

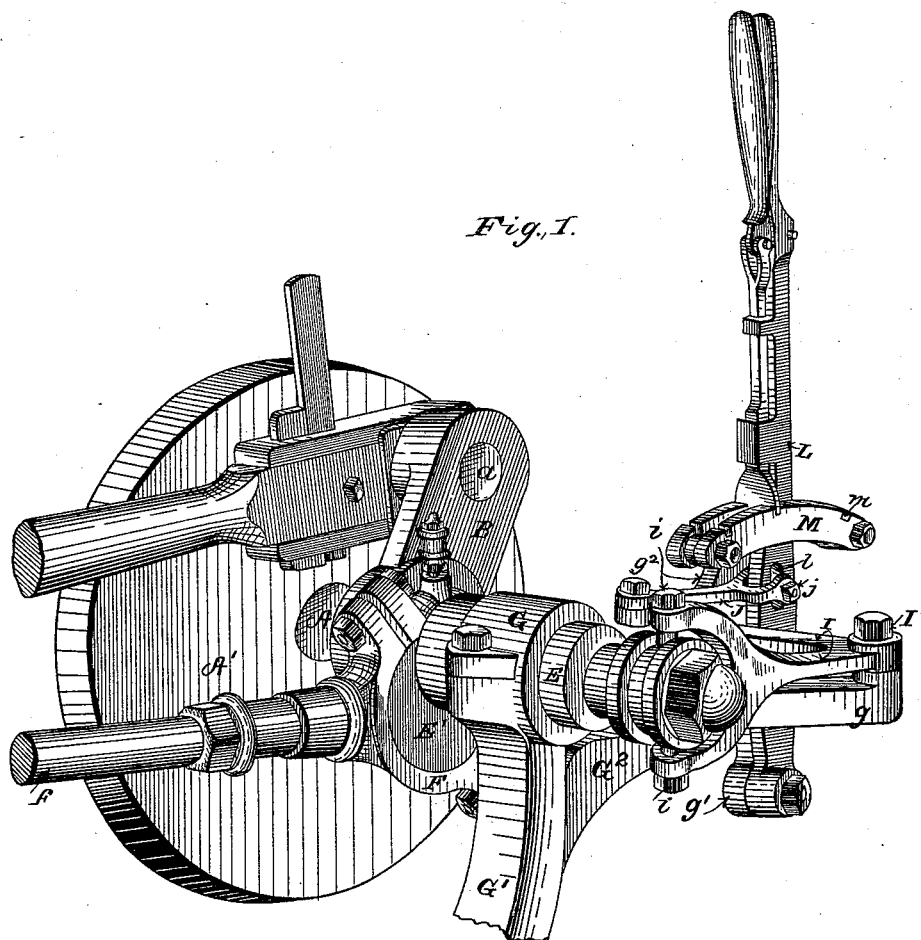
(No Model.)

2 Sheets—Sheet 1.

R. SCHEIDLER.
REVERSING MECHANISM.

No. 421,523.

Patented Feb. 18, 1890.



WITNESSES.

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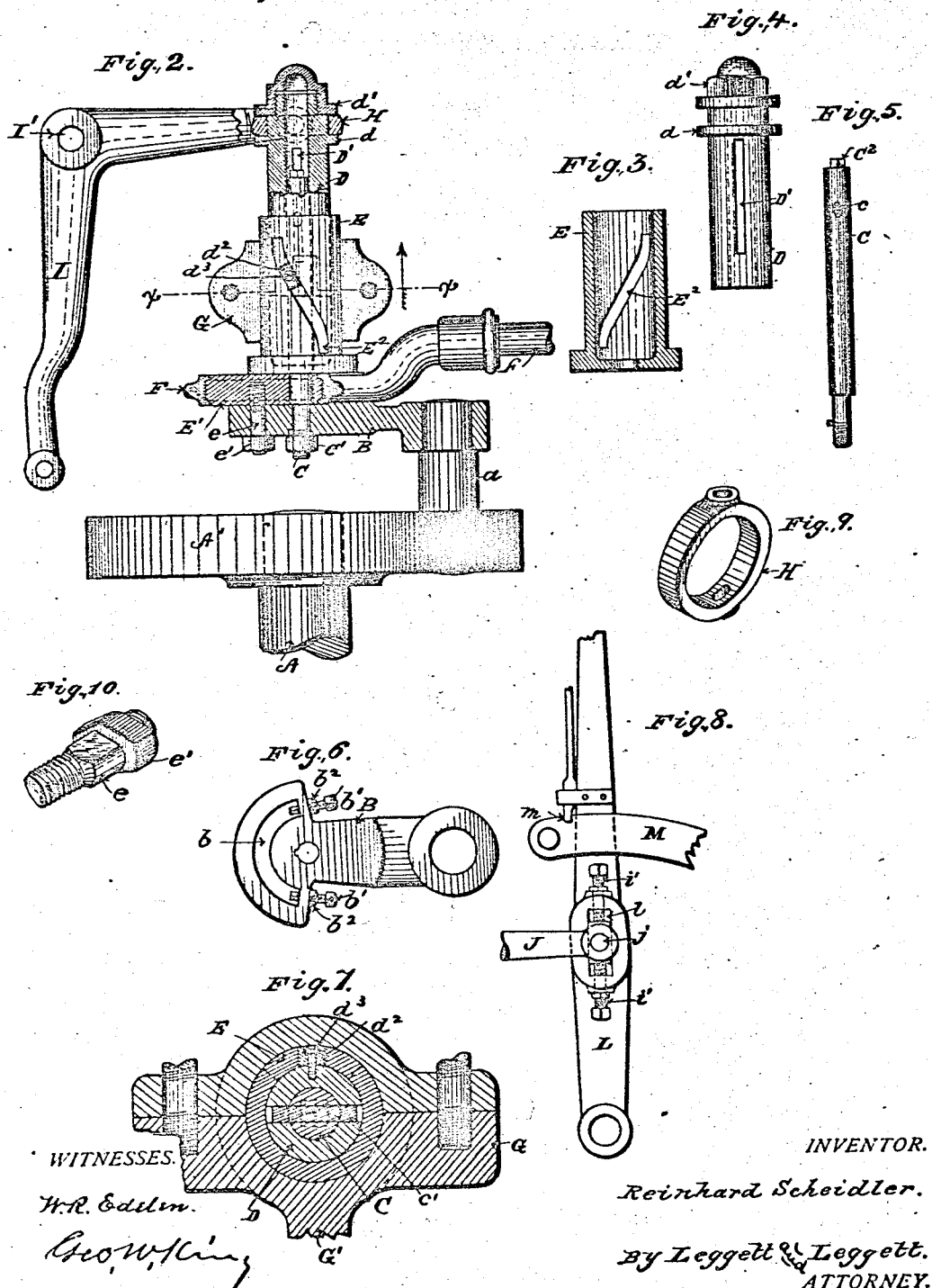
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UNITED STATES PATENT OFFICE.

REINHARD SCHEIDLER, OF NEWARK, OHIO.

REVERSING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 421,523, dated February 18, 1890.

Application filed September 3, 1889. Serial No. 322,894. (No model.)

To all whom it may concern:

Be it known that I, REINHARD SCHEIDLER, of Newark, in the county of Licking and State of Ohio, have invented certain new and useful Improvements in Reversing Mechanism; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to improvements in reversing mechanism designed more especially for traction-engines; and it consists in certain features of construction and combination of parts hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in perspective. Fig. 2 is a plan, partly in section. Figs. 3 and 4 are plan and elevation in detail, respectively, of sleeves D and E, the former being in section. Fig. 5 is a plan in detail of steady-pin C. Fig. 6 is a side elevation of the eccentric-arm B. Fig. 7 is an elevation in section on line $x-x$, Fig. 2. Fig. 8 is a side elevation of the reversing-lever. Figs. 9 and 10 are details, respectively, of collar II and stud e .

A represents the crank-shaft of the engine, having mounted thereon crank-disk A', the latter being provided with wrist a , these members being of ordinary construction. On wrist a is rigidly mounted the eccentric-arm B, the latter extending past the line of shaft A. To arm B is attached steady-pin C, the axis of this pin and the axis of shaft A being coincident. The hole in arm B for receiving the steady-pin and the engaging section of the latter are preferably slightly conical, the steady-pin having a nut C' for drawing the pin home to its seat in the arm. Before tightening nut C' the steady-pin may be turned on its axis in adjusting the parts. The steady-pin is rigidly held to its seat by tightening the nut against the arm, and a key, pin, or spline may be added, if necessary, to prevent the steady-pin from turning in the arm. For turning the steady-pin previous to fastening it, the end of the pin at C' is square or otherwise prepared for receiving a wrench or other appliance for turning the pin on its axis. On pin C is mounted the inner sleeve D, this sleeve having an easy fit, so that the

sleeve may be easily moved endwise on the pin. Pin C has a lateral hole c , in which is driven key c' , the protruding ends of this key operating in longitudinal slots D' of sleeve D, by which arrangement of parts the sleeve is held from turning on the steady-pin, but may reciprocate endwise thereon. Sleeve D is provided with collar d , usually integral with the sleeve, the latter being also provided with a cap-nut d' , by means of which latter dirt and dust are excluded from the cavity of the sleeve. Between the collar and nut operates a loose collar or band H. The latter is omitted in Fig. 1, so as to show the other members more clearly, collar H being shown in position in Fig. 2 and in detail in Fig. 9.

E is an outer sleeve mounted with an easy fit on sleeve D, so that the inner sleeve may reciprocate endwise in the outer sleeve and the outer sleeve may turn on its axis around the inner sleeve. Sleeve E is integral or rigidly connected with the eccentric E', the latter being provided with eccentric-strap F and eccentric-rod f , of ordinary construction, for transmitting the throw of the eccentric to the valve of the engine. Sleeve E is journaled in and held from moving endwise by box G, the box being supported by bracket-arm G', connected, preferably, with the bed-plate (not shown) of the engine. Sleeve E has a spiral or diagonal groove E², in which operates block d^2 , the latter, by means of studs d^3 , being fastened to sleeve D, the latter having preferably a depressed seat for receiving the block, whereby the latter is held more firmly in contact with sleeve D. With such arrangement of parts the eccentric is turned on its axis in the one direction or the other the distance necessary to reverse the engine by moving sleeve D endwise in the one direction or the other. Of course the eccentric must be adjusted accurately in either position to give the proper lead to the valve, and for such purpose adjustable stops are provided, as follows, to wit: Arm B is provided with a curved slot b , this slot being concentric with the axis of pin C. In this slot operates stud e , the latter being screwed into a threaded hole in the eccentric or otherwise fastened thereto. Arm B at the end walls of slot b is provided with adjusting-screws b' , these screws engaging threaded

holes in the arm and the ends of these screws projecting into slots *b* in position to abut stud *e*. These screws are provided with jam-nuts *b*² for holding them in adjustment.

5 These screws are cut square across at the ends, and the sides of stud *e* are flattened where they engage the screws to offer a fair bearing for the latter. By adjusting these screws the eccentric is stopped in its reverse
10 movements in the exact positions for operating the valve in running the engine the one way or the other. Stud *e* is provided with nut *e'*. This nut should fit so tight on the stud that it will not be turned by the jar or
15 motion in running the engine. This nut is backed off a trifle from arm B when the reversing mechanism is to be used, and in such position is of course inoperative. The reversing mechanism is mostly used in controlling
20 the engine in traveling on the road; but when the engine is to be used, for instance, in thrashing, sawing wood, or other purposes, the reversing mechanism having been adjusted to run the engine in the desired direction by tightening nut *e* against arm B, the reversing mechanism is released from all strain in operating the engine.

I is a lever of the bell-crank variety and is fulcrumed at I'. The forked arm of this lever
30 embraces collar II, the prongs of the lever having studs *i*, that enter holes in collar II, these holes, as shown, being elongated circumferentially of the collar, so that the parts are not cramped by the swinging movement of lever I. The other end of lever I is
35 connected by link J with shifting-lever L, the joints being sufficiently loose to prevent the parts from cramping by reason of levers I and L operating in planes approximately at right angles to each other. A sector M is
40 provided having notches *m* and *m'* for engaging latch L' of the reversing-lever when the lever is in the respective positions required for holding the eccentric in its reversed positions.

To compensate for lost motion caused by wear, the pivotal connection between the reversing-lever and link is made adjustable lengthwise of the reversing-lever, the latter
50 having a longitudinal slot 1, in which the pivotal pin or bolt *j* operates, with suitable means of adjusting this pin or bolt lengthwise of the lever to give greater or less throw of the link with a given throw of the reversing-lever. For instance, in Fig. 8 adjusting-
55 screws 1' 2 are shown for the purpose, although the means of which such adjustment is made is not material. Bracket-arm G' has a branch arm G², the latter terminating in members *g* *g'* *g*², for attaching, respectively, the bell-crank lever, reversing-lever, and sector. With this construction, by reason of
60 sleeve E being journaled in a stationary box, the eccentric-arm is supported by pin C substantially the same as if this pin directly engaged a journal-box.

What I claim is—

1. In combination, an outer sleeve embracing an inner sleeve, the latter embracing a steady-pin, an eccentric rigidly secured to the outer sleeve and having a diagonal slot, the inner sleeve having attachments operating in such slot, the inner sleeve being held from turning on the steady-pin, and means for reciprocating the inner sleeve endwise, substantially as and for the purpose set forth.

2. In combination, outer and inner engaging sleeves, steady-pin, and journal-box, the latter embracing the outer sleeve and the steady-pin being embraced by the inner sleeve, the latter having end movement between the steady-pin and outer sleeve, the inner sleeve being held from turning on the steady-pin, and a diagonal slot in the outer sleeve, an attachment of the inner sleeve operating in such slot, substantially as and for the purpose set forth.

3. In combination, eccentric-arm, steady-pin connected therewith, sleeve mounted on the steady-pin, such sleeve being embraced by a second or outer sleeve, such outer sleeve, an eccentric rigidly secured to the outer sleeve, and mechanism, substantially as indicated, for reversing the eccentric by means of reciprocating the inner sleeve, substantially as and for the purpose set forth.

4. In combination, eccentric-arm, steady-pin, inner and outer sleeves, the latter bearing eccentric and operating in a stationary journal-box, a stud connected with the eccentric, such stud operating in a slot in the eccentric-arm, and adjusting-screws connected with the eccentric-arm, such screws being located at the end of said slot in position to engage the stud of the eccentric at the extreme of the throw, substantially as and for the purpose set forth.

5. In combination, eccentric-arm, steady-pin, and eccentric, a stud connected with the eccentric and operating in a slot in the eccentric-arm, and adjusting-screws connected with the eccentric-arm for engaging such stud at the extreme of its throw, such stud having a nut adapted to bear against the eccentric-arm, whereby the eccentric may be rigid with such arm, substantially as and for the purpose set forth.

6. In combination, steady-pin, inner and outer sleeves mounted the one on the other, the inner sleeve operating on such steady-pin, substantially as indicated, bell-crank lever for reciprocating the inner sleeve, and link connecting the bell-crank lever with the reversing-lever, the pivotal connection between link and reversing-lever being adjustable lengthwise the latter, substantially as and for the purpose set forth.

In testimony whereof I sign this specification, in the presence of two witnesses, this 28th day of January, 1889.

REINHARD SCHEIDLER.

Witnesses:

KATHARINE KOOS,
EDWARD KIBLER.