

F. B. Blanchard,
Steam-Boiler Furnace,

No. 32,614,

Patented June 25, 1861.

Fig. 1.

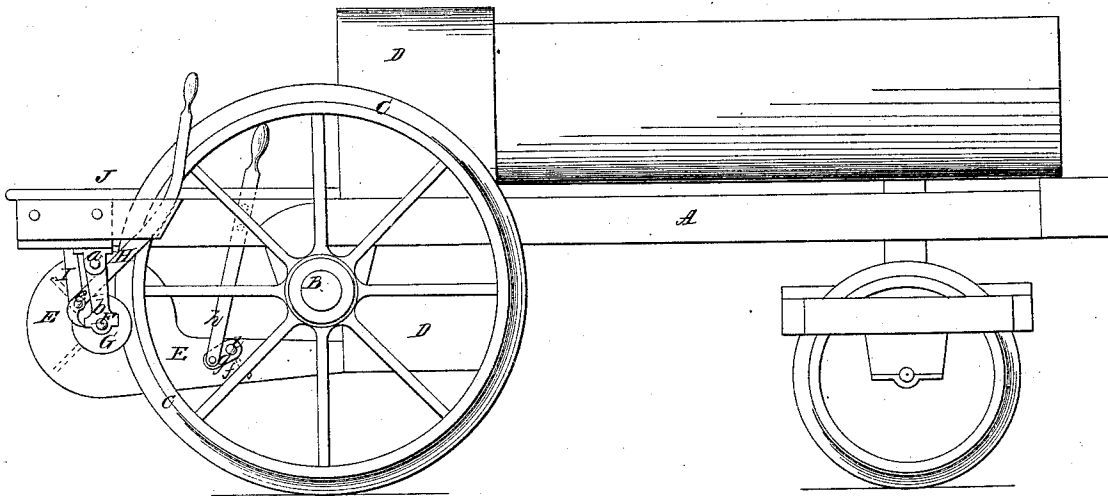
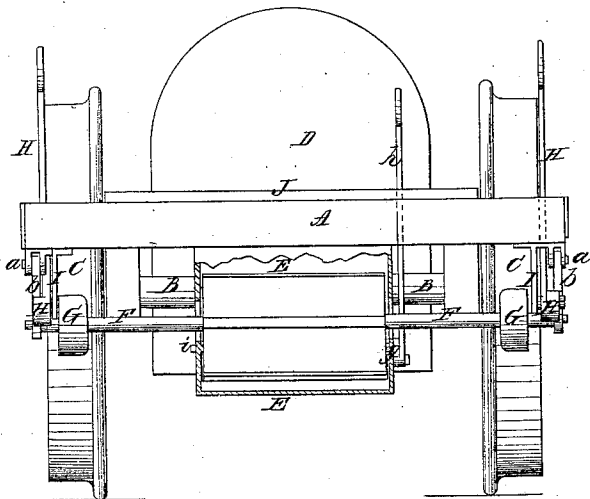


Fig. 2.



Witnesses:
Wm. Thompson,
J. W. Coombs

Inventor:
F. B. Blanchard

UNITED STATES PATENT OFFICE.

F. B. BLANCHARD, OF NEW YORK, N. Y.

APPLICATION OF BLOWERS TO FURNACES OF LOCOMOTIVES.

Specification of Letters Patent No. 32,614, dated June 25, 1861.

To all whom it may concern:

Be it known that I, FRANCIS B. BLANCHARD, of the city, county, and State of New York, have invented a new and useful Improvement in the Application of Blowers to the Furnaces of Locomotives; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side view of a locomotive having my invention applied. Fig. 2 is a rear view of the same, partly in section.

Similar letters of reference indicate corresponding parts in both figures.

This invention relates to the driving of the blower by friction from the peripheries of the driving or other wheels of the locomotive to effect combustion in a closed furnace, and it consists in furnishing the blower shaft with friction pulleys or rollers to work in contact with the peripheries of the said wheels, and the arrangement of the so furnished shaft in bearings movable toward and from the axis of said wheels under the control of levers for the purpose of bringing the blower into or out of operation at pleasure.

To enable others skilled in the art to make and use my invention I will proceed to describe its construction and operation.

A. is the frame of the locomotive.

B. is the driving axle; C. C. the driving wheels; and D. the fire box.

E. is the casing of the blower arranged under the rear portion of the carriage A. and having its trunk connected with the furnace for the delivery of the air thereinto.

F. is the fan shaft, supported a short distance in rear of the driving wheels and parallel with their axle in bearings in hangers *b, b*, which are suspended from the frame A. by pin joints *a, a*, in such manner as to permit them to swing backward and forward to carry the fan shaft toward and from the driving wheels.

G. G. are the friction pulleys, or more properly speaking the friction rollers on the fan shaft, arranged opposite to the treads of the driving wheels. The hangers *b, b*, are so arranged that the weight of the fan shaft and its fans and friction rollers tends to draw and keep the latter out of contact with the driving wheels.

H. H. are two similar levers arranged to work on fixed fulcrum pins *e, e*, carried by two rigid hangers I. I. which are bolted to the bottom of the frame A. near the swinging hangers *b, b*, of the fan shaft. These levers which are situated one near each side of the engineer's platform J. within the reach of the engineer, are so arranged that they may be brought to bear upon the swinging hangers *b, b*, in such manner as to bring the friction rollers G. G. of the fan shaft into contact with the treads of the driving wheels, for the purpose of enabling the said wheels to drive the blower by their friction upon the said rollers. Suitable means may be provided for securing the said levers in position to keep the rollers in contact with the driving wheels and so keep the blower in operation. The blower may be driven in the same manner by one of the wheels, the blower shaft in that case having only one of its bearings movable and being furnished with but one roller G., and a single lever H. only being provided.

The trunk of the blower is fitted with a swinging valve *f*, shown dotted in Fig. 1, the spindle *i*, of the said valve protruding through one side of the trunk and being furnished outside thereof with an arm *g*, to which is connected a rod *h*, passing through the engineer's platform. By taking hold of the rod and moving it up or down the engineer can give a less or greater opening to the valve and so give more or less force to the blast.

What I claim as my invention and desire to secure by Letters Patent, is,

1. The combination of the movable bearing or bearings *b*, of the fan shaft, the friction roller or rollers G. and the lever or levers H. the whole applied relatively to the driving or other wheels of the locomotive and operating substantially as herein specified.

2. The regulating valve *f*, applied and operating in the trunk of the blower, under the control of the engineer, substantially as herein specified.

F. B. BLANCHARD.

Witnesses:

O. D. MUNN,
M. M. LIVINGSTON.