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Patented Apr. 22, 1902.

R. E. OLDS.
MOTOR VEHICLE.

(Application filed Oct. 18, 1901.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

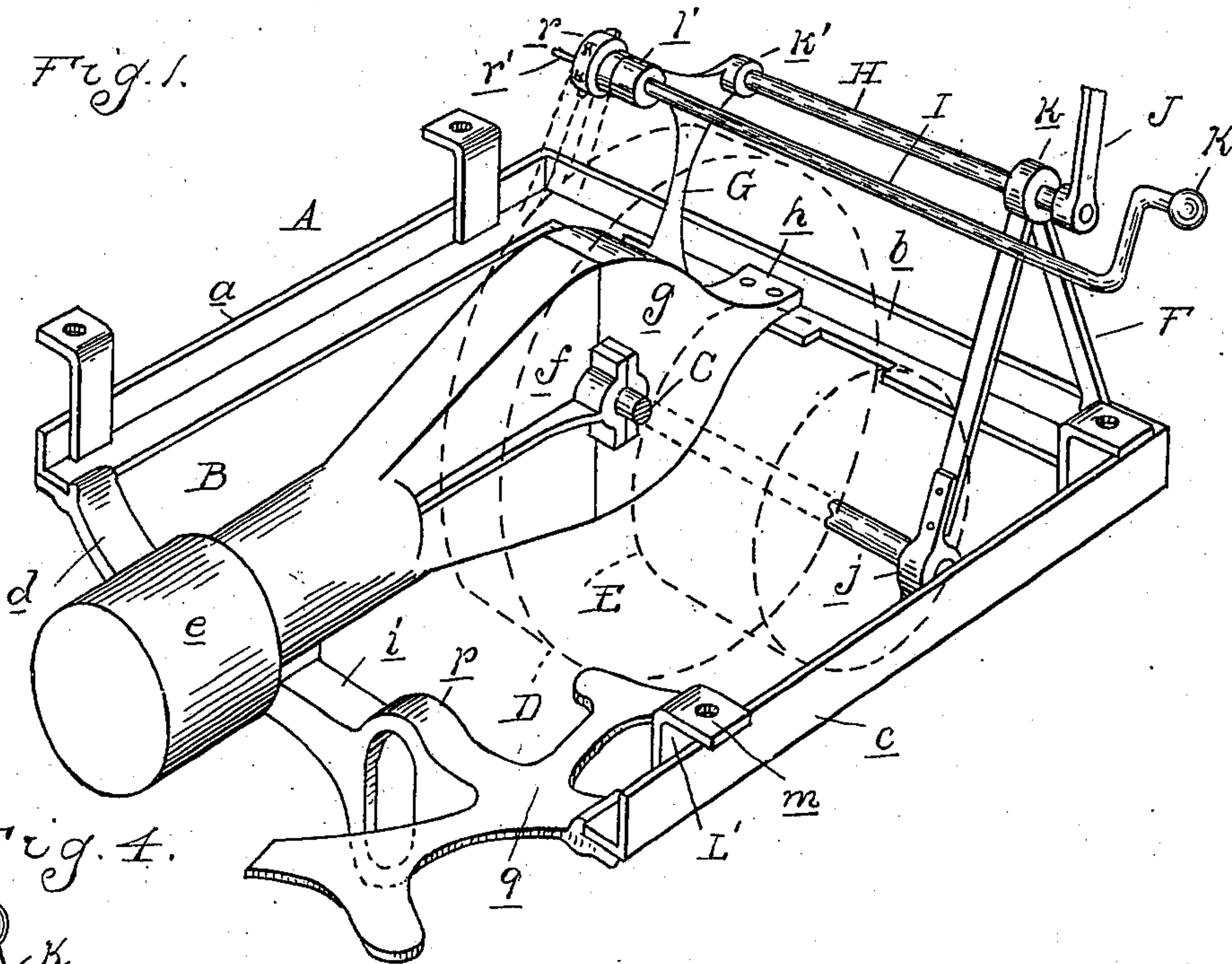


Fig. 2.

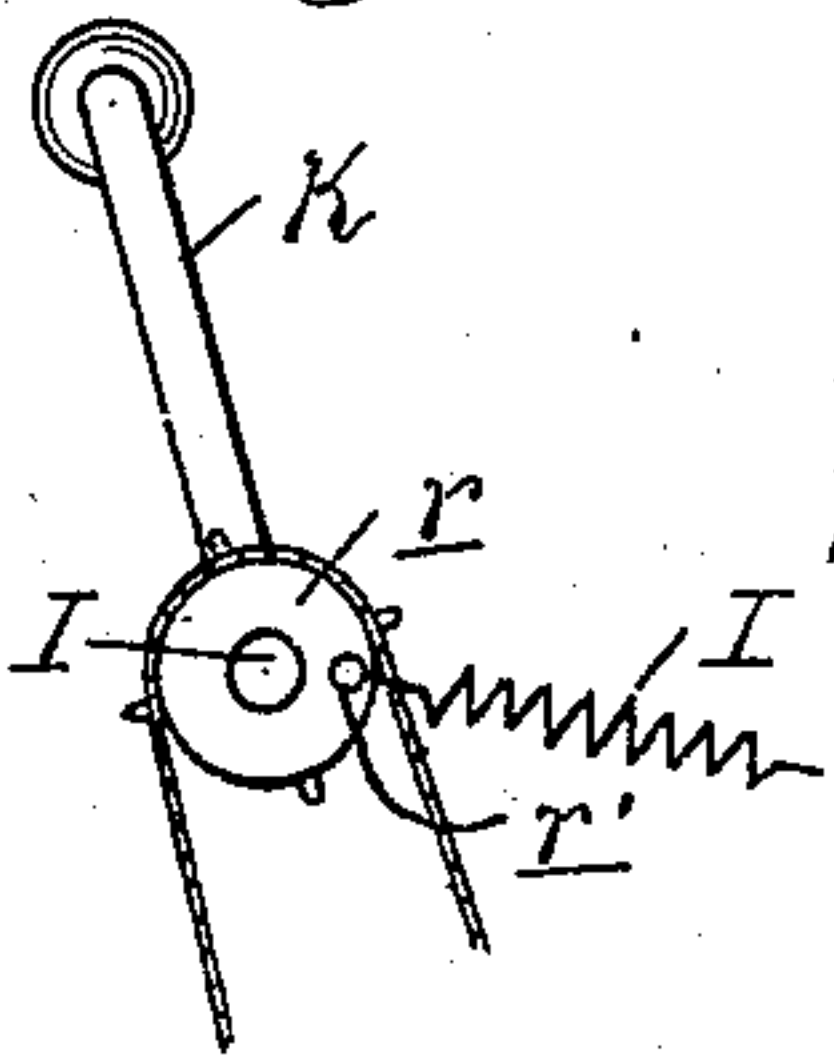


Fig. 3.

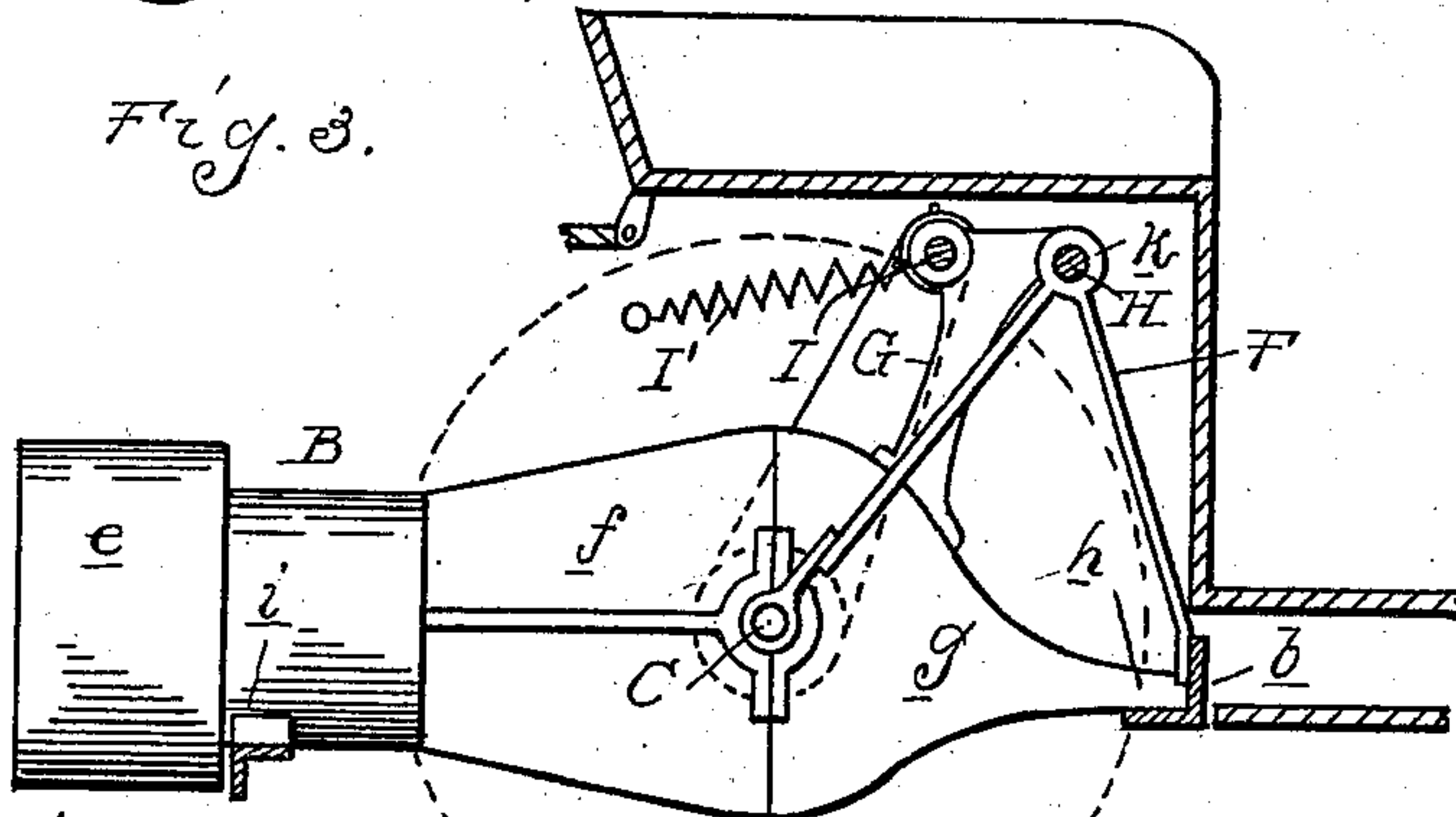
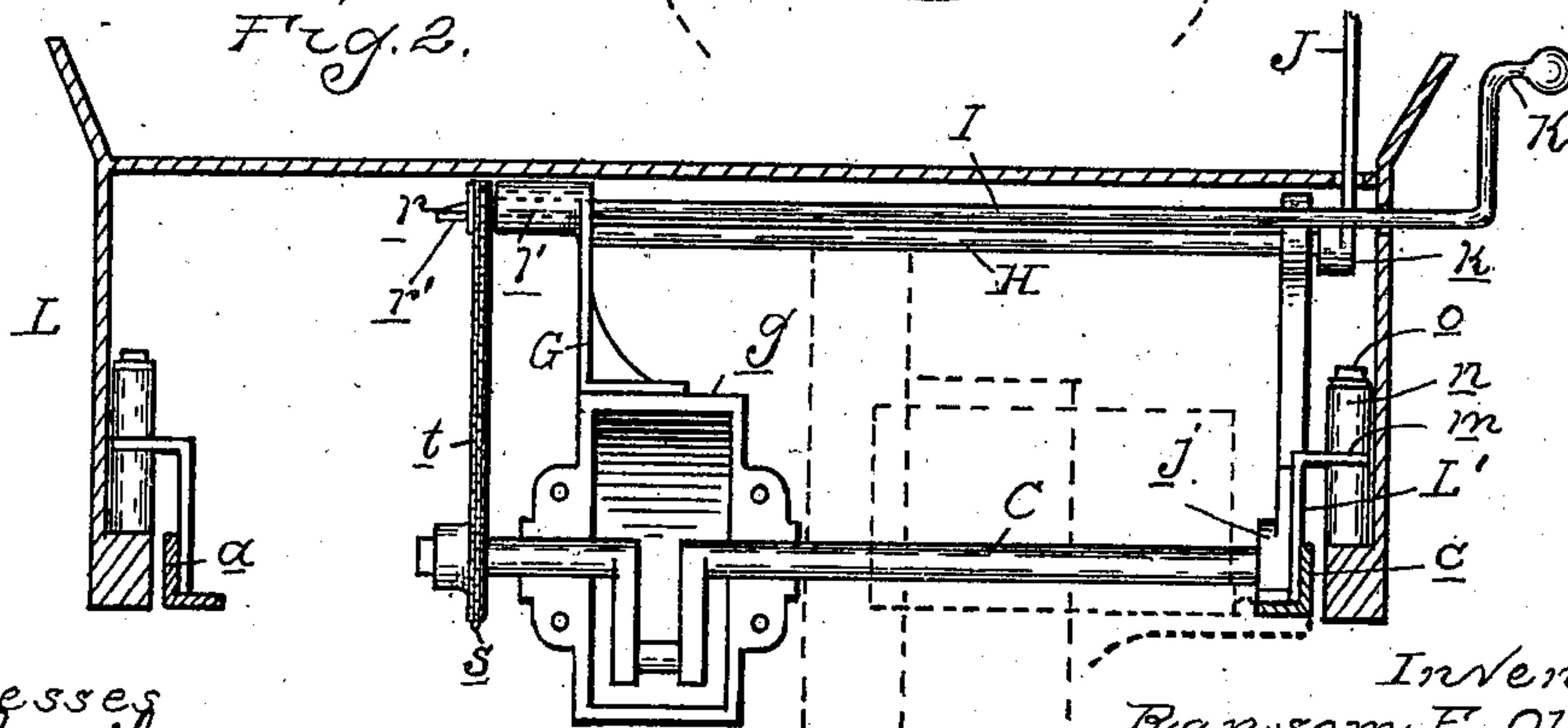


Fig. 4.



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2 Sheets—Sheet 2.

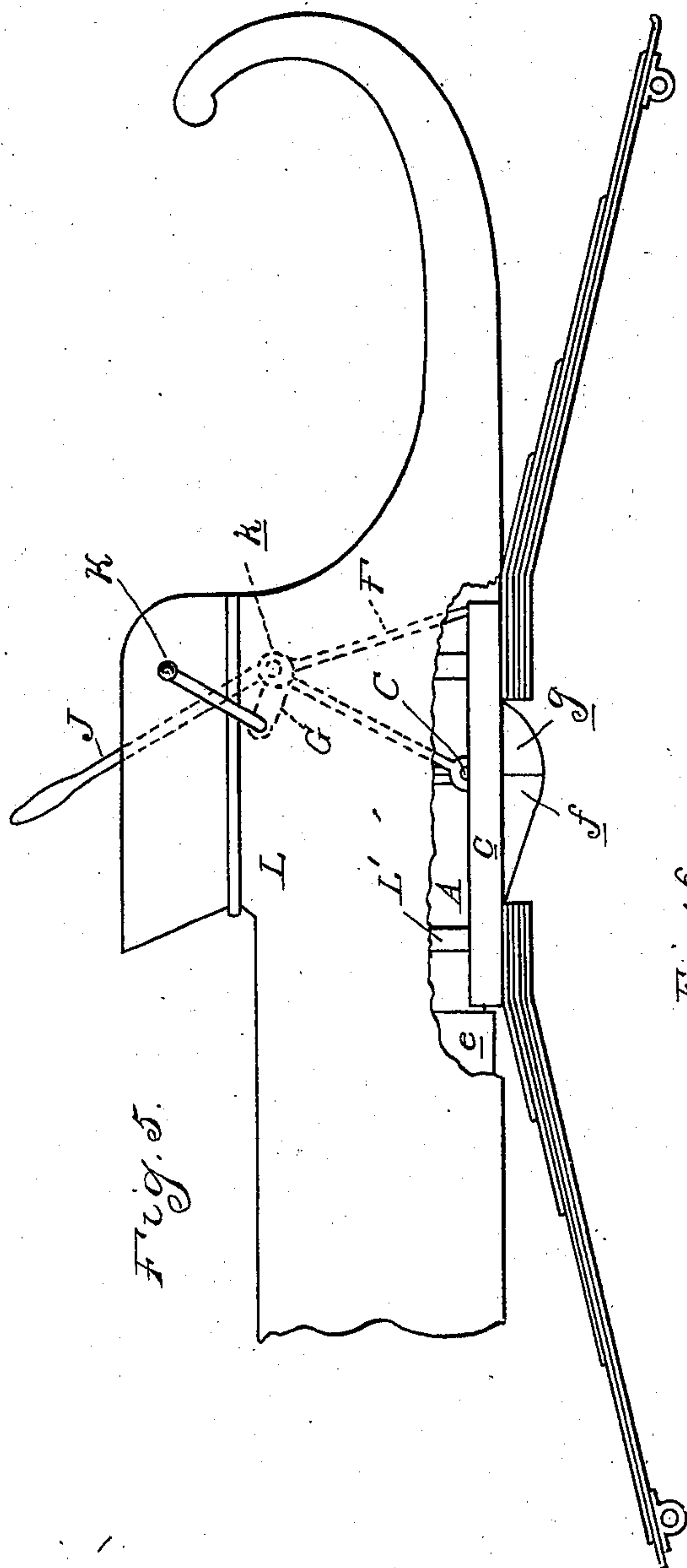


Fig. 5.

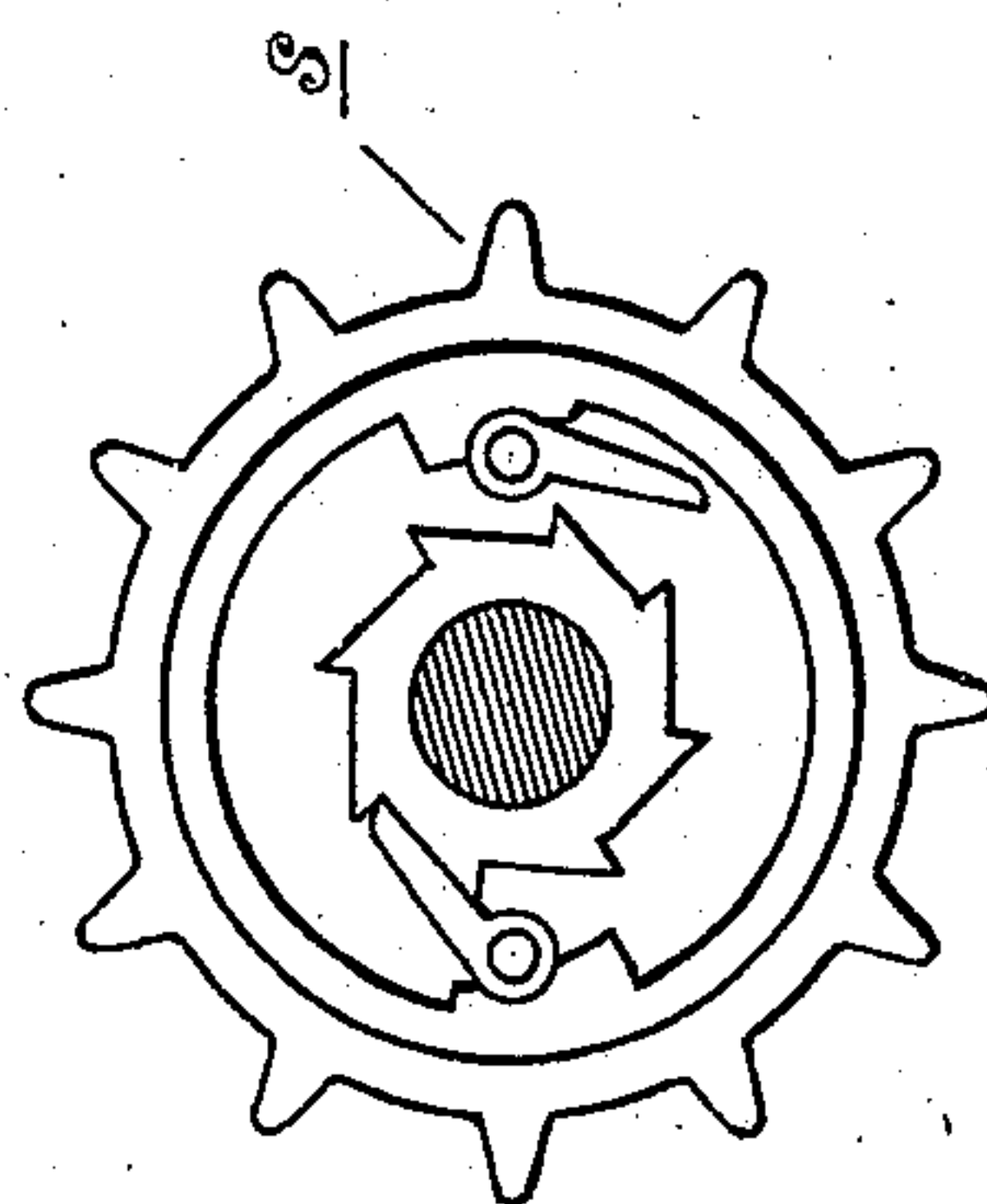


Fig. 6.

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UNITED STATES PATENT OFFICE.

RANSOM E. OLDS, OF DETROIT, MICHIGAN.

MOTOR-VEHICLE.

SPECIFICATION forming part of Letters Patent No. 698,131, dated April 22, 1902.

Application filed October 18, 1901. Serial No. 79,081. (No model.)

To all whom it may concern:

Be it known that I, RANSOM E. OLDS, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Motors and Frames Therefor for Motor-Vehicles, of which the following is a specification, reference being had therein to the accompanying drawings.

10 The invention relates to motor-frames for motor-vehicles.

It is the object of the invention to obtain a construction in which the motor-casing forms a rigid member of the frame that supports the vehicle-body.

15 It is a further object to support all of the auxiliary parts of the motor, such as the transmission-gearing and its operating mechanism, upon this frame and to obtain an arrangement in which the whole is compactly housed within the vehicle-body.

With these objects in view the invention consists in the construction as hereinafter described and claimed.

25 In the drawings, Figure 1 is a perspective view of the frame. Fig. 2 is a cross-section showing the frame arranged in relation to the vehicle-body. Fig. 3 is a sectional side elevation of the frame, showing a portion of the vehicle-body; and Fig. 4 is a detail of the starting mechanism. Fig. 5 is a side elevation of the vehicle-body, and Fig. 6 is a detail enlarged view of the clutch member with the front part removed.

35 A is a substantially rectangular frame. Three sides *a*, *b*, and *c* of this frame are preferably formed from an angle-bar, which is bent into a substantially U-shaped form, as shown. The fourth side *d* is preferably formed of casting and connects the free ends of the sides *a* and *c*, being bolted or otherwise secured thereto.

45 B is the motor. This comprises an explosion-engine consisting of a cylinder *e* and crank-casing *f*, preferably formed integral. The casing *f* preferably extends to the vertical plane of the crank-shaft and has secured thereto a complementary portion *g*, the latter terminating in a laterally-projecting lug *h*. The motor B is secured to the frame A by having the cylinder *e* bolted to the depressed portion *i* of the casting *d* and the lug

h secured to the side *b*. The motor-casing thus forms a rigid member of the frame, which greatly adds to the strength thereof. 55 The crank-shaft C of the motor extends to the side *c* of the frame A, and it is journaled in a bearing *j*, secured thereto. Intermediate the bearing *j* and the crank-casing an open space is provided within the frame to receive the fly-wheel D and transmission-gearing E. (Indicated in dotted lines in Fig. 1.) 60

F is a bracket secured to the side *b* and extending upward therefrom. 65

G is a bracket secured to the crank-casing. The brackets F and G are provided with aligned bearings *k* and *k'*, in which a shaft H is journaled. This shaft H constitutes a rock-shaft controlling the transmission-gearing, being provided with suitable connections (not shown) with said gearing, by which varying speeds may be obtained in different positions of adjustment of said shaft. At one end this shaft is provided with an operating-handle J. 75

I is a shaft constituting a portion of the starting mechanism. One end of this shaft is journaled in a bearing *l* upon the bracket G, while the opposite end passes out through the side of the body L and is provided with an operating crank-handle K. The construction of parts just described is such that the shafts H and I are arranged so as to clear the fly-wheel and are housed within the vehicle-body so as to bring the handles J and K in convenient relation to the operator's seat. 85

As shown in Figs. 2 and 3, the vehicle-body is arranged to inclose the frame and motor, the shafts H and I extending across immediately beneath the seat. The handle J extends upward through the slot in the seat near one end thereof, and the handle K is arranged beyond the end of said seat, the shaft I passing through a bearing in the side of the body. The body is supported upon the frame, preferably by means of brackets L', secured to and extending upward from the sides *a* and *c* near opposite ends thereof. These brackets are secured to the sills of the body, which are arranged beneath laterally-extending portions *m* of said brackets and are yieldingly attached thereto. As shown in Fig. 2, 95 100

this yielding attachment may be formed by arranging elastic washers *n* above and below the portion *m* of the bracket and sleeved upon the bolt or pin *o*, secured to the sill.

5 The casting *d* is preferably provided with a portion *p*, having an eye or aperture therein through which the drive-chain from the crank-shaft and axle of the vehicle may pass. Adjacent to this portion of said casting is
10 formed a bracket *q* which serves to support the fuel-tank for the motor.

From the above description it will be seen that the various parts are compactly arranged to be conveniently housed within the
15 vehicle-body, that the handles *J* and *K* are arranged in convenient proximity to the operator's seat, and that the whole structure forms a rigid frame which serves to support the vehicle-body and may be readily secured
20 to the vehicle frame or axles. The construction of the motor and the transmission-gearing form no part of the present invention except as they form members of the frame, and these parts are therefore not shown in detail.

25 The drive connection between the shaft *I* and the crank-shaft is preferably formed by a sprocket and chain, comprising the sprockets *r* and *s* and the chain *t*. The sprocket *s* is sleeved upon the crank-shaft and has a
30 clutch engagement therewith by means of which said shaft will be driven by the rotation of the shaft *I* in starting the engine. Whenever the engine is in motion, the clutch will automatically disconnect the sprocket *s* from
35 the crank-shaft, so that it, together with the chain *t*, sprocket *r*, and shaft *I*, will remain stationary. The specific construction of the clutch is essential to the present invention, and it is therefore shown in detail in Fig. 6
40 of the drawings, wherein a well-known form of ratchet-and-pawl construction is illustrated. Other well-known forms of clutch can, however, be employed.

It will be noted that one end of the shaft *I*
45 is journaled in the bearing *l* on the rigid motor-frame, while the opposite end is journaled in the body, which is yieldingly supported upon said frame. To permit of this arrangement, the shaft *I* is made of sufficient length
50 and flexibility to allow its outer end to move freely with the body, while its inner end remains stationary.

In order to hold the crank *K* always in a position most convenient for starting the engine, a spring *I'* is preferably secured to a
55 crank-pin *r'* on the sprocket *r*. The arrangement of the pin *r'* is such that when drawn to its normal position by the spring *I'* it will hold the crank *K* in an upright position, as
60 shown in Fig. 4, where the operator may readily grasp it and start the engine by a downward push.

What I claim as my invention is—

65 1. In a motor-vehicle, the combination of a rigid motor-supporting frame, the motor-shaft journaled thereon, a bracket secured to the frame, a counter-shaft journaled therein

and extending to the side of the frame, a crank for actuating said counter-shaft, and a gear connection from the counter-shaft comprising
70 a clutch permitting the rotation of the motor-shaft independent of the counter-shaft or through the medium of said counter-shaft.

2. In a motor-vehicle, the combination with the body, of a supporting-frame therefor comprising side bars extending in adjacency to
75 the sides of said body and secured thereto, cross-bars connecting said side bars and a motor extending longitudinally intermediate said side bars and rigidly connected to said
80 cross-bars.

3. In a motor-vehicle, the combination with the body, of an angular supporting-frame therefor having parallel side bars extending
85 in adjacency to and connected with the sides of said body, a motor-casing extending longitudinally across said frame and rigidly secured thereto, a motor-shaft extending transversely across said frame and a journal-bearing
90 for said shaft secured to one of the side bars of said frame; the space between said bearing and casing being adapted to receive the fly-wheel and transmission-gearing.

4. In a motor-vehicle, the combination of a horizontally-arranged substantially rectangular
95 frame, a motor-casing extending longitudinally across and rigidly secured to said frame, a frame extending upwardly from said horizontal frame, a motor-controlling shaft journaled therein, a body inclosing said motor
100 and frame and having its sides supported upon and in adjacency to the sides of said horizontal frame and an operating-handle for said motor-controlling shaft extending without said body into proximity to the operator's
105 seat.

5. In a motor-vehicle, the combination of a rigid motor-frame, the motor-shaft journaled
110 thereon, a spring connection between the frame and axles, a drive-chain from the motor-shaft to the drive-axle, a counter-shaft journaled on the motor-frame, and extending to the side thereof, an actuating-crank for said shaft, and a drive connection between
115 the counter-shaft and the motor-shaft permitting the rotation of the motor-shaft independently of the counter-shaft or through the medium of said counter-shaft.

6. In a motor-vehicle, the combination with a motor-frame, and its motor, of a yieldingly
120 supported body, a starting mechanism connected with the motor-shaft and comprising a counter-shaft extending to the side of the body, a bearing for the counter-shaft rigid on the motor-frame, and a crank on the counter-
125 shaft at the side of the body.

7. In a motor-vehicle, the combination of a body, a rigid frame, the motor secured thereto, the motor-shaft, a starting-shaft journaled
130 fixedly on said frame, a gear connection from the starting-shaft to the motor-shaft, and a permanently-attached crank for the starting-shaft projecting into proximity to the seat at the side of the body, and a clutch which per-

mits the operation of the engine without turning the crank, but which permits the starting of the motor by rotating the crank.

5 8. In a motor-vehicle, the combination with the motor, a frame upon which said motor is rigidly mounted and a body yieldingly supported on said frame, of a starting-shaft having its motor-connected end journaled upon said frame and its operating end journaled in
10 said body free to move therewith independently of said frame.

9. In a motor-vehicle, the combination with the motor, a frame upon which said motor is rigidly mounted and a body yieldingly supported upon said frame, of a flexible starting-shaft having one end journaled in said frame and connected with said motor, upon one side
15 of the vehicle, the opposite end of said shaft extending to the opposite side of the vehicle
20 and out through a bearing in the side of the body and a hand-crank upon the free end of said shaft.

10. A motor-frame comprising a U-shaped

horizontal frame formed of angle-bar, a bar connecting the free ends of said frame and 25 having a depressed portion intermediate its ends with a motor-supporting saddle thereon, a motor comprising an engine having its cylinder rigidly secured to said saddle and a rigid crank-casing extending to the opposite
30 side of the frame and rigidly secured thereto.

11. In a motor-vehicle, the combination of a frame supporting the motor, its shaft and a transmission-gearing, brackets on the frame and shafts journaled in said brackets, a drive
35 connection from one of said shafts to the motor-shaft for starting the latter, said connection including a clutch, and a connection from the other shaft to the transmission-gearing. 40

In testimony whereof I affix my signature in presence of two witnesses.

RANSOM E. OLDS.

Witnesses:

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H. C. SMITH.