July 30, 1940. C. S. BRAGG 2,209,594

CLUTCH CONTROL MECHANISM

Original Filed April 17, 1935

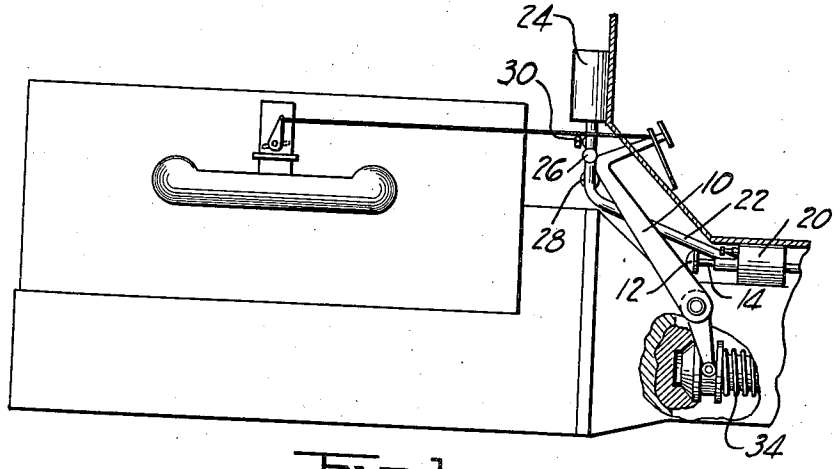


FIG. 1

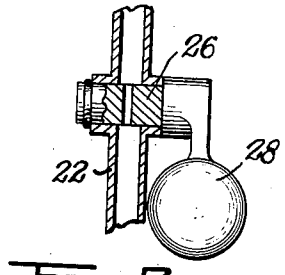


FIG. 3

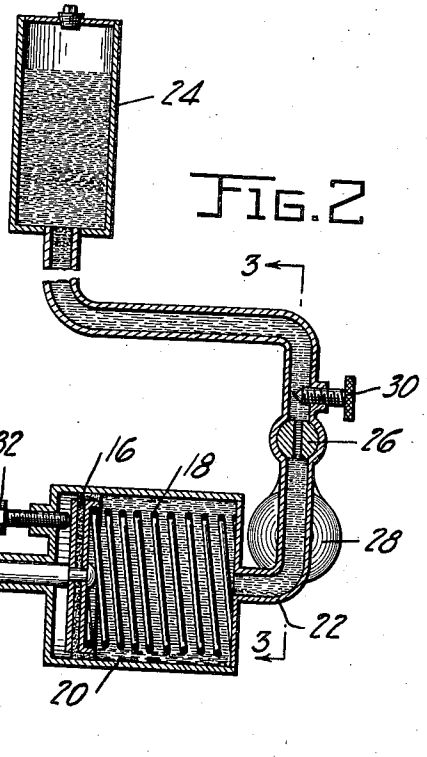


FIG. 2

INVENTOR
CALEB S. BRAGG
BY H. O. Clayton
ATTORNEY

Patented July 30, 1940 2,209,594

UNITED STATES PATENT OFFICE

2,209,594

CLUTCH CONTROL MECHANISM

Caleb S. Bragg, Palm Beach, Fla., assignor to Bragg-Kliesrath Corporation, South Bend, Ind., a corporation of New York

Original application April 17, 1935, Serial No. 16,748. Divided and this application October 13, 1937, Serial No. 168,699

1 Claim. (Cl. 192—109)

This invention relates in general to clutch controlling mechanism and in particular to means for regulating the rate of engagement of the clutch of an automotive vehicle.

The principal object of the invention is to provide automatically operable means operable when and if the clutch is about to engage too severely to counteract the effect of the clutch springs. To this end there is provided a weight operable, by virtue of its inertia, to control the loading of the clutch plate by controlling the action of a cushioning device.

The invention further contemplates means for cushioning the engagement of a manually operated clutch, said means comprising a dashpot, the latter being controlled by inertia operated means to limit the engagement of the clutch, as previously discussed.

Other objects of the invention and desirable details of construction and combinations of parts will become apparent from the following detailed description of the invention, taken in conjunction with the accompanying drawing, in which:

Figure 1 is a diagrammatic view or layout disclosing the principal features of my invention;

Figure 2 is a view, partly in section, disclosing the details of the inertia controlled dashpot mechanism constituting the essence of my invention; and

Figure 3 is a sectional view of the pendulum member, taken on the line 3—3 of Figure 2.

Describing now in detail the features of my invention, there is disclosed a device for cushioning the engagement of a manually operated clutch. A clutch pedal 10, having been released to a position where the clutch plates are just about to contact, will then contact a stop 12 on one end of a rod 14 projecting from a piston 16 loaded by a spring 18. The piston is reciprocable within a double-ended cylinder 20, provided at one end with a pipe 22 topped by a fluid reservoir 24. A cut-off valve 26, operated by a pendulum member 28, is rotatably mounted in the pipe 22 and the construction is completed by an adjustable bleed valve member 30, also mounted in the pipe, and an adjustable stop 32.

The above-described mechanism will cushion the engagement of the clutch, the clutch springs 34 acting to force the piston 16 to the right against the action of the return spring 18 and the load of oil in the system, the flow of oil and the consequent rate of clutch engagement being controlled by the bleed valve 30 and by the inertia operated cut-off valve 26. Thus, should the clutch be engaged with such a load as to excessively jerk the car, the pendulum operated valve 26 will be automatically moved to cut off the flow of liquid into the reservoir, thus blocking the escape of fluid from the cylinder and limiting the engagement of the clutch. In this construction, the clutch will slip until the car acceleration is sufficiently reduced to permit the pendulum valve to return to its normal position, whereupon the engagement of the clutch will be resumed.

The invention heretofore described is disclosed in my Patent No. 2,104,731, issued January 11, 1938, this application constituting a division thereof.

While one illustrative embodiment has been described, it is not my intention to limit the scope of the invention to that particular embodiment, or otherwise than by the terms of the appended claim.

I claim:

In an automotive vehicle provided with a clutch operating member, means for controlling the engagement of the clutch comprising a double-ended cylinder, a piston in the cylinder, a liquid filling the compartment of the cylinder outlined by one end wall thereof, the piston and a portion of the body of the cylinder, a liquid reservoir mounted above the cylinder, a conduit interconnecting the reservoir and aforementioned compartment, inertia operated valve means positioned within said conduit for controlling the flow of liquid through the conduit from the compartment into the reservoir, a stop adjustably mounted in said cylinder, a spring in said compartment at all times urging the piston toward said stop, and a pin secured to the piston and extending through one end wall of the cylinder, said pin being contacted by said clutch operating member immediately prior to the engagement of the clutch plates with each other as the clutch is being engaged, whereby there is provided means for controlling the engagement of the clutch to insure a relatively slow movement of the driving clutch plate into engagement with the driven plate during the last stage of said movement.

CALEB S. BRAGG.