

(No Model.)

F. E. HAVENS.
WAGON.

No. 507,123.

Patented Oct. 24, 1893.

FIG. 1.

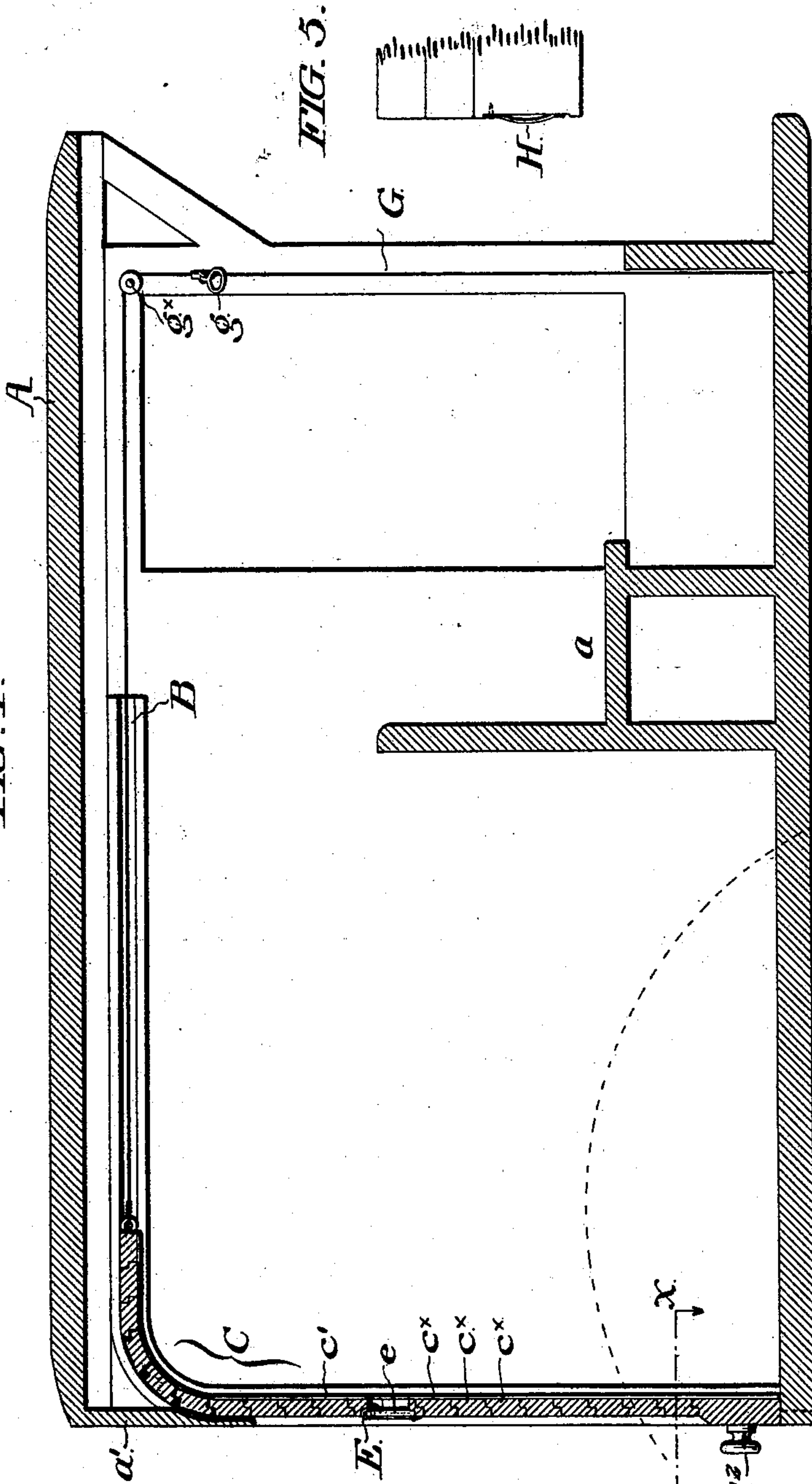


FIG. 5.

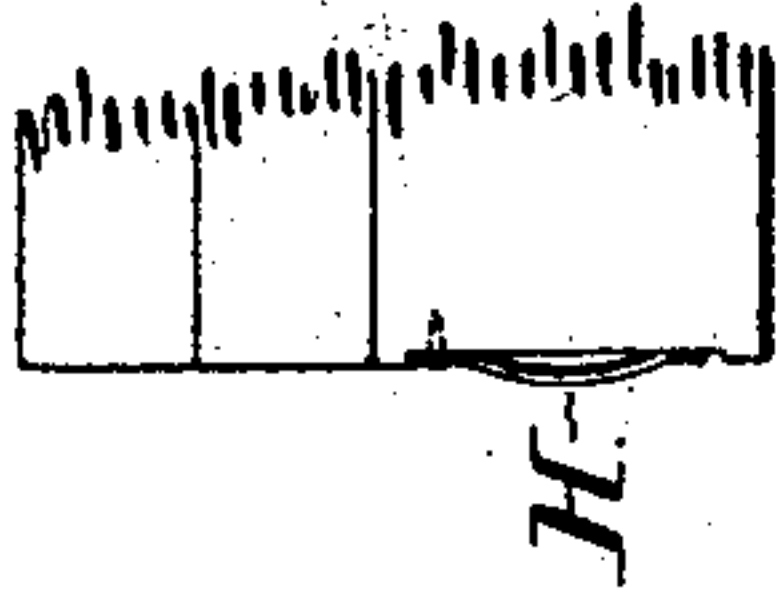


FIG. 4.

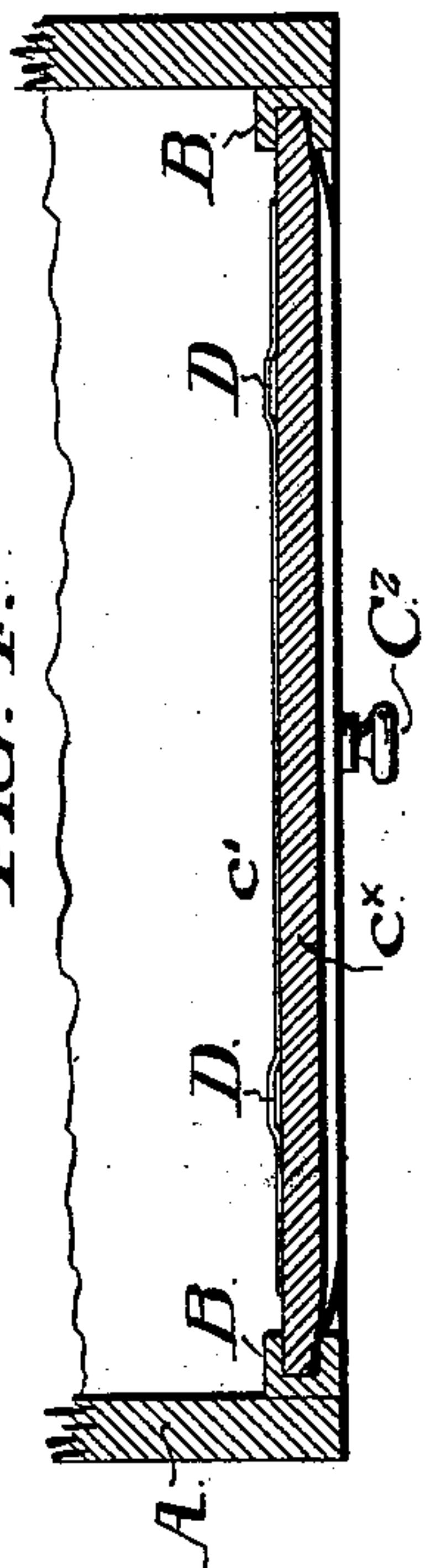
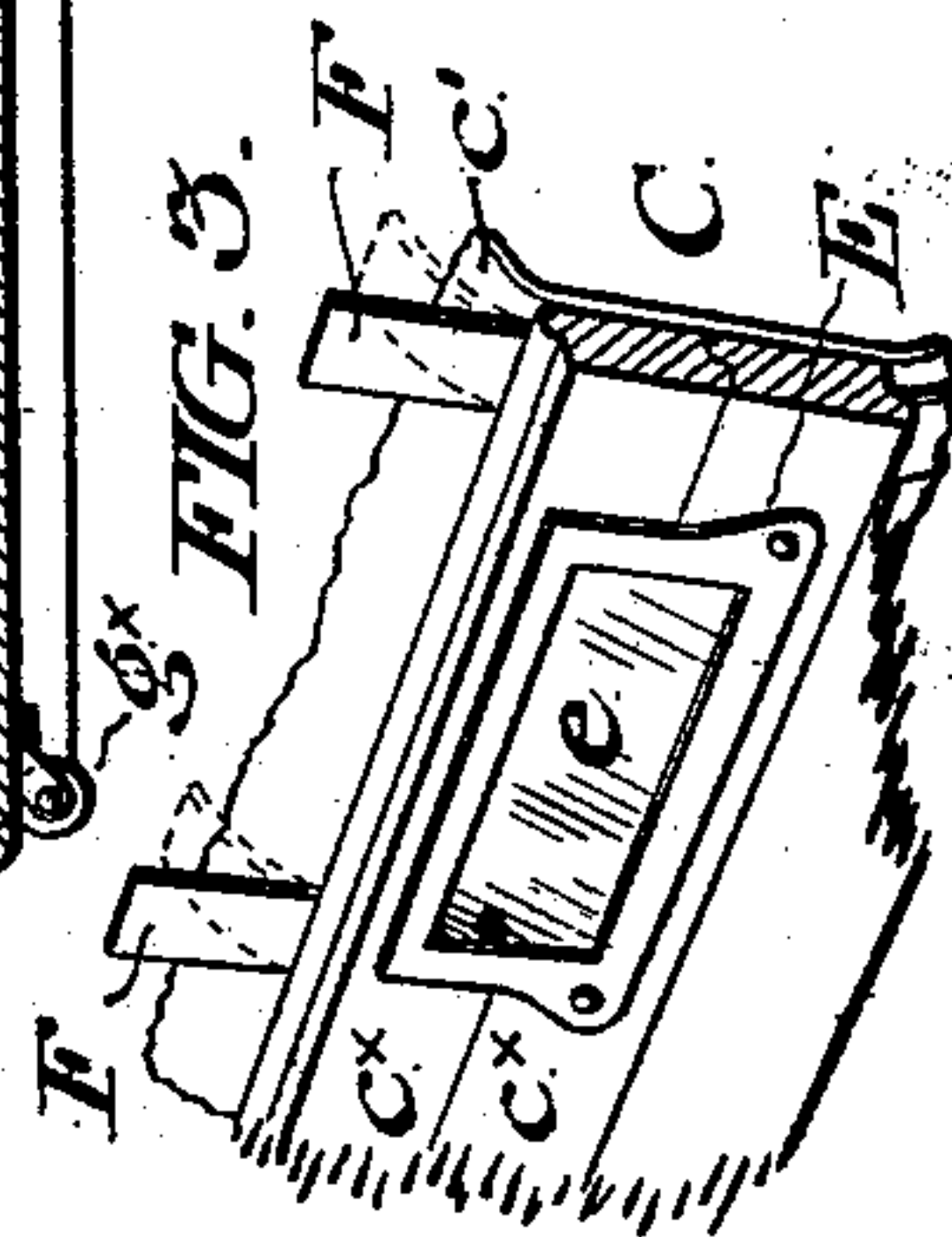


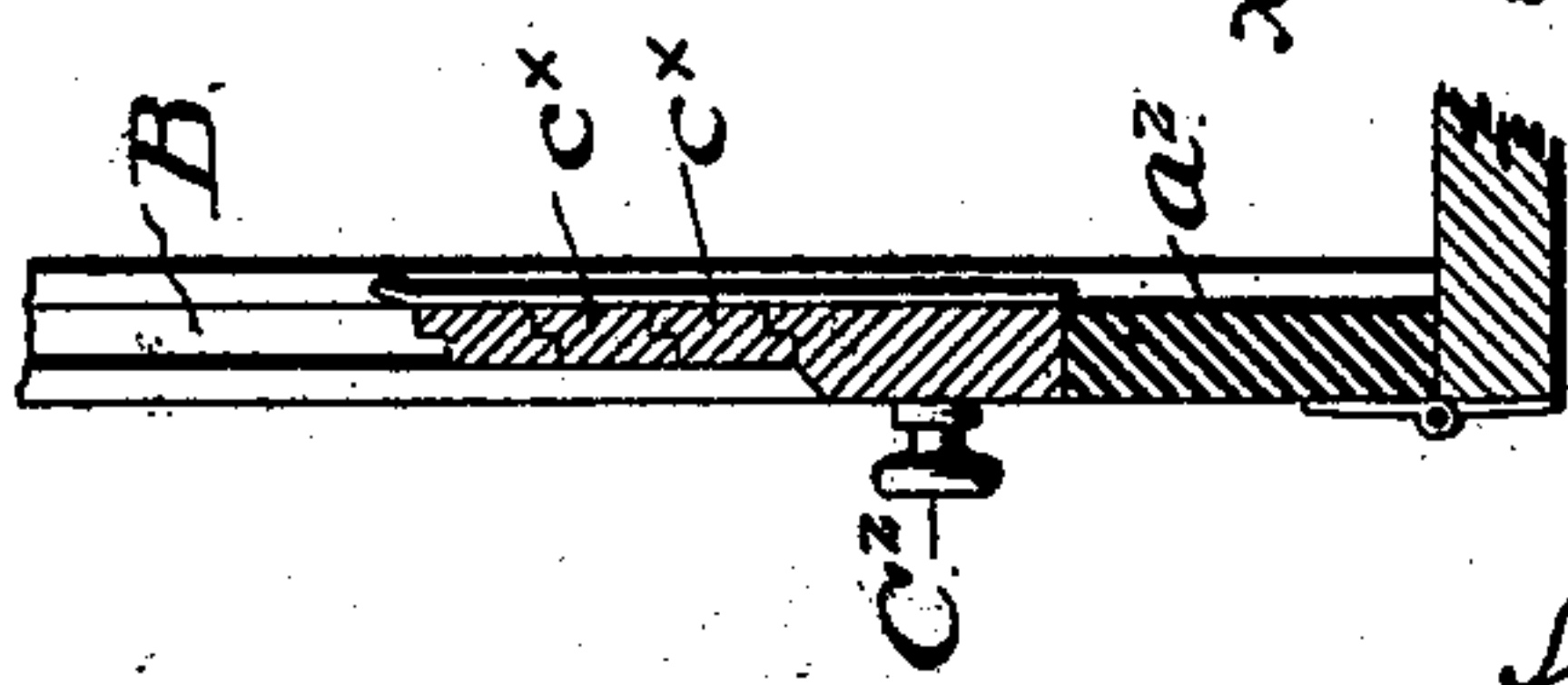
FIG. 3.



WITNESSES:

J. E. Paige
James Loughran.

FIG. 2.



INVENTOR

Frank E. Havens
By his attorneys
Strawbridge & Taylor

UNITED STATES PATENT OFFICE.

FRANK. E. HAVENS, OF BRIDGETON, NEW JERSEY.

WAGON.

SPECIFICATION forming part of Letters Patent No. 507,123, dated October 24, 1893.

Application filed May 18, 1893. Serial No. 474,615. (No model.)

To all whom it may concern:

Be it known that I, FRANK. E. HAVENS, a citizen of the United States, residing in the city of Bridgeton, county of Cumberland, and State of New Jersey, have invented certain new and useful Improvements in Wagons, of which the following is a specification.

My invention, while applicable in connection with vehicles generally, is especially designed for use in connection with wagons employed in the delivery of merchandise, and relates to the means employed for closing their rear openings. Heretofore wagons of this character have usually been provided with hinged shutters or doors which are objectionable in that when the wagons are drawn up in proximity to the curb-stone and the shutters or doors thrown open, they are liable to be encountered by pedestrians upon the pavement; they are, moreover, incapable of being opened and closed otherwise than from the rear of the wagon.

It is the object of my invention to provide a simple, inexpensive, and durable, closure for the rear opening of a wagon body, adapted to be opened by being drawn up into the space beneath and in proximity to the roof, and capable of being opened and closed either from the driver's seat or from the rear of the wagon.

Generally stated, my invention comprehends a closure formed of a series of transversely disposed slats suitably connected together, in such manner that the structure is, longitudinally considered, flexible, and adapted to be moved longitudinally in ways mounted upon the inner faces of the side walls of the wagon, which ways extend vertically from top to bottom thereof at the rear of the vehicle and continue from the upper ends of the vertical portions forward horizontally from the rear end of the wagon a suitable distance toward the front thereof,—to the upper and lower extremities of which closure are attached the respective extremities of an operating cord, the intermediate portion of which is carried forward into a position in which it is readily accessible to the hand of the driver.

In the drawings I show, and herein I describe a preferred form of a convenient embodiment of my invention, the particular sub-

ject matter claimed as novel being hereinafter definitely specified.

In the drawings, Figure 1 is a longitudinal central vertical sectional elevation through a wagon body equipped with my improvements. Fig. 2 is a vertical sectional elevation of the lower portion of the closure, in place within the lower portion of the ways, and illustrating the employment of a tail board in connection with my improved closure. Fig. 3 is a view in perspective of the window which I provide in the closure, the adjacent parts of the closure being shown in fragmentary arrangement to illustrate construction. Fig. 4 is a sectional plan taken on the line $x-x$ of Fig. 1. Fig. 5 is a fragmentary view of one end of the lower slat of the closure.

Similar letters of reference indicate corresponding parts.

In the drawings, A represents a wagon body of ordinary construction supposed equipped with the usual running gear, and a is the driver's seat.

B B are grooves or ways of any suitable construction, supported respectively upon the opposing inner faces of the sides of the wagon body, extending vertically from its bottom to its top in close proximity to its rear end, and continued horizontally along the upper portions of said sides and in close proximity to its roof a suitable distance according to the dimensions of the closure itself, whereof hereinafter. The vertical portion of each way merges into the horizontal portion in a gradual curve of large radius.

C is the closure referred to, formed, as stated, of a series of transversely disposed slats c^x connected together in any suitable manner and mounted in the ways B B hereinbefore referred to. The preferred form of closure is that represented in the drawings, in which each slat overlaps its neighbor on one side and is overlapped by its neighbor on the other, the slats being suitably recessed or grooved from end to end to avoid undue increase of the thickness of the closure in such overlapping. The slats may be made of metal if preferred but are conveniently formed of wood; when made of wood they may be connected together by a web or by straps of text-

ile material, leather, or any suitable material, secured by gluing, tacking, or otherwise attaching it to the faces of the individual slats. In the drawings they are shown as
5 connected by a web c' of textile material.

In the form of closure shown in the drawings, D D are two flat bands of steel extending across the slats from end to end of the closure, and conveniently secured by being
10 interposed between the slats themselves and the facing c' of textile or other material. These bands constitute springs and tend each to coil upon itself and therefore tend to draw the flexible closure closely against the
15 lower or inner sides of the ways, and thus serve to both temporarily secure the closure in the various portions in which it may be placed and also to prevent the rattling of the closure in the travel of the wagon. The
20 springs D also, in tending to bring the curtain to a curved position, conform it to and facilitate its passage along the curved portion of the ways. Intermediate of the length of the curtain, and at a suitable distance from
25 the lower end thereof, an opening may be cut through the central portions of several of the slats, and a frame E inclosing a pane of glass e inserted therein. The dimensions of the window thus formed are to be so limited
30 as not to interfere with the bending of the closure necessary to enable it to pass through the curved portion of the ways.

To guard the glass against breakage I prefer to mount between the slats and the facing
35 material c' a pair of flat metal bands F of spring metal of length somewhat in excess of the breadth of the window, placing one at each side of said window, and transversely with respect to the slats. These bands F ,
40 which I term window springs, operate to maintain the central portion of the closure in the vicinity of the window as straight as possible and therefore to guard the glass against breakage, when the slats in which the window opening
45 is formed are passing through the curved portions of the ways.

As will be noticed, the rear wall a' of the wagon body depends from the top thereof down as far as the lower end of the curved
50 portion of the ways so as to conceal the curved portions of the closure.

a^2 , Fig. 2, is the usual tail board of the wagon, which may be either used or not as preferred.

55 The lower end of the closure conveniently terminates in a slat of considerably greater dimensions than the others, upon the respective extremities of which, as shown in Fig. 5, small outwardly bellied band springs H are
60 mounted, and which by their contact with the bottoms of the ways operate to prevent rattling of the closure, and to maintain it in its different positions of adjustment.

C^2 is a knob or operating handle attached
65 to the lower end of the closure.

As will be understood, when the closure is in its closed position, or that illustrated in

Fig. 1, it completely closes the rear opening of the wagon, and presents a neat and attractive appearance; it may be colored to match
70 the coloring of the other portions of the wagon body, and is light and durable. When it is desired to open the rear end of the wagon, the closure is elevated, and in such elevation travels around the curved portion and along
75 the horizontal portion of the ways, being thus disposed of in a space at the upper portion of the wagon, which space is usually otherwise unoccupied. The movement of the closure in its ways is smooth and easy. The
80 closure may be operated by a person standing at the rear of the wagon, the character of the closure and its relation to the ways being such that, notwithstanding its flexibility, upward pressure applied to its lower end will
85 occasion its travel up and along the ways. For the purpose of enabling the operation of the closure by the driver without dismounting from his seat, I provide a cord G , the upper end of which is secured to the upper end of the
90 closure, and which extends forward to a point in the vicinity of the driver's seat, downward to the vicinity of the floor, and rearwardly to the vicinity of the lower end of the closure, to which it is in turn attached. Inter-
95 mediate of its length the cord is provided with an operating handle g , which depends in proximity to the driver, and the cord being preferably throughout its length supported upon rollers g^x which allow of its free
100 longitudinal movement, the movement of the handle g in one or the other direction will occasion the conjoint movement of the cord and closure.

Having thus described my invention, I
105 claim and desire to secure by Letters Patent—

1. A wagon body provided with ways extending horizontally along its upper portion and vertically down its end, and a closure mounted in said ways and composed of a series of slats, means for connecting said slats
110 together, so that adjoining slats are in contact, and a band of spring metal extending transversely with respect to the slats, substantially as set forth.

2. A wagon body provided with ways extending horizontally along its upper portion and vertically down its rear end, and a closure, mounted in said ways, and composed of a series of slats, means for connecting said
120 slats together, and a pair of bands of spring metal extending transversely with respect to the slats, substantially as set forth.

3. A wagon body provided with ways extending horizontally along its upper portion
125 and vertically down its rear end, and a closure, mounted in said ways, and composed of a series of overlapping slats, a flexible web for connecting said slats together, and bands of spring metal extending transversely with
130 respect to the slats, substantially as set forth.

4. A wagon body provided with ways extending horizontally along its upper portion and vertically down its rear end, a closure

mounted in and adapted to slide along said ways, a cord secured to the respective extremities of the closure and the intermediate portion of which exists at the front of the wagon, and an operating handle secured to said cord, substantially as set forth.

5. A wagon body provided with ways extending horizontally along its upper portion and vertically down its rear end,—a closure composed of a series of slats suitably connected together and mounted in said ways, a spring mounted upon the edge of the closure and adapted to bear against the bottom of a way, substantially as set forth.

6. A wagon body provided with ways ex-

tending horizontally along its upper portion and vertically down its rear end,—a closure composed of a series of slats suitably connected together and mounted in said ways, a window opening formed in several of said slats, and window springs mounted in the closure in position to protect the window, substantially as set forth.

In testimony that I claim the foregoing as my invention I have hereunto signed my name this 9th day of May, 1893.

FRANK. E. HAVENS.

In presence of—

F. NORMAN DIXON,
JAMES LOUGHRAN.