(No Model.)

F. UFFELMANN.

REVERSING DEVICE FOR ENGINES.

No. 344,225. Patented June 22, 1886.

Fig. 1.

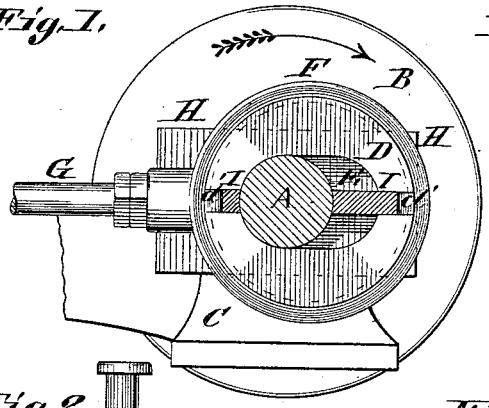


Fig. 3.

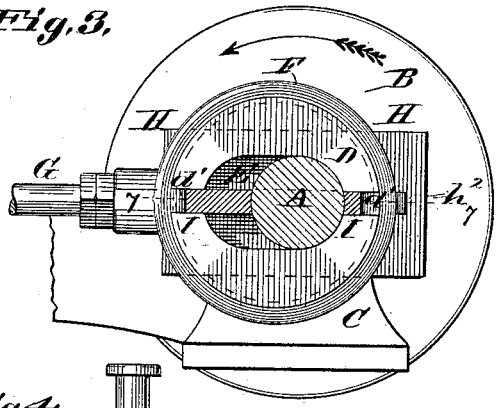


Fig. 2.

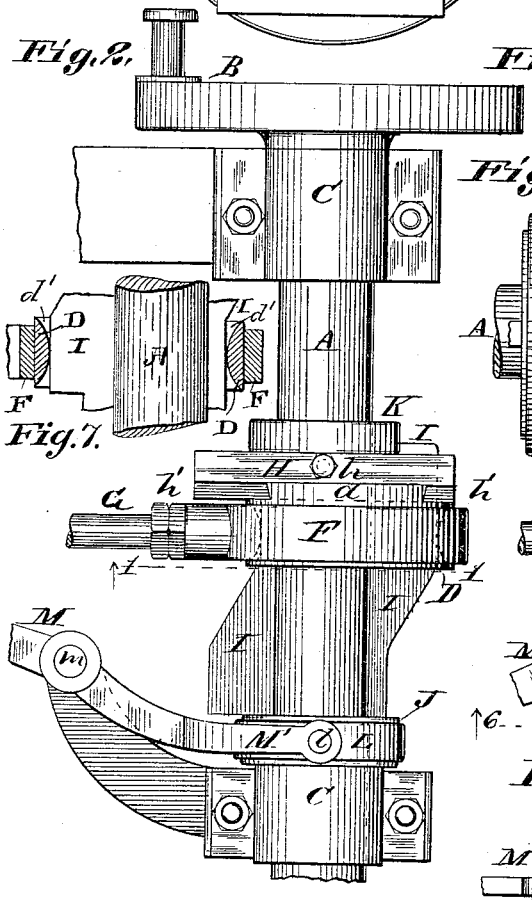


Fig. 4.

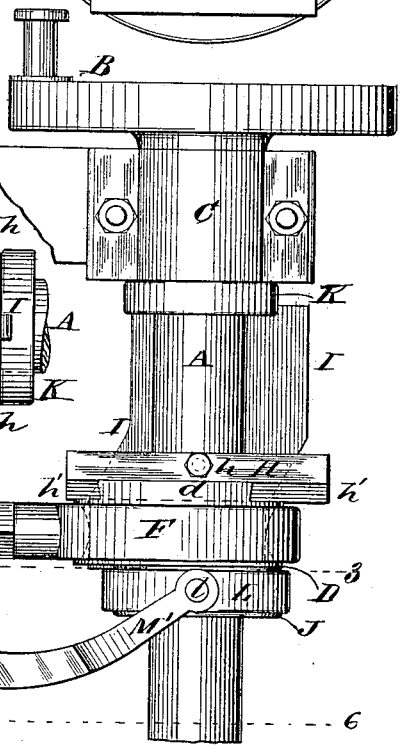


Fig. 5.

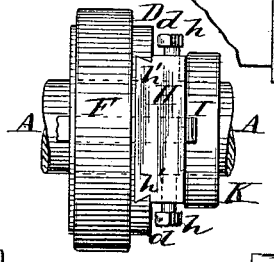
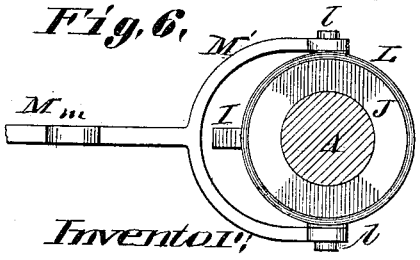


Fig. 7.

Fig. 6.



Attest:

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UNITED STATES PATENT OFFICE.

FRIEDRICH UFFELMANN, OF RED BUD, ILLINOIS.

REVERSING DEVICE FOR ENGINES.

SPECIFICATION forming part of Letters Patent No. 344,225, dated June 22, 1886.

Application filed March 8, 1886. Serial No. 194,466. (No model.)

To all whom it may concern:

Be it known that I, FRIEDRICH UFFELMANN, of Red Bud, Randolph county, in the State of Illinois, have invented a certain new and useful Improvement in Reversing Devices for Engines, of which the following is a clear, full, and exact description, reference being had to the accompanying drawings, forming part of this specification, and in which—

Figures 1 and 3 are sections at 1 1, Fig. 2, and 3 3, Fig. 4, respectively, showing the eccentric in its two extreme positions. Figs. 2 and 4 are top views showing the eccentric in these two positions. Fig. 5 is a detail side view. Fig. 6 is a section at 6 6, Fig. 4. Fig. 7 is a section on the line 7 7, Fig. 3, showing the eccentric and the yoke surrounding it, fragments of the wedges for shifting the eccentric and the crank-shaft being shown in elevation.

This is a reversing device which acts by giving the eccentric a strictly diametric movement on the eccentric-shaft by means of two inclines or wedges secured to collars having endwise movement on the shaft.

A is the eccentric-shaft, which may be the main or crank shaft of the engine.

B represents the crank.

C C represent the journal-bearings of the shaft.

D is the eccentric, which is made with an aperture, E, whose width is about equal to the diameter of the shaft A, but whose length is sufficient to allow the eccentric to be moved transversely upon the shaft to either side, to give it the required eccentricity to cause the movement of the slide-valve of the engine.

F is the yoke or collar of the eccentric.

G is the eccentric-rod.

H is a guide-plate fixed upon the shaft A by set screws *h*, or by other means. This plate has beveled guides *h'*, upon which work the beveled guides *d* upon the side of the eccentric. By this guide-connection the eccentric is caused to turn with the shaft A, and has freedom to move transversely upon the shaft.

I I are inclines or wedges having endwise movement on the shaft. These wedges work in slots h^2 of the guide-plate H and in slots *d'* of the eccentric, against whose ends they bear, to give the transverse movements to the eccentric. The wedges extend radially from the shaft. Their ends are attached to collars J K, which are movable on the shaft. The collar J has a circumferential groove, in which is a ring, L, having studs *l*, engaging in the prongs of the shifting-fork M' at the end of the shifting-lever M.

The movement of the lever M upon its fulcrum *m* will cause the endwise movement of the collars J K and wedges I I upon the shaft, and thus the eccentric may be moved into a position concentric with the shaft or its eccentricity reversed to reverse the motion of the engine.

It will be seen that there are parts of the wedges at the ends whose edges are parallel with the shaft, so that when the eccentric is at either extreme there shall be no tendency to leave such position, as there would be if the end of the eccentric slot *d'* had bearing against an inclined edge.

In order to permit the eccentric D to slide from the inclined portions of the wedges I onto the parts which are parallel with the axis of the shaft A, the surfaces at the bottoms of the notches *d*, which bear against the opposite sides of said wedges, are beveled off or rounded, as shown in elevation in Figs. 1 and 3, by dotted lines in Figs. 2 and 4, and in transverse section in Fig. 7.

I claim as my invention—

1. The combination, with the eccentric-shaft A, having the wedges I, said wedges being constructed with edges parallel with each other throughout their length, parallel with the axis of the shaft at their extremities, and inclined to the said shaft at an intermediate point, of the ring D, of cylindrical form on its exterior, having the elongated slot E, for the passage of the shaft A, and the slots *d'*, fitting snugly the edges of said wedges, and the yoke or ring F, fitting the cylindrical exterior of the ring D, substantially as and for the purposes set forth.

2. The combination, with the shaft, of the wedges I, terminating in straight portions, substantially as described, and the eccentric having a slot for the reception of said wedges, the surfaces of the eccentric which engage with the opposite sides of said wedges being beveled off or rounded, substantially as and for the purpose set forth.

3. The combination, with the shaft A, hav-

ing the wedges I, whose surfaces are parallel to each other, but inclined to the axis of the shaft, and which terminate at both ends in surfaces parallel with the axis of the shaft, of the eccentric D, having the elongated aperture E, and the diametrically-opposite slots *d'*, the engaging surfaces at the extremities of said slots being beveled or rounded, substantially as set forth.

FRIEDRICH UFFELMANN.

Witnesses:
SAML. KNIGHT,
JOSEPH WAHLE.