

(No Model.)

2 Sheets—Sheet 1.

T. C. DILL.  
DISCONNECTING DEVICE FOR VALVE RODS.  
No. 385,549.

Patented July 3, 1888.

FIG. 1.

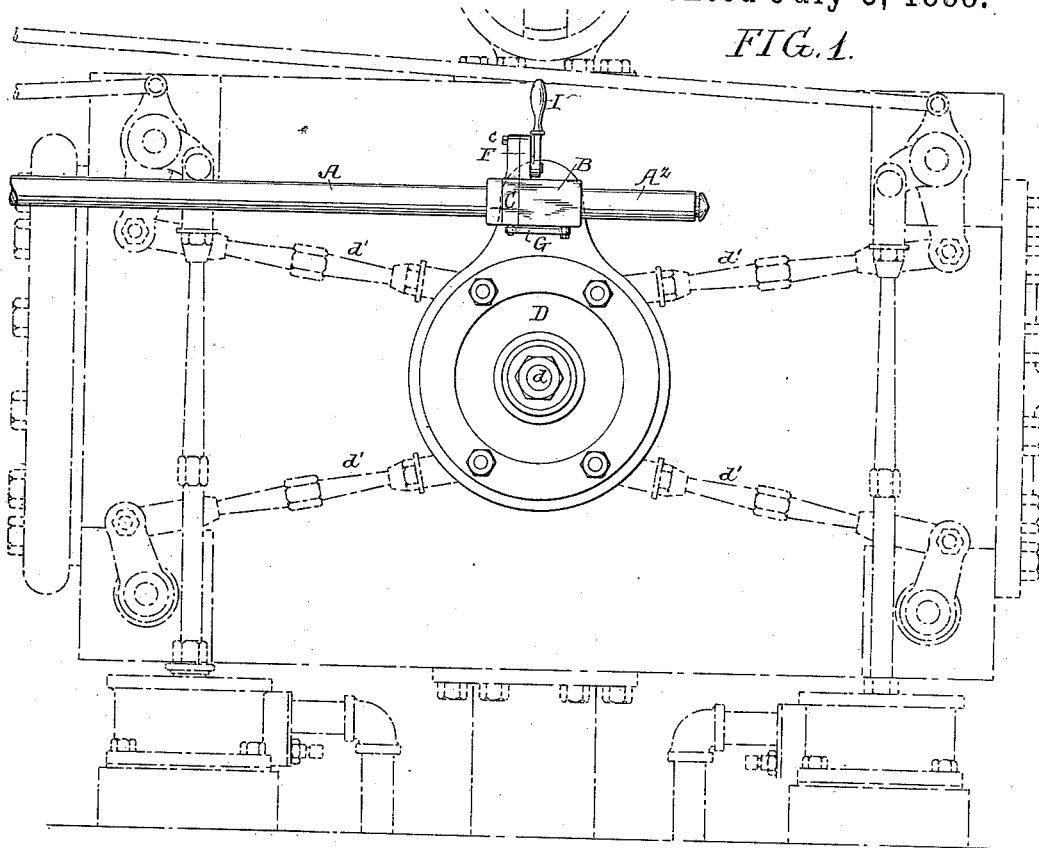
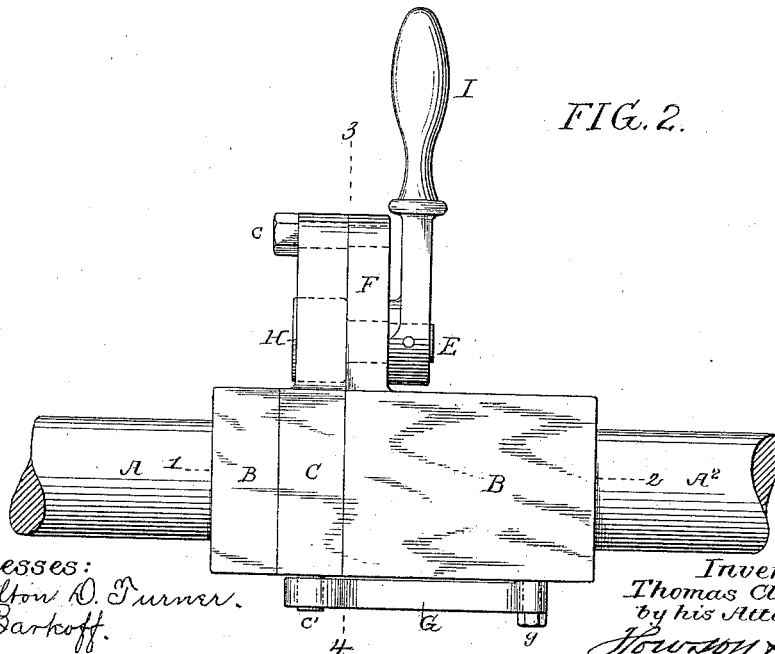


FIG. 2.



Witnesses:  
Hamilton D. Turner.  
Alex. Barkoff.

Inventor:  
Thomas Clark Dill.  
by his Attorneys.  
Howson & Howson.

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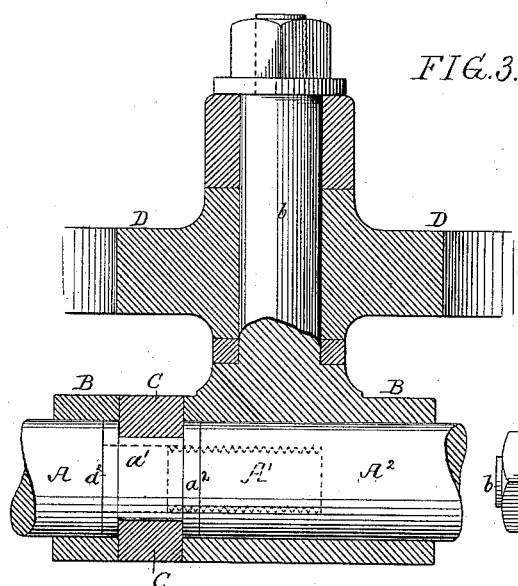


FIG. 3.

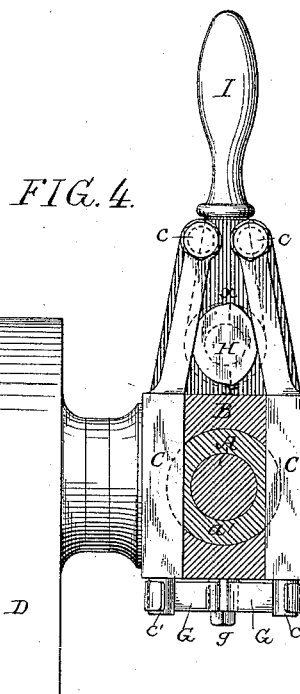


FIG. 4.

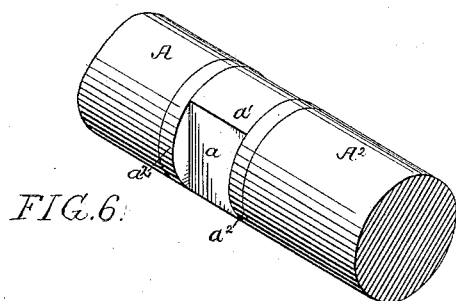


FIG. 6.

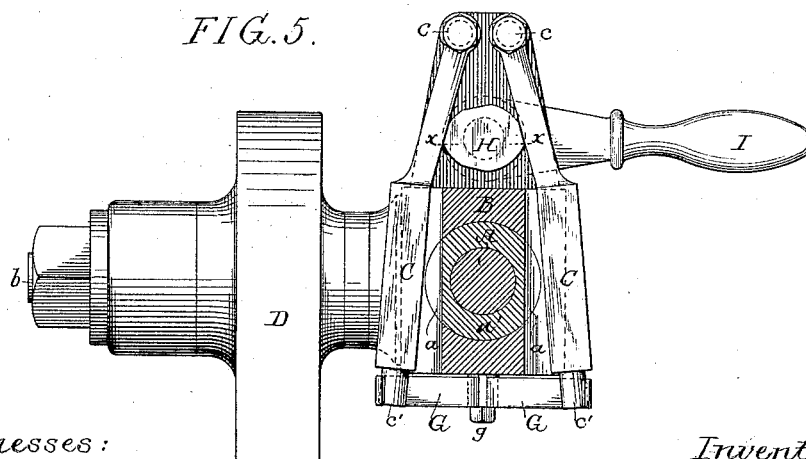


FIG. 5.

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# UNITED STATES PATENT OFFICE.

THOMAS CLARK DILL, OF PHILADELPHIA, PENNSYLVANIA.

## DISCONNECTING DEVICE FOR VALVE-RODS.

SPECIFICATION forming part of Letters Patent No. 385,549, dated July 3, 1888.

Application filed March 3, 1888. Serial No. 266,019. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS CLARK DILL, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented certain Improvements in Disconnecting Devices for Valve-Rods of Steam-Engines, of which the following is a specification.

The object of my invention is to attach the eccentric-rod of a steam-engine to, or detach it from, the valve-operating mechanism.

In the drawings I have illustrated my device in connection with an engine of the Corliss type; but it will be understood that it may be applied to engines of other constructions without departing from my invention.

In the accompanying drawings, Figure 1 is a side view of sufficient of an engine to illustrate the application of my device. Fig. 2 is an enlarged side view. Fig. 3 is a sectional plan view on the line 1 2, Fig. 2. Fig. 4 is a transverse section on the line 3 4, Fig. 2, showing the eccentric-rod locked to the device. Fig. 5 is a similar view showing the eccentric-rod released from the control of the device, and Fig. 6 is a perspective view of a detail of the invention.

Referring to the drawings, A is the eccentric-rod adapted at one end to the usual eccentric. This rod A passes through a sleeve, B, which has at its rear a stud, b, swiveled in an extension of the valve-operating disk D, which is pivoted at d to any portion of the engine-frame and has radiating from it the valve-operating rods d' in the manner common to Corliss engines.

F is an extension of the sleeve B, and to this extension at c c are pivoted two keys, C C, which are adapted to fit snugly in ways in the sleeve B, and also in slots a a in each side of the connecting-rod, as shown in Figs. 3 and 4. These keys are held in place against the eccentric-rod A by means of springs G G, attached at g to the sleeve and passing around pins c' on the keys C C, so that the tendency of the keys is always to assume the position shown in Fig. 4.

Having its bearings on the extension F of the sleeve B is a short shaft, E, provided with a cam, H, at one end, which is adapted to fit between the keys C C, as shown in Fig. 4. To

the outer end of this shaft E is secured a suitable hand-lever, I, for the purpose of operating said cam H. This cam is of the peculiar form shown in Figs. 4 and 5, the widest portion being through the line x x, so that when the handle is turned to the position shown in Fig. 5 this wide portion of the cam will force the keys C C apart and out of the slots a a in the side of the eccentric-rod, and consequently will release the sleeve B from the control of the eccentric and stop the engine instantly and allow the rod to reciprocate freely in the sleeve without imparting any movement thereto; but when the handle is turned to the position shown in Fig. 4 the springs will draw the keys C C together, and as soon as the slots in the eccentric-rod A come in line with the keys said keys will be forced into the slots a a, locking the eccentric-rod to the sleeve B, thus giving motion to the valve-operating mechanism and starting the engine.

I prefer to construct the rod in sections, as shown in Fig. 3—that is, I provide the main portion of the rod A with a reduced portion, A', screw-threaded, as shown, and adapted to an internal screw-thread in a portion, A<sup>2</sup>, of the rod, and I prefer to clamp between these two portions three sleeves, a' a<sup>2</sup> a<sup>3</sup>. The sleeve a' is cut away, as shown, to form the slots a a. By this construction the wear consequent upon the releasing and clutching of the keys C C can be taken up, although it will be understood that a plain rod, H, with slots may be used without departing from my invention.

It will be understood that in place of the two keys shown one key may be used; but I prefer, especially in constructing engines of large size, to use the two keys, as illustrated.

I claim as my invention—

1. The slotted eccentric-rod with a sleeve, B, and a key or keys adapted to lock the sleeve to the rod, and operating devices therefor, all substantially as set forth.

2. The combination of the slotted eccentric-rod, the sleeve B, secured to the valve-operating devices of a steam-engine, the pivoted keys C C, and a handled cam for operating upon these keys to force them out of the grooves in the eccentric-rod, all substantially as set forth.

3. The combination of the eccentric-rod, the slots therein, the sleeve B, connected to the valve-operating mechanism, the pivoted keys C C, the handled eccentric H for forcing the  
5 keys apart, and a spring, G, tending to force the keys against the eccentric-rod, substantially as set forth.

4. The combination of the two-part eccentric-rod, the portion A, having a screw-  
10 threaded reduced portion, A', and an external

screw-threaded portion, A<sup>2</sup>, with a sleeve, a', grooved to receive the keys of the locking device, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two sub- 15  
scribing witnesses.

THOMAS CLARK DILL.

Witnesses:

HENRY HOWSON,

HARRY SMITH.