

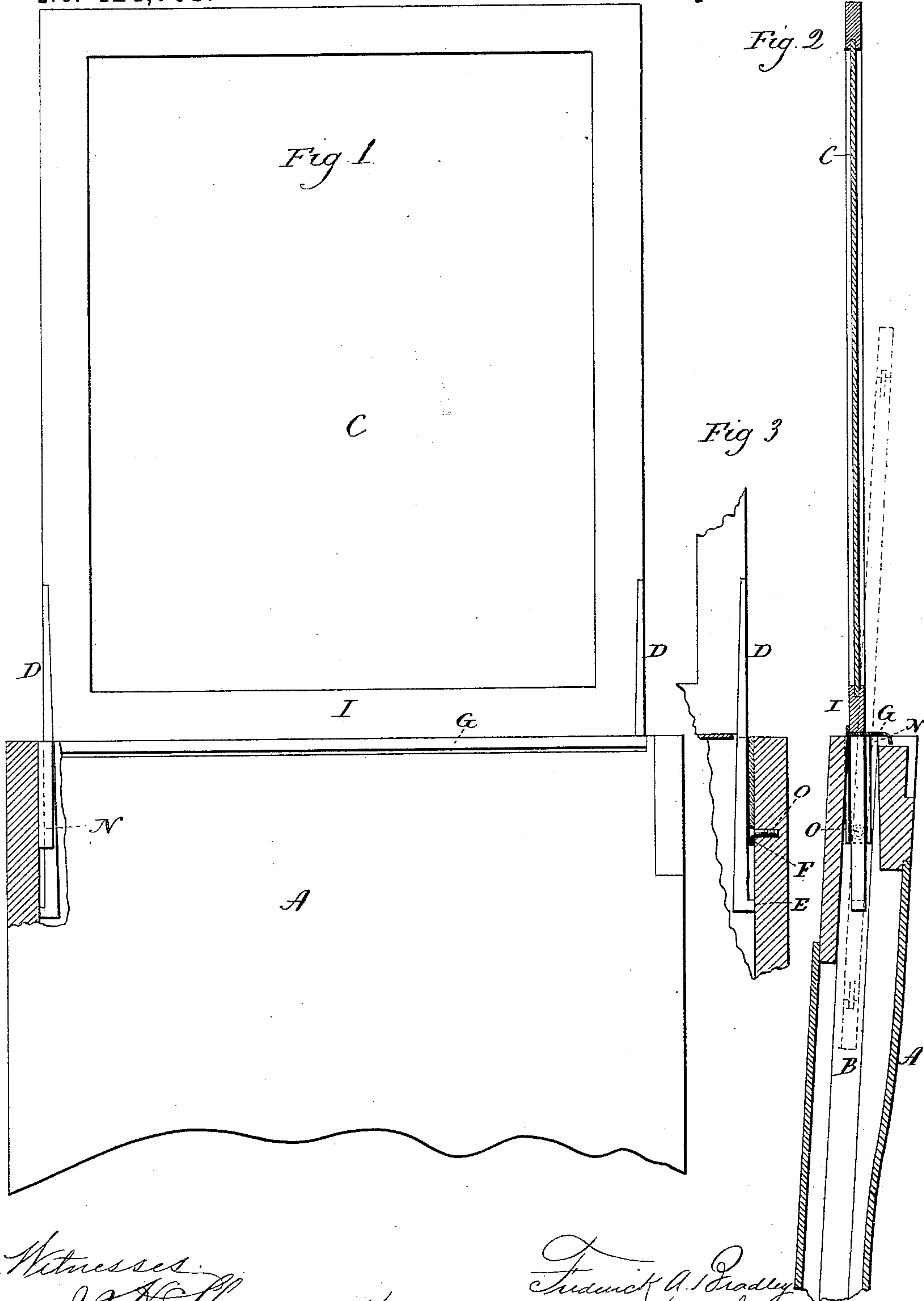
(No Model.)

2 Sheets—Sheet 1.

F. A. BRADLEY.
CARRIAGE DOOR.

No. 424,701.

Patented Apr. 1, 1890.



Witnesses.
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Fred C. Earle.

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Fig. 4

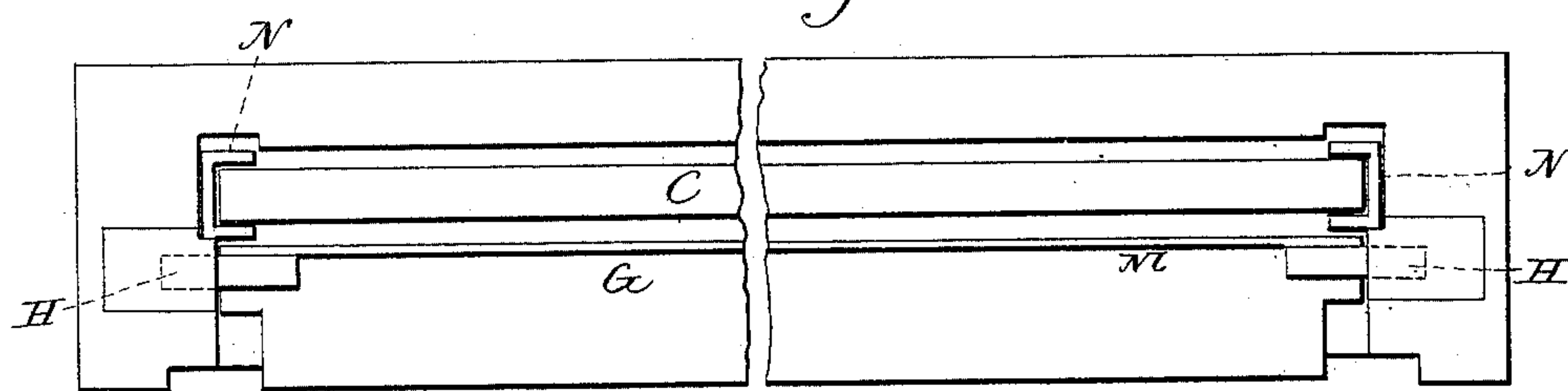


Fig. 5

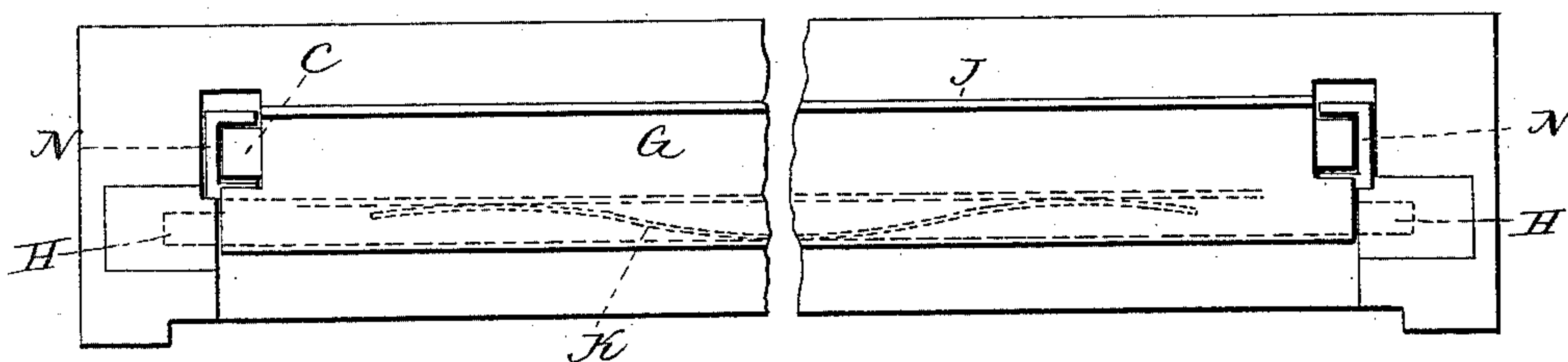


Fig. 7

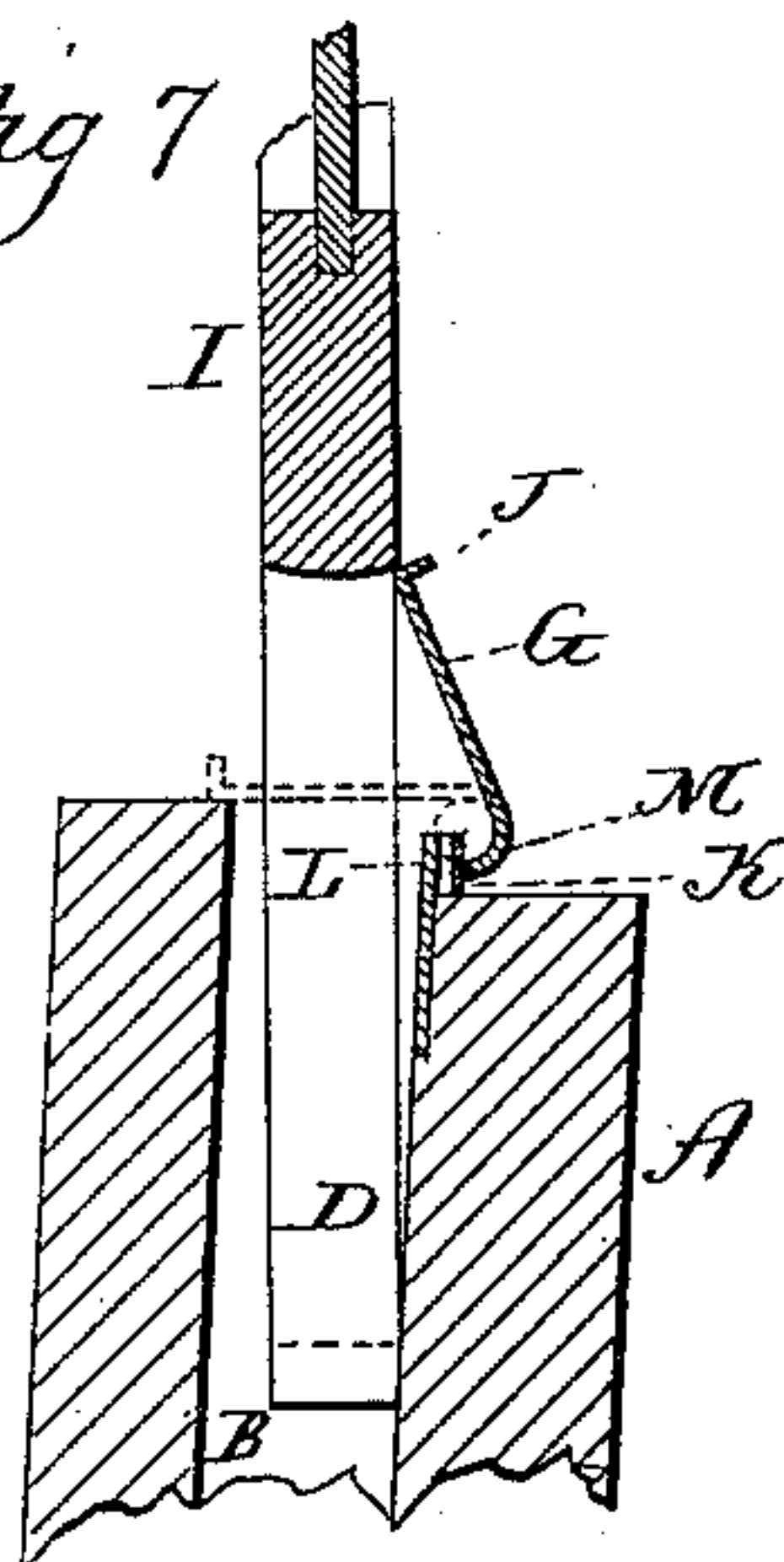


Fig. 8

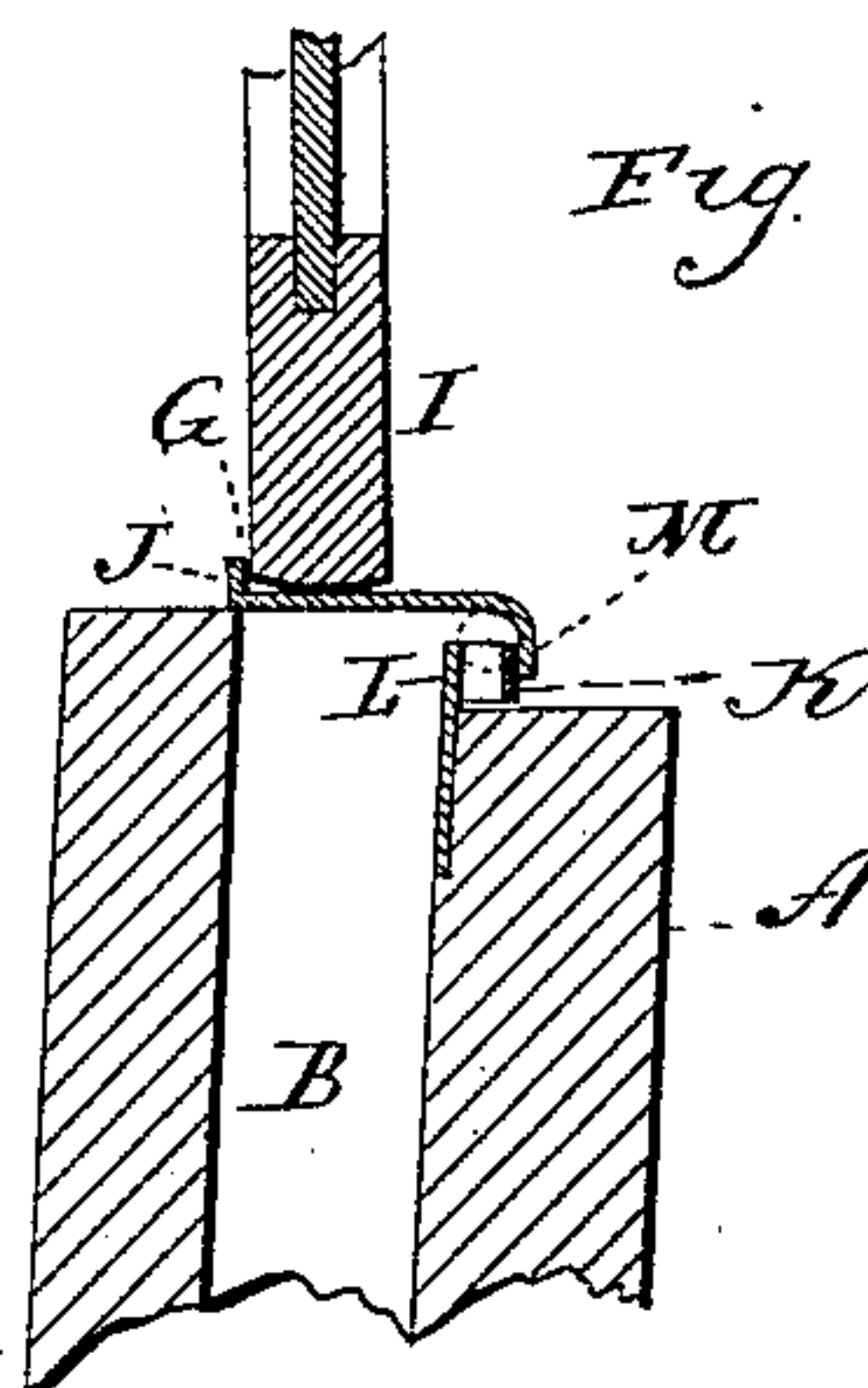


Fig. 6

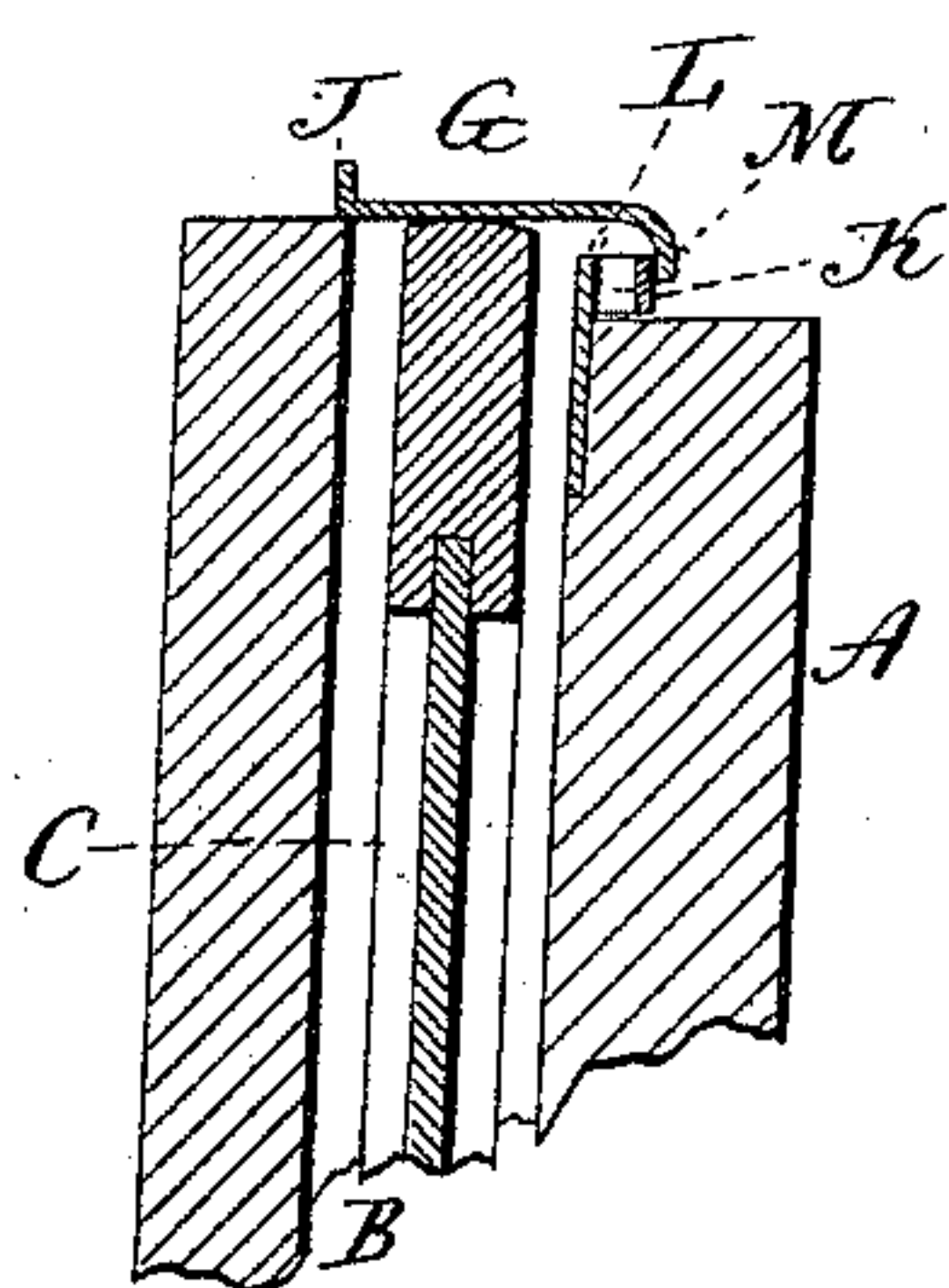


Fig. 10

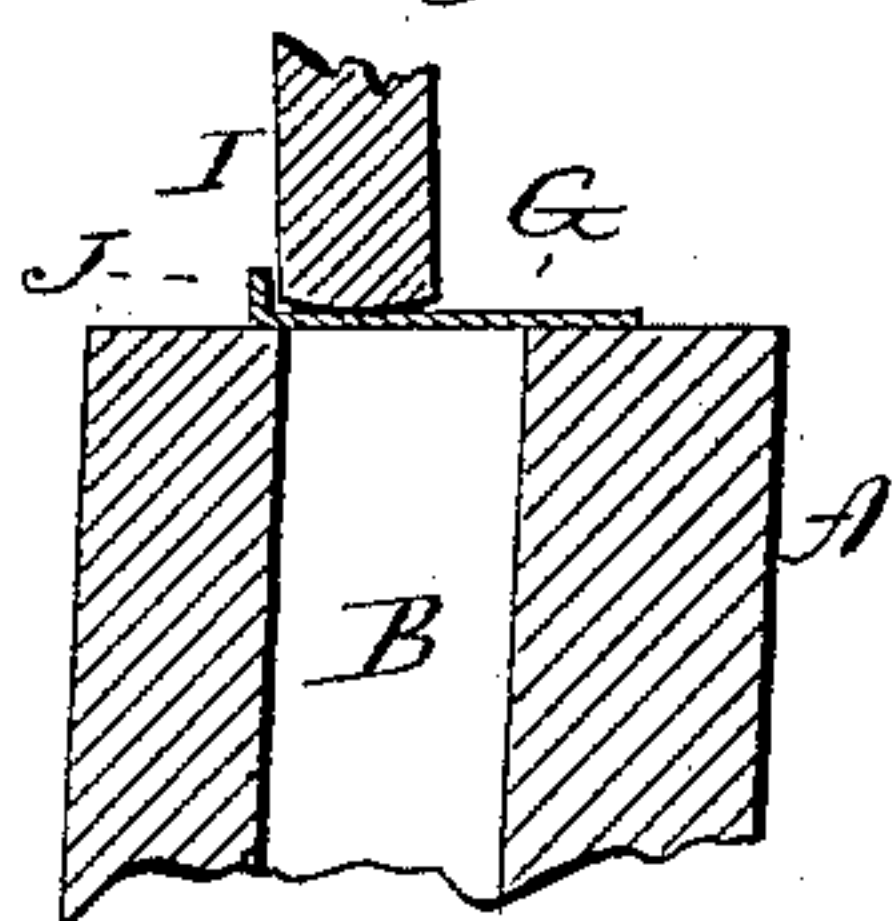


Fig. 11

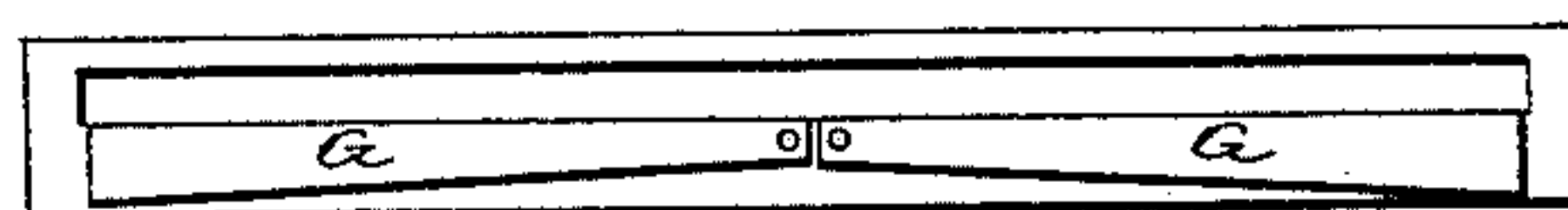
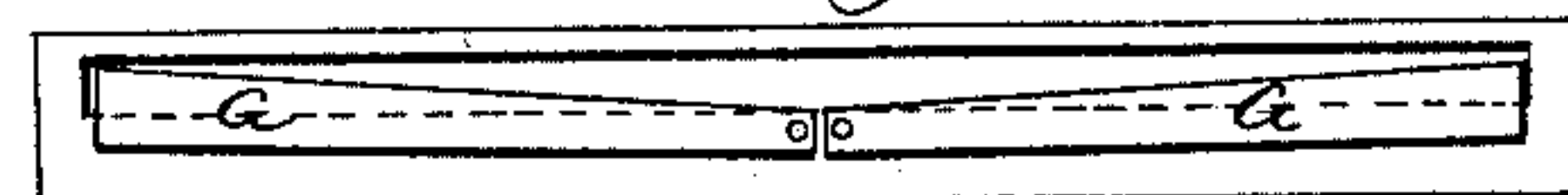


Fig. 12



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UNITED STATES PATENT OFFICE.

FREDERICK A. BRADLEY, OF NEW HAVEN, CONNECTICUT.

CARRIAGE-DOOR.

SPECIFICATION forming part of Letters Patent No. 424,701, dated April 1, 1890.

Application filed August 29, 1889. Serial No. 322,325. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK A. BRADLEY, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Doors for Landaus and Similar Carriages; and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, an outside view of the door, a portion broken away to show the side view of one of the sash-supporting guides; Fig. 2, a vertical central section through the door and sash; Fig. 3, a detached vertical section through one side of the door, cutting through the swinging guide in which the arms from the sash work; Fig. 4, a top view of the door representing the sash in the down position and the flap in the open position; Fig. 5, a top view of the same, representing the flap in the closed position when the sash is down; Fig. 6, a vertical section through the upper portion of the door with the sash and flap in the closed position; Fig. 7, the same section, illustrating the sash as fully raised and the flap as about to pass under the sash; Fig. 8, the same section, representing the flap as turned below the sash and the sash resting thereon; Figs. 9, 10, 11, and 12, modifications.

This invention relates to an improvement in doors for that class of carriages in which the top is collapsible or removable, so that the door cannot extend above the sill upon which the sash rests in its elevated position, such as landaus and similar carriages. In the usual construction the lower part of the door is constructed as a pocket into which the sash which forms the upper part of the door may drop, the sides of the door not extending above the sill upon which the sash rests, and generally these doors have been constructed with a flap at each end of the pocket, hinged so as to turn upward from each other forward and rearward, and so as to form practically an extension of the door, these flaps being grooved upon the inside, so that the sash will run up through the grooves, and when raised its lower edge must be thrown

outward onto the sill outside the pocket as a rest. This construction is not only unsightly, but is inconvenient inasmuch as there is considerable difficulty experienced in raising and adjusting the sash and a great liability of throwing the sash entirely out of place.

The object of my invention is a construction which will firmly support the sash, be simple, effective, and convenient in its operation, and prevent the accidental displacement of the sash; and it consists in a sash arranged to slide up or down from or into the pocket, as the case may be, the sash constructed with downward extensions from its lower edge into the pocket, which form supports for the sash, and stops to prevent its accidental withdrawal, and having combined therewith a rest on the door, which may be thrown under the sash after it is raised, and upon which the sash may rest and be supported in the up position, as more fully hereinafter described.

A represents the door, which is substantially the same as that used in landau-carriages, the door extending upward no farther than the sill upon which the sash is to rest. This door is constructed with the usual pocket B, into which the sash may be dropped or withdrawn therefrom.

C represents the sash, which may be of any desirable construction, here represented as that usually employed, it consisting of a four-sided frame. At each side of the sash a downward projection D is applied, preferably of metal, secured to the edge of the sash, and extends downward, forming two arms—one at each side—which work into the pocket. Preferably these arms are each constructed with a shoulder E, which may strike a suitable stop or shoulder in the pocket, as F, Fig. 3, so that when the sash is raised so far as to bring the shoulder E against the shoulder F the further raising of the sash will be prevented, and therefore the sash cannot be accidentally withdrawn from the pocket, so as to separate it from the door. The sash runs into and from the pocket in the usual manner.

To the upper edge of the door or sash sill a flap G is hung. This flap extends longitudinally across the door, parallel with the pocket, its hinge being preferably formed by

trunnions H at each end, supported in suitable bearings in the top of the door, the axis of the hinge being parallel with the pocket, as seen in Figs. 4 and 5. The flap is preferably arranged upon the door outside the pocket, as represented, so that when the sash is dropped into the pocket this flap may lie over the pocket, so as to cover the upper edge of the sash, as seen in Fig. 6; but the flap may be turned from over the pocket, as seen in Figs. 4 and 5, so as to permit the up or down movement of the sash, as the case may be. The sash being in the pocket, as seen in Fig. 6, and it being desired to raise the sash so as to completely close the door-opening, the flap is turned upward, as seen in Fig. 7, thus opening the pocket, and the sash then drawn up until the bottom rail I of the sash rises so far above the edge of the door, as seen in Fig. 7, that the flap G may drop inward over the pocket, as represented in broken lines, Fig. 7, thus closing the pocket to prevent the return of the sash. Then the sash drops onto the flap G, as seen in Fig. 8. The flap then forms a support for the sash in its up position. The arms D, which still remain in the guides in the pockets, support the sash against lateral or outward and inward movement. The flap is best constructed with an upwardly-projecting flange J upon its inner edge, which will rest against the inside of the sash to prevent rain from driving through beneath the sash into the carriage.

The flap may be operated mechanically; but I prefer to employ a spring which will yieldingly hold the flap in its closed position and automatically return it to that position when the sash is raised so far as to permit the flap to swing under the sash. This spring may be arranged as seen in Figs. 5, 6, 7, and 8, K representing the spring, which is in the form of a flat feather-spring, as seen in broken lines, Fig. 5, and which lies against the flange or "fence" L upon the outer edge of the pocket, and so as to bear against the turned-down edge M of the flap, this edge M of the flap operating as a cam upon the spring, so that as the flap is raised from the position seen in Fig. 6 to that seen in Fig. 7 the spring will be compressed, and so that when the sash is raised to its full elevation, as seen in Fig. 7, the spring will react and throw the flap over the pocket beneath the sash, as seen in broken lines, Fig. 7. The spring also serves as a stop which will hold the flap against the sash in the turned-up position, should the sash not be fully raised, and so as to prevent its rattling. If the spring be omitted, then the lower edge of the flap should strike the fence or other suitable stop, so as to bear against both it and the sash to prevent the rattling of the flap.

In some cases the shape of the door, as seen in Fig. 2, is such that the pocket in the door inclines inward, while the sash when raised must stand in a vertical position. To accommodate the sash to doors of this charac-

ter, an auxiliary guide N (see Figs. 4 and 5) is hung in the pocket at each edge of the sash. These guides are constructed with a groove upon their inner side corresponding to the sash, and through which the sash will readily run, the guides being hung upon a pivot O, (see Figs. 2 and 3,) and the width of the pocket is such that the said guides may swing outward and inward as the sash is raised or lowered, as from the position seen in Fig. 2 to that seen in broken lines, same figure, so as to permit the sash to be thrown outward after it commences its descent into an inclination corresponding to the inclination of the pocket.

While I prefer to make the support for the sash in the form of a flap G, hinged parallel with the sash and pocket, as I have described, the flap or support may be otherwise formed—as, for illustration, it may be in the form of a slide, as seen in Figs. 9 and 10, so as to slide inward and outward, as from the position seen in Fig. 9, when the sash is in the pocket, to the position seen in Fig. 10, when the sash is raised; or the supports for the sash may be made in the form of two laterally-swinging arms, as seen in Figs. 11 and 12, these arms being hung upon the top of the door upon the inside of the sash—say near the center—so that when the sash is raised they may be turned inward over the pocket beneath the sash, as seen in Fig. 12. These illustrations will be sufficient to indicate that my invention is not to be understood as limited to a hinged flap or support for the sash; but

What I do claim is—

1. In a carriage-door the sides of which extend no higher than the rest or sill for the sash, the door constructed with a pocket opening through its upper edge, a sash arranged to slide into or from the said pocket, the sash constructed with downward projections at each side below the bottom rail extending into the pocket as supports for the sash, and so as to permit the bottom rail to rise above the upper edge of the pocket, while the said projections extend into the pocket with a support arranged upon the upper edge of the door and adapted to pass under the said lower rail of the sash and over the pocket when the sash is raised, and so that the sash may rest thereon in the raised position, substantially as described.

2. A carriage-door the sides of which do not extend above the sash-rest, constructed with a pocket opening from the upper edge, and into which the sash may drop, combined with a sash adapted to slide into or be drawn from the said pocket, the sash constructed with a downwardly-projecting arm from its lower edge at each side, an outwardly and inwardly swinging guide arranged in each side of the pocket, the said guides constructed with a groove through which the said sash and said arms will work, and a support on the door adapted to be thrown under the sash when in the raised position, substantially as described.

3. A carriage-door substantially such as

described, constructed with a pocket opening from its upper edge and adapted to receive the sash, combined with a sash adapted to slide into or from the said pocket, the said sash constructed with downwardly-projecting arms from its lower edge at each side, the said arms constructed with shoulders E, and the door provided with corresponding shoulders F, against which said stops will strike when the sash is raised, with a support adapted to be thrown under the sash when the sash is in the raised position, substantially as described.

4. In a carriage-door substantially such as described, constructed with a pocket opening from its upper edge, and into which the sash may drop, the combination therewith of a sash constructed with downward projections from its lower edge at each side, extending into the pocket as supports for the sash, and a flap hinged to the upper edge of the door upon an axis parallel with the plane of the sash and adapted to drop over the pocket in the door and beneath the sash when the sash is in the raised position, substantially as described.

5. The combination of a carriage-door substantially such as described, constructed with a pocket opening from its upper edge, a sash constructed with downward projections from its lower edge at each side and extending into said pocket, and into which pocket the sash is adapted to drop, the said projections forming arms for the support of the sash, a flap hinged to the top of the door, the axis of the hinge being parallel with the plane of the sash, the said flap adapted to drop over the pocket and beneath the sash when the sash is raised, so as to form a support for the sash in the raised position, with a spring, the tendency of which is to throw and yieldingly hold the said flap in its closed position, substantially as described.

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