

(No Model.)

J. CLAYTON.
Attachment for Pumps and Compressors.
No. 241,527.
Patented May 17, 1881.

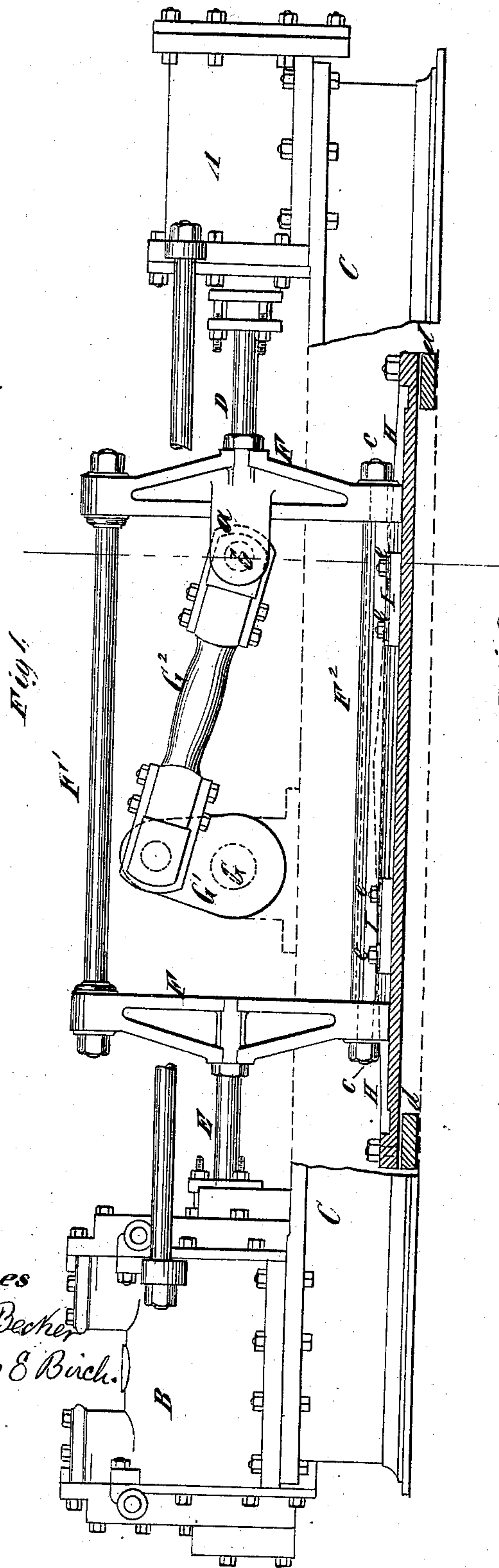
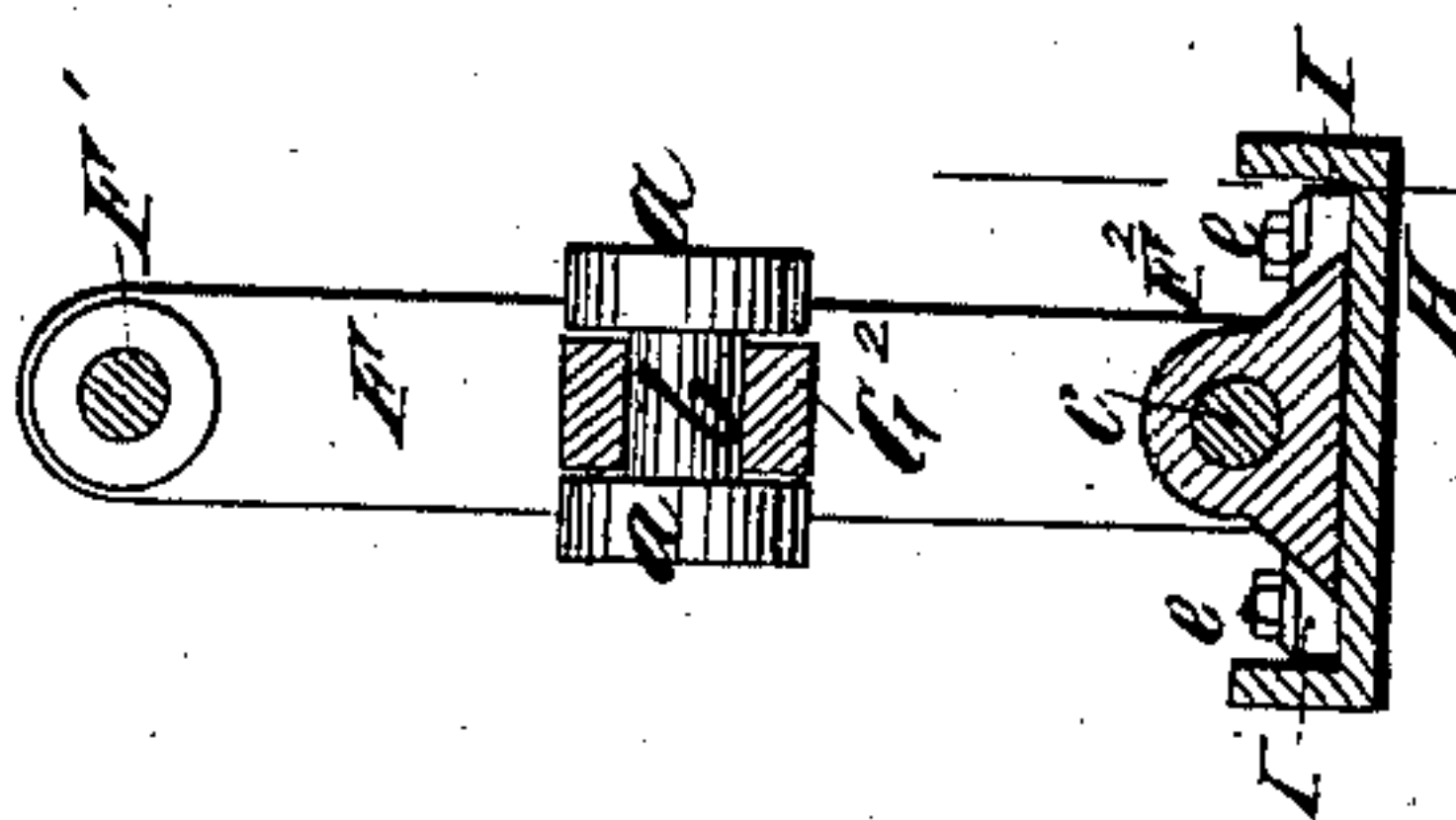


Fig. 2.



Witnesses

John Becker
Thomas E. Birch.

Inventor

James Clayton
By his Attorneys
Brown & Brown

UNITED STATES PATENT OFFICE.

JAMES CLAYTON, OF BROOKLYN, NEW YORK.

ATTACHMENT FOR PUMPS AND COMPRESSORS.

SPECIFICATION forming part of Letters Patent No. 241,527, dated May 17, 1881.

Application filed September 15, 1880. (No model.)

To all whom it may concern:

Be it known that I, JAMES CLAYTON, of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Attachments for Pumps and Compressors, of which the following is a specification.

My invention relates to that class of pumps, air-compressors, &c., in which the steam or actuating cylinder is arranged in line with the pump-cylinder and the two piston-rods are connected by a yoke and with a connecting-rod and crank.

The invention consists in the combination, with a steam or actuating cylinder arranged in a horizontal position, and pump-cylinder, their piston-rods, a yoke connecting them and composed of two cross-heads and two parallel bars or stretchers, and a crank and connecting-rod receiving motion from said yoke and preferably arranged in a vertical plane with the piston-rods, of a guide of novel construction for the lower bar or stretcher of said yoke, whereby the weight of the yoke, pistons, and piston-rods is largely supported, and all twisting or turning of the yoke prevented.

In the accompanying drawings, Figure 1 represents a partially-sectional side view of an air-compressor embodying my invention; and Fig. 2 is a transverse section of the yoke and its supporting-guide.

Similar letters of reference designate corresponding parts in both the figures.

A B designate, respectively, the steam or actuating cylinder and the pump or air-compressing cylinder, both of which are secured in a horizontal position upon a bed-plate, C. The piston-rods D E of the steam and air cylinders are arranged in line with each other, and are connected by a yoke composed of two cross-heads, F, to which the piston-rods are connected, and two parallel connecting-bars or stretchers, F' F², between said heads.

G designates a crank-shaft, G' a crank, and G² a connecting-rod for transmitting motion from the yoke to said crank-shaft. As here shown, the yoke is sufficiently long to receive the crank and connecting-rod between its two cross-heads or ends F, it being somewhat longer between the heads or ends than the length of

the crank and connecting rod combined. The connecting-rod is connected to the yoke by two lugs, a, upon one of the cross-heads or ends F, between which the rod end is secured by a pin or bolt, b.

By reference to Fig. 2 it will be seen that the two lugs a, or fork for receiving the end of the connecting-rod, is in the middle of the width of the yoke in line with the piston-rods, and that therefore the connecting-rod vibrates or moves in a vertical plane with the piston-rods and all side strain is obviated. When the connecting-rod is so arranged the only strain received from imparting motion to it is an upward and downward strain, as the crank end of the connecting-rod moves above and below the center line of the pistons and rods; and in order to counteract this strain and prevent wear, I employ a guide for the lower cross-bar or stretcher, F², of the yoke, which I will now describe.

The upper bar or stretcher, F', connecting the cross-heads or ends F, may consist simply of a bolt, as shown; but the lower bar or stretcher is composed of a piece or shoe, F², having a broad flat face, and held in place by a rod or bolt, c, passing lengthwise through it and through the cross-heads or ends F. H is a guide or bed, which is supported at each end upon cross-braces d in the bed-plate C, and which forms a continuous support for the shoe F². By this bed or guide the weight of the pistons, piston-rods, and yoke is largely supported, and the wear of the lower sides of the cylinders and stuffing-boxes is greatly reduced. As shown clearly in Fig. 2, the shoe F² is dove-tailed or of an inverted-V shape in its transverse section, and I designates gibs having corresponding faces, and adapted to be set up on either side of the said shoe, to take up wear, and secured in position by bolts e. These gibs are shown as arranged in pairs near each end of the yoke, and it will be seen that by their inclined faces all upward movement of the yoke which might be produced by the vibration or movement of the connecting-rod is prevented.

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

1. The combination of two cylinders ar-

ranged in line, two pistons and rods therefor, a yoke connecting said piston-rods and comprising a broad-faced bar or shoe, F², having inclined or dovetailed-shaped sides, the guide
5 or bed H therefor, and the gibs I, having their faces inclined correspondingly to the shoe F², substantially as specified.

2. The combination of the cylinders A B, the pistons-rods D E, the yoke F F' F², the

crank-shaft G, crank G', and connecting-rod 10 G², adapted to vibrate or work in a vertical plane coincident with the centers of the piston-rods, and the guide and support H I, all substantially as specified.

JAMES CLAYTON.

Witnesses:

FREDK. HAYNES,

LOUIS M. WHITEHEAD.