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A. STERN & N. LEFKOWITZ.

FOLDING CARRIAGE.

No. 598,964. Patented Feb. 15, 1898.

Fig. 1.

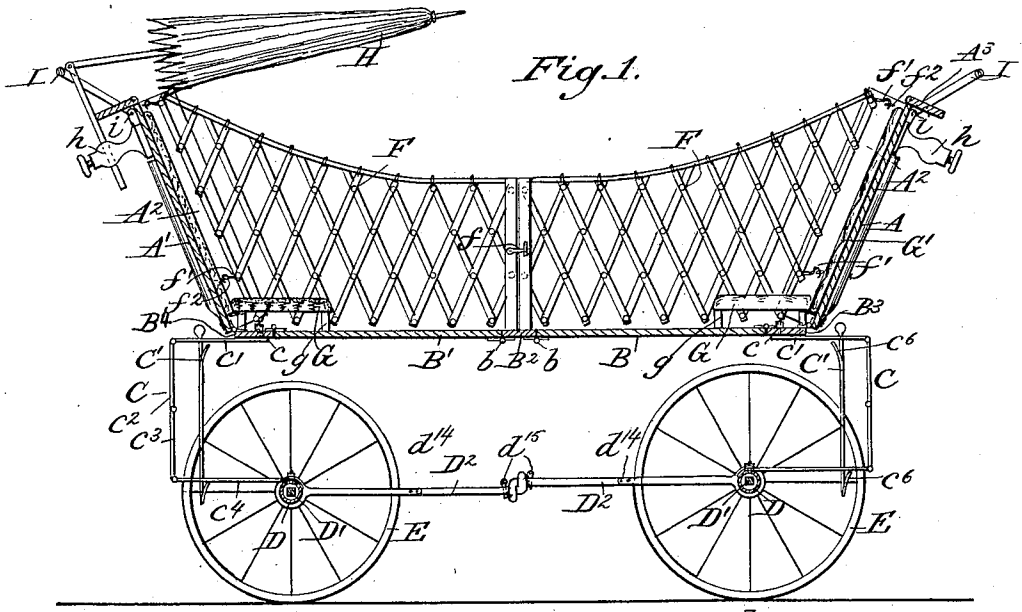


Fig. 2.

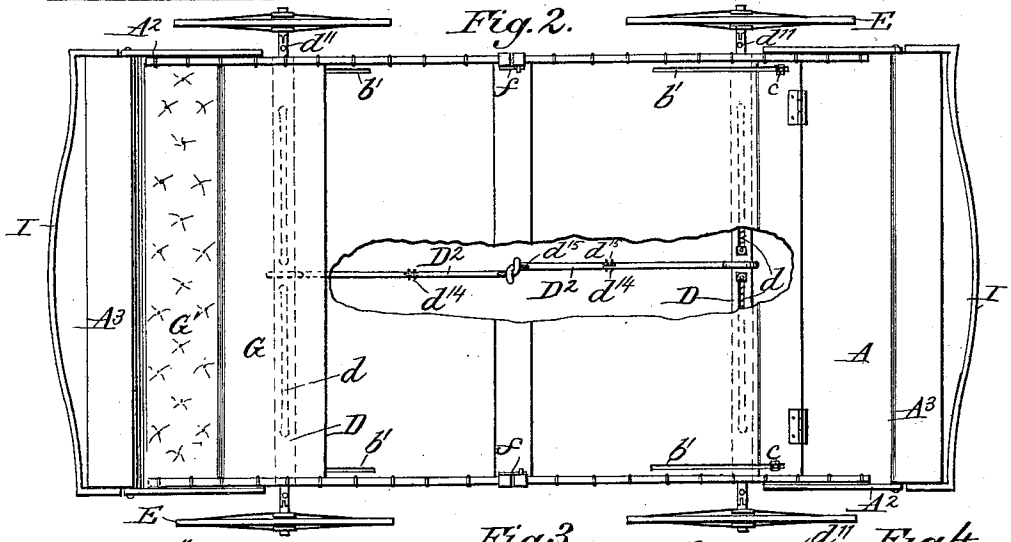


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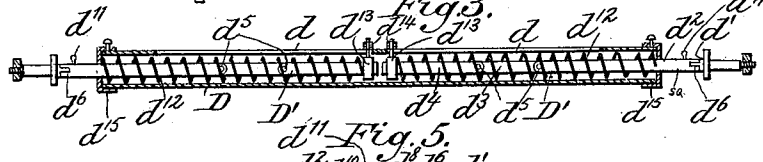
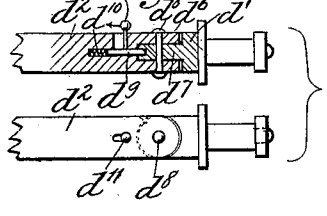


Fig. 4.



Fig. 5.



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Fig. 6.

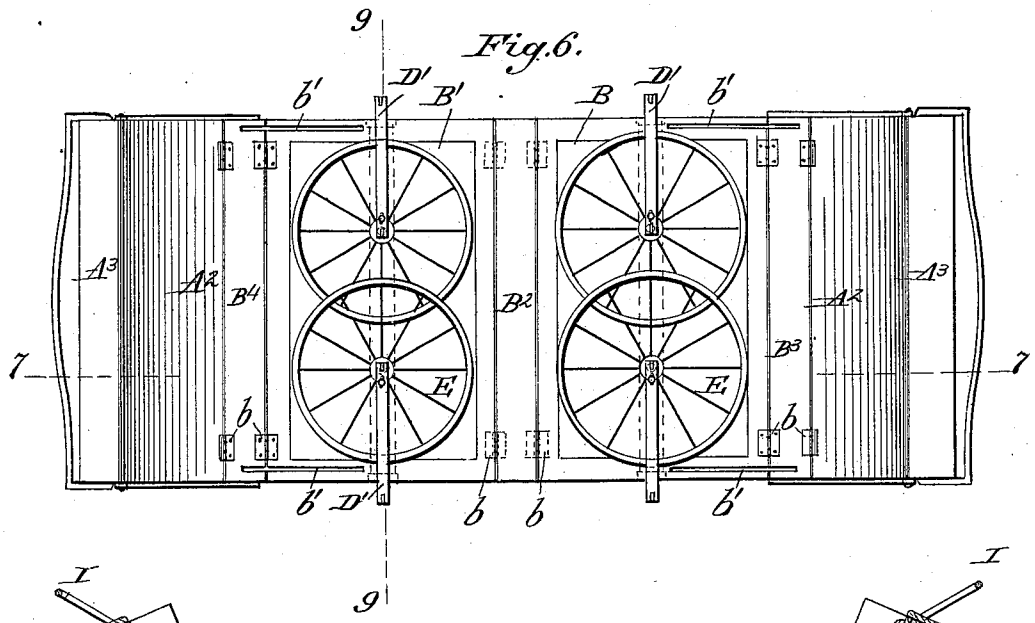


Fig. 7.

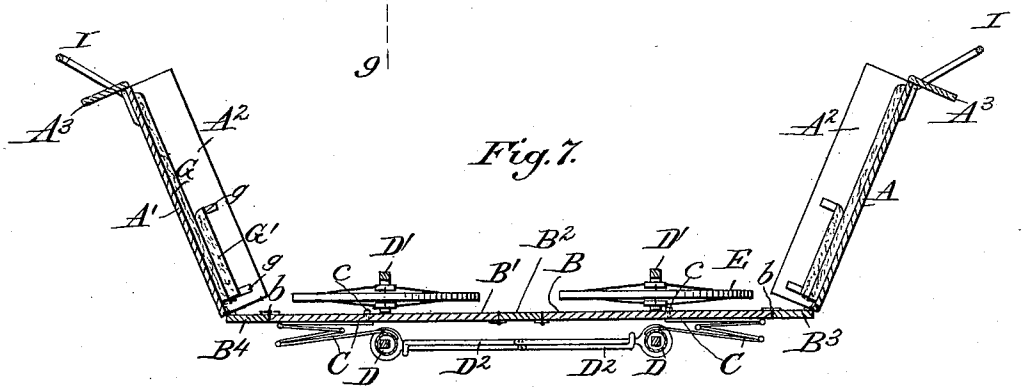


Fig. 8.

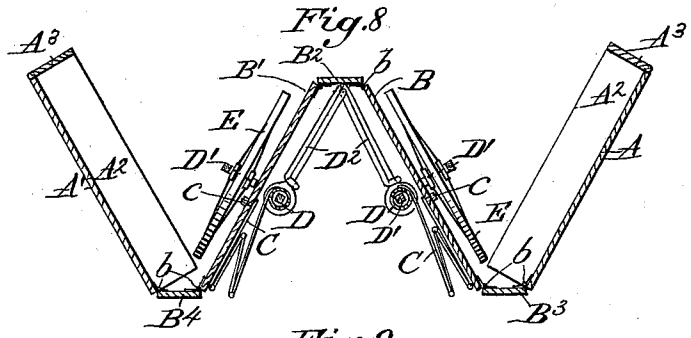
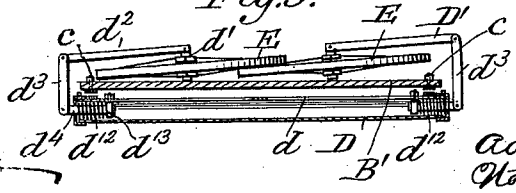


Fig. 9.



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Fig. 10.

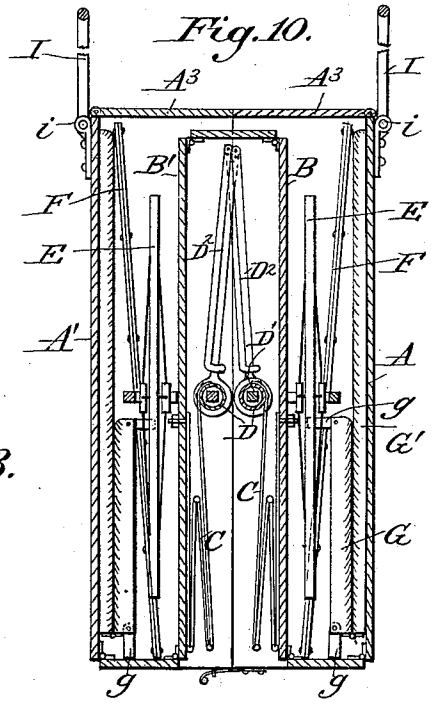


Fig. 13.

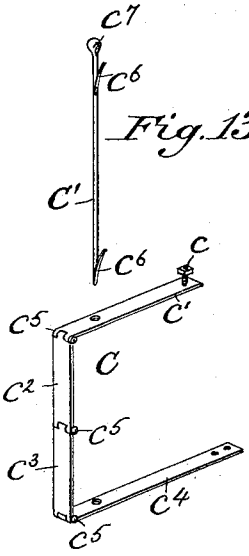


Fig. 11.

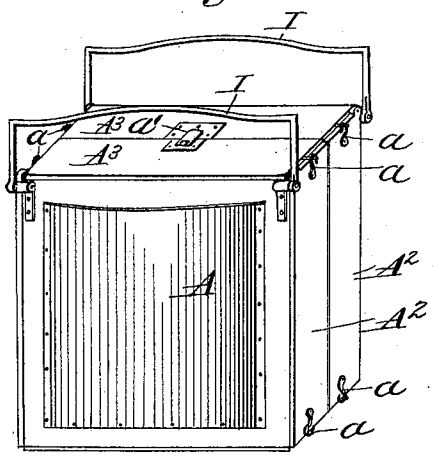
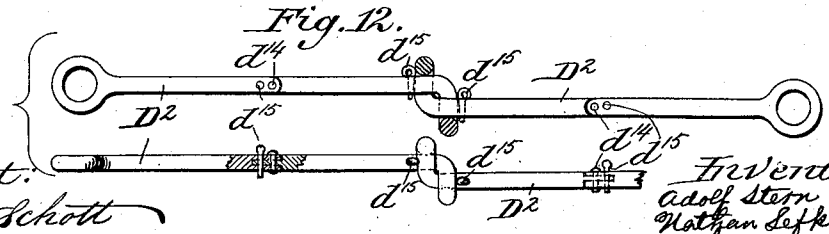


Fig. 12.



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UNITED STATES PATENT OFFICE.

ADOLF STERN AND NATHAN LEFKOWITZ, OF NEW YORK, N. Y.

FOLDING CARRIAGE.

SPECIFICATION forming part of Letters Patent No. 598,964, dated February 15, 1898.

Application filed May 1, 1897. Serial No. 634,756. (No model.)

To all whom it may concern:

Be it known that we, ADOLF STERN and NATHAN LEFKOWITZ, citizens of the United States, residing at New York, in the county and State of New York, have invented certain new and useful Improvements in Folding Carriages; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to improvements in vehicles, and particularly to improvements in a folding baby-carriage.

The main object of the invention is to produce a child's carriage which may be folded into a small compass, whereby it may be stored when not in use without requiring much space, thereby making it of particular advantage for residents in apartment houses and the like where commodious quarters are lacking.

The invention consists in a device arranged to accomplish the above object and which will first be described in connection with the accompanying drawings and then pointed out in the claims.

In the drawings, Figure 1 is a longitudinal sectional view of a carriage embodying our invention in its extended position; Fig. 2, a plan of the same with the bottom partly broken away; Figs. 3, 4, and 5, detail views illustrating the axle; Fig. 6, a plan view showing the wheels folded over; Fig. 7, a longitudinal section of the same; Fig. 8, a similar view showing the parts partly folded; Fig. 9, a transverse section on the line 9 9, Fig. 6; Fig. 10, a longitudinal section, on an enlarged scale, of the carriage completely folded; Fig. 11, a perspective view showing the appearance of the whole device when folded, and Figs. 12 and 13 detail views referred to hereinafter.

Referring to the drawings, A and A′ are dashboards, to which are secured side panels A^2, preferably projecting at right angles to the dashboards and toward the center of the carriage. To the top of each dashboard A A′ are hinged flaps A^3, which are capable of being folded either inward, as shown in Fig. 8, or outward, as shown in Fig. 1, being locked to the side panels A^2 when in the former position by means of any suitable fastening device or devices—as, for instance, the hooks and pins *a*, Fig. 11. To the lower edges of the dashboards A A′ is connected a collapsible or folding carriage-bottom, comprising in the structure illustrated a pair of panels B B′, a center strip B^2, and two end strips B^3 B^4, all connected to each other and to the said lower edges of the dashboards A A′ by means of suitable loose connections, such as the hinges *b*. By this construction it will be observed the bottom may be folded upward, so as to be received within the two trays formed by the dashboards A A′, the side panels A^2, and the flaps A^3, these trays thus coming together to form a case or box, the two trays being held together by any desirable fastening device, such as the lock *a*′, Fig. 11.

Each panel B B′ is provided at its outer end and on each side with slots *b*′, which slots are also extended into the end strips B^3 B^4, as shown in Fig. 2. Through these slots pass bolts *c*, projecting from folding springs C, these springs being formed of four pieces *c*′ c^2 c^3 c^4, hinged together at c^5, as best shown in Fig. 13, and each capable of being extended to form the three sides of a rectangle, being retained in the extended position by a suitable extension device, such as a rod C′, passed through the upper and lower arms *c*′ c^4 and provided with spring-catches c^6, which prevent the accidental withdrawal of the rod C′, each rod also having a head c^7 to limit its downward movement.

To the inward-extending ends of the lower portions c^4 of each pair of springs an axle and wheels are attached, the axles being each constructed of an outer shell and an inner flexible or jointed axle proper. The said flexible or jointed axle proper is made in two parts, each having one inflexible end extending beyond the shell and provided with a thimble-skein on which the wheel is mounted, the inner end of each part being so constructed as to slide longitudinally in the shell, whereby it may be drawn outward to a certain extent in order that the wheels may be folded over with their spokes approximately parallel to the shell. Furthermore, when drawn inward the parts of the flexible axle

may be clamped or secured in such a manner that they cannot be accidentally drawn out.

The specific construction of the axle illustrated in the drawings is as follows:

D is a tube forming an outer shell which is slotted at d, within which tube is located a flexible axle proper composed of two parts D′, (best shown in Figs. 3 to 5,) each consisting, preferably, of four parts d' d^2 d^3 d^4, three of which are hinged together in any ordinary way, as shown at d^5, while the outer joint d^6 next to the wheel is provided not only with a hinge, but also with a clamp or lock device, whereby the inflexible outer end d' of each axle part may be secured rigidly to the next adjacent portion d^2 of the axle part or may be unlocked therefrom, so as to be turned at an angle thereto. This joint, as shown in Fig. 5, is formed by providing the portion d' at its inner end with a tongue d^7, which enters a slot in the end of the portion d^2, being pivoted to the said portion d^2 by a pin d^8, passing through it and through the tongue. In the inner end of the tongue d^7 is formed a notch or opening arranged to receive one end of a bolt d^9, located in a recess in the end of the portion d^2, yieldingly pressed outward by a spring d^{10} and capable of being retracted by a finger-piece d^{11}, which projects outward through a slot in the side of the portion d^2.

The flexible axle parts are each surrounded by a spring d^{12}, located within the outer shell D and bearing against a collar d^{13}, fixed on the inner end of the flexible part and provided with a bolt extending outward through the slot d, upon which bolt is placed a nut d^{14}, whereby the flexible axle part may be forced outward and then clamped or clamped when drawn inward by the spring d^{12}. Each end of the shell D is provided with a cap d^{15}, having a square opening through which its respective axle part projects, said axle part being preferably square in cross-section and fitting snugly in the opening in order that the axle part will be held against any tendency to rotate which might be caused by friction between the wheel and its thimble-skein.

The wheels E are of any desired construction and held on the thimble-skeins in the usual manner.

In packing the carriage the rods C′ are withdrawn by pressing the springs c^6 against the respective rods and pulling the rods upward. The parts c^2 c^3 of the springs are then pressed toward the center of the vehicle, thereby permitting the axles to come up close against the under side of the panels B B′, the bolts c being loosened and pushed toward the center of the carriage, whereby the axles are brought beneath the middle of said panels. The nuts d^{13} are then loosened and forced outward, the two flexible or jointed axle parts being thereby extended as far as the slots d will permit, whereupon the nuts d^{13} are tightened to prevent the springs from forcing the flexible axle parts inward again. The bolts in the joint d^6 are withdrawn and the thimble-skeins turned at an angle to the shell D, after which the flexible axle parts may be bent over so as to bring the wheels flat on top of the panels B B′, so that when the bottom is folded up into the case formed by the two dashboards and their attached parts said wheels will be next to the said dashboards, while the axle-shells D will be in the space between the two panels B B′.

The axles are held at a predetermined distance apart by means of a folding or telescopic reach, which is preferably constructed of two parts D^2, each provided at one end with a collar encircling the center of its respective axle-shell D, while at the inner ends each part D^2 is provided with a loop encircling the main portion of the opposite part D^2. By this construction the two parts of the reach may be slid together when the carriage is being collapsed, and in order to permit the reach, when thus closed or telescoped, to be folded with the folding of the buggy-bottom the parts D^2 are each jointed at d^{14}, the joints being each made similar to the joint at d^6 in the flexible axle part above described, with the exception that no bolt is employed—that is to say, one of the parts of the reach has a tongue fitting into a slot in the other part, a pivot-pin serving to hold the tongue in place. In order to hold the reach in its extended position, a series of cotters or pins d^{15} are employed. This construction will be clear from Fig. 12.

The carriage sides F are made flexible or collapsible, being either of cloth, leather, or the like, or of a construction which will permit them to be folded for storage within the case. In Fig. 1 is shown the latter construction, each side F preferably consisting of two parts which meet at the center and are fastened together in any suitable way, as by the latches f. These sides are made of a number of bars pivoted together in the form of a "lazy-tongs" and are provided with hooks f', which engage rings f^2, secured to the inside of the side panels A^2. By this construction the sides may be unhooked from the dashboards and unlocked from each other and then collapsed and packed into the spaces between the panels B B′ and the dashboards A A′.

The seat for the carriage comprises two parts G G′, hinged together, so as to fold toward each other when not in use, each part being suitably upholstered in any desired manner and preferably provided with springs to give elasticity to the cushions. The bottom G of the seat is provided with short legs g, which serve to raise the said seat a short distance above the carriage-bottom. In Fig. 1 we have shown two of such seats, though, as is obvious, only one may be employed.

A folding parasol H may also be provided, in which case the dashboards are supplied with the usual parasol-holding devices or sockets h.

To the outer face of each dashboard is secured a handle I, jointed at i, so that it may be turned down at an angle to the back of the

dashboard, whereby the carriage may be pushed from either end, and at the same time the handles may be turned up vertically to permit them to be grasped in carrying the case, as shown in Fig. 11.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a folding vehicle, the combination, with a bottom, of springs connected to the bottom and capable of movement toward and from the center of said body, and means for holding said springs at the desired distances apart.

2. In a folding vehicle, the combination with a bottom, of collapsible springs connected to said bottom, and axles carried by said folding springs.

3. In a folding vehicle, the combination with a bottom, of collapsible springs connected to said bottom and capable of movement toward and from each other.

4. In a folding vehicle, the combination with a folding bottom, of axles connected to the bottom and capable of movement toward each other, and a telescopic reach connected to both axles, each section of the reach being jointed.

5. In an axle for folding vehicles, the combination with a shell, of a flexible axle composed of two parts mounted in said shell and capable of movement longitudinally therein, and means for retaining said axle parts within said shell.

6. In an axle for folding vehicles, the combination with a shell, of a flexible axle composed of two parts mounted in said shell and capable of movement longitudinally therein, and yielding means for holding said axle parts within the shell.

7. In a folding vehicle, the combination, with dashboards, of a collapsible bottom, said bottom comprising two panels, a center strip and two end strips, all hinged together, collapsible springs, axles secured thereto, and a folding reach, arranged to fold between the panels of the bottom.

8. In a folding vehicle, the combination, with dashboards, of a slotted collapsible bottom, arranged to fold between the dashboards, collapsible springs secured to the bottom, one end of each spring being movably secured in a slot in the bottom, axles secured to the other ends of the springs, and a collapsible reach secured to the axles.

9. In a folding vehicle, the combination, with dashboards, of a collapsible bottom, collapsible springs secured thereto, each spring comprising two parallel parts, and a hinged part, a removable brace through the parallelled parts, axles at the ends of the springs and a collapsible reach secured to the axles.

10. In a collapsible vehicle, the combination, with a bottom, of axles connected therewith, a collapsible reach connecting the axles, each section of the reach being jointed, and pins for holding the reach in its extended position.

In testimony whereof we affix our signatures in presence of two witnesses.

ADOLF STERN.
NATHAN LEFKOWITZ.

Witnesses:
H. B. SALISBURY,
ISAAC HYMAN.