

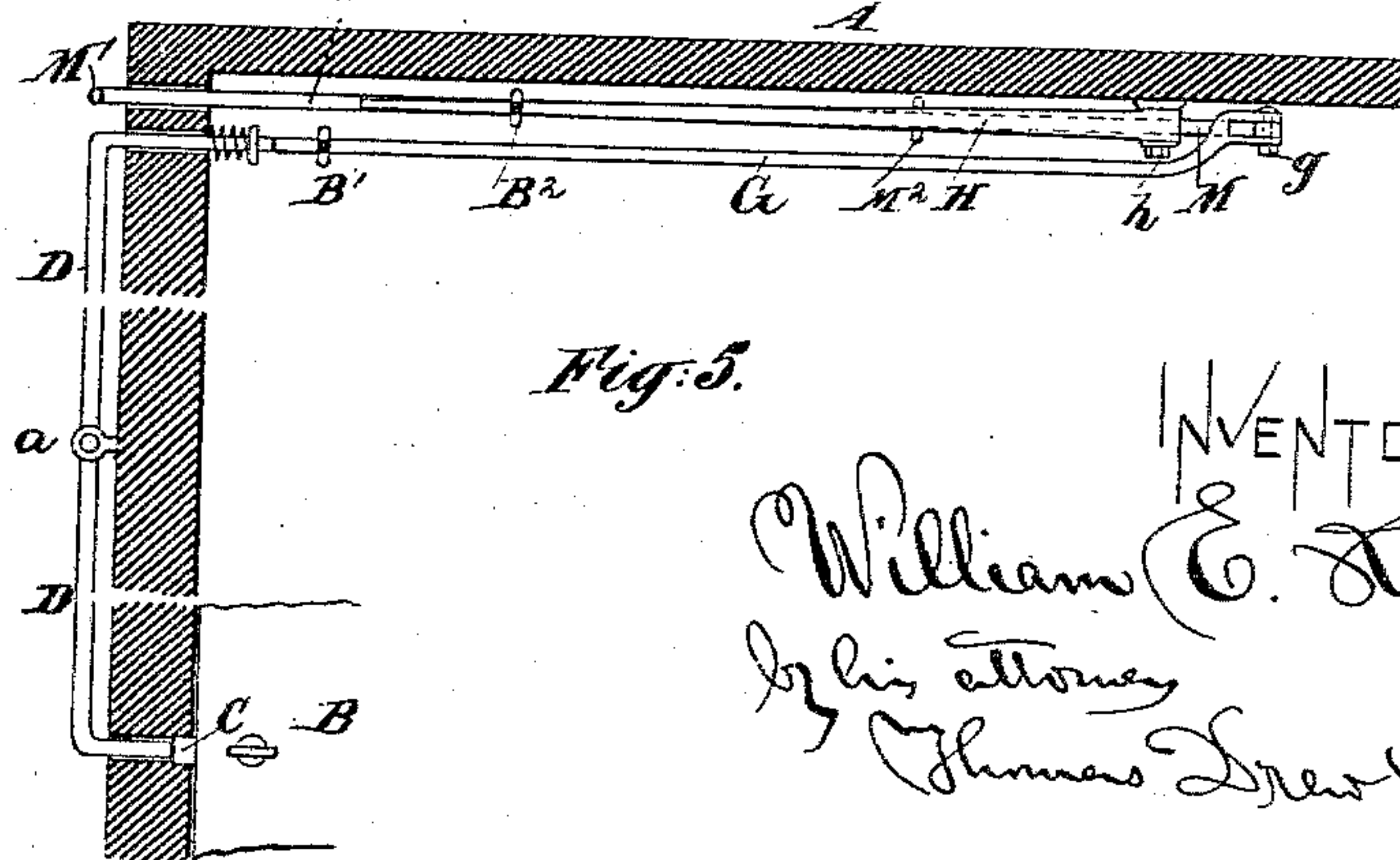
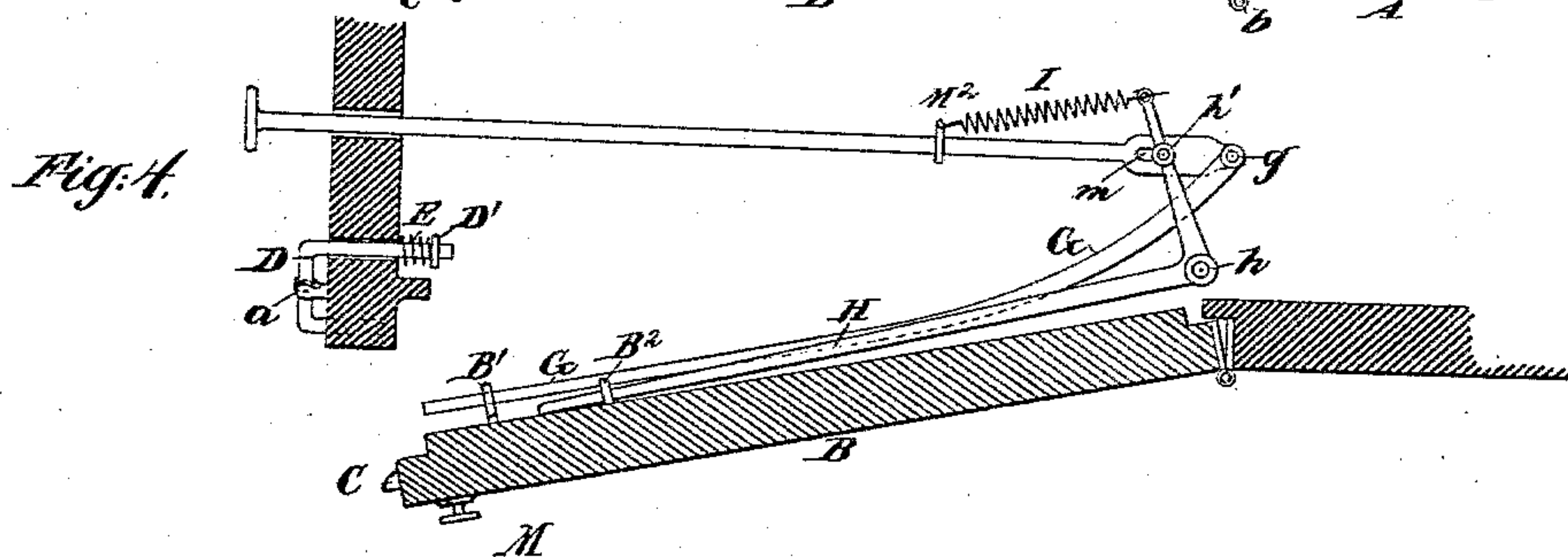
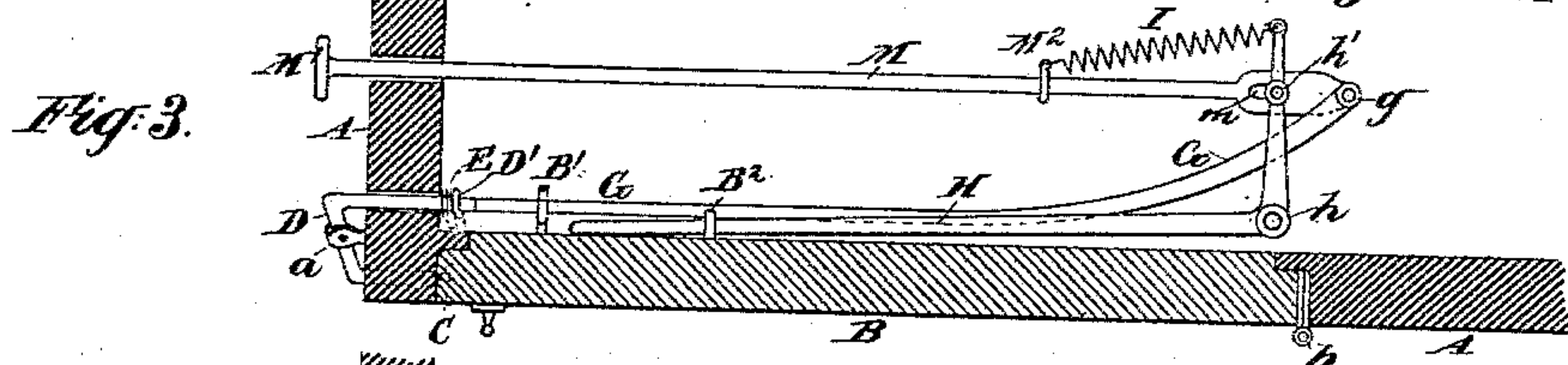
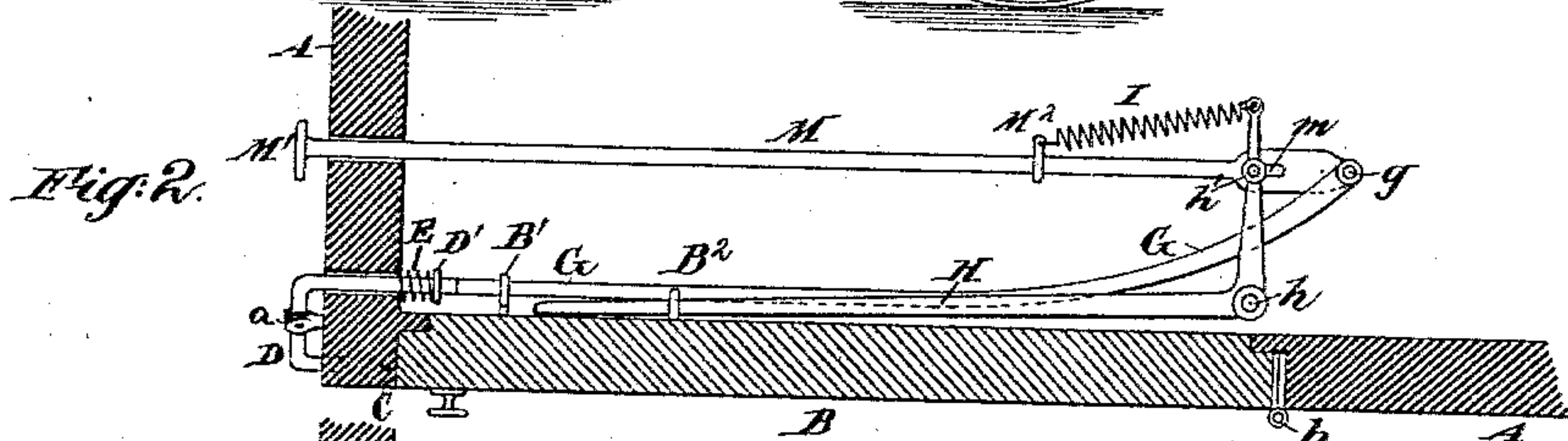
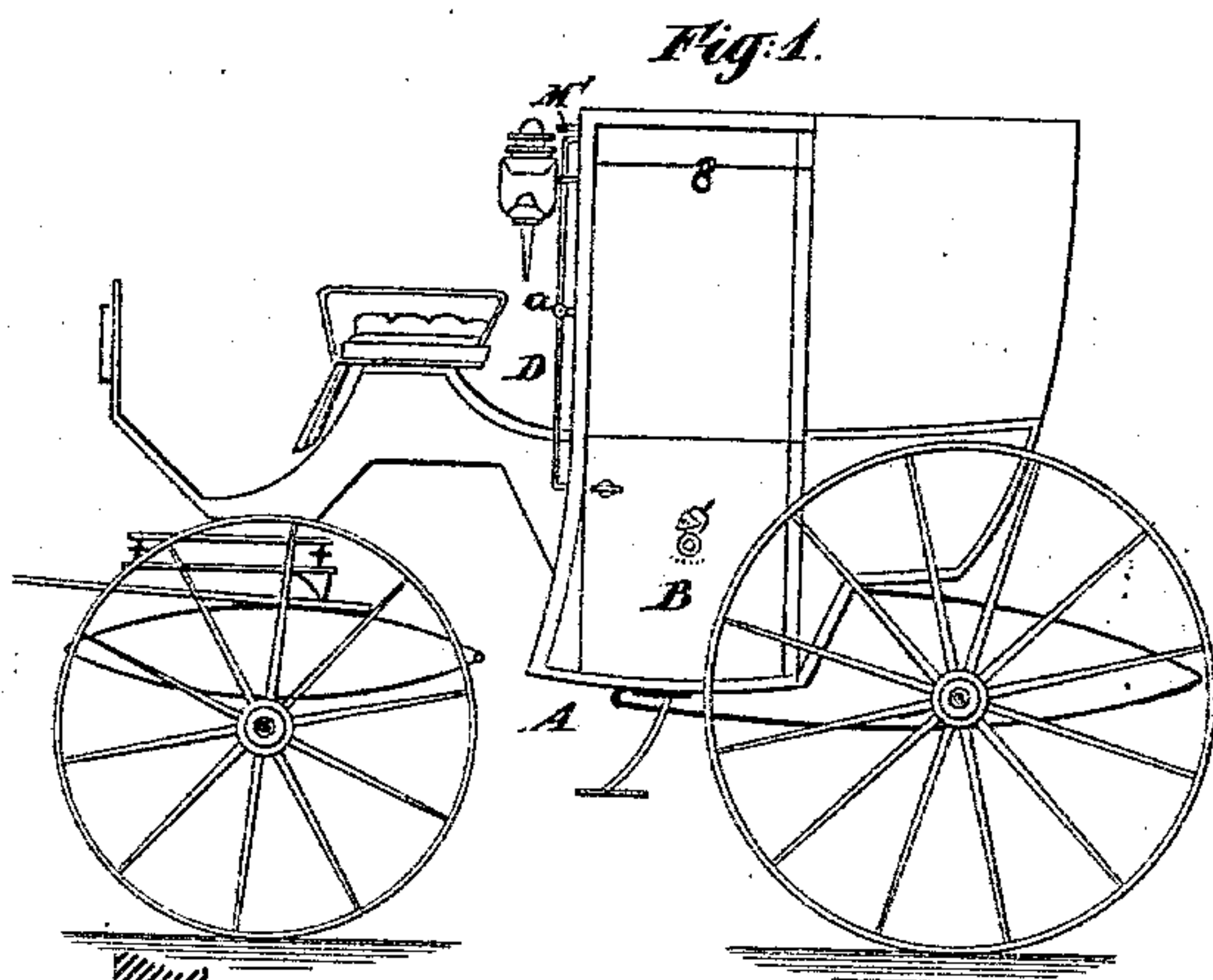
(No Model.)

W. E. ROBERTS.

CARRIAGE.

No. 321,386.

Patented June 30, 1885.



WITNESSES=

Charles M. Searle.  
M. F. Boyle

*Fig: 5.*

INVENTOR                     

William E. Roberts

In his attorney

Thomas Drew Nelson



# UNITED STATES PATENT OFFICE.

WILLIAM E. ROBERTS, OF NEW YORK, N. Y.

## CARRIAGE.

SPECIFICATION forming part of Letters Patent No. 321,386, dated June 30, 1885.

Application filed December 9, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM E. ROBERTS, of New York city, in the county and State of New York, have invented new and useful Improvements in Carriages, of which the following is a specification.

The improvements apply to hacks, coupés, cabs, and generally to carriages of whatever name having a door or doors. I have devised means for liberating the catch and opening and closing the door by a single handle, which may be worked by the driver without leaving his seat. It not only relieves the driver from the necessity of leaving his seat, which in some weather is very important, but it also insures against mistake by the driver in believing that the door is closed and fastened when it is not, and against its being accidentally opened while the carriage is in motion. I locate the handle where it can be felt by the elbow either constantly or at short intervals while driving. Many efforts have been before made to attain this end. My invention avoids the objections thereto.

The following is a description of what I consider the best means of carrying out the invention:

The drawings form a part of this specification, and represent the novel parts, with so much of the ordinary parts as is necessary to indicate their relations thereto. It will be understood that the portions not represented may be of any ordinary or suitable character.

Figure 1 is a general side elevation of a coupé with my improvement attached. The remaining figures show details on a larger scale. Fig. 2 is a horizontal section in a plane near the top of the door, with the door closed and fastened. Fig. 3 is a corresponding section showing the condition after the handle is pulled by the driver to liberate the door, but before the door commences to open. Fig. 4 is a corresponding horizontal section showing the conditions after the door has commenced to open. Fig. 5 is a vertical section corresponding to Fig. 2.

Similar letters of reference indicate corresponding parts in all the figures.

A is the body of a close carriage of the style commonly designated a "coupé." There is a door, B, on each side, turning on hinges b.

C is an ordinary beveled catch-bolt. It

will be understood that it is actuated by a shaft, with a handle on the outside and inside, and allows of being operated from the interior or exterior of the carriage, precisely as in our ordinary best carriages. A spring throws out this catch-bolt. This spring may be the ordinary one; but it is important that it be so gentle that it may be overcome by a proper force applied through my mechanism when it is required to open a door by the action of the driver.

D is a lever, with both its upper and lower ends bent about at right angles, and extending up and down just outside the carriage-front. It turns on a pivot, *a*, attached to the carriage. Its lower bent end is in position to abut against the end of the catch-bolt C. Its upper bent end is provided with a collar, D', and is encircled by a spiral spring, E, which exerts a constant force to hold the entire lever D out of action.

A staple or keeper, B', on the inner face of the door serves as a guide for a long sliding bolt, G. The rear end is bent, as shown, and is pivoted at *g* to a sliding rod, M, which extends out through an orifice in the front of the carriage, and is provided with a T-piece, M'. The bolt G is so arranged that when the door is closed the bolt abuts against the upper bent end of the lever D.

H is a lever turning on a stout pivot, *h*, fixed in the interior of the carriage near the line of hinges of the door. One arm of this lever is engaged in a staple or keeper, B', fixed to the door. The other arm is engaged by a pin, *h'*, in a longitudinal slot, *m*, in the rod M. This rod M performs important functions. Its T-piece or handle M' is arranged convenient to the driver's seat. The preferable arrangement is such that the T-piece will be presented immediately behind the elbow of the driver. He can, without leaving his seat, seize that handle, and, by pulling and pushing it, open and close the door. Pulling on this handle M', the rod M first thrusts the bolt G and actuates the lever D against the force of its spring E to push back the catch-bolt C. This movement is allowed by the slot *m* before the door commences to open. Then the pin *h* being acted on, a further pulling of the handle M' opens the door. The door may be held open for any length of time. When it is desired



to close it again, the driver simply thrusts on the rod M, and the lost motion due to the slot *m* becoming available allows the bolt G to be moved backward, the door is closed, and the catch-bolt C is allowed to fasten it again.

I is a spiral spring attached to the rod M, and exerting a contractile force thereon. It insures against the possibility of the forward end of the bolt G striking against the bent upper end of the lever D when the door is closed by other means than by a thrust on the rod M.

The spring I is connected at the back end to the lever H, and at the forward end to the collar M<sup>2</sup> on the rod M. It should have sufficient force to hold the rod M always in its extreme backward position, except when it is pulled forward by the driver to unfasten and open the door. Whenever the door is closed by the driver applying force through the rod M, the latter is thrust back. The spring I exerts a gentle force to hold the rod similarly back whenever the door is closed by other means, and the rod M is simply left free.

It will be seen that the single rod M and handle M' serve, by alternate pulling and thrusting, to detach the fastening and open the door, holding it open for any length of time, and again shutting and fastening it. This allows the driver to attend properly to the occupants of the carriage by promptly opening and closing the door without requiring him to leave his seat.

Another not so obvious use of the invention, but which I esteem very important in practice, is to serve the occupant of the carriage as a convenient means of attracting the attention of the driver. He can, by disengaging the catch-bolt C in the ordinary manner and pushing the door partly open, thrust the rod M forward against the arm of the driver with sufficient force to compel his immediate attention. In some cases possibly the mere sliding of the rod M forward to the small extent which is allowable by the looseness of the connections may attract the driver's attention.

The attachment of the spring I to a point on the lever H beyond the pin *h'* insures that the tension of the spring I shall be greatest at the period when it is most wanted, when the door is nearly shut. The complete opening of the door reduces the force of this spring.

Modifications may be made in the forms and

proportions of the parts. I can make the pivot *h* coincide in position with the line of action of the axis of the door B; and in such case the arm of the lever H, parallel to the door, may be screwed or otherwise fixed firmly to the door, instead of being allowed to slide through the keeper B<sup>2</sup>, as shown.

The upright portion of the lever D may be mounted nearer the body A of the carriage, or even wholly or partly within it. In such case the horizontal portions at the upper and lower ends of D may be reduced or entirely omitted.

Parts of the invention may be used without the whole. I can dispense with the spring I, and allow the parts to slip on each other when the door is occasionally shut with the bolt G in its forward position.

I claim as my invention—

1. In a carriage, the rod M, having a provision, as *m*, for lost motion, the lever H, door B, catch-bolt C, and bolt G, and connecting means, as D, for detaching the same, all combined and adapted for joint operation, substantially as herein specified.

2. The lever D, in combination with the carriage-body A, door B, rod M, bolt G, lever H, and catch-bolt C, arranged to serve substantially as herein specified.

3. The spring I, in combination with the rod M, bolt G, lever H, door B, and carriage-body A, arranged for joint operation, as herein specified.

4. The carriage-body A, door B, catch-bolt C, lever D, spring I, bolt G, lever H, rod M, with its slot *m*, and spring I, arranged for joint operation, as herein specified.

5. In a carriage, the rod M, adapted to transmit pulling and thrusting motions, and door having holding-catch C, combined with a lever-connection between the rod M and door, and a lever and rod connection between said rod M and catch, all arranged for joint operation, as set forth.

In testimony whereof I have hereunto set my hand, at New York city, New York, this 4th day of December, 1884, in the presence of two subscribing witnesses.

W. E. ROBERTS.

Witnesses:

W. C. DEY,  
CHARLES R. SEARLE.