The stop here used to expose was $\frac{1}{5}$ th of the focal length, a larger one being employed for focusing.

"The result surpassed the expectations of all present. The instrument possesses all the qualifications which constitute excellence in a lens.

"Upon careful examination no difference could be found between the visual and actinic focus."

We have seen many pictures taken with these lenses, and can fully confirm the opinion expressed by the committee that "all the qualifications constituting excellence are possessed by this lens," and that it has a combined extent of angle, flatness of field and depth of focus possessed by no other existing combination.

This lens was first exhibited in public, at the meeting of the Franklin Institute for June, 1866, when it was fully described in the Secretary's report, (see this *Journal*, Vol. LII., page 63.) Our able contemporary, the *British Journal of Photography*, took, with reference to this matter, the strange ground that the lens described must, on theoretical grounds, be inaccurate, especially with reference to want of coincidence in the chemical and luminous foci, and that, therefore, such a lens could not possibly produce the effects stated.

Such *a priori* assertion (we cannot call it reasoning) in opposition to fact, we did not consider it worth while to notice. We could well afford to wait until time and better knowledge should vindicate the truth. Overwhelming testimony at last appears to have convinced our critic that facts could not so easily be disposed of on theoretical grounds. He, however, still tries to force fact into accordance with his theory, and by new assumptions to depreciate the merits of this invention which has the misfortune to operate in opposition to his judgment.

In justice to the inventor we feel called upon to say, that all the new assumptions are as far from the fact as the first one, and that this lens is, beyond doubt, destined to achieve as wide a reputation as the world-renowned American globe lens, (which, as may be noticed in the report above, it excels,) and which, like it, was at first ridiculed in the foreign press as an impossibility.

FACTS AND FIGURES IN REGARD TO THE PENNSYLVANIA RAILROAD.

By J. M. WILSON, C.E., Principal Assistant Engineer P. R.R.

WE submit to our readers the following interesting statistics furnished through the kindness of Mr. Wilson, from whom we are pro-

mitted some other valuable information concerning the new bridges on the same road. Ed.

LENGTH OF MAIN LINE FROM PHILADELPHIA TO PITTSBURGH, INCLUDING HARRISBURG AND LANCASTER RAILROAD *via* MOUNT JOY.

1.—Track.

	Miles, Tenths.
From west end Market Street Bridge to Passenger Station, West Philadelphia.....	0 2
From Passenger Station, West Philadelphia, to Harrisburg...	165 5
From Harrisburg to Passenger Station, Pittsburgh.....	248 2
From Passenger Station, Pittsburgh, to Duquesne Depot.....	9
	<hr/>
	354 8
Length of road <i>via</i> Columbia.....	353 7
Distance from Passenger Station, West Philadelphia, to Passenger Station, Pittsburgh, <i>via</i> Mount Joy—distance travelled, by through passenger trains.....	353 7
Length of double track, Main line.....	348 9
Amount of double track yet to be laid, to give continuous double track from Philadelphia to Pittsburgh.....	5 9
Length of sidings on Main line.....	121 2

BRANCH ROADS OWNED BY PENNSYLVANIA RAILROAD.

Hollidaysburg Branch.....	7 6
Indiana “.....	19 0
Delaware Extension.....	5 5
Steubenville “.....	1 2
	<hr/>
	33 3

ROADS LEASED BY PENNSYLVANIA RAILROAD.

East Brandywine and Waynesburg.....	17 0
Harrisburg and Lancaster.....	54 1
Mifflin and Centre County.....	6 9
Tyrone and Clearfield.....	23 5
Bald Eagle Valley.....	51 2
Ebensburg and Cresson.....	11 0
Western Pennsylvania Railroad.....	63 7
Philadelphia and Erie “.....	287 5
	<hr/>
	514 9

AMOUNT OF SINGLE TRACK OPERATED BY PENNSYLVANIA RAILROAD.

Main line.....	720 3
“ sidings.....	121 2
Branches, including sidings.....	603 9
	<hr/>
Total single track.....	1554 4

Which, if extended out by shortest present railroad route, would reach from Philadelphia to fifty miles beyond Fort Kearney, N. T., or if laid as one continuous rail, would reach one-eighth around the world.

The road had laid in track January 1st, 1867, over 2000 tons of steel rails, of which some 1500 tons are laid in main tracks, and the balance in sidings. About 250 tons are crucible steel, the balance are Bessemer steel. They are wearing remarkably well. At some points where the above rails have been in use, two or three sets of iron would have worn out, while the steel rails are yet in good condition.

2.—Tunnels—Main Line.

There are eight tunnels in Main Line, of the following lengths:
200, 900, 1200, 3612. (Alleghany Mountain,) 650, 300, 450 and 450 feet.

Total lineal feet of tunnelling, 7762 feet.

3.—Stations on Main Line.

Passenger,	85
Freight,	52

4.—Engine Houses—Main Line.

West Philadelphia—No. 1.....	21	engines capacity.
“ No. 2.....	44	“
Columbia.....	20	“
Harrisburg.....	44	“
Mifflin.....	15	“
Altoona.....	30	“
“.....	26	“
“.....	44	“
Conemaugh.....	15	“
Pittsburgh.....	44	“
Miscellaneous points on road.....	11	“
Total.....	314	“

The Company is now putting up an engine house at Pittsburgh for 40 engines, and contemplates building one at Harrisburg for 44 engines, which will give a total capacity of 396 engines.

5.—Shops—Main Line.

There are eight principal shops on Main Line, comprising a total superficial area of buildings of over ten acres actually under roof, exclusive of engine houses and all buildings, except *shops proper*.

FACTS AND FIGURES IN REGARD TO PENNSYLVANIA RAILROAD. 353

6.—Bridges—Main Line.

Number of iron bridges, Main Line.....	141
“ wooden “ “	48
“ stone “ “ of 24 feet span and upwards, 17	
Total length of iron bridges.....	12,097 feet.
“ wooden “	8,595

The Company has now under construction and will bring into use this year, 1,208 feet lineal of iron bridges. This will alter the above items, giving us

Total length iron bridges.....	13,505 feet.
" wooden "	7,187 "

7.—*Motive Power, January 1st, 1867, exclusive of Philadelphia and Erie Railroad.*

Passenger Engines.....	72
Freight “	230
Switching “	37
Constructing “	28
Total	367

8.—*Passenger and Freight Equipment, Jan. 1st, 1867, exclusive of Philadelphia and Erie Railroad.*

Passenger Cars.....	147
Emigrant ".....	44
Baggage ".....	43
Mail ".....	4
Express ".....	88
Box ".....	2711
Stock ".....	995
Gondola ".....	2072
Coal ".....	2204
Oil ".....	50
Total.....	8308

9.—*Mileage made by Engines during 1866, exclusive of Philadelphia and Erie Railroad.*

Passenger Engines.....	1,775,472
Freight and Switching Engines.....	5,804,554
Constructing	273,240
Total.....	7,353,266

It will be noticed particularly, that items 2, 3, 4, 5 and 6 are for *Main line* only, and items 7, 8 and 9 do not include Philadelphia and Erie Railroad. If the engines and cars given in items 7 and 8 were coupled together on one track, they would make a train nearly sixty miles long. The mileage given in item 9 is equivalent to that of one engine running nearly 296 times around the earth.