H & F. J. L. Blandy,

Steam-Engine Pump-Gearing.

No. 43,387. Patented July 5, 1864.

Fig. 1.

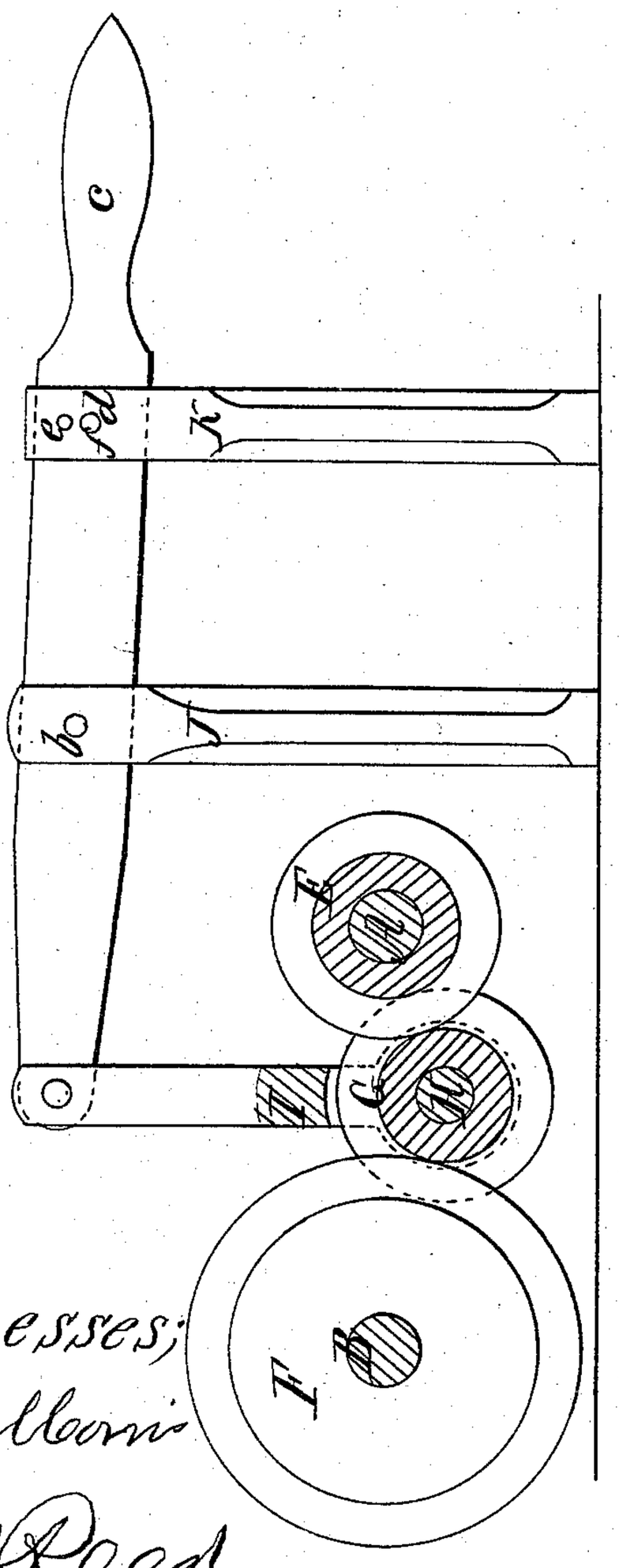
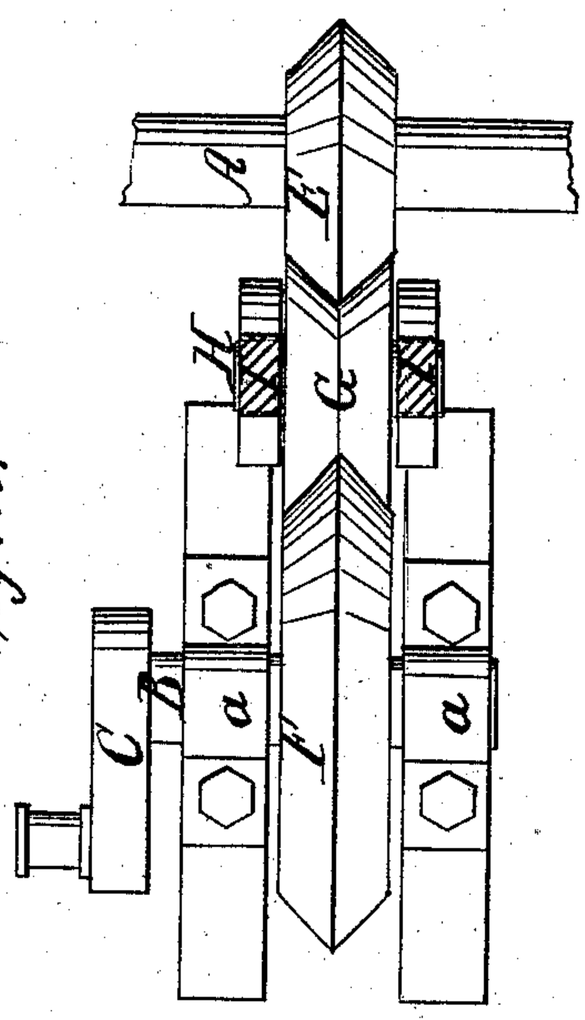


Fig. 2.



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AM. PHOTO-LITHO. CO. N.Y. (OSBORNE'S PROCESS)

UNITED STATES PATENT OFFICE.

HENRY BLANDY AND FREDERICK J. L. BLANDY, OF ZANESVILLE, OHIO.

IMPROVEMENT IN PUMP-GEAR

Specification forming part of Letters Patent No. **43,387**, dated July 5, 1864.

To all whom it may concern:

Be it known that we, HENRY BLANDY and FREDERICK J. L. BLANDY, both of Zanesville, in the county of Muskingum and State of Ohio, have invented a new and useful Improvement in the Driving-Gear of Feed-Pumps of Steam-Engines; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and apply the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 exhibits a transverse section of the crank-shaft and a side view of the pump-gear of a steam-engine. Fig. 2 is a plan of the same, partly in section.

Similar letters of reference indicate like parts.

This invention consists in transmitting motion from the crank-shaft of a steam-engine to a counter-shaft for working the feed-pump, by means of a system of friction-wheels, one of which is arranged as an idle-wheel, to be thrown in and out of gear as required to connect the pump with and disconnect it from the engine, the object being to effect such connection and disconnection in a more easy manner than can be done by the means heretofore used and to relieve the engine of all avoidable friction and the driving-gear of the pump of all avoidable wear when the pump is not in operation.

A is the main or crank shaft of the engine.

B is the counter-shaft, arranged in suitable bearings, *a a*, and furnished with a crank, C, for driving the pump.

E is a friction-wheel on the main shaft A, and F is a friction-wheel on the counter-shaft B. The peripheries of these wheels are made with V-shaped ridges, to give them a greater frictional surface.

G is an idle-wheel, having in its periphery a V-shaped groove to fit the V-shaped edges of the wheels E and F. This idle-wheel G has the journals of its shaft or axle H fitted to bearings in a forked rod which is suspended from one end of a lever, I, which works on a fulcrum-pin, *b*, supported in a standard, J, and the other end of which is formed into a handle, *c*. The said wheel G is arranged between the wheels E and F, below the centers thereof, and is of too large diameter for its center to come in line with the centers of E and F. The portion of the lever near the handle *c* is received in a slot in a fixed standard, K, in which there are two holes, *d* and *e*, for the reception of a pin, *f*, which is inserted through one of them and through a corresponding hole in the lever.

To connect the pump with the engine, it is only necessary to depress the handle far enough to bring the hole in the lever opposite to the lower hole, *d*, in the standard K, which brings the idle-wheel G into contact with the wheels E and F, and causes E to transmit motion through G to F, and so to drive the counter shaft and the pump. The pin *f* is then inserted through the holes in the lever and standard K, and the wheel G thereby kept in contact with E and F, and the pump kept in operation.

When it is desired to disconnect the pump, it is only necessary to take out the pin *f* and raise the handle *c* of the lever high enough to permit the pin to be inserted through the upper hole, *e*, of the standard and the hole in the lever, which keeps the idle-wheel G below the wheels E and F.

When the pump is connected, the friction-wheels transmit the motion with the least possible amount of friction, and when it is disconnected the engine is relieved of all the friction of the pump-gear, so that there is neither waste of power nor unnecessary wear.

The pump may be driven at any speed by making the friction-wheels E F of proper relative size.

We claim as our invention and desire to secure by Letters Patent—

The employment, in combination with a counter-shaft, B, for driving the feed-pump of an engine, of a friction-wheel, E, on the main shaft of the engine, a friction-wheel, F, on the said counter-shaft, and an intermediate idle friction-wheel, G, suspended from a lever, or its equivalent, substantially as herein specified.

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