

H. Lawrence, Wheel Barrows.

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PATENTED JUL 18 1871

Fig: 1.

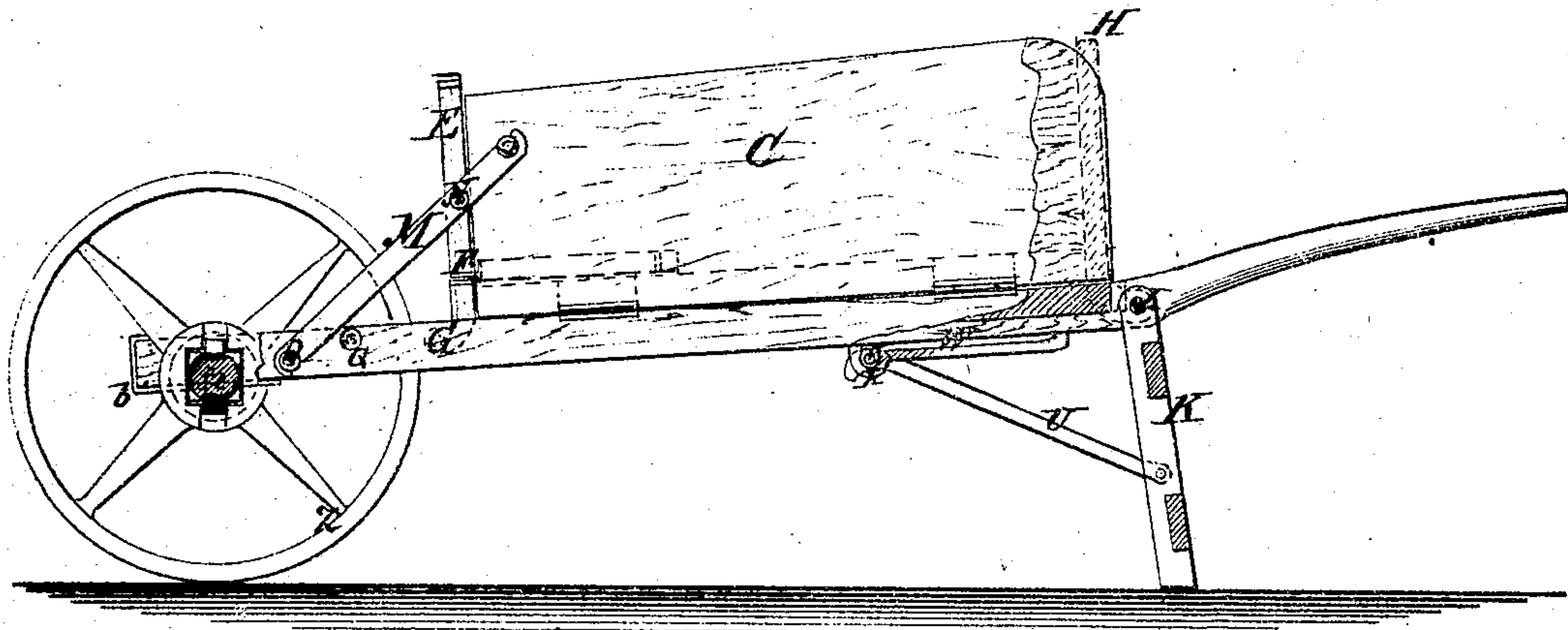


Fig: 4.

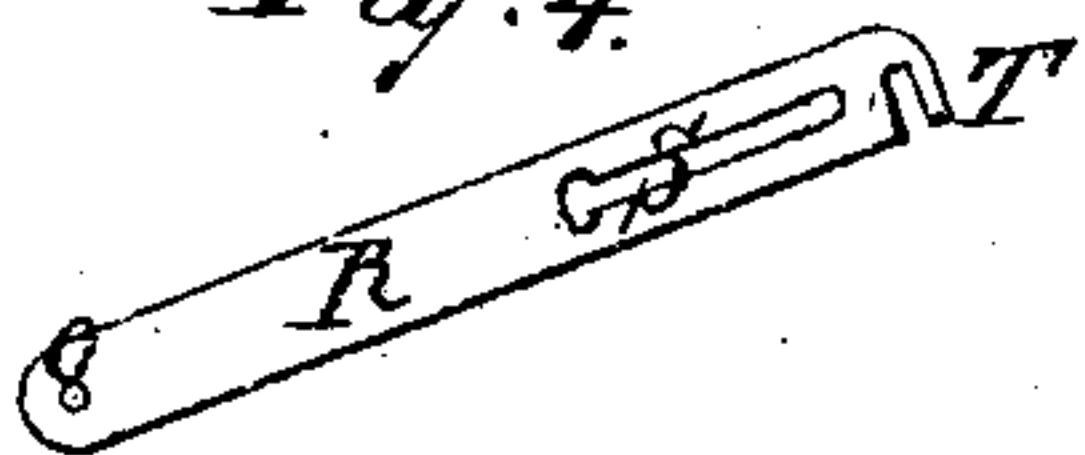


Fig: 2

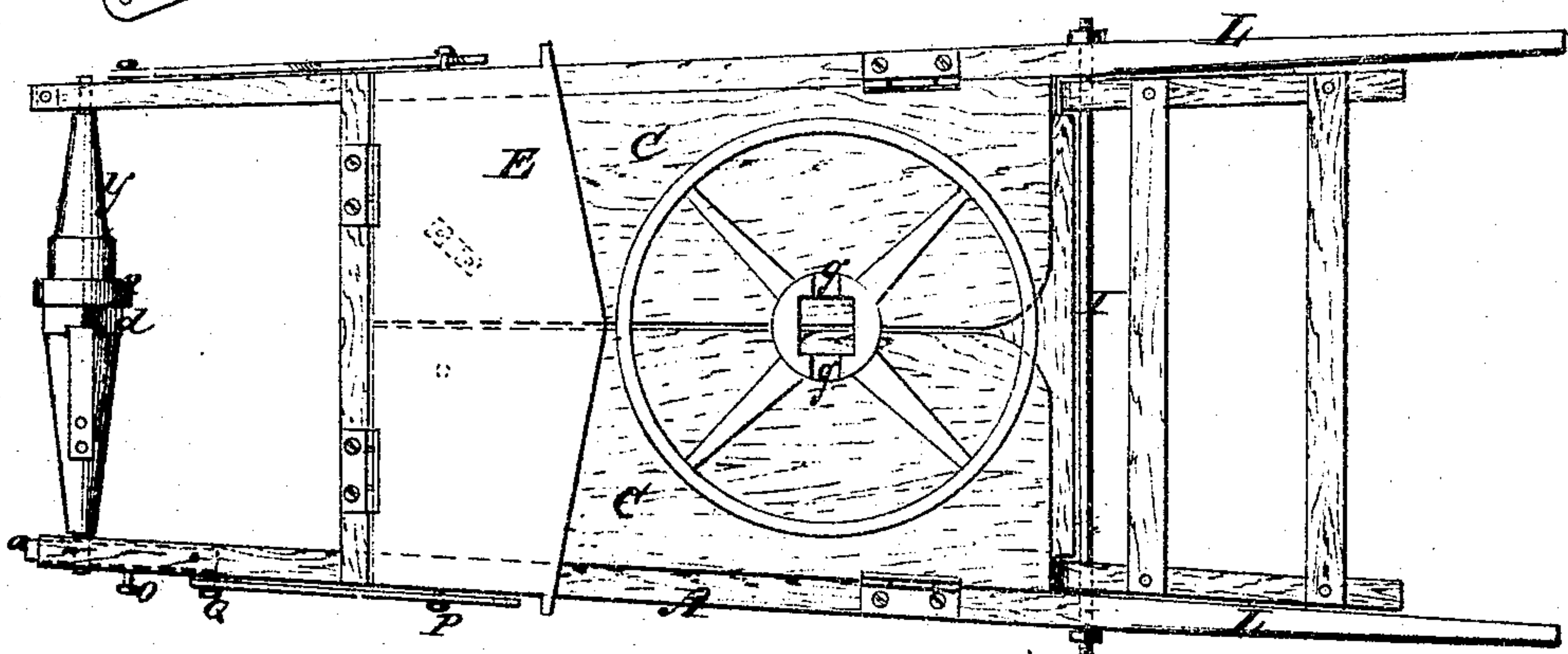
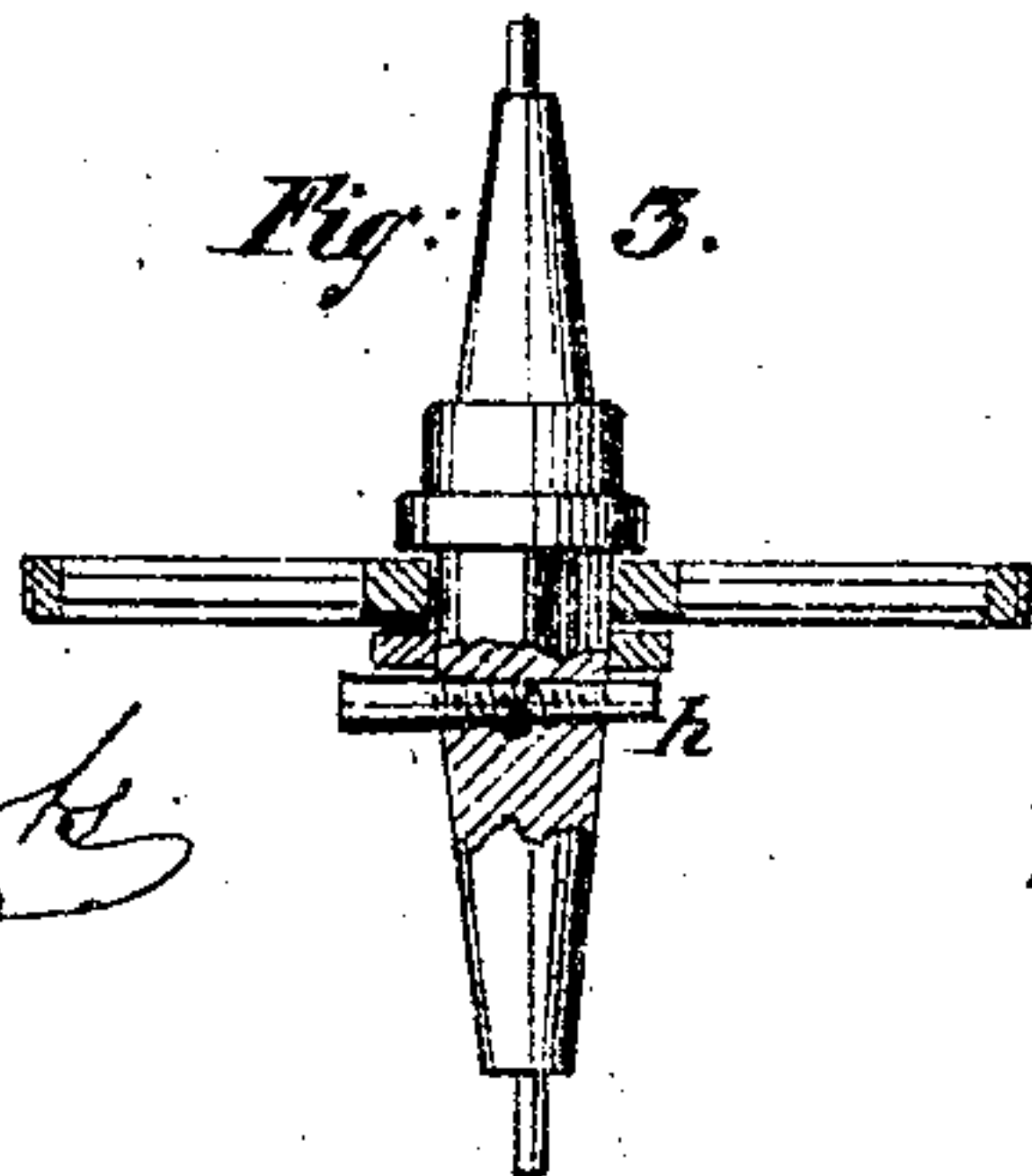


Fig: 3.



Witnesses:

C. Raettig.
Alex. F. Roberts

Inventor:

H. Lawrence

PER

Wm. J. L.

Attorneys.

UNITED STATES PATENT OFFICE.

HARRY LAWRENCE, OF NEW YORK, N. Y.

IMPROVEMENT IN WHEELBARROWS.

Specification forming part of Letters Patent No. 117,085, dated July 18, 1871; antedated July 7, 1871.

To all whom it may concern:

Be it known that I, HARRY LAWRENCE, of the city of New York, in the county and State of New York, have invented a new and useful Improvement in Wheelbarrows; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

This invention relates to improvements in wheelbarrows; and it consists in an improved construction and arrangement of the said vehicles for folding together into compact packages for economizing space in storage and transportation.

Figure 1 is a side view, partly sectional, of a wheelbarrow constructed according to my improvements, showing the working condition in full lines and the folded condition in dotted lines. Fig. 2 is a plan view of the same when folded up for storage or shipping. Fig. 3 is a section of the wheel and axle, and Fig. 4 is a plan view of one of the braces.

Similar letters of reference indicate corresponding parts.

A is the frame of the wheelbarrow, which, in this example, is arranged as such frames usually are, and has a flat bottom, B, secured to the cross-pieces between the side rails of the frame. C represents the sides, and E the front end of the box, which, in this case, is of the character of a square or nearly square box, with vertical or nearly vertical sides. I propose to hinge or otherwise joint the sides C to the side rails at the top, so that they will fold down inwardly upon the bottom, as indicated in Fig. 2, and to hinge or joint the end-board E, either as indicated at F, to fold down over the sides, as in Fig. 2, or, as indicated by the dotted lines G, to a transverse rod, so that it may fold down on the axle when the wheel is removed; or, the axle and wheel being removed, it may be folded under the bottom B, for which purpose the hinge-straps are curved, as indicated, immediately above the eyes by which they are connected to the rod. In case a tail-end board, H, is to be used, it may be hinged to the transverse rod I, as shown in Fig. 1, by curved eye or hinge-straps, so that it will fold down upon the legs K, which are arranged to fold up between the handles L, as shown in Fig.

2. For holding both the end board E and the side boards up in position for use I may employ braces M, pivoted at N to the end board, and having notches at each end, one to engage with a stud-pin on the side rail at O, and the other with a stud-pin, P, on the side C, which will be detached from the said stud-pins when the parts are to be folded down, and one end will be engaged with another stud-pin, Q, when folded down. Or, by another arrangement, I may employ braces R pivoted to the side rails at O, and having notched slots S for the stud-pins N of the end board E; also, the hooks T for hooking into a staple in the side board C in the place of the stud-pin P. The hooked ends of these braces enter the staples at the same time that the notches of the slots S engage the stud-pins N, and are disengaged from them simultaneously with the disengaging of the notches and studs. When disengaged the studs slide along the slots in folding the end boards down. The legs K are sustained in the working position by the brace U jointed to them and having stud-pins V working in the slotted bars W, which have notches X into which the stud-pins drop when adjusted to hold the legs in position, and, being raised out by the notches, admit of folding the legs up between the handles. I propose, also, to apply the axle Y to the frame detachably; also, the wheel Z to the axle, so that the wheel may be readily taken off for packing. For this purpose I provide a spring-cap, *a*, under the bearing for the journal of the axle at one end, so arranged that that end of the axle may be readily removed from the bearing which is at the under side of the side piece, and the other end may be withdrawn from its bearing and the cap or plate *b* which confines the journal in its bearing. The spring-cap *a* is to have sufficient strength to hold the journal in place against the tendency of the weight to cause it to fall out when the frame is raised. For applying the wheel to the axle detachably I make the latter with a square or other shaped angular part, *d*, at the center, with a collar, *e*, at one side, and provide the wheel with a square hole fitting the part *d*, so as to slide on against collar snugly, where I secure it either by the springs *f*, over which it slides, and which spring outward so as to bear at the ends snugly against the beveled wall *g* of notches made in the side of the wheel from the hole outward; or I may employ a linch-

pin, *h*, having smooth ends, with a screw-threaded part, *i*, between them to screw into a screw-threaded hole through the axle. The wheel being taken off, the axle may be packed on the box-sides behind the end *E*, as shown in Fig. 2, where it will occupy but little space, and the axle may be replaced again. The sides may be folded down on the bottom, while the end *E* is supported in the working position to admit of loading on boards or other articles too long for putting in the box. The braces *M R* may be made either curved or straight, and they may be placed either in the inside of the side rails of the frame or outside, as preferred. In the former case the end boards will hook in between the side boards at the ends instead of against the said ends, as here shown. I may also apply this folding arrangement to those forms of boxes in which the bottom and sides are made of one concave piece and the ends of concave pieces, by making the bottom in three flat or plane pieces and making the end pieces also flat; and I propose to do so.

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

1. A wheelbarrow, having the sides and end pieces hinged to the frame for folding down on the bottom, or for the ends to fold down on the frame away from the bottom, substantially as specified.

2. The axle mounted detachably on the frame,

and the wheel mounted detachably on the axle, substantially as specified.

3. The legs *K* jointed to the frame, and supported by braces *U* jointed to them, and connected to the frame by the stud-pins *V* and notched and slotted bars *W*, substantially as specified.

4. The combination, with the folding sides *C* and end *E*, of the braces *M*, pivoted to the end pieces and arranged to catch on a stud-pin on the side *C* and on another on the frame, all substantially as specified.

5. The combination, with the folding sides and end *E*, of the slotted and hooked braces *R* pivoted to the frame and engaging with the stud on the end *E* and the staple on the side *C*, all substantially as specified.

6. The axle confined in the bearing by one fixed cap, *b*, and one spring-cap, *a*, substantially as specified.

7. The detachable wheel confined on the squared part of the axle by the springs *f* resting in the notches with the beveled walls *g*, or by the linch-pin *h*, having the smooth ends and the screw-threaded part *i*, the latter screwing in a hole in the axle, all substantially as specified.

The above specification of my invention signed by me this 21st day of December, 1870.

Witnesses: HARRY LAWRENCE.

GEO. W. MABEE,

L. S. MABEE.