

No. 742,618.

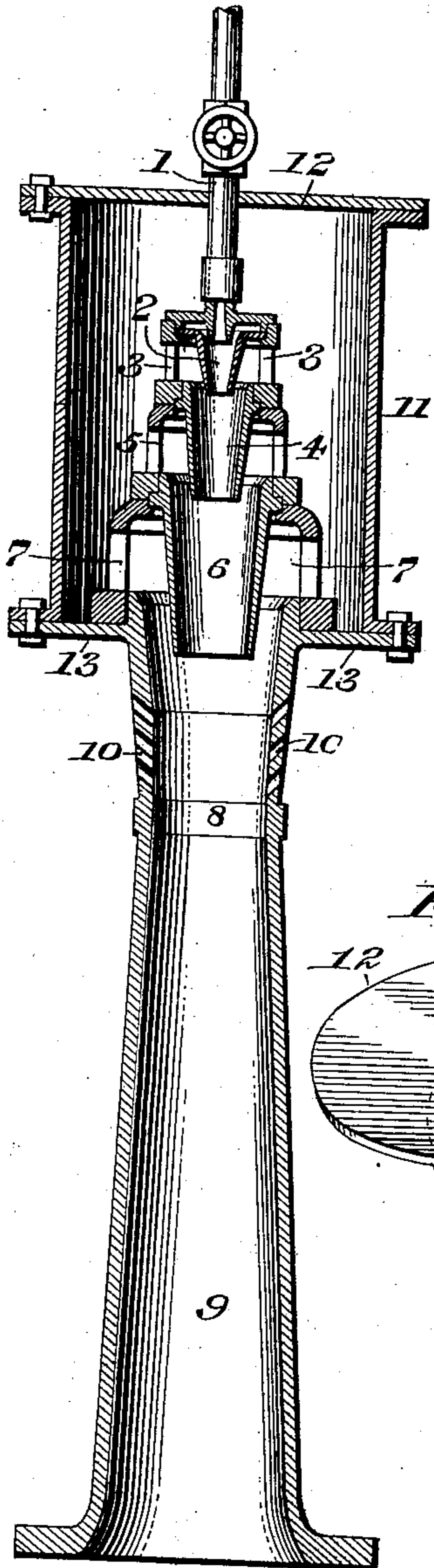
PATENTED OCT. 27, 1903.

T. M. EYNON.  
BLOWER.

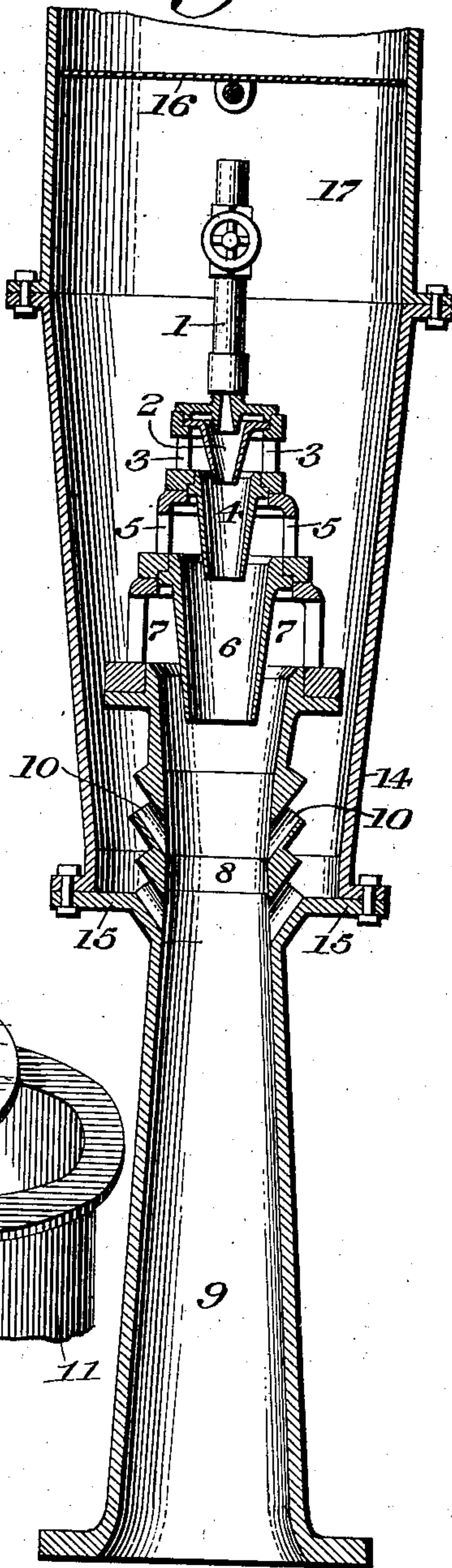
APPLICATION FILED MAR. 17, 1902.

NO MODEL.

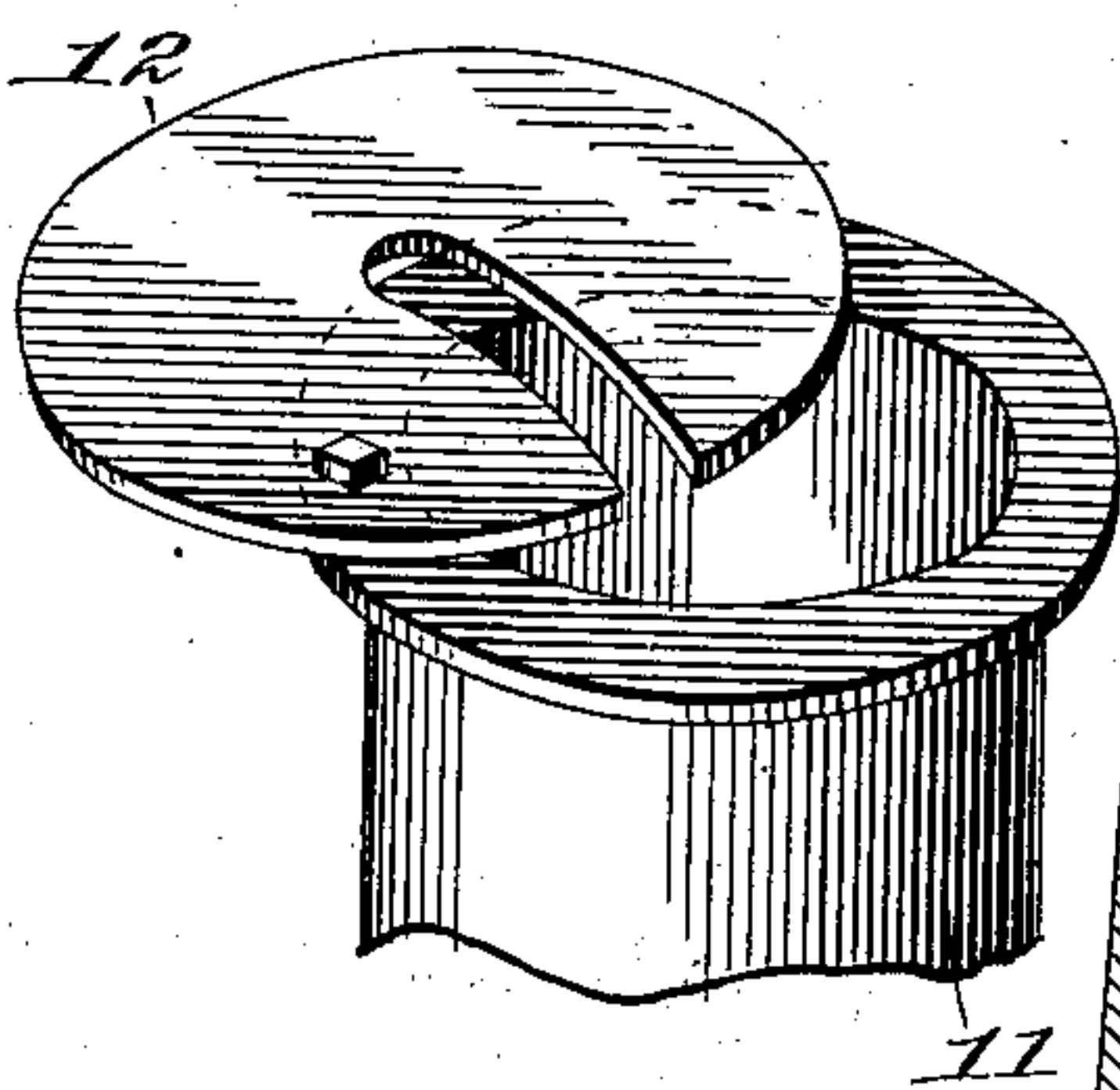
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



Witnesses  
*P. H. Nagle.*  
*L. Bouville.*

Inventor  
*Thomas M. Eynon*  
By  
*Wiedersheim & Fairbanks*  
Attorneys



# UNITED STATES PATENT OFFICE.

THOMAS M. EYNON, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO  
EYNON-EVANS MANUFACTURING COMPANY, A CORPORATION OF  
PENNSYLVANIA.

## BLOWER.

SPECIFICATION forming part of Letters Patent No. 742,618, dated October 27, 1903.

Application filed March 17, 1902. Serial No. 98,541. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS M. EYNON, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Blowers, of which the following is a specification.

My invention relates to an improved construction of a blower which is adapted for gas-producers, boiler-furnaces, and other similar locations, the blower when used for boiler-firing being exceedingly effective in producing a blast perfectly under control and with a minimum expenditure of steam, the invention being especially useful in furnaces where inferior grades of fuel—such as screenings, gas-works breeze, and other refuse products—must be burned and providing a means for increasing the steam capacity of the boilers with any kind of fuel.

The blast produced by my improved construction of steam-jet blower when applied to a boiler-furnace not only prevents the clinking of the coal, but at the same time produces a gas by the decomposition of the steam that greatly increases the combustion of the coal or fuel used.

The present invention consists more especially in a blower having an additional series of auxiliary air-induction ports located at a point beyond the larger discharge-nozzle and in proximity to the throat of the combining or commingling tube, which discharges the commingled steam and air to the desired point, whereby an increased efficiency of from fifteen to twenty per cent. is attained, all as will be hereinafter set forth, and particularly pointed out in the claims.

Figure 1 represents a longitudinal sectional view of a blower embodying my invention. Fig. 2 represents a longitudinal sectional view of another embodiment of my invention. Fig. 3 represents a perspective view of the upper portion of the casing seen in Fig. 1.

Similar letters of reference indicate corresponding parts in the figures.

Referring to the drawings, 1 designates a steam-pipe for conducting steam to the nozzle 2, whereby air is drawn in from the ports 3 and the commingled steam and air are discharged into the nozzle 4, around which are located

the air-inlet ports 5, whereby additional air is drawn into the discharge-nozzle 6, in proximity to which are the ports 7, the commingled steam and air being discharged into the throat 8 of the commingling or combining tube 9, which may lead to any desired point, all of the above parts being of the usual construction.

I have found by practical experiments that the efficiency of blowers constructed as above described can be greatly increased by the provision of an additional or auxiliary series of air-induction ports 10, which are located at or in proximity to the throat 8 beyond the extremity of the discharge-nozzle 6, whereby an additional supply of air is introduced into the commingling-tube 9.

I have found by practical experiments that the efficiency of blowers provided with these additional air-induction ports 10, located at or in proximity to the throat 8, is increased by from fifteen to twenty per cent. In practice I surround the nozzles 3, 4, and 6 with a suitable casing, as 11, (seen in Fig. 1,) which latter may be provided with a cover or plate 12, which can be laterally turned into the desired position upon the bolt as a pivot, (seen at the upper left-hand portion of Fig. 1,) so as to serve as a damper and permit the admission of a greater or less quantity of air, as may be desired.

In the construction seen in Fig. 1 I have shown the casing 11 as secured to a flange or other support 13, which is located exteriorly to the auxiliary air-induction ports 10, while in Fig. 2 I have shown the casing 14 as secured to the flange or other support 15, which is so located with respect to the auxiliary air-induction ports 10 that it completely incloses said ports, the amount of air passing into the ports 3, 5, and 7, as well as the auxiliary induction-ports 10, being controlled by a suitable damper 16, which can be located in the air-supply pipe or air-conductor 17, which latter may be extended through the roof of the building, (not shown,) if desired so as to prevent all noise in the building.

It will be apparent that the auxiliary induction-ports 10 may be constructed as shown in either Figs. 1 or 2 and that the same may extend at various angles to the axis of the



blower, as may be desired or expedient, it being, however, apparent that the best results will be secured by locating said ports in substantially the angle and position shown.

5 I desire it to be understood that my present invention is clearly differentiated from and is a great improvement over the prior devices with which I am familiar, wherein no auxiliary ports, as 10, are employed for the purpose  
10 hereinabove explained and wherein no throat, as the part 8, exists and wherein there is no commingling-tube, since by the novel combination of a series of nozzles a commingling-tube and throat intermediate said nozzles and commingling-tube and auxiliary air-induction ports 10, located intermediate said  
15 nozzles and throat, I have produced a novel construction and am enabled to attain advantages greatly superior to any of the devices with which I am familiar.  
20

It will be apparent that slight changes may be made by those skilled in the art in the manner of assembling the parts above described, and I do not, therefore, desire to be  
25 limited in every instance to the precise construction I have herein shown and described.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

30 1. In a blower, a throat, a commingling-tube into which said throat discharges, means for discharging commingled steam and air into said throat, and a series of auxiliary air-induction ports located in proximity to said  
35 throat, intermediate of the latter and said means.

2. In a blower, a series of discharge-nozzles of varying size for steam and air, a commin-

gling-tube for said steam and air, a throat intermediate of said nozzles and commingling-tube into which latter said throat discharges, and a series of auxiliary air-induction ports located intermediate of said throat and the larger of said discharge-nozzles. 40

3. In a blower, a series of discharge-nozzles 45 for steam and air, a commingling-tube for the steam and air, a throat intermediate of said nozzles and commingling-tube, a series of auxiliary air-induction ports located intermediate of said throat and said nozzles, and a casing 50 surrounding said nozzles.

4. In a blower, a series of discharge-nozzles for steam and air, a commingling-tube for said steam and air, a throat intermediate of said nozzles and tube, a series of auxiliary air-induction ports located in proximity to said throat and intermediate of the latter and the nearest of said nozzles, a flange or other support on said commingling-tube, and a casing 60 supported upon said flange.

5. In a blower, a series of discharge-nozzles for steam and air, a commingling-tube for said steam and air, a throat intermediate of said nozzles and tube, a series of auxiliary air-induction ports located in proximity to said throat intermediate of the latter and the nearest of said nozzles, a flange or other support on said commingling-tube, and a casing supported upon said flange, in combination with means on said casing for regulating the admission of air to said nozzles. 70

THOMAS M. EYNON.

Witnesses:

JOHN A. WIEDERSHEIM,  
E. HAYWARD FAIRBANKS.