

No. 663,999.

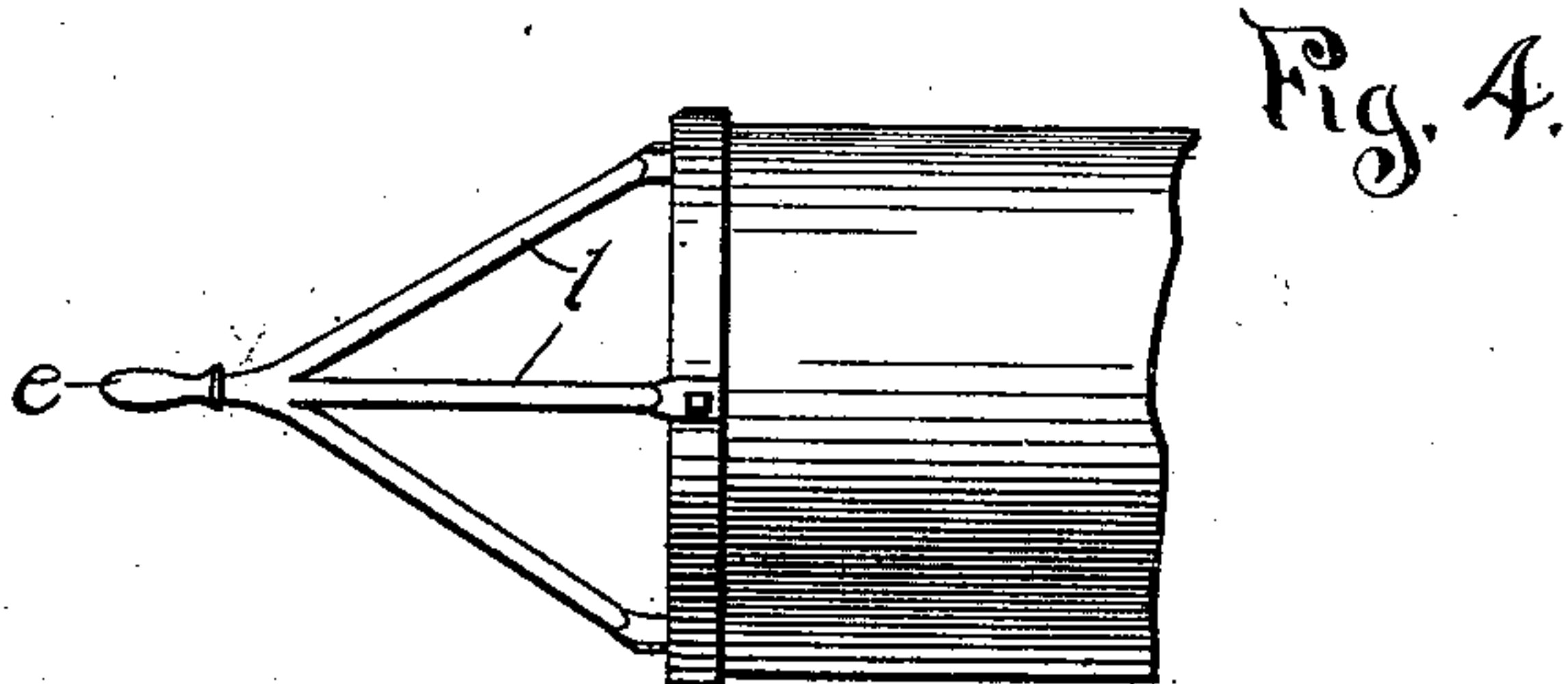
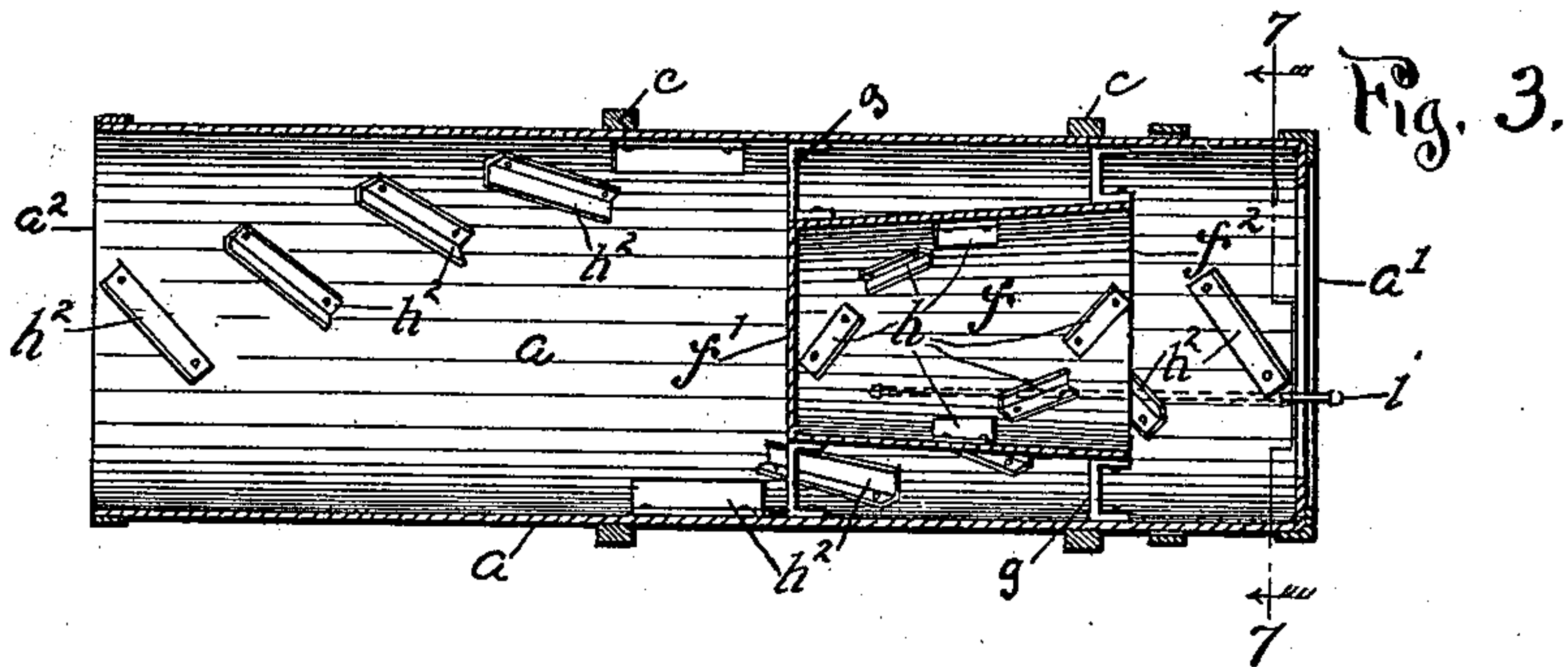
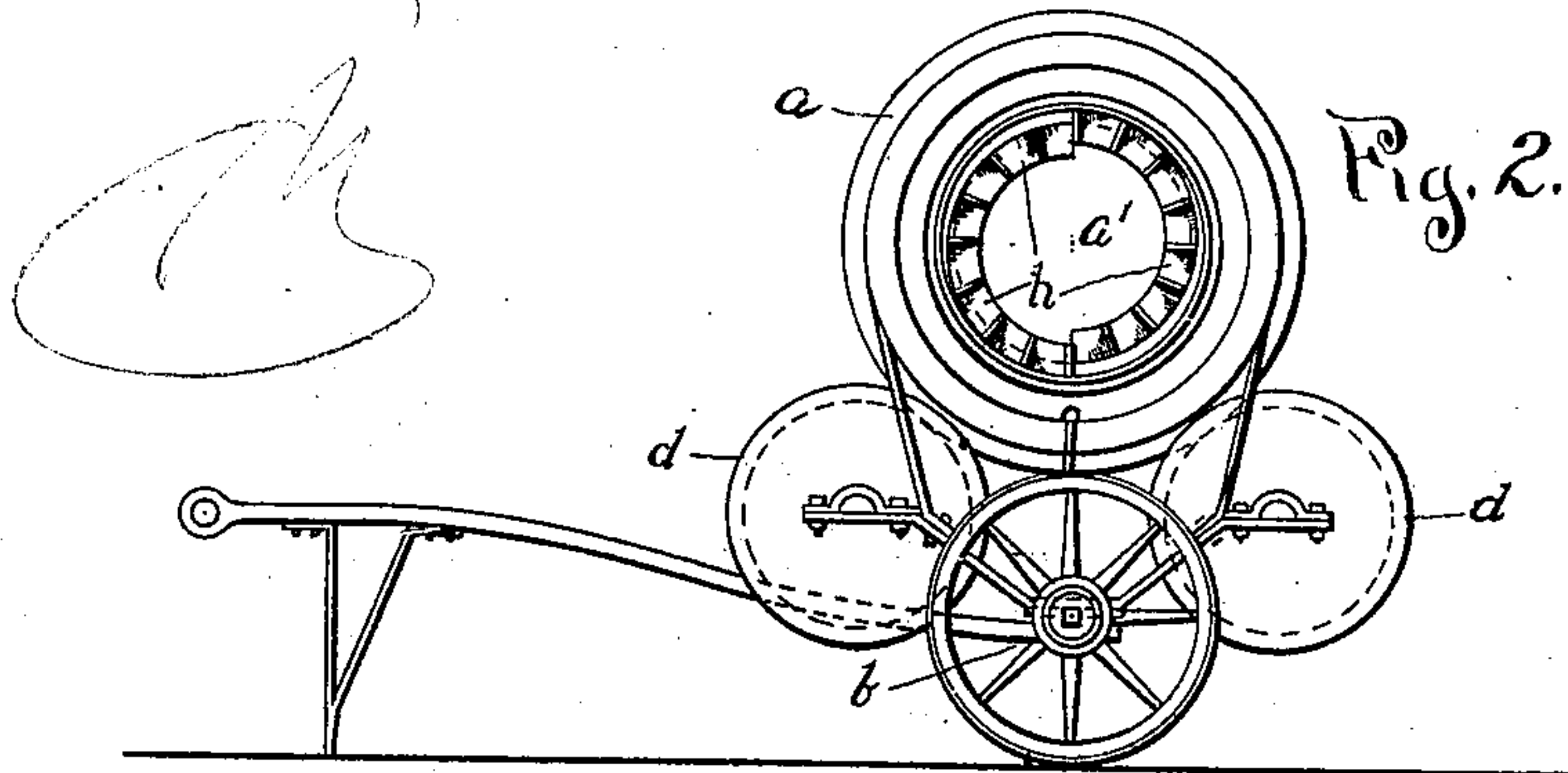
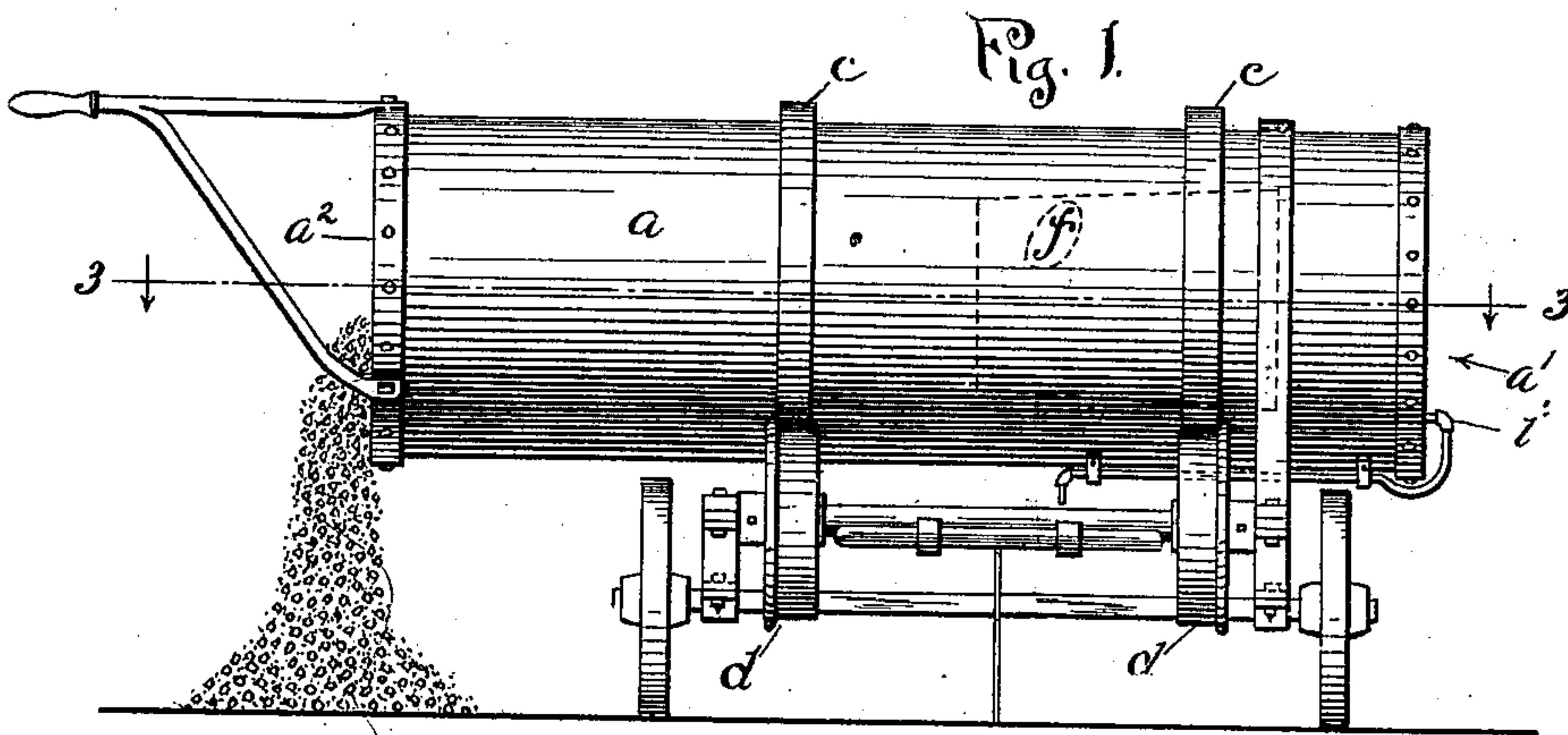
Patented Dec. 18, 1900.

S. P. McKELVEY.
CONCRETE MIXER.

(Application filed Aug. 7, 1899.)

(No Model.)

2 Sheets—Sheet 1



Witnesses:—

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Inventor:—

Samuel P McKelvey

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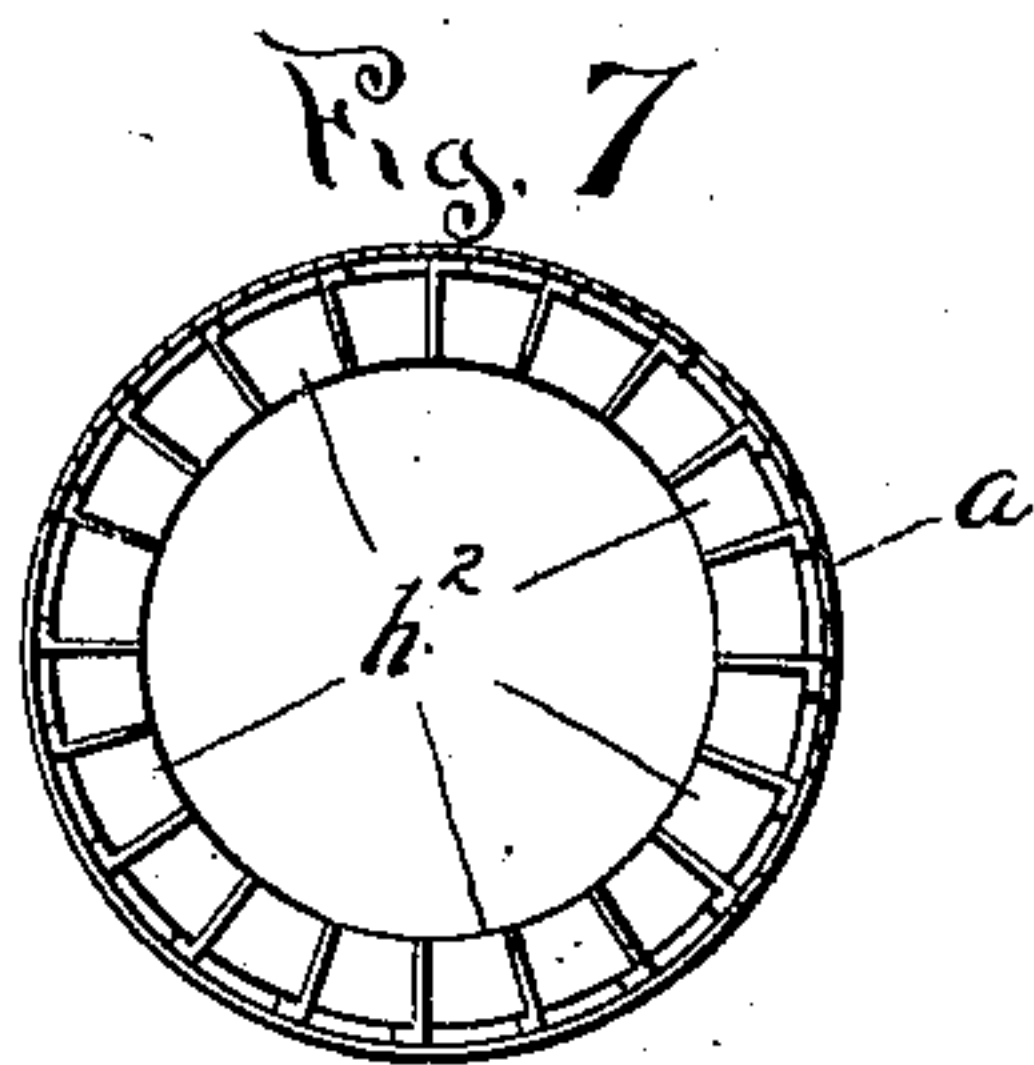
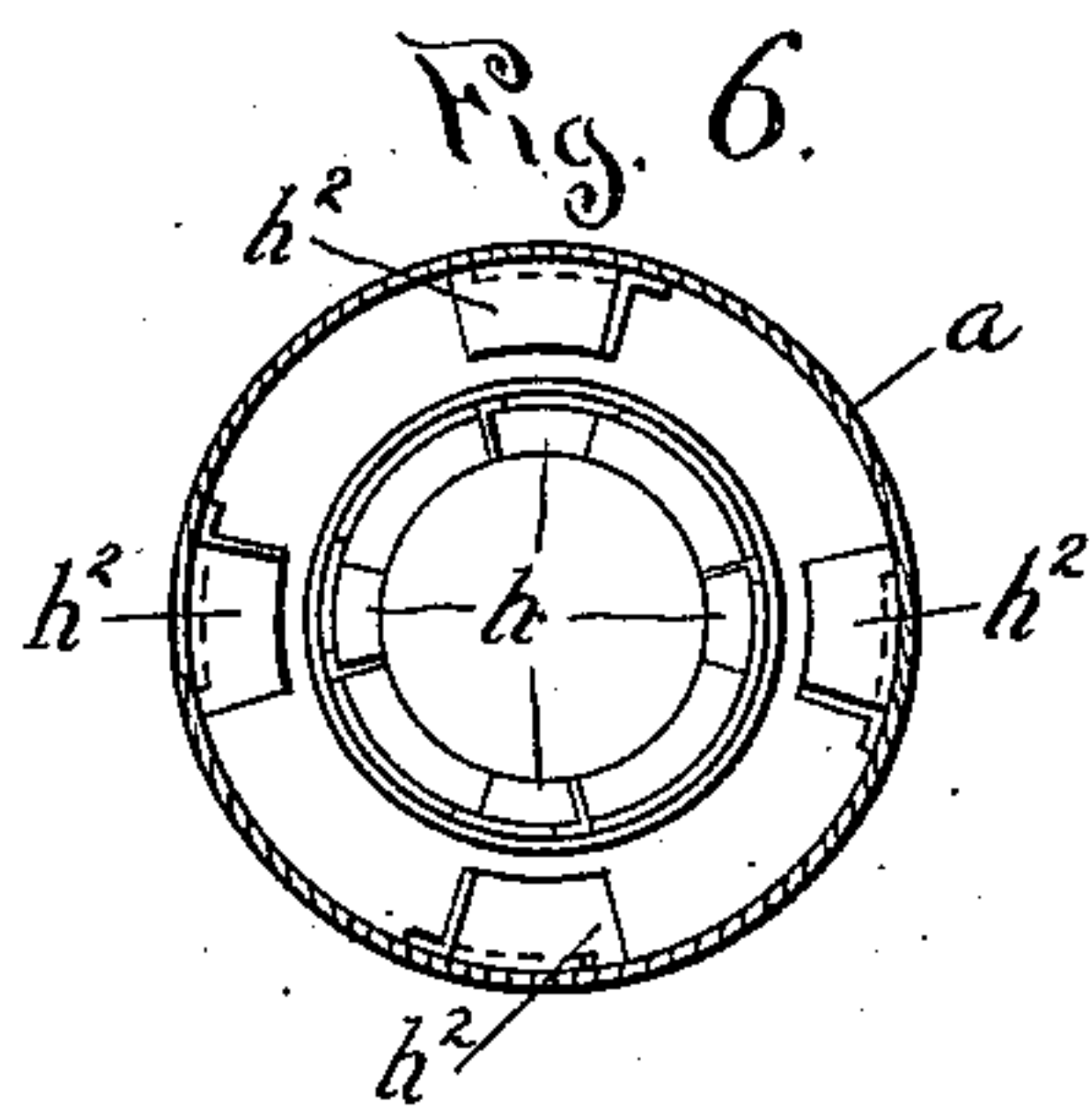
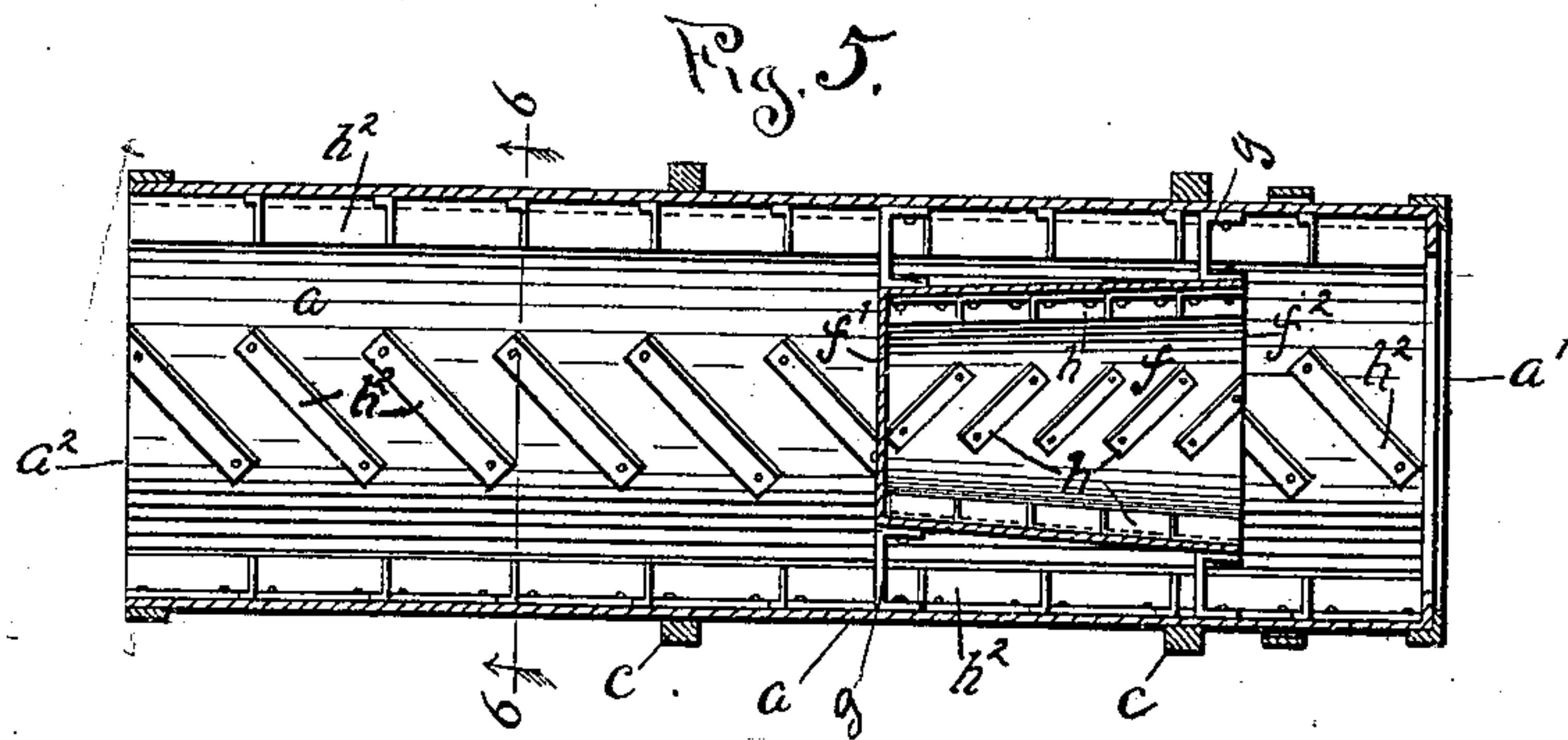
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2 Sheets—Sheet 2.



Witnesses:—
Ira D. Perry.
J. B. Keir

Samuel P. McKelvey Inventor:—

By H. C. Hunsberger Atty

UNITED STATES PATENT OFFICE.

SAMUEL P. MCKELVEY, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO
O. G. HURSON, OF SAME PLACE.

CONCRETE-MIXER.

SPECIFICATION forming part of Letters Patent No. 663,999, dated December 18, 1900.

Application filed August 7, 1899. Serial No. 726,487. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL P. MCKELVEY, a citizen of the United States, residing at Chicago, county of Cook, and State of Illinois, have invented a new and useful Improvement in Concrete-Mixers, of which the following is a specification.

My invention relates to that class of concrete-mixers in which a rotatable drum is utilized as a mixer and is provided with a separate compartment in which to receive the material forming the concrete, mix it in its dry state, and automatically discharge it into another compartment in which water is introduced and the mixing continued until discharged by the machine.

The object desired is to keep the mass moving during the process of mixing from the moment it enters the machine until it is discharged to mix it thoroughly in its dry state and in the wet, each in its own compartment.

The device is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of the drum, showing it mounted on a truck. Fig. 2 is an elevation of the front or feed end of the drum. Fig. 3 is a longitudinal section on line 3 3, Fig. 1. Fig. 4 is a plan view of spider and crank by which the drum is revolved. Fig. 5 is a longitudinal section, being a modified form of Fig. 3. Fig. 6 is a cross-section on line 6 6, Fig. 5. Fig. 7 is a cross-section on line 7 7, Fig. 3.

Similar letters refer to similar parts throughout the several views.

A drum *a* is mounted horizontally upon a truck *b*, preferably of two wheels when intended to be operated by hand and of four wheels when operated by steam or other motor. The drum *a* is provided with the steel tracks *c c* encircling the drum, which engage the flanged wheels *d d d d*, (two on each side of the drum,) mounted on a shaft *m* in bearings on the truck *b*. The wheels *d* are provided with ball-bearings to reduce friction and enable the operator to easily rotate the drum by means of the crank *e*, attached to a spider *l*, projecting from the rear end of the drum. The drum *a* is open-ended. *a'* is the feeding end, and *a²* the discharge or outlet. A smaller drum *f* is inserted into the feed

end of the drum *a* slightly rearward of the feed-aperture *a'*. This drum may be conical in form, but that is not essential. Its inner end *f'* is closed, and it is mounted rigidly on legs *g* in the drum *a* and partakes of its motion. A space sufficient is maintained between the inner and outer drums to permit the contents of the inner drum to drop from its open mouth *f²* into the body of the outer drum. Series of projecting wings or deflectors, set at an angle, are rigidly attached to the inner surface of both the inner and outer drums. On the inner drum *f* the deflectors *h* are placed with the lower point of deflection toward its mouth *f²* to deflect its contents toward the feed and discharge it into the forward end of the outer drum *a*. In the outer drum *a* the wings or deflectors have the lower point of deflection toward the outlet *a²* in order that its contents may be carried rearward to the outlet.

The dry material—crushed stone, sand, and cement—is shoveled through the feed-aperture into the inner drum *f* and thrown against the closed inner end *f'*. The drums are revolved usually in one direction only. The dry material is carried up on the side of the inner drum, rolls back over itself, is caught up by one deflector after another and moved forward and discharged at its mouth *f²* into the forward end of the outer drum, where a spray *i* is provided, to which a hose may be attached and the water introduced into the bottom of the outer drum. As the dry mixed concrete drops from the inner drum it is carried up the side of the outer drum, falls back, rolls over on itself, and is caught by one wing or deflector after another and moved forward until it is discharged at the outlet *a²*. By this method the concrete dropping from varied heights in its passage through the drum all the lumps are broken up, the particles of stone and sand are coated with the moist cement, and the stone cement and sand thoroughly blended and evenly mixed together without clogging the machine.

The number of the deflectors may in a measure depend upon the rapidity it is desired to pass the concrete through the mixer. The greater the number the more rapid is the movement. While I arrange the deflectors

so that usually the lower point of one is in line with the higher point of the next in advance, they may be placed indiscriminately through the drum without regard to order.

5 It is not essential that any special order is observed.

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

10 1. In a concrete-mixer, an outer and an inner drum, the outer having open ends, the inner drum open at one end, short wings set at an angle projecting from the inner surface of each drum, the wings in the inner drum having their lower points of deflection toward the feed end of the drum, the wings in the outer drum having their lower points of deflection toward the outlet, means for rotating said drums as specified.

20 2. In a concrete-mixer a rotatable drum having open ends mounted horizontally on a truck, a shorter inner drum mounted rigidly on legs attached to the inner sides of said open-ended drum and having the same axial plane, an open mouth in said inner drum in line with the feed end of the drum, series of projecting wings set at an angle against the inner surface of said drums the angle of deflection in the inner drum being toward the feed-aperture, and the angle of deflection of the wings in the outer drum toward its outlet, means for rotating said drums as specified.

30 3. In a concrete-mixer, a rotatable drum mounted on wheels, a dry and a wet mixing-compartment in said drum, said dry mixing-compartment consisting of a shorter inner

drum mounted on legs in the wet mixing-compartment and having the same axial plane therewith and adapted to discharge its contents into said wet mixing-compartment, short projecting wings set at an angle against the inner surface of both dry and wet mixing-compartments, the former adapted to deflect its contents toward the feed end of the wet mixing-compartment, the latter toward the outlet means for introducing water into said wet mixing-compartment and means for rotating said drum.

4. In a concrete-mixer the combination of a truck provided with shafts carrying flanged wheels, with a horizontal drum having open ends, provided with steel tracks encircling its perimeter mounted on said flanged wheels, a spider on one end of said drum, a crank-handle to said spider, an inner drum mounted firmly on legs in said open-ended drum and partaking its motion, said inner drum being on the same axial plane as the open-ended drum and open toward the feed end of said outer drum, short projecting wings in said drums set at an angle, the wings of the inner drum adapted to deflect the contents toward its mouth and discharge into the feed end of the open-ended drum, the wings in said open-ended drum adapted to deflect the contents toward the outlet as the drum revolves, means for introducing water into said open-ended drum and means for rotating said drum.

SAMUEL P. MCKELVEY.

In presence of—

H. C. HUNSBERGER,
WILLIAM SEAFERT.