

No. 733,211.

PATENTED JULY 7, 1903.

A. A. JOHNSTON.
WASHING MACHINE.

APPLIOATION FILED FEB. 7, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.

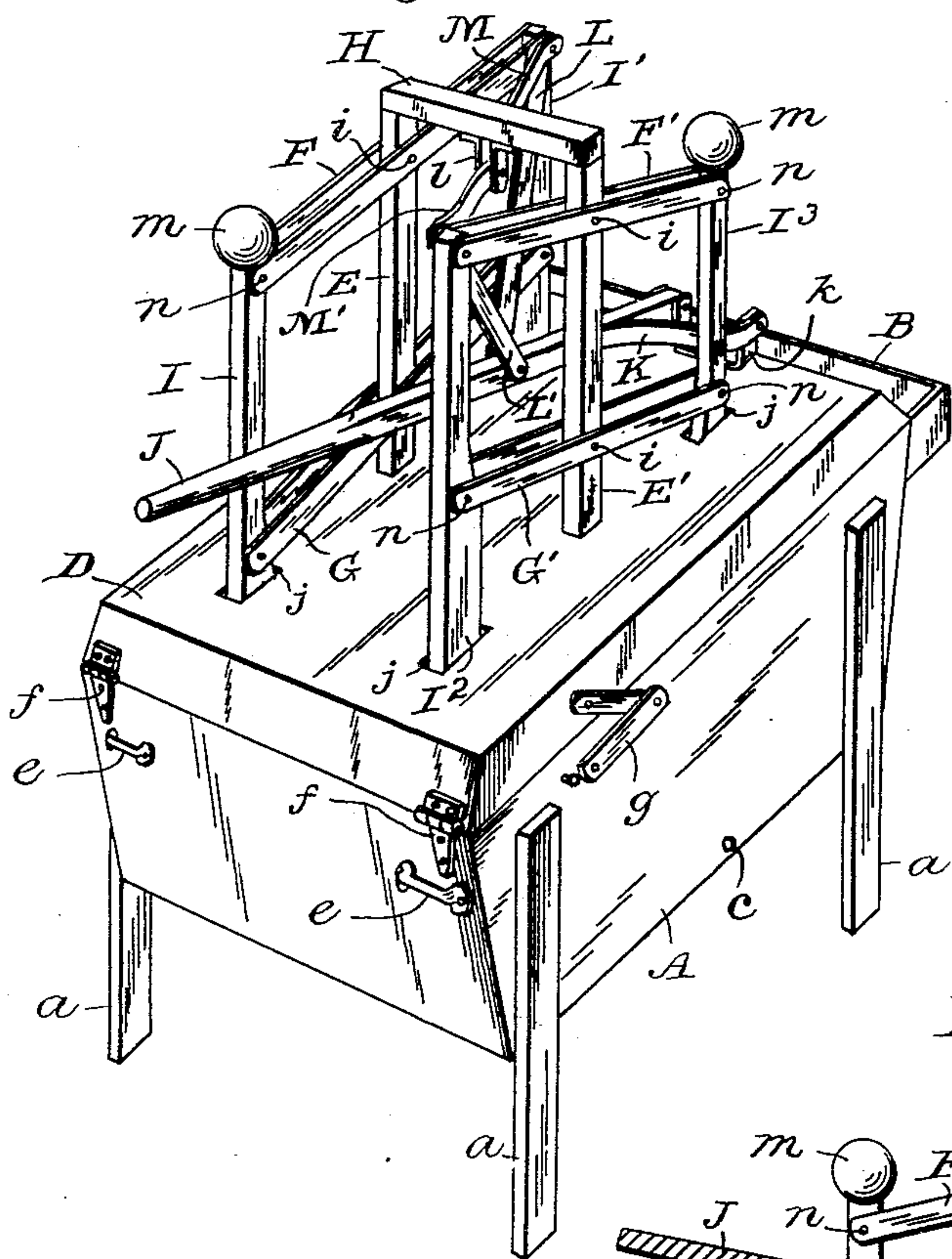


Fig. 2.

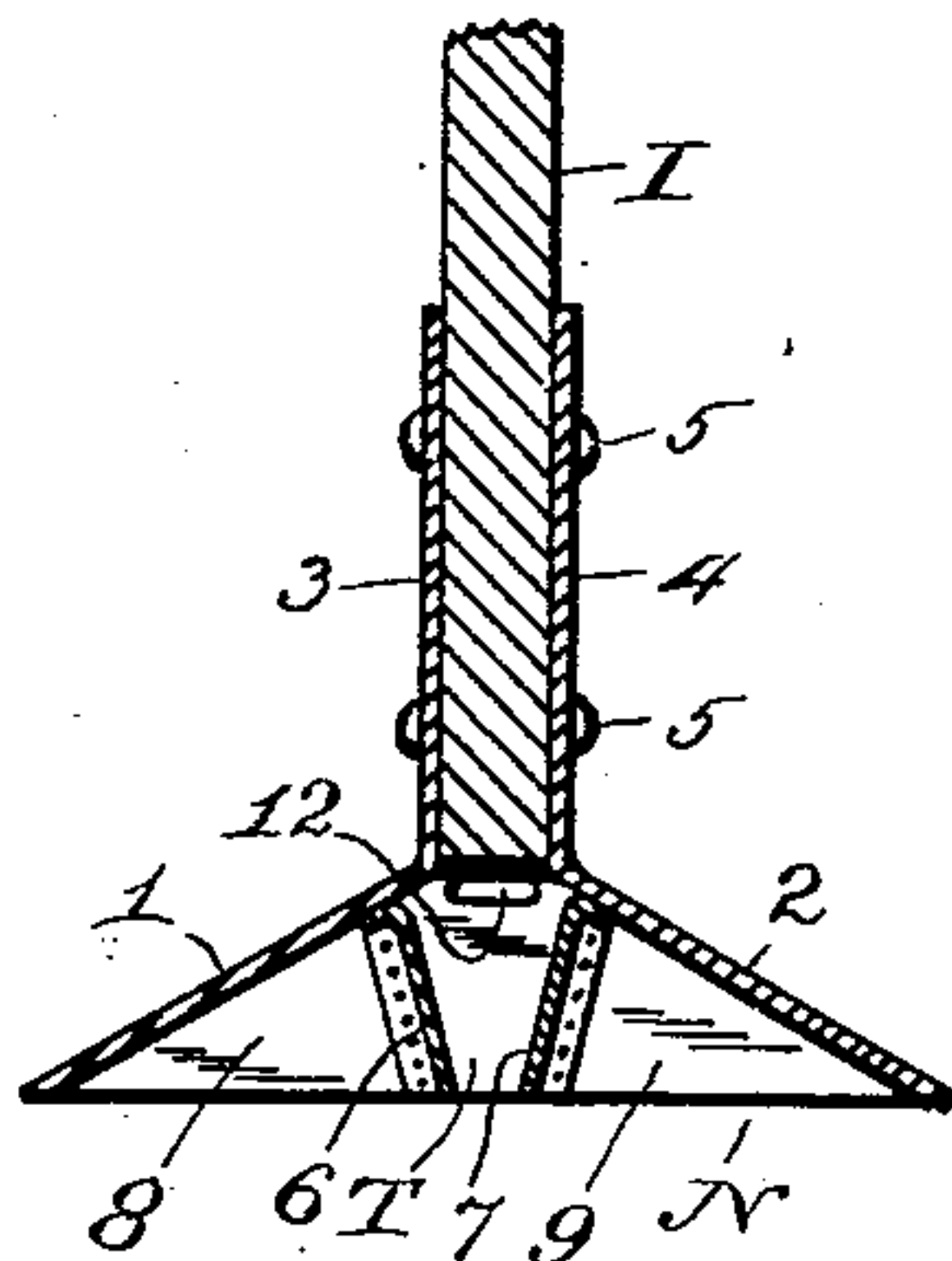


Fig. 4.

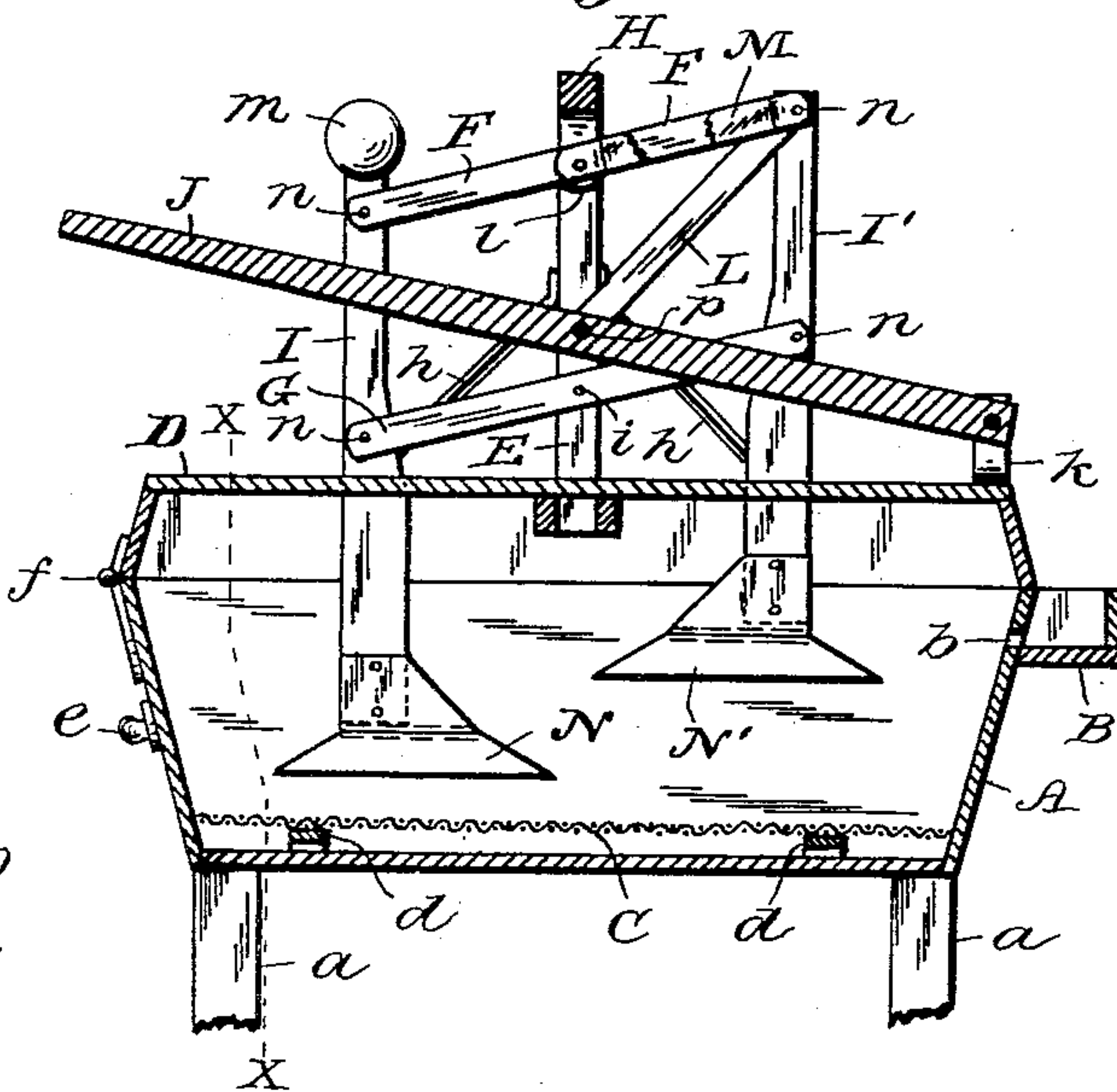
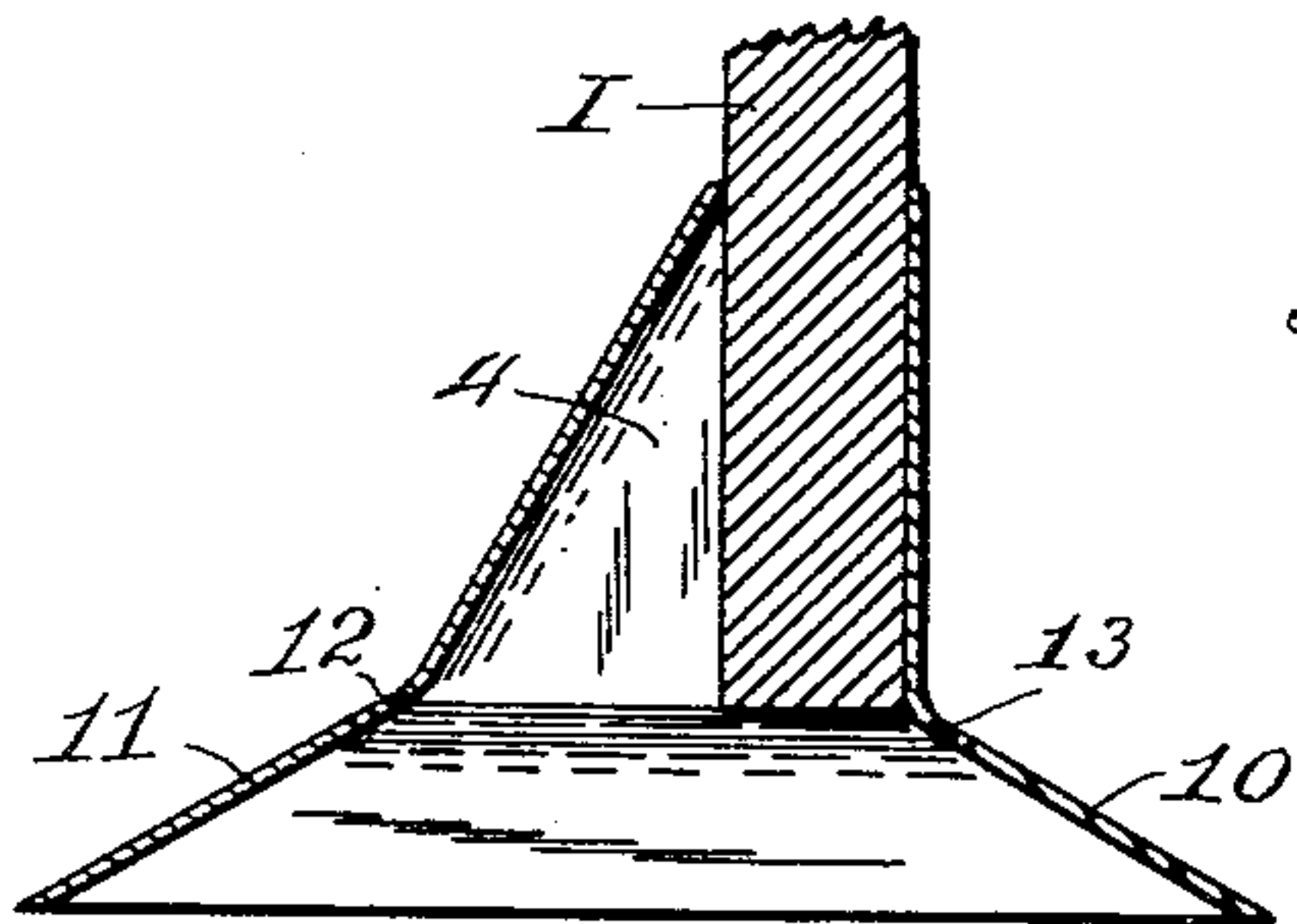


Fig. 3.



WITNESSES:

W^m H Payne!
Stella Snider

INVENTOR:

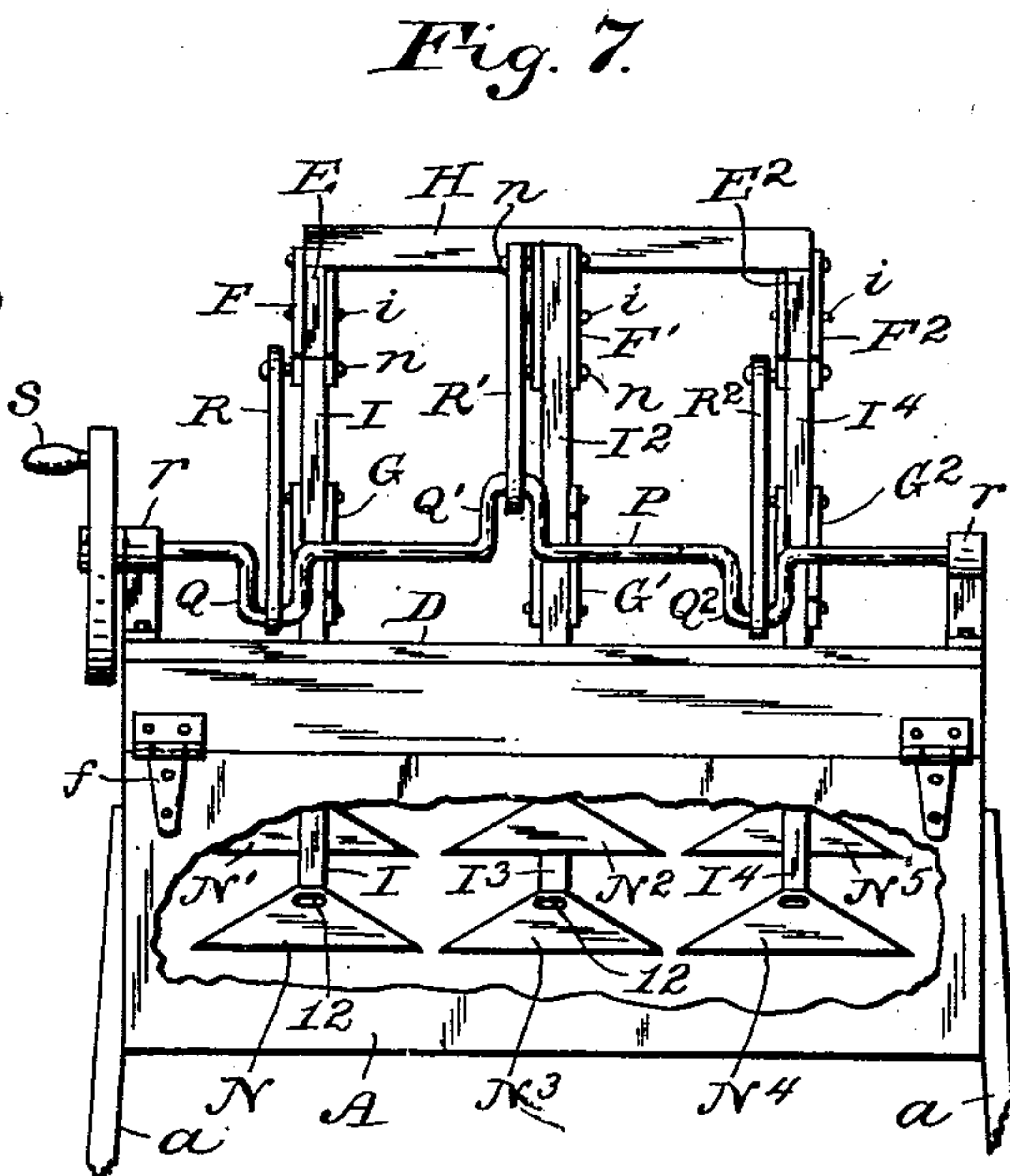
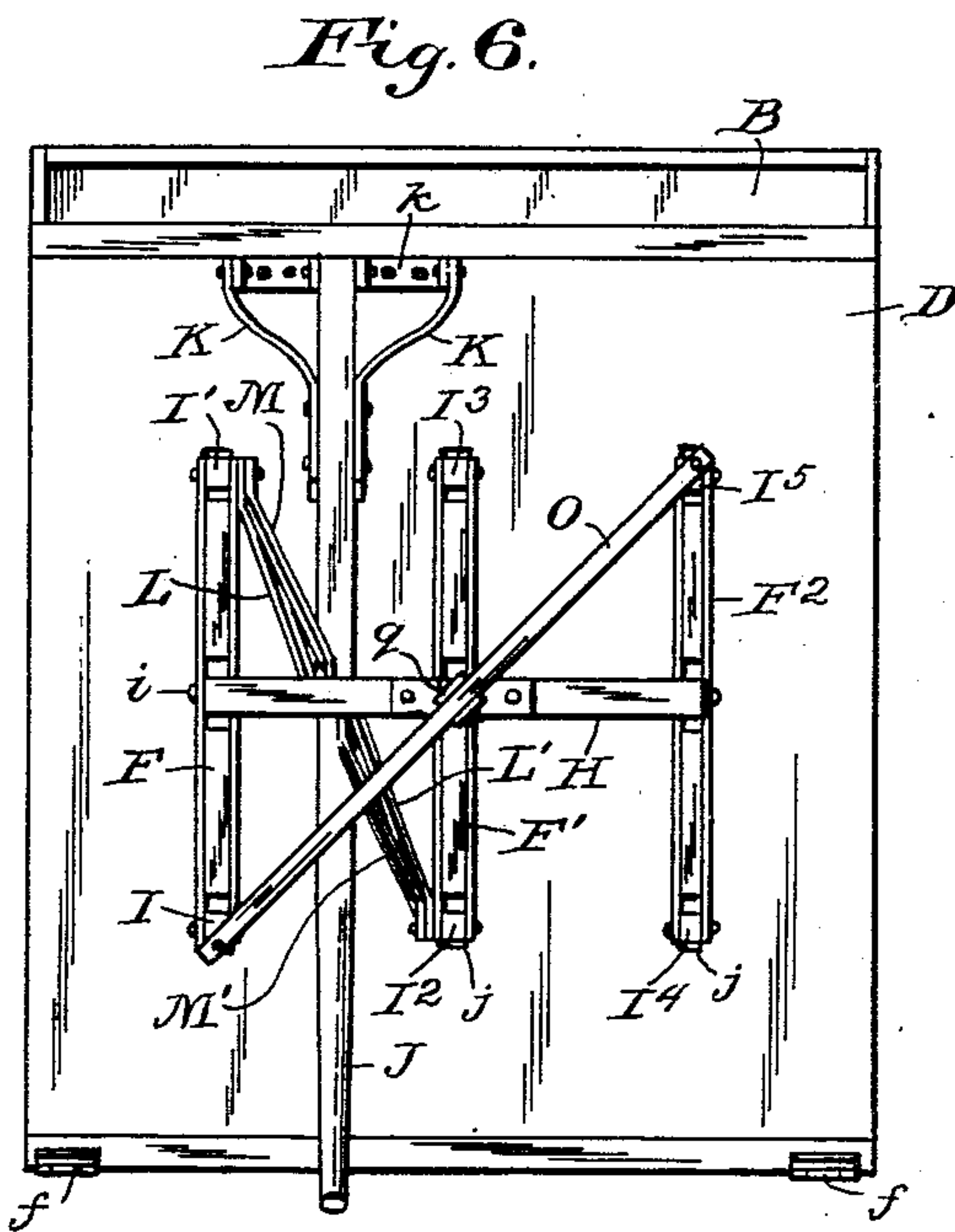
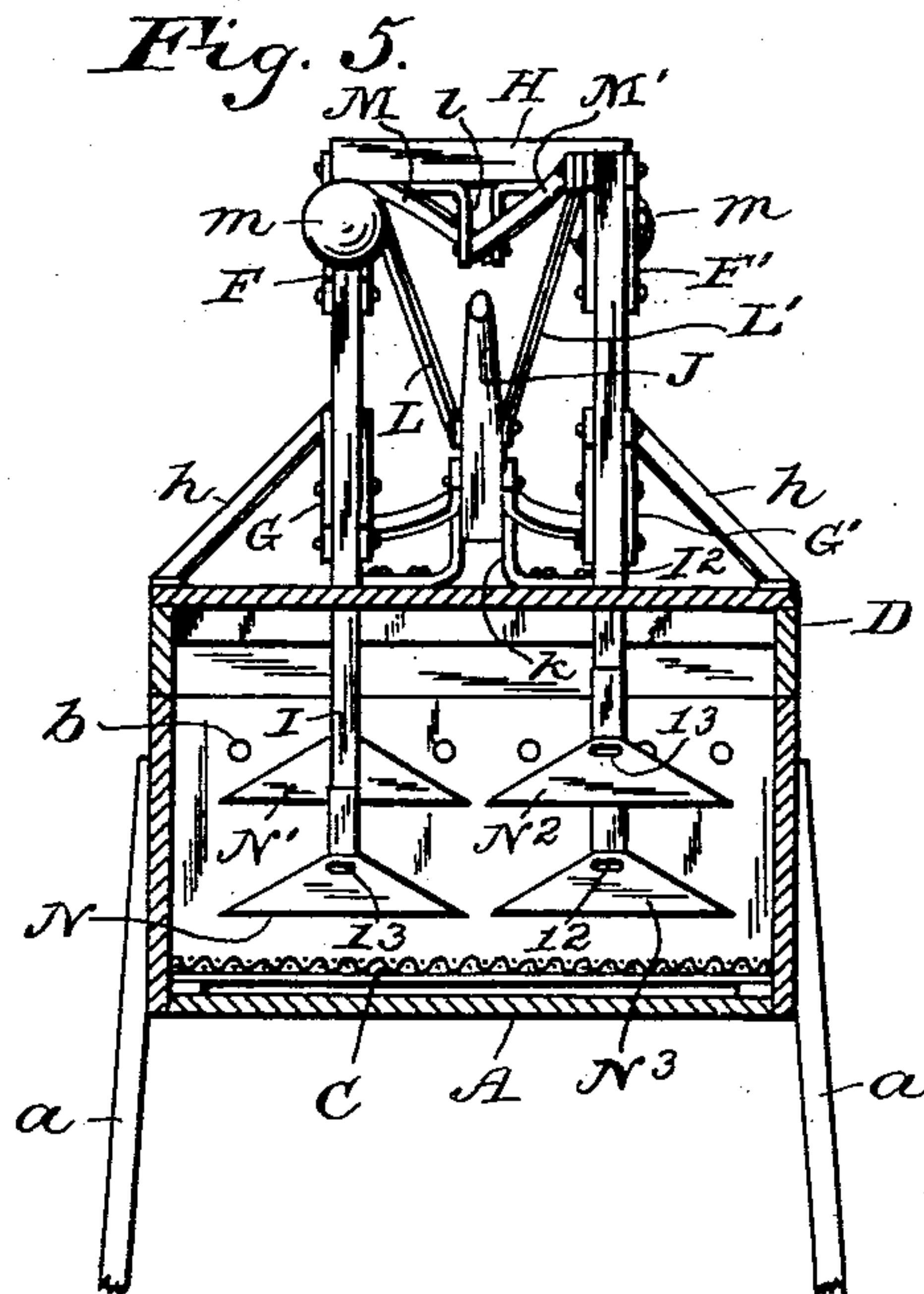
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WASHING MACHINE.

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NO MODEL.

2 SHEETS—SHEET 2.



WITNESSES:

Wm H Payne.
Stella Snider

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UNITED STATES PATENT OFFICE.

ALEXANDER A. JOHNSTON, OF INDIANAPOLIS, INDIANA.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 733,211, dated July 7, 1903.

Application filed February 7, 1903. Serial No. 142,291. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER A. JOHNSTON, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented new and useful Improvements in Washing-Machines; and I do declare the following to be a full, clear, and exact description of the invention, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to machines for washing clothes and the like; and it has reference more particularly to washing-machines that are adapted particularly for domestic or family use.

The principal object of the invention is to provide a washing-machine that may be constructed of cheap and simple parts, a machine that may be easily operated and without injury to clothes, and that will be durable and economical in use.

My invention consists in a tub and a plurality of reciprocating pounders arranged in pairs geared so that the pounders of each pair shall operate alternately in opposite directions; and the invention consists also in the novel parts and in the combination and arrangement of parts, as hereinafter particularly described and then pointed out in the appended claims.

Referring to the drawings, Figure 1 is a perspective view of a machine constructed substantially in accordance with my invention, showing two pairs of reciprocating bars for the pounders; Fig. 2, a transverse vertical sectional view of a poulder; Fig. 3, a longitudinal vertical sectional view of a poulder; Fig. 4, a central longitudinal vertical sectional view of the machine; Fig. 5, a transverse vertical sectional view of the machine as on a line X X in Fig. 4; Fig. 6, a top plan view of the machine as constructed with three or more pairs of pounders, and Fig. 7 an end elevation showing a machine having three pairs of pounders and a crank-shaft instead of levers for operating them. The operative parts are supposed to be in the same positions in all of the figures showing complete machines.

Similar reference characters in the several figures of the drawings indicate corresponding parts.

In construction, A designates a suitable tub, ⁵⁵ a supporting legs, and B a trough having drain-holes *b* and adapted to support a wringer. A wire screen C rests on the bottom of the tub or slightly above the same on suitable supports *d*. The end of the tub opposite to the trough is provided with lifting-handles *e* and also with hinges *f*, to which is attached a tub-cover D of suitable form and adapted to support all the operating parts. A flexible link *g* is connected to the tub and also to the cover ⁶⁵ thereof for holding the cover uprightly when open or raised from the tub. At the bottom of the tub is a drain-hole *c*, in which a plug may be inserted.

Upright standards E E' E², or as many as ⁷⁰ may be desired of such, are secured to the cover D and are usually provided with braces *h*. Near the tops of the standards working beams F F' F² are centrally connected thereto, as by pivots *i*, the beams being composed of parallel bars of iron and wooden blocks between the two bars of a beam. Parallel beams G G' G² are also centrally pivoted in a similar manner to the upright standards at lower portions thereof. A horizontal tie-beam H is ⁷⁵ attached to the tops of the standards. ⁸⁰

Reciprocating bars I I' I² I³ I⁴ I⁵ are connected with the ends of the working beams and also with the ends of the parallel beams, as by pivots *n*, and the cover D has apertures ⁸⁵ *j*, through which the bars extend. Each bar, as I, is connected to an end of a working beam, as F, and also to an end of a parallel beam, as G, mounted on the same standard, the two bars of each pair being disposed at ⁹⁰ opposite sides of the standard. The bars have poulder-feet, which will be further described.

In some cases, as illustrated in Figs. 1, 4, 5, and 6, a pivot-block *k* is mounted on the ⁹⁵ cover D, and an operating-lever J, usually having braces K, is connected at one end thereof to the pivot-block and extends between two standards above the opposite end of the cover. A pivot-bracket *l* is secured to ¹⁰⁰ the beam H for supporting lateral braces for the working beams. Weights *m* are attached

to such of the reciprocating bars as may be required to overbalance the operating-lever J, which is connected with the working beams by means of pivoted connecting-rods L L', the rod L extending from the pivot *p* of the lever to an end of the beam F, and the rod L' extending from the pivot *p* to the end of the beam F' at the opposite end of the machine, so that the working beams have opposite movements. The lateral braces M and M' are pivoted in the bracket *l* and also to the opposite beams F F' to the same pivots that connect the connecting-rods with the working beams, so that the braces M M' operate with the working beams and extend obliquely from the ends thereof, since the bracket *l* is situated midway between the two standards that support the working beams.

The pounder-feet N N' N² N³ N⁴ N⁵ are secured to the lower ends of the reciprocating bars, above described, and the feet preferably have shorter ends or heels disposed toward the ends of the tub, so that the longer body portions of the feet are disposed toward the central plane of the tub, as indicated in Fig. 4. Each foot consists of opposite oblique-angled sides 1 and 2, having shank ends 3 and 4, respectively, attached to the reciprocating bar by rivets or screws 5. Oblique-angled partitions 6 and 7 are disposed oppositely in the foot, so as to diverge upwardly, thus forming rather shallow pockets or shallow recesses 8 and 9 and an air passage or chamber T between the recesses, oblique-angled ends 10 and 11 being attached to the sides 1 and 2 and to the reciprocating bar, the ends having apertures 12 and 13 for the passage of air from the air passage or chamber above described.

In some cases when six pounders are employed a diagonal working beam O is centrally pivoted on a pivot-stand *q*, attached to the top of the beam H, the beam O being suitably connected at its ends with the beam F and the opposite end of the beam F², thus extending across the beam F' and operating the beam F² and the pounders connected therewith in unison with the beam F and its pounders.

In some cases when six or more pounders are employed the operating-lever J and co-acting members may be dispensed with, in which case the working beams, the parallel beams, the reciprocating pounders, and other principal parts, as above described, will be retained and motion will be transmitted to the working beams by means of a crank-shaft P, mounted in bearings *r r* at one end of the cover D and having cranks Q Q' Q² and also a hand-crank *s*. A pitman R is connected to the crank Q and also to the beam F, as by means of the pivot *n* or otherwise, in a suitable manner, and likewise a pitman R' connects the crank Q' and the beam F', and a pitman R² connects the crank Q² and the beam F², so that the beams may operate alternately

in opposite directions, and it will be obvious that various other mechanical movements may be employed for operating the working beams and the agitators in the manner described, and various motors may also be connected with either the operating-lever or the operating-shaft.

In practical use the cover D, carrying the operative parts, may be swung back on its hinges, so that the tub will be uncovered. Then the washing soap or solution and the clothes or other articles may be placed in the tub, the netting or perforated false bottom C holding the clothes up from the bottom of the tub, so that the washing fluid may circulate freely beneath the clothes. The cover D may now be lowered upon the tub and the mechanism be set in motion. As the working beams move, the foot N will descend, while the foot N' will ascend, and at the same time every other foot at the side of an ascending foot will descend, and so the movements will continue, the fluid thus being forced through the fabrics and back and forth from end to end and from side to side of the tub. In the operation of the feet or pounders the air may pass freely through the chambers T and prevent undue resistance in descending and objectionable suction in ascending. The wash-water may be changed as often as desired with little trouble, and the articles may thus be cleansed without being injured through violent rubbing operations.

Having thus described my invention, what I claim is—

1. A washing-machine including a tub, a tub-cover, standards having each a plurality of pivots one above another, working beams mounted on the pivots in pairs one above another, reciprocating bars having each a plurality of pivots connected to a plurality of the working beams, connecting-rods pivoted to the working beams, and operating devices pivoted to the connecting-rods.

2. A washing-machine including a tub, a tub-cover, standards having each a plurality of pivots one above another, working beams mounted on the pivots in pairs one above another, reciprocating bars having each a plurality of pivots connected to a plurality of the working beams, connecting-rods pivoted to the working beams, operating devices connected to the connecting-rods at ends thereof, and counterweights attached to the reciprocating bars that are connected to the working beams oppositely to the connecting-rods.

3. A washing-machine including a tub, a tub-cover, standards having each a plurality of pivots situated one above another, a plurality of working beams mounted on the pivots in pairs one above another, a plurality of reciprocating bars having each a plurality of pivots connected to a plurality of the working beams, an operating-lever pivoted at one end thereof, oppositely-extending connect-

ing-rods pivoted to the lever and also to opposing working beams, a tie-beam mounted on the standards, and lateral braces pivoted to the working beams and also connected
5 pivotally with the tie-beam.

4. A washing-machine including a tub, a tub-cover, a plurality of standards, a tie-beam connecting the plurality of standards, a pivot-stand mounted upon the tie-beam, working
10 beams pivoted to the standards below the plane of the tie-beam, reciprocating pounders connected with the working beams, and a diagonal working beam mounted on the pivot-stand and connected with working beams at
15 opposite sides of the pivot-stand.

5. A washing-machine comprising a tub, a tub-cover, a plurality of standards mounted on the cover, a stationary beam connecting the tops of the plurality of standards, a bracket

having a pivot depending from the stationary 20 beam, working beams mounted on the standards in planes below the stationary beam, reciprocating pounders connected with the working beams, lateral braces mounted on the pivot of the bracket and connected with 25 opposite working beams, an operating-lever pivoted at one end thereof on one end of the cover, and connecting-rods pivoted to the operating-lever and extending obliquely to opposite ends of opposite working beams and 30 connected therewith.

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

ALEXANDER A. JOHNSTON.

Witnesses:

WM. H. PAYNE,
E. T. SILVIUS.