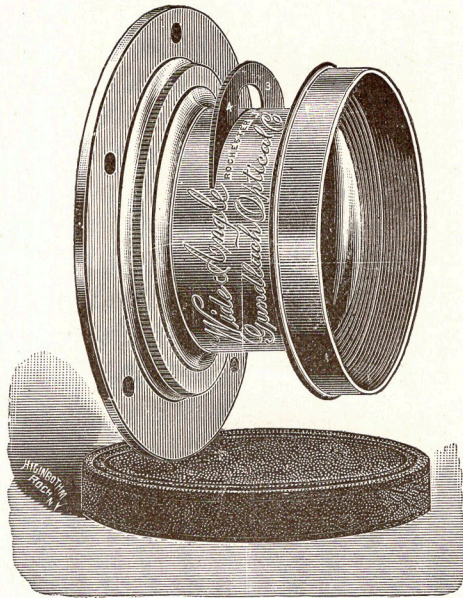
## Hand Camera Lenses and Shutters.



For a number of years we have made a specialty of lenses and shutters for hand cameras, and have sold them in large quantities to the leading manufacturers of the country. The lenses are our INSTANTANEOUS SYMMETRICAL, and are unsurpassed by any similar lens in the market, while the shutter is the same as is described in this catalogue, and can be had with either rotating or iris diaphragm.

No.	Size of Plate.	Equivalent Focus.	Diam. of Lenses.	Price with Shutter and Iris Diaph.
1	4 x 5	6 $\frac{1}{4}$ in.	1 in.	\$ 15 00
2	5 x 7	8 " "	1 $\frac{3}{16}$ " "	20 00

## The Wide Angle.

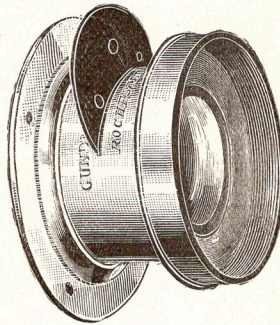


The extreme angular aperture of this lens is the especial feature for which we recommend it to the photographic public. It is absolutely rectilinear and possesses, in so far as any lens of extreme angle can, the qualities which have won so much favor for the RAPID RECTIGRAPHIC. It is provided with a rotating diaphragm. Its angle is fully 100°.

### DESCRIPTION AND PRICES.

No.	Size of Plates.	Dia. of Lenses.	Back Focus.	Equivalent Focus.	Price.
1	5 x 7	$\frac{7}{8}$ in.	3 in.	$3\frac{3}{8}$ in.	\$ 24 00
2	$6\frac{1}{2}$ x $8\frac{1}{2}$	1 "	$4\frac{1}{8}$ "	$4\frac{5}{8}$ "	30 00
3	8 x 10	$1\frac{1}{8}$ "	$4\frac{3}{4}$ "	$5\frac{5}{16}$ "	35 00
4	10 x 12	$1\frac{7}{16}$ "	6 "	$6\frac{1}{2}$ "	40 00
5	11 x 14	$1\frac{5}{8}$ "	$6\frac{7}{8}$ "	$7\frac{1}{2}$ "	47 00
6	14 x 17	2 "	$8\frac{1}{2}$ "	9 "	55 00
7	17 x 20	$2\frac{3}{8}$ "	10 "	$10\frac{1}{16}$ "	80 00

## Wide Angle Symmetrical.



This is a fine, wide angle lens made on the symmetrical plan and will give good satisfaction. We can strongly recommend it for quality and it sells at a very low price. It embraces an angle of from 80 to 85°, and for a wide angle is very rapid. It is fitted with a rotating diaphragm.

No.	Size of Plate.	Equivalent Focus.	Back Focus.	Price.
1	4 x 5 in.	4 in.	3½ in.	\$ 9 00
1	5 x 8 "	5½ "	4¾ "	12 00
3	6½ x 8½ "	6½ "	5½ "	15 00
4	8 x 10 "	8 "	7¼ "	18 00

## Focusing Glass.



This lens is an achromatic combination of novel construction consisting of a double convex crown glass lens and a negative miniscus flint glass lens, cemented together and mounted in brass with adjustment to focus. The lens is perfectly aplanatic.

Price, - - - - - \$3 00

## \* Double Convex Finder Lenses.

These lens are of the best quality, and are accurately centered so that the optical axis is concentric with the edge and the surfaces.

No.	Diameter.	Focus.	Price.
1	$\frac{3}{8}$ in.	$\frac{3}{4}$ to 2 in.	\$ .45
2	$\frac{1}{2}$ "	$\frac{3}{4}$ " 2 "	.50
3	$\frac{3}{4}$ "	1 " $2\frac{1}{2}$ "	.55
4	$\frac{7}{8}$ "	1 " 3 "	.60
5	$\frac{7}{8}$ "	$1\frac{1}{2}$ " 3 "	.65
6	1 "	2 " $3\frac{1}{2}$ "	.70



## Single Achromatic Lenses.

These lenses are constructed especially for Photographic purposes and consists of a positive crown-glass lens combined with a negative flint glass lens, corrected for actinic light.

The following prices are for lenses unmounted.

$\frac{3}{8}$ in. Diameter,	5 in. Focus	-----	\$1 00 each.
$\frac{7}{8}$ " " "	$5\frac{1}{2}$ " "	-----	1 00 "
1 " " "	6 " "	-----	1 35 "
$1\frac{1}{4}$ " " "	8 " "	-----	1 60 "
$1\frac{1}{2}$ " " "	10 " "	-----	2 00 "
$1\frac{3}{4}$ " " "	12 " "	-----	2 50 "
2 " " "	14 " "	-----	3 25 "
$2\frac{1}{2}$ " " "	16 " "	-----	4 50 "

Special prices will be quoted on these lenses to dealers or manufacturers desiring to use them in quantities.

## Single Achromatic Lenses, Mounted.

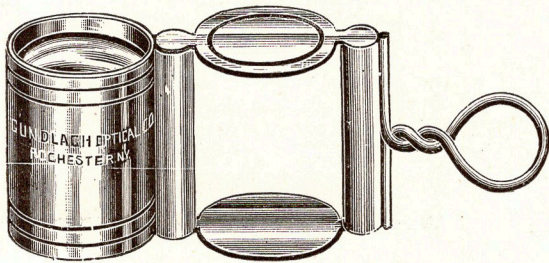
The lenses are the same as described above and mounted in a nicely finished and lacquered brass mount, which is provided with a rotating diaphragm and is also fitted with a morocco cap.

No.	Size of Plate.	Focus.	Price.
1	$2\frac{1}{2}$ x $3\frac{1}{4}$ inches,	5 inches,	\$2 75
2	$3\frac{1}{4}$ x $4\frac{1}{4}$ "	$5\frac{1}{2}$ "	3 00
3	4 x 5 "	6 "	3 25
4	5 x 8 "	9 "	4 50
5	$6\frac{1}{2}$ x $8\frac{1}{2}$ "	12 "	5 50 *
6	8 x 10 "	14 "	7 50

## List of Caps, Diaphragms, Etc., for the Rapid Rectigraphic and Perigraphic Lenses.

	0	1	2	3	4	5	6	7	8
Flange -----	\$ 35	\$ 45	\$ 65	\$ 75	\$1 00	\$1 30	\$1 60	\$2 50	\$3 00
Diaphragms ---	70	80	1 20	1 75	2 25	2 75	3 40	5 75	6 75
Case -----	30	35	40	45	50	65	75	1 25	1 50
Caps -----	30	35	40	45	50	65	75	1 25	1 50

## Globe Magnifiers.



The GLOBE MAGNIFIER is made after the principle of the globe lens which consisted of a sphere of crown glass enclosed in two hemispheres of flint glass, and by the principle of its construction the aberrations were corrected to a higher degree than had heretofore been obtained by any other construction. This lens has an optical axis in any direction, hence the field is perfectly flat and distinct to the outer edges, and what is true of no other lens, the field is always the largest possible. Pocket Magnifiers, made on this principle, are furnished as follows:

These lenses have proved very useful in many branches of photography.

No. 290	— 1 in. focus,	nickel-plated brass mount,	magnifying 11 diam.	\$ 5 00
No. 291	— $\frac{3}{4}$ " " " " " "	" " " " " "	14 " "	5 00
No. 292	— $\frac{1}{2}$ " " " " " "	" " " " " "	21 " "	8 00
No. 293	— $\frac{1}{4}$ " " " " " "	" " " " " "	41 " "	12 00

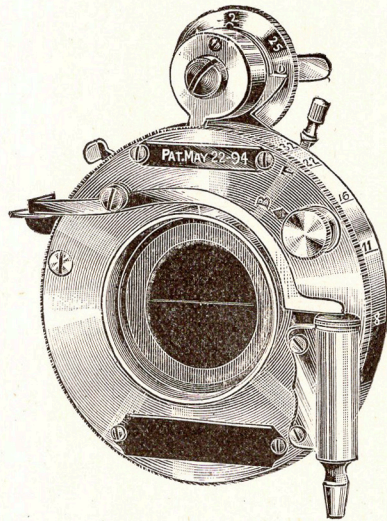
## Shutter and Iris Diaphragm.

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Our new shutter is the most compact, the simplest in construction and operation of any first class shutter in the market. At present it is made in five sizes, ranging from 4 x 5 to 8 x 10. The shutter is only made in combination with an iris diaphragm, and the price includes both the diaphragm and the shutter. The setting of the shutter does not open the blades, so there is not the slightest danger of exposing the plate before the bulb is pressed. It is arranged so that it can be released by pneumatic pressure with the bulb or by hand in pressing the lever. The disc at the top of the shutter controls the length of exposure from  $\frac{1}{4}$  to  $\frac{1}{100}$  seconds. The button with the index over the letters I. B. T. controls the action as to time or instantaneous exposure. With the instantaneous exposure, of course, one pressure of the bulb is all that is required, while the time exposure the first pressure opens the shutter, and the second pressure closes it. When the index is set at B, the shutter will remain open as long as the bulb is kept under pressure. This feature is unique with this shutter and is of especial value in making very short time exposures, where it would be impossible to give two pressures to the bulb without making too long an exposure.

The workmanship in these shutters is of the best, and they are suited to all gallery or outside work.

We call attention to the following scale of prices:



No.	Complete on a New Lens of our own Manufacture without extra barrel.	When fitted to Lenses of our own Manufacture with extra barrel.	When fitted to Lenses of other Manufacture leaving barrel intact.
1	\$ 10 00	\$ 10 50	\$ 12 00
2	10 00	10 50	12 00
3	12 00	12 50	14 00
4	13 50	14 25	15 50
5	15 00	15 75	17 00

We assume no responsibility for the proper mounting of a lens into a shutter, whether of our own or other manufacture, unless the complete lens is sent to us.

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