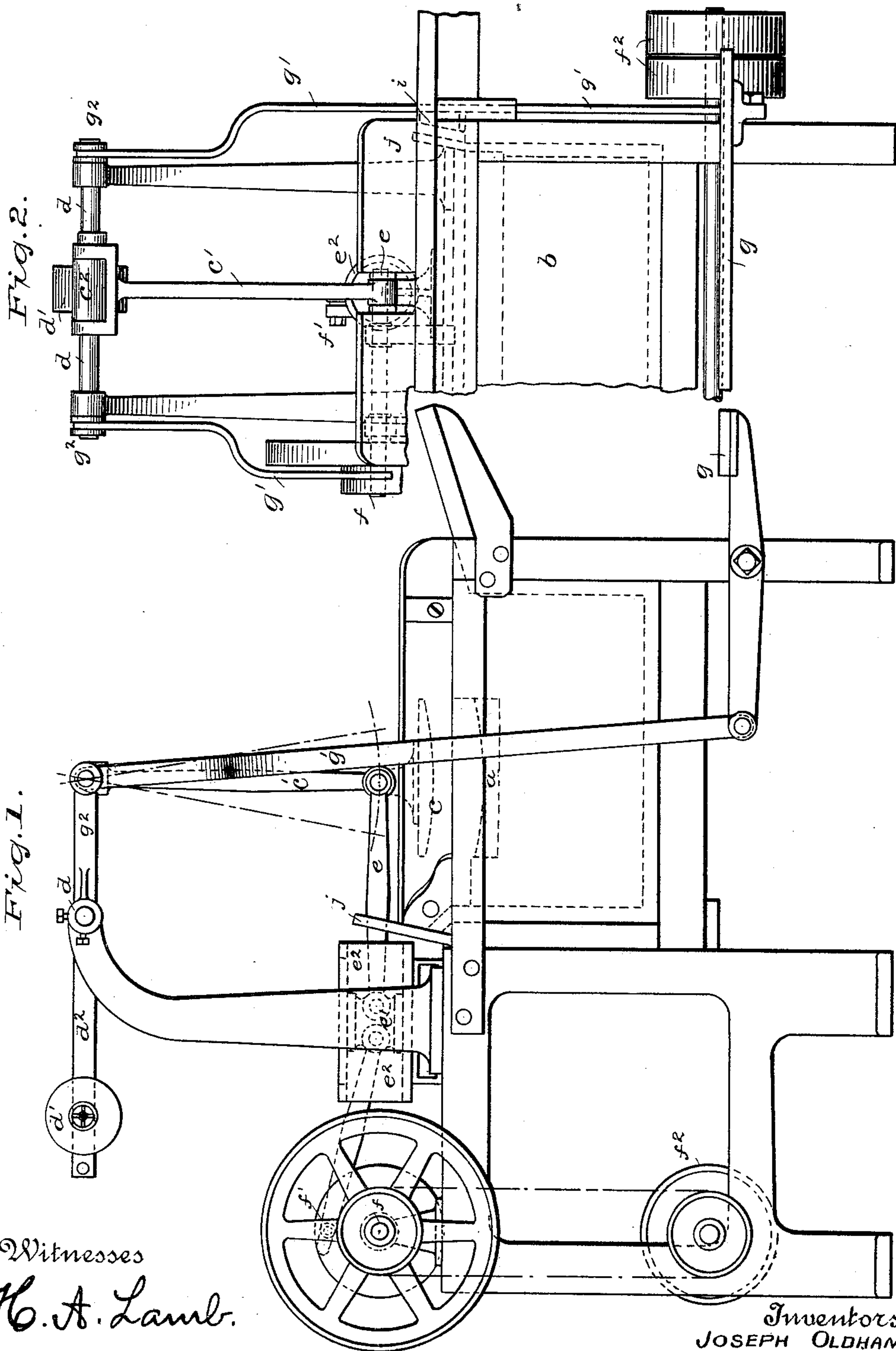


2 Sheets—Sheet 1.

MACHINE FOR SETTLING AND PLANKING FELT HAT BODIES.

Patented July 16, 1889.



Witnesses

H. A. Lamb.

Stephen D. James

Inventors

JOSEPH OLDHAM

ORLANDO OLDHAM

By their Attorney.

H. L. Gurn.

(No Model.)

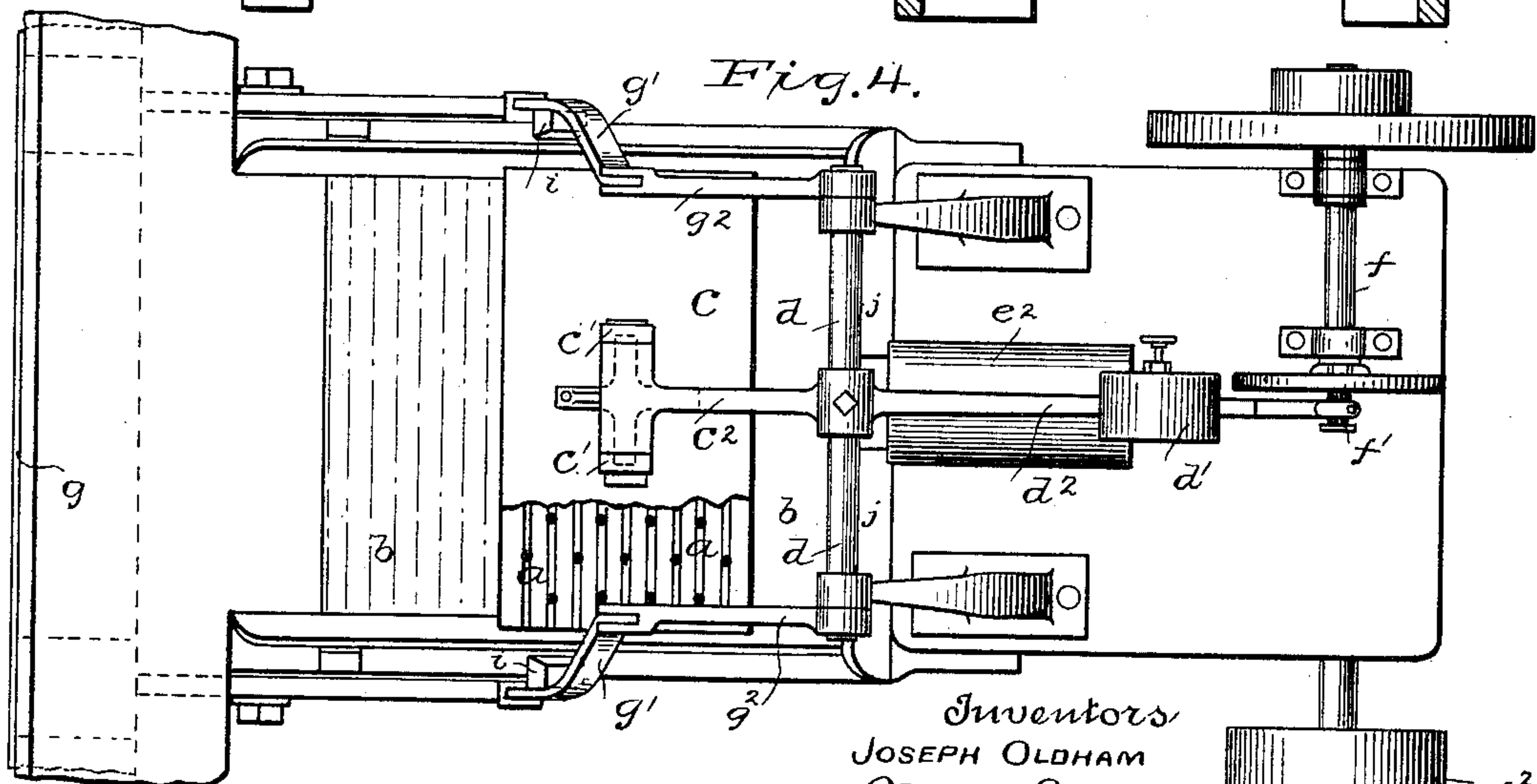
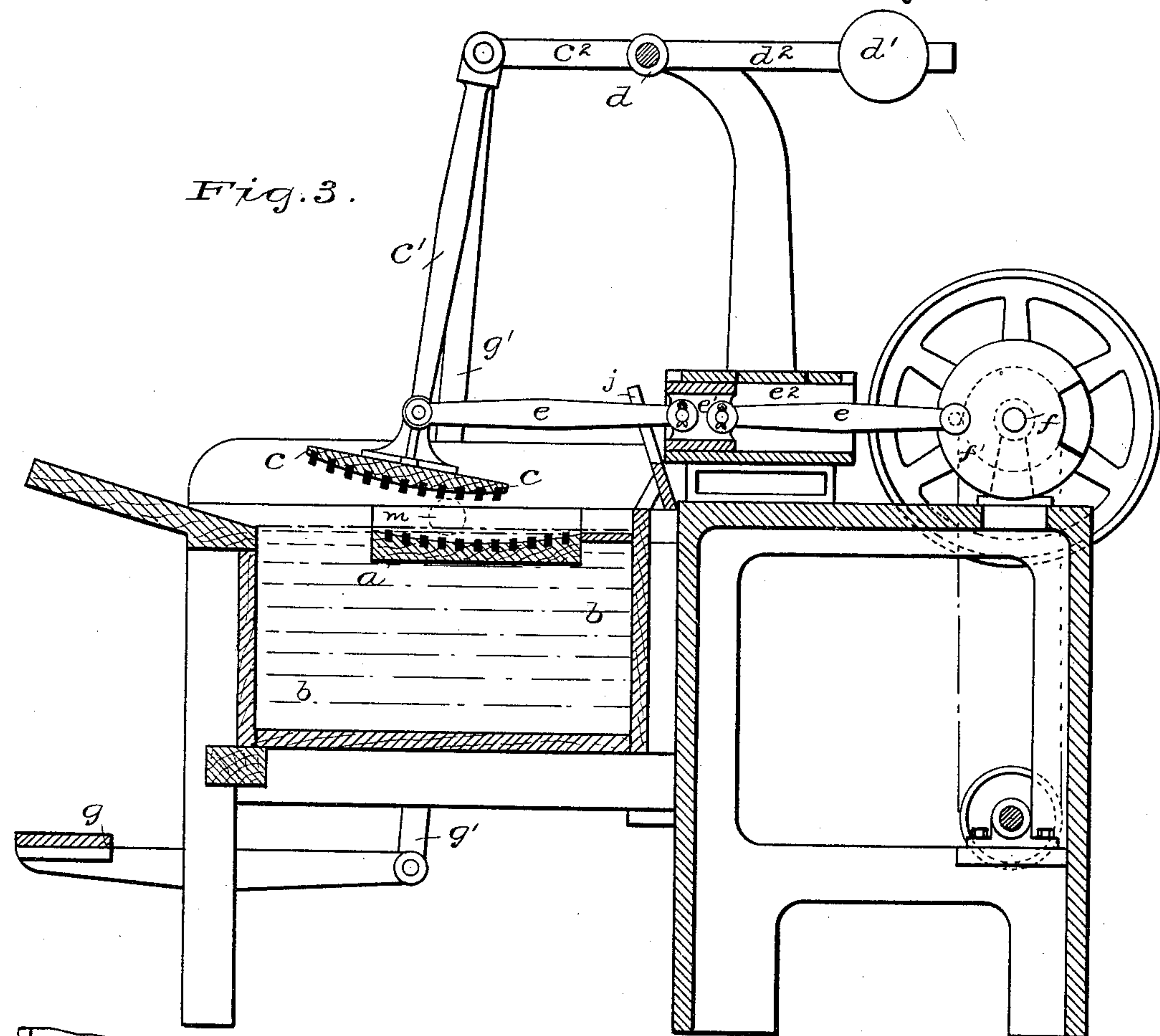
2 Sheets—Sheet 2.

J. & O. OLDHAM.

MACHINE FOR SETTLING AND PLANKING FELT HAT BODIES.

No. 406,948.

Patented July 16, 1889.



Witnesses
H. A. Lamb.
Stephen S. James

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UNITED STATES PATENT OFFICE.

JOSEPH OLDHAM AND ORLANDO OLDHAM, OF DENTON, COUNTY OF LANCASTER, ENGLAND.

MACHINE FOR SETTLING AND PLANKING FELT HAT-BODIES.

SPECIFICATION forming part of Letters Patent No. 406,948, dated July 16, 1889.

Application filed July 25, 1887. Serial No. 245,260. (No model.) Patented in England January 8, 1887, No. 313.

To all whom it may concern:

Be it known that we, JOSEPH OLDHAM and ORLANDO OLDHAM, subjects of the Queen of Great Britain and Ireland, and residents of Denton, in the county of Lancaster, England, have invented Improvements in Machinery for Settling and Planking Felt Hat-Bodies, (patented to us in Great Britain and Ireland by Royal Letters Patent No. 313, dated 8th day of January, 1887,) of which the following is a specification.

The object of this invention is the construction of an arrangement of mechanism whereby the settling and planking of felt hat-bodies can be effected more speedily and perfectly than heretofore, and so as to approach more nearly, if not to surpass, hand-planking.

On the accompanying drawings, Figure 1 is a side view, Fig. 2 a front view, Fig. 3 a side sectional view, and Fig. 4 a plan, of our improved mechanism.

In all the views, *a* is a curved and corrugated wooden board or plate (hereinafter called the "platform") fixed at the upper part of a wooden trough *b*, as illustrated, and so that the hot water contained in the trough can overflow such platform during the settling and planking operations. Above this platform we mount a correspondingly segmental and corrugated wooden board or plate, (hereinafter called the "segmental" plate *c*,) affixed at the lower extremity of a pendulous or radial rod *c'*. This rod *c'* is suspended from an arm *c''*, projecting from one side of a rock-shaft *d*, which is counterbalanced by a sliding adjustable weight *d'*, mounted upon a lever-arm *d''*, branching from the other side of the same rock-shaft. We impart an oscillating motion to the pendulous or radial rod *c'* by jointing it, above the segmental plate *c*, to a connecting-rod *e*, caused to reciprocate to and fro by being connected (through the intervention of a slide-block *e'*, illustrated as working in a cylindrical guide *e''*, but which, it is obvious, might be otherwise guided) with a revolving crank or eccentric *f'* upon a shaft *f*, driven by a belt upon the fast and loose pulleys *f''*, or by a winch-handle, or in any other convenient manner.

It is preferred to have the corrugated sur-

face of the platform *a* and segmental plate *c* covered with hard-wood pegs, as seen more clearly in Figs. 3 and 4; and in order to raise the segmental plate *c* for the insertion of the hat-forms between the two corrugated and pegged surfaces we arrange a treadle *g*, connected by side rods *g'* with arms *g''*, projecting from each outer extremity of the rock-shaft *d*, and thus we are enabled not only to raise the segmental plate *c* for the insertion and withdrawal of the hat-forms, but to adjust the pressure, if need be, upon the hat-bodies while undergoing the settling and planking operations. Stops *i* are affixed on the inner sides of the rods *g'* to come into contact with the side frames and so prevent them descending too far.

The action of this improved machine may be described as follows: The hat-forms taken from the trough *b* and rolled in the usual cloth are first placed upon the platform *a* and the pendulous plate *c* is then allowed to lower itself into contact with such forms, (marked *m*, as illustrated in Fig. 3,) and by its oscillation to roll the same to and fro along the platform *a*, which is by preference immersed in the hot water—an operation hitherto impracticable, and which is continued until the desired settling or planking is effected. In this manner and by thus having a segmental corrugated plate oscillating above a platform curved and corrugated, as aforesaid, and immersed in hot water, we find that the hat-bodies are more perfectly and easily rolled, and with an even pressure exerted on the entire curved surfaces, thus imparting a fine finish to the hat-bodies quite equal to if not better than can be effected by hand-planking.

We find that the finest quality of fur-bodies can be thus planked, even such qualities as have hitherto required to be done by hand.

Hitherto the objection urged against machinery used for this purpose has been that the hat-forms have been worked too dry, and, as a consequence, only a rough surface has been obtained, and, in fact, it has been impossible to obtain the desired finish which has only hitherto been obtainable by hand-planking.

This arrangement of mechanism, it will be

observed, permits all the working parts (which are constructed of iron) to be situated at the back of the machine, behind the splash-board *j*, and all out of the way of the acid, which has been a source of great injury to machines of this class as hitherto constructed.

It will be apparent that, instead of mounting the segmental plate *c* at the extremity of the arm *c*², projecting from a rock-shaft *d*, as hereinbefore described and illustrated, the segmental plate *c*, by means of its pendulous radial rod *c'*, might be suspended from a fixed point above the trough (the rod being connected to the revolving crank or eccentric to obtain the requisite to-and-fro motion,) and the platform *a* be so arranged as to descend into the trough for the insertion and withdrawal of the hat-forms; but this we should consider to be a modification, albeit a less convenient arrangement, of our invention.

We would here state that we are aware of an arrangement of mechanism for similar purposes, for which Letters Patent No. 2,353 were granted to William Grimshaw on the 7th day of August, 1872, and hence we make no claim, broadly, to rolling hat-forms to and fro be-

tween two surfaces, one of which is stationary and the other reciprocating, save and except in the manner hereinbefore described, and as illustrated on the annexed drawings.

We claim—

A machine for settling and planking felt hat-bodies, comprising the hot-water tub *b*, the immersed platform *a*, having a concave curved working-surface, the elevated rock-shaft *d*, pivotal connections between said rock-shaft and plate, the jointed pitman *e e*, mechanism, substantially in the horizontal plane of the tub, for reciprocating said pitman, a horizontal guide for limiting its vibrations, the treadle *g*, pitmen *g'*, connecting said treadle and rock-shaft, and stops *i*, attached to said pitmen *g'* and engaging with the top of the tub, substantially as hereinbefore specified.

In testimony whereof we affix our signatures to the foregoing specification.

JOSEPH OLDHAM.

ORLANDO OLDHAM.

Witnesses:

WALTER GUNN,

JAS. L. EWIN.