

No. 778,395.

PATENTED DEC. 27, 1904.

C. A. BAKER.
WHEELBARROW.

APPLICATION FILED JAN. 7, 1904.

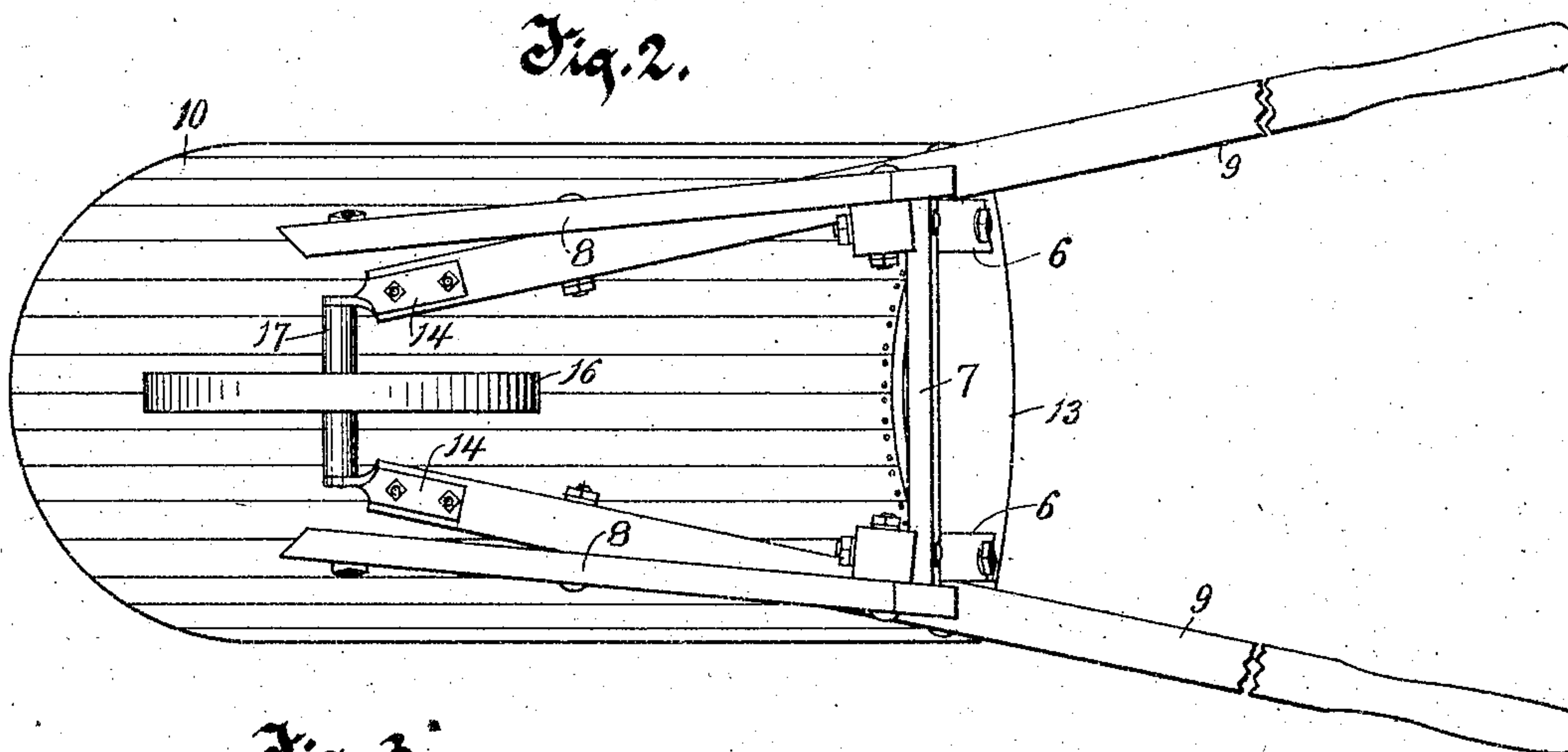
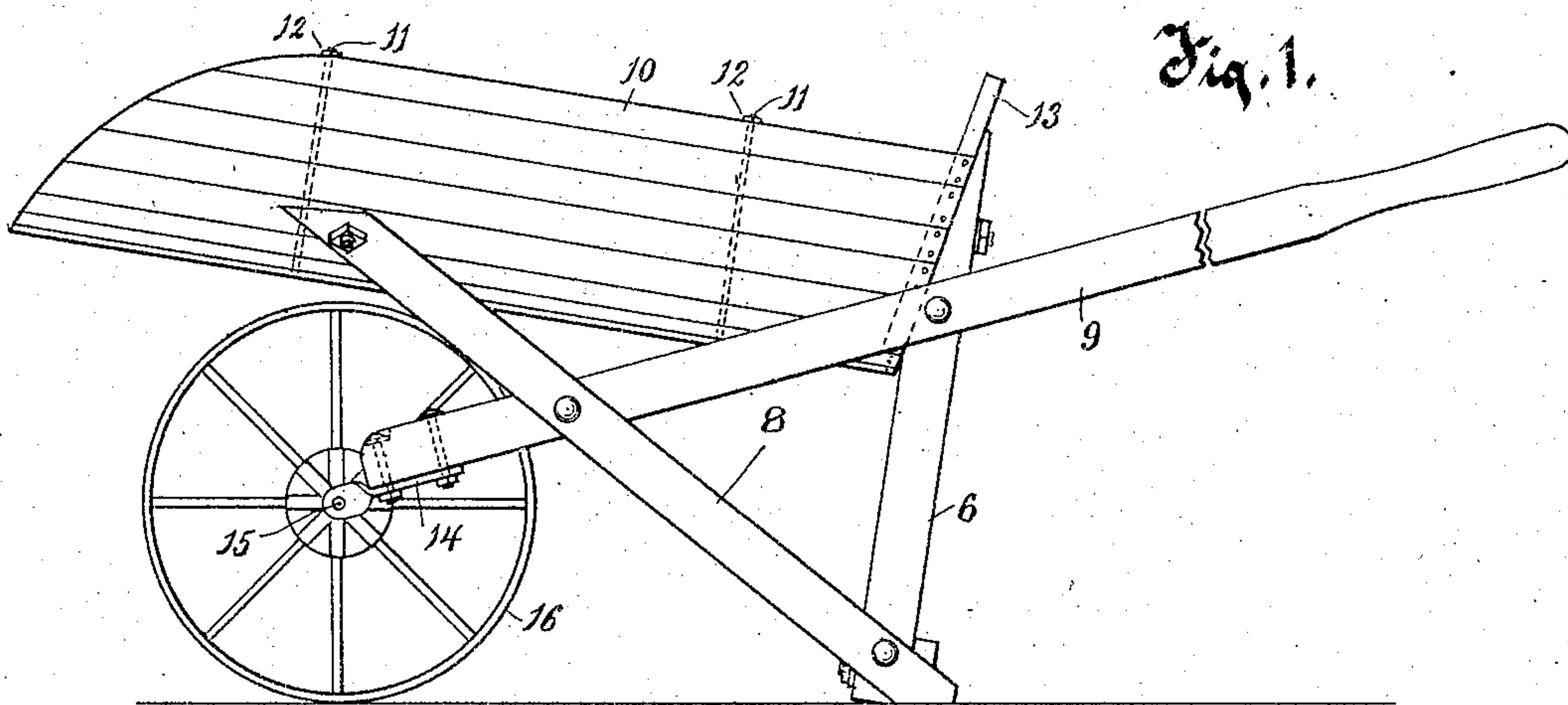


Fig. 3.

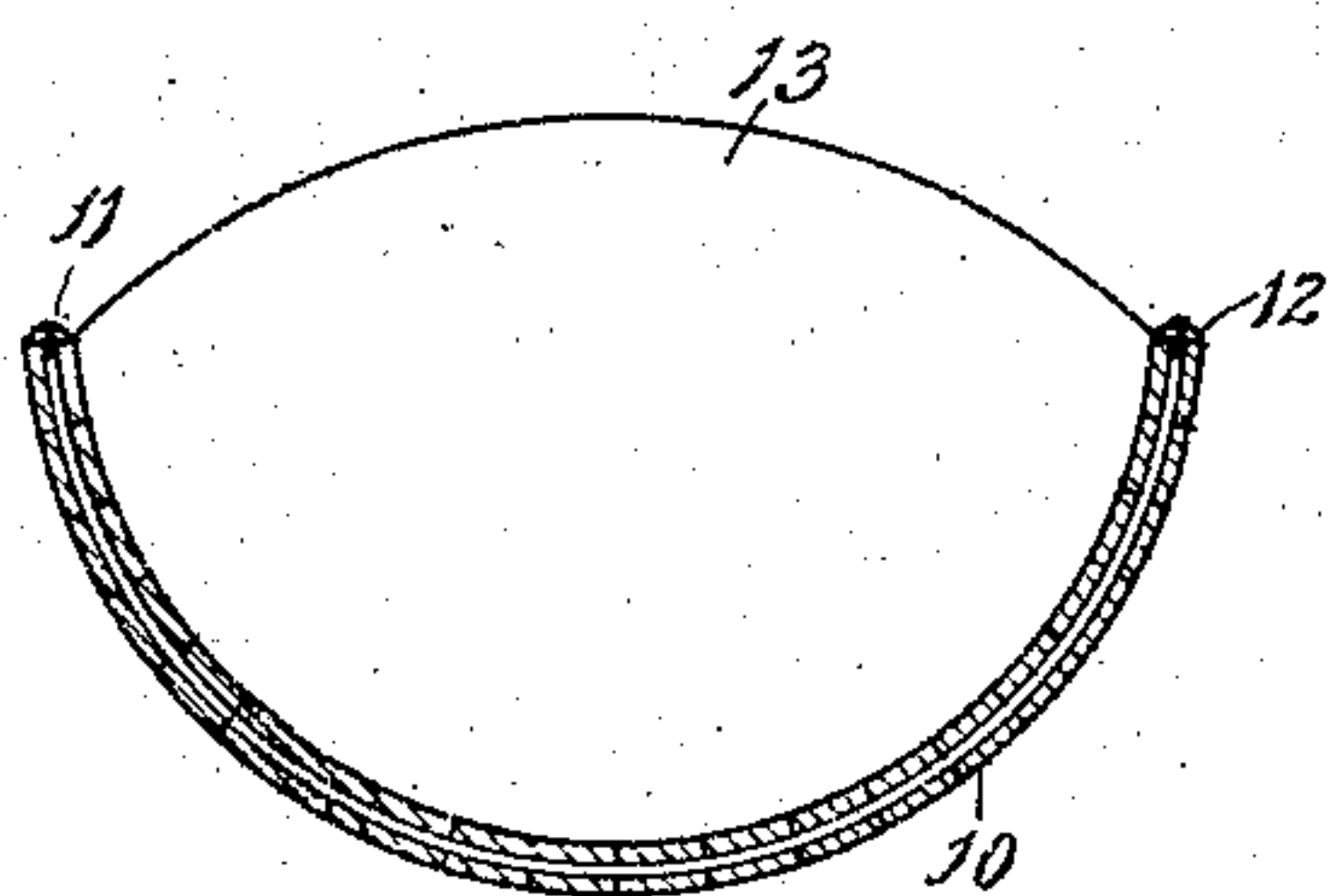


Fig. 4.

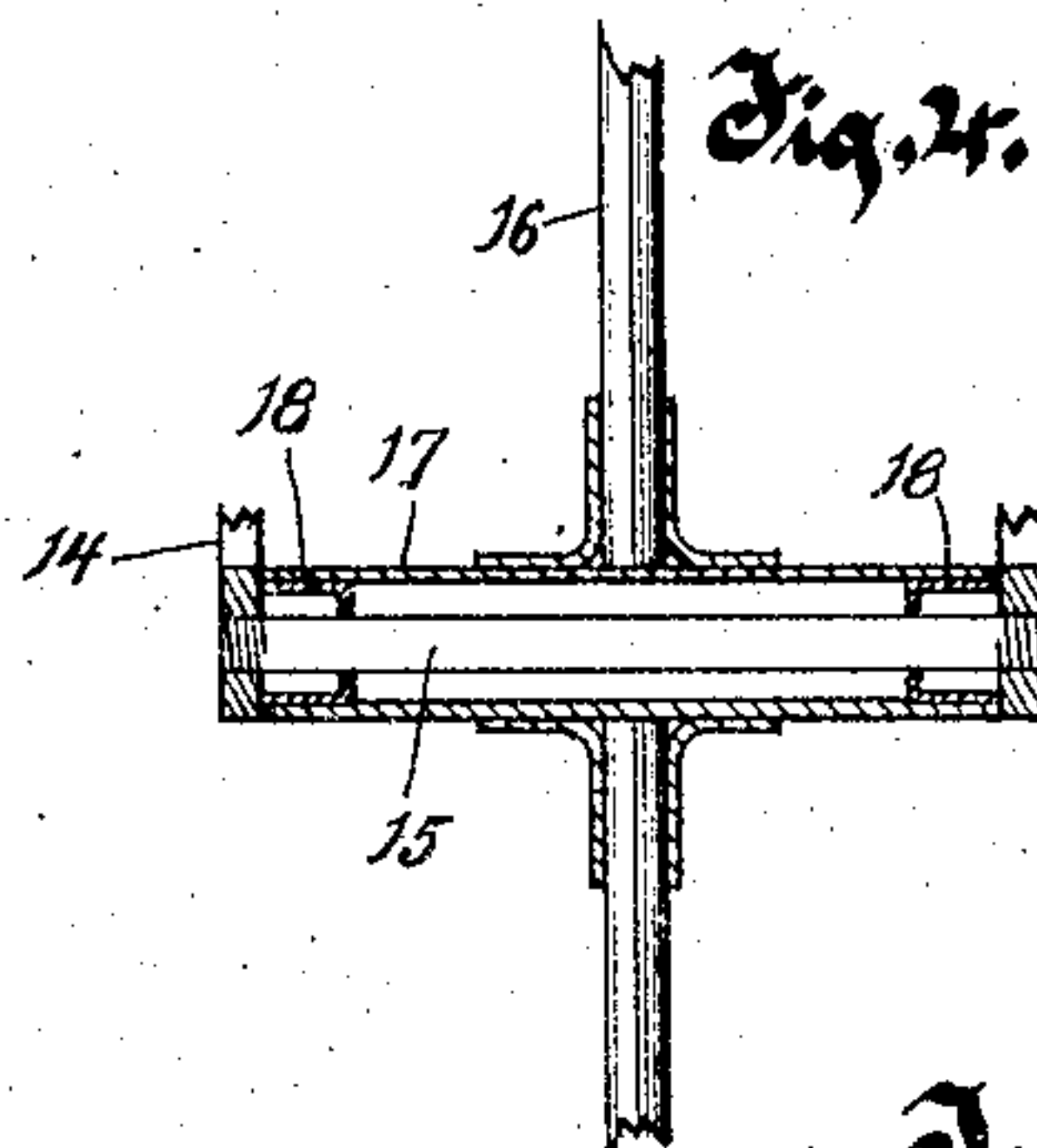
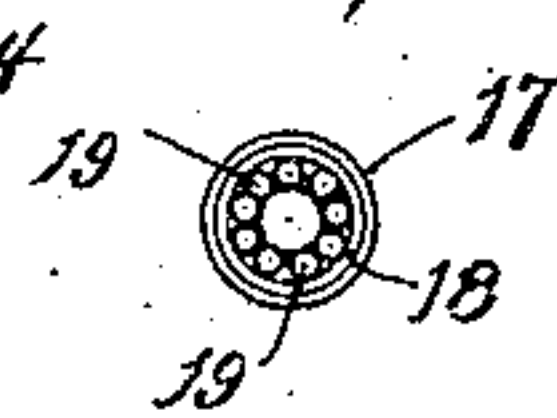


Fig. 5.



Witnesses.

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CHARLES A. BAKER, OF WAUKESHA, WISCONSIN, ASSIGNOR TO STERLING WHEEL-BARROW COMPANY, OF MILWAUKEE, WISCONSIN, A CORPORATION OF WISCONSIN.

WHEELBARROW.

SPECIFICATION forming part of Letters Patent No. 778,395, dated December 27, 1904.

Application filed January 7, 1904. Serial No. 188,014.

To all whom it may concern:

Be it known that I, CHARLES A. BAKER, residing at Waukesha, in the county of Waukesha and State of Wisconsin, have invented
5 a new and useful Improvement in Wheelbarrows, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

10 My invention relates to improvements in wheelbarrows.

In an ordinary form of wheelbarrow the tray of the barrow is open at opposite sides, so that the dumping may be effected at either side,
15 and in other forms of wheelbarrows the tray is made up of a fixed front piece and removable side pieces, and in order to effect the dumping the side pieces are required to be removed and the barrow tilted sidewise. In the forms of wheelbarrows referred to and in all other forms of wheelbarrows, so far as I am aware, the tray is arranged back of the wheel of the barrow, so that when said barrow is loaded and pushed along the major portion of the weight is on the handles.
25

It is the primary object of my invention to provide an improved construction of wheelbarrow in which the unloading or dumping is effected at the front end of the barrow and
30 the wheel is disposed beneath the tray, without projecting beyond the front end of the tray, so that the load is over said wheel, and hence a minimum of the weight is on the handles, whereby the barrow is capable of carrying a very heavy load with the least possible effort and at the same time, by reason of the provision of the front dump, the strain which is necessarily exerted on the wheel in barrows of the sidewise-tilt type is avoided.
35

40 With the above primary and other incidental objects in view the invention consists of the devices and parts or their equivalents, as hereinafter more fully set forth.

In the accompanying drawings, Figure 1 is a side elevation of the improved wheelbarrow.
45 Fig. 2 is a bottom plan view of the wheelbarrow. Fig. 3 is a cross-sectional view through the tray of the barrow, taken on a plane cen-

trally through said tray. Fig. 4 is a longitudinal section through the antifriction-bearing for the wheel, the antifriction-rollers being omitted; and Fig. 5 is a cross-section through said bearing, taken on a plane through one of the cups 18.

The supporting-framework for the tray of the wheelbarrow may be of any desirable form; but the specific form shown in the accompanying drawings is found in practice to be desirable. This specific framework consists of the uprights 6 6, which at their upper ends are
55 connected to the rear end piece of the tray and at their lower ends are connected by a cross-piece 7. Diagonal brace-bars 8 8 are connected at their rear ends to the lower ends of the uprights and at their forward ends to the under side of the tray. The handle-bars or arms 9 9 also constitute a portion of the frame and are disposed against and bolted to the inner sides of the diagonal brace-bars 8 and are extended forwardly a slight distance
60 therefrom and are then extended rearwardly in divergent lines adjacent and bolted to the outer sides of the upright 6 and thence extended some distance rearwardly to form the handles.
75

The tray of the barrow is advisably of scoop form—that is to say, is of concavo-convex shape in cross-section—and is provided with a rear end piece, while the forward end is open, the upper side edges gradually curving down-
80 wardly to the front edge of the tray. The tray may be constructed of metal or any other desirable material; but I prefer to construct it of a series of longitudinal slats or strips 10, placed edge to edge and connected together
85 by means of transverse bolts 11 11. The opposite ends of these bolts are threaded to receive nuts 12. After the slats are connected together in the manner described they are then bent into the curved or concave form
90 illustrated, the bolts being at the same time bent to conform to the contour given to the slats. It will be noticed that the longitudinal slats or strips are cut at an angle, so that they may be readily shaped to the form illus-
95 trated. The rear end of the tray thus

formed is closed by means of a wooden end piece 13.

The forward ends of the handle-bars or arms have connected thereto forwardly-extending straps 14 14, which are provided with openings in which the opposite ends of the axle 15 are fitted. On this axle the hub of the wheel 16 is adapted to revolve. The forward ends of the handle-bars or arms 9 and the forward extremity of the bearing-straps secured thereto are so positioned that the wheel will be disposed at a point beneath the tray and without projecting beyond the forward end of the tray and at such location that the maximum amount of the weight will be directly over the wheel. By this disposition of the wheel there is very little weight on the handles, and consequently the operator can lift the barrow and push the same along with very little effort, notwithstanding the fact that the barrow may be very heavily loaded.

It will be further noted that the tray is so secured to the supporting-framework as to be on a gradual declination from the front toward the rear. By thus inclining the tray when the same is lifted from the rear by the handles there is very little danger of the contents of the tray passing out of the front open end, for the reason that the rearward tilt of the tray prevents a forward inclination thereof when the tray is lifted by raising the handles, whereas if the tray were on a horizontal plane and the tray lifted by the uplifting of the handles the said tray would be brought to a forward inclination, and thereby permit the contents thereof, especially when loaded with liquid or semiliquid material, such as concrete in its wet condition, to pass out of the front open end of the tray.

Another important advantage possessed by a wheelbarrow of the construction herein shown and described—viz., wherein the dump is from the forward end of the tray instead of from the sides thereof—is that the tray is capable of carrying a considerably greater load, inasmuch as in barrows in which the tray is adapted to dump at opposite sides the said tray necessarily has a limited carrying capacity.

Another important advantage possessed by a front-dump construction, such as herein shown and described, is that in the operation of discharging the contents of the tray there is no strain on the wheel, whereas in barrows of the sidewise-dump type whenever the barrow is tilted to either side for the purpose of discharging a severe lateral strain is necessarily produced on the wheel.

In the improved form of wheelbarrow hereinbefore described it is essential to successful operation that the wheel should be revolved with the greatest possible freedom or with the least possible frictional retardation. I therefore employ in connection and combination with my wheelbarrow an improved form

of antifriction roller-bearings for the wheel, which will now be particularly referred to and which are clearly illustrated in Figs. 4 and 5 of the drawings. The importance of providing a free bearing for the wheel in this particular form of wheelbarrow, wherein the wheel is disposed beneath the load, will be readily appreciated, inasmuch as without a free antifriction-bearing there would be necessarily produced a friction between the hub of the wheel and the axis or shaft of said wheel, owing to the fact that the load bears directly down upon the axle. To guard against this, I provide the improved form of antifriction roller-bearings herein illustrated. Referring particularly to this construction, the numeral 17 indicates the hub of the wheel, which is provided with the usual sockets or pockets for the spokes. This hub surrounds the axle 15, with a considerable space between said axle and the hub, and the opposite ends of the hub are provided interiorly with cups 18, in which are disposed a series of elongated rollers 19, of hardened steel or other desirable material, and which completely surround or form a complete circle around the shaft. The opposite ends of the shaft project slightly beyond the ends of the hub and are threaded, and these threaded ends engage threaded openings in the bearing-arms 14. By this construction it will be seen that I provide a free roller-bearing for the hub of the wheel of such construction that friction is reduced to the minimum, notwithstanding the fact that the load is directly above the wheel, and, furthermore, a construction is provided of such character that should the supporting-frame for the tray get out of true the roller-bearings will not be affected thereby, but will run with freedom and the minimum frictional resistance.

What I claim as my invention is—

1. In a wheelbarrow, the combination of a supporting-frame, projecting handles, a tray supported by the frame and having an open front end, said tray consisting of the bottom, the side pieces extending upwardly from the bottom, and the rear end piece forming a closure for the rear end of the tray, the said bottom of the tray being on a straight line from the rear closed end to the front open end thereof, and a wheel located beneath the tray and at such distance back of the front end thereof as not to project beyond said front end, the wheel being thereby located in such position as to have a portion of the load carried by the tray directly thereabove.

2. In a wheelbarrow, the combination of a supporting-frame, projecting handles, a tray supported by the frame, and having an open front end, said tray consisting of the bottom, the side pieces extending upwardly from the bottom, and the rear end piece forming a closure for the rear end of the tray, the said bottom of the tray being on a straight line from

the rear closed end to the front open end thereof, and the entire tray being on a slight decline from the front end rearwardly, and a wheel located beneath the tray and at such distance back of the front end thereof as not to project beyond said front end, the wheel being thereby located in such position as to have a portion of the load carried by the tray directly thereabove.

3. In a wheelbarrow the combination of a supporting-frame, projecting handles, a wheel journaled in the frame, and a tray supported by the frame and consisting of a series of longitudinal slats arranged edge to edge and connected by transverse bolts and bent into concavo-convex form, the rear end of said tray being closed by a rear end piece, and the front end of the tray being open for the discharge of the load from the tray.

4. In a wheelbarrow, the combination of a frame consisting of handles and a support therefor, a tray supported by the frame, an axle, a wheel provided with a hub surrounding the axle, the axle and wheel being so located that said wheel is disposed beneath the tray in such position as to have a portion of the load carried by the tray directly above the wheel, cups in opposite ends of the hub, roller-bearings in the cups and surrounding the axle, and bearing-arms extending from the frame and having the opposite ends of the axle mounted therein.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES A. BAKER.

Witnesses:

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