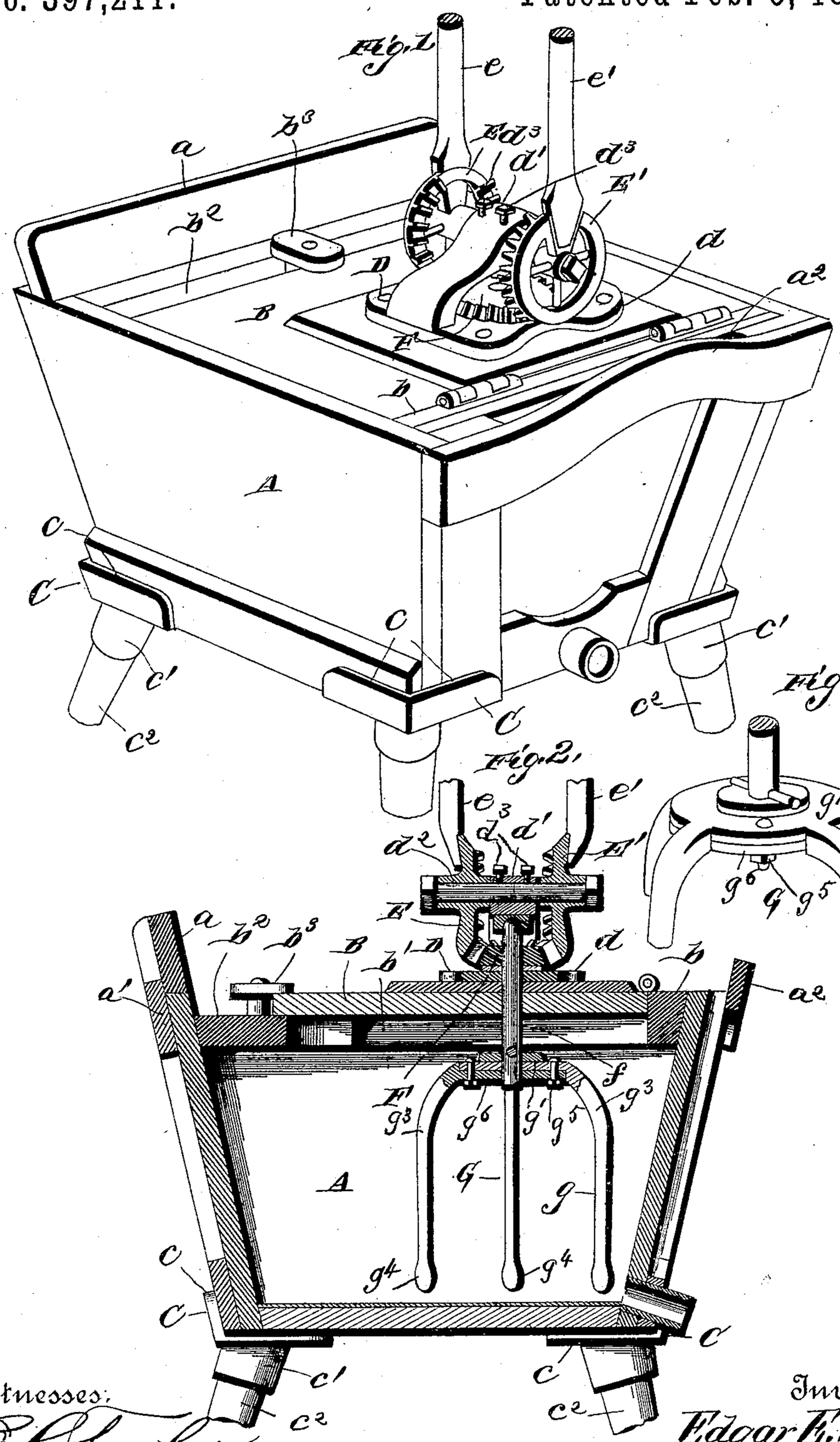
(No Model.)

E. E. WILLIS.

WASHING MACHINE.

No. 397,211. Patented Feb. 5, 1889.



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UNITED STATES PATENT OFFICE.

EDGAR E. WILLIS, OF DECATUR, ILLINOIS.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 397,211, dated February 5, 1889.

Application filed April 12, 1888. Serial No. 270,446. (No model.)

To all whom it may concern:

Be it known that I, EDGAR E. WILLIS, a citizen of the United States, residing at Decatur, in the county of Macon and State of Illinois, have invented a new and useful Improvement in Washing-Machines, of which the following is a specification.

The invention relates to improvements in washing-machines; and it consists in the construction and novel combination of parts, hereinafter described, illustrated in the accompanying drawings, and pointed out in the appended claim.

In the drawings, Figure 1 is a perspective view of a washing-machine embodying the invention. Fig. 2 is a vertical sectional view of the same. Fig. 3 is a perspective view of the agitator, detached.

Referring to the drawings by letter, A designates the suds-box, square in horizontal section, and with its sides converging downward to its flat bottom. One of the sides of the suds-box has at its edges arms projecting above the adjoining sides, and secured to said arms is the board *a*, to the upper edge of which a wringer of any desired construction may be attached. Below the board *a* the cleat *a'* is secured to the wall of the suds-box, and to the opposite wall, at its top, is secured, by end blocks, the bar a^2. The said bar and cleat serve as handles for conveying the machine.

B is the lid of the suds-box, hinged to a transverse strip, *b*, secured to the upper edge of the wall, to which the bar a^2 is attached and with its upper surface flush with the edges of the adjoining walls. The door rests on each side upon supporting-strips *b'*, secured to the inner surfaces of said adjoining walls, and also has its upper surface flush with the edges thereof.

b^2 is a board secured to said walls at its ends and at its outer edge to the wall supporting the board *a*. The board b^2 supports the free end of the lid and has pivoted upon it a button, b^3, that can be turned over the said edge to hold the lid closed and keep it practically steam-tight.

C C are quadrantal castings provided with upstanding flanges *c* on their straight edges, which flanges are united at the angles of the castings and fit upon the lower corners of the suds-box, to which the castings are secured by screws or otherwise. The said castings are provided with outwardly-standing sockets *c'* to receive the upper ends of the outwardly-inclining detachable legs c^2, upon which the suds-box rests.

D is a casting, the plate portion *d* of which is attached to the lid by screws or otherwise. *d'* is a bridge integral with said plate portion and having upon the central part the opposite outstanding trunnions, d^2, for the hubs of the similar bevel gear-wheels, E E', which face each other, and are provided with the lever-handles *e e'*, respectively, the trunnions being held in their seats by set-screws d^3. The said gear-wheels mesh at opposite points with the bevel-pinion F, secured to the upper end of the oscillatory agitator-rod *f*, which passes through and has a suitable bearing in the lid. G is the agitator, provided with the four similar depending arms *g*. Two of the arms are formed integral with the disk *g'*, and the other two formed integral with disk g^6. The two disks *g' g*^{6} are placed upon each other so as to come flush on all sides and are held together by bolts g^5. The agitator is of white metal, and the arms, which are equidistant, curve out from the edge of the disk, as at g^3, and then extend vertically downward, having enlarged and rounded ends g^4.

To operate the machine, the handles *e e'* are grasped in the hands and moved to and fro in opposite directions, thus reducing the labor and causing less unequal and unsteady motion of the gear-wheels. This action oscillates the agitator laterally within the suds-box and drives the clothes therein alternately in opposite directions.

As the lid is practically steam-tight, boiling water may be used in the suds-box.

It is evident from Fig. 2 that the trunnions d^2 can be withdrawn from their seats, and either or both of the gear-wheels E E can be quickly and easily dismounted after loosening the set-screws d^3, which hold the trunnions in their seats. This is a positive and great advantage, as one of the gear-wheels might

be broken, and the construction permits the ready substitution of a perfect one therefor.

Having described my invention, I claim—

In a washing-machine, the oscillatory agitator consisting of the disks g' g^6, of equal diameter, each having the integral opposite depending arms g curving outwardly from the disk and extending vertically downward, and the bolts to connect the disks then together, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

EDGAR E. WILLIS.

Witnesses:
L. J. TRUSSELL,
J. H. DURFEE.