(No Model.)

2 Sheets—Sheet 1.

J. INGLEBY.

MACHINE FOR CHARGING LINOLEUM MOLDS.

No. 604,396. Patented May 24, 1898.

Fig. 1.

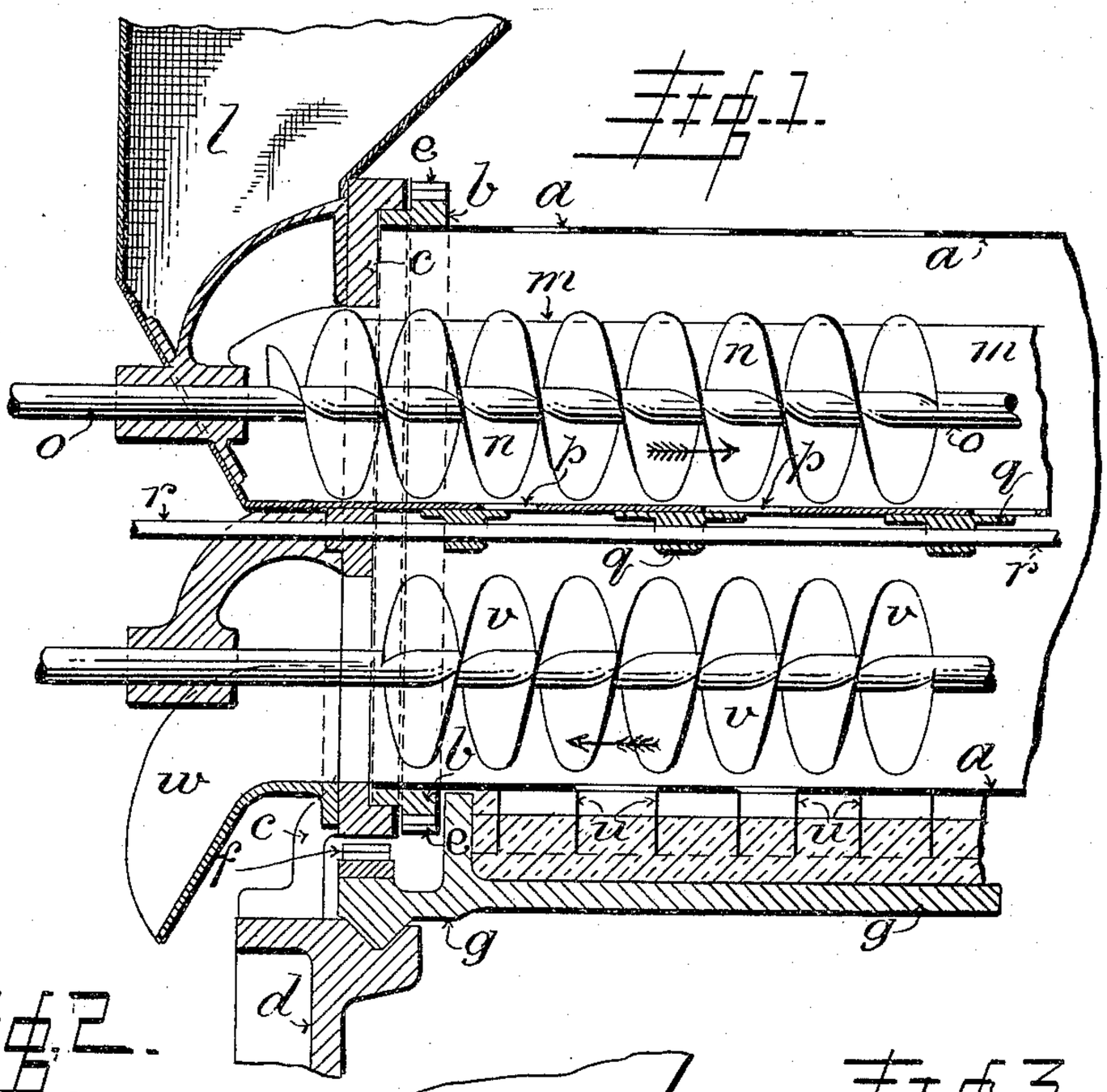


Fig. 2.

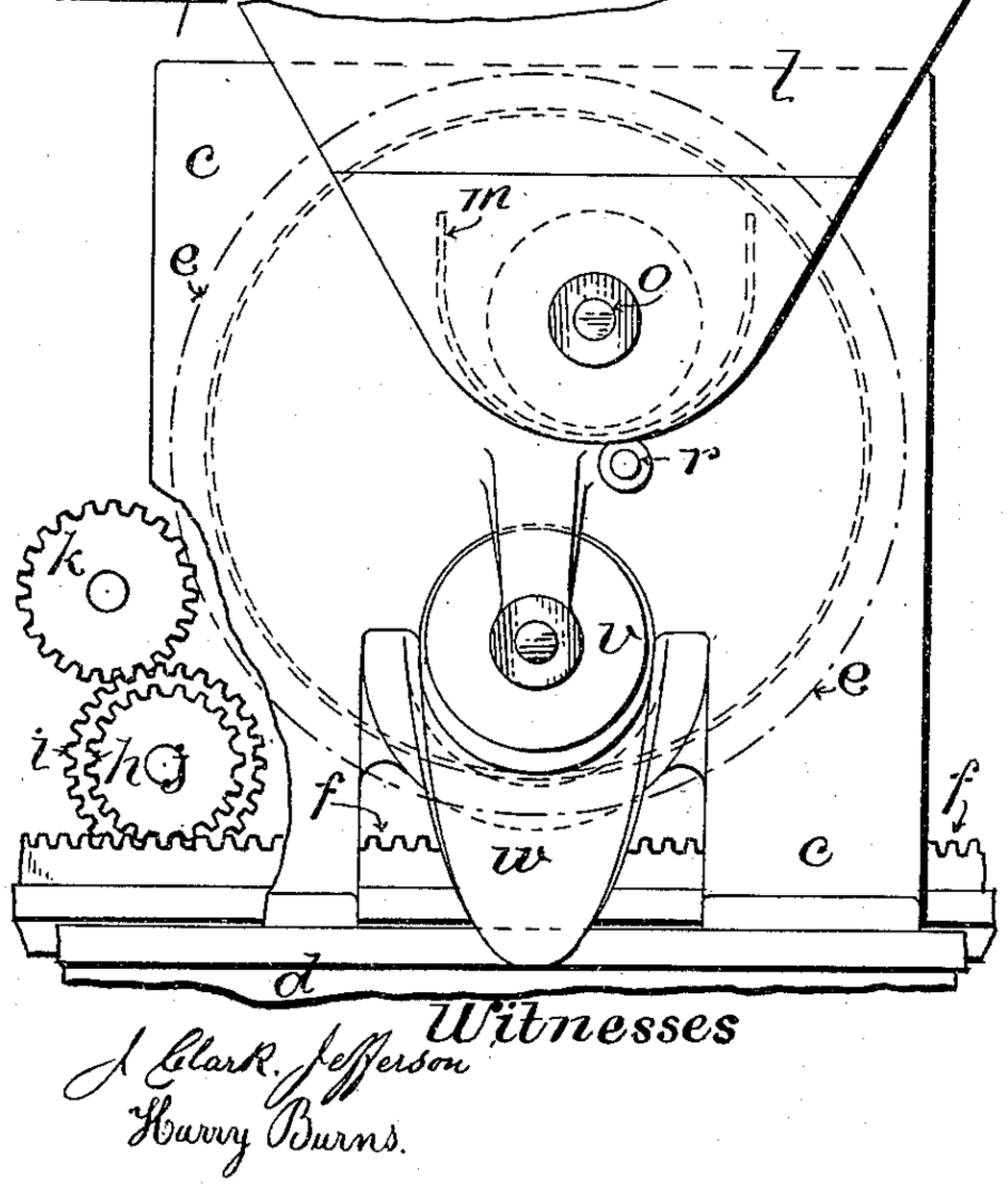
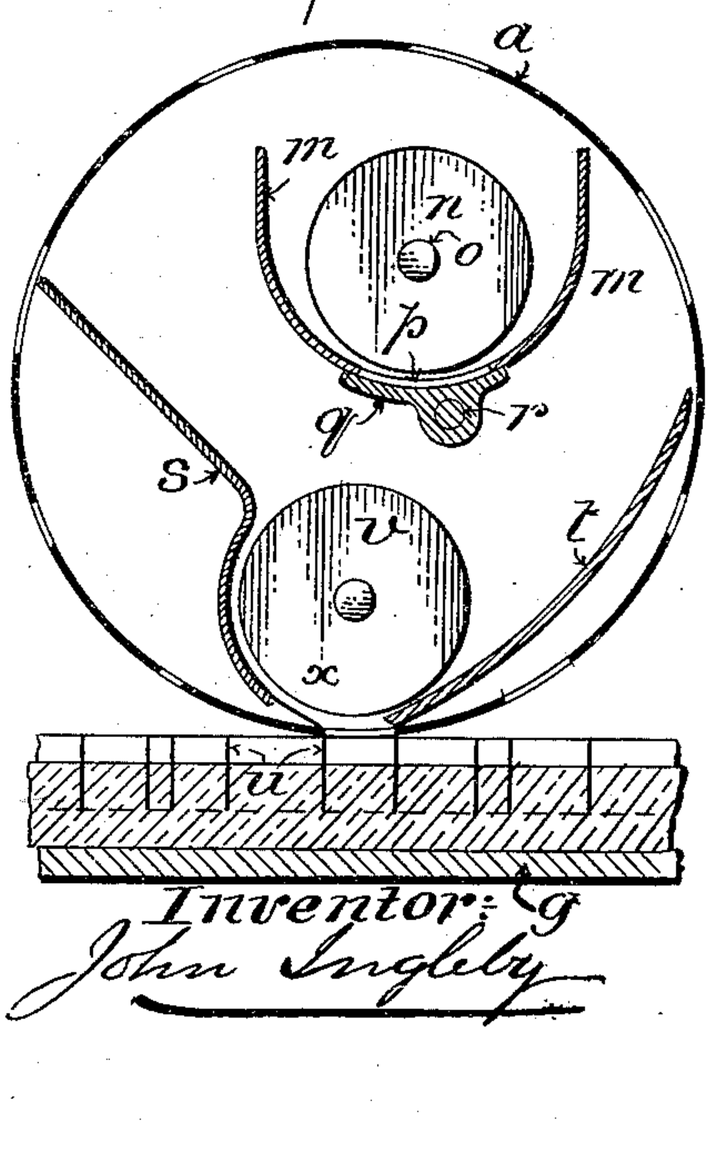


Fig. 3.



Witnesses

J. Clark Jefferson

Harry Burns.

Inventor:

John Ingleby

(No Model.) 2 Sheets—Sheet 2.

J. INGLEBY.

MACHINE FOR CHARGING LINOLEUM MOLDS.

No. 604,396. Patented May 24, 1898.

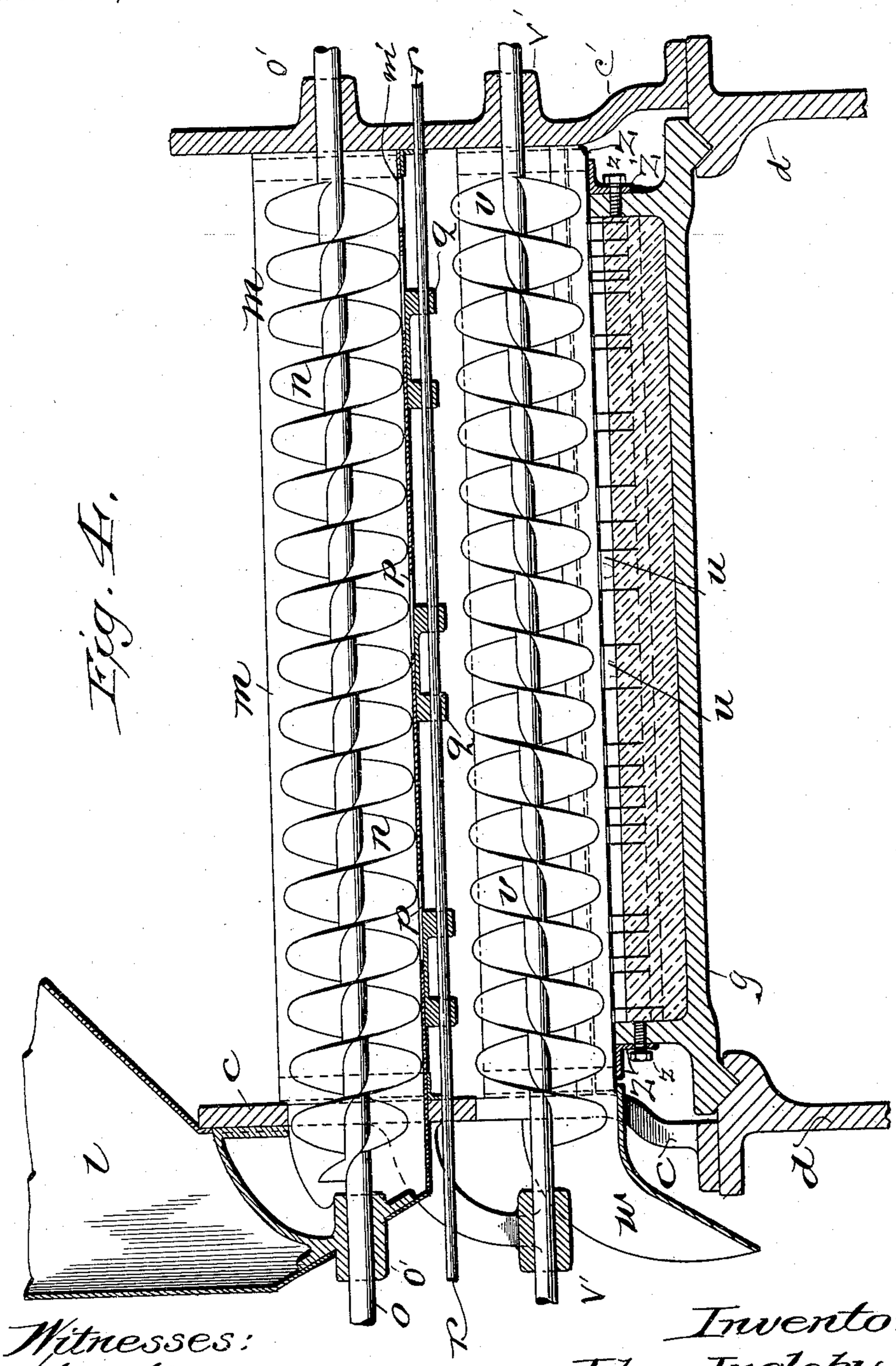


Fig. 4.

Witnesses:
Wm. L. Glendenning.
Albert Glendenning.

Inventor:
John Ingleby,
by Wm. H. Babcock
Attorney.

UNITED STATES PATENT OFFICE.

JOHN INGLEBY, OF LEEDS, ENGLAND.

MACHINE FOR CHARGING LINOLEUM-MOLDS.

SPECIFICATION forming part of Letters Patent No. 604,396, dated May 24, 1898.

Application filed February 25, 1897. Serial No. 624,951. (No model.) Patented in England June 27, 1895, No. 12,433.

To all whom it may concern:

Be it known that I, JOHN INGLEBY, a subject of the Queen of Great Britain and Ireland, residing at Leeds, in the county of York, England, have invented a new and useful Improvement in Machines for Charging Linoleum-Molds, (patented by Letters Patent in Great Britain June 27, 1895, No. 12,433, and for which I have applied for Letters Patent in Great Britain, No. 6,519, bearing date March 25, 1896,) of which the following is a specification.

This invention relates to the filling or charging of the compartments of the molds used in the manufacture of mosaic and inlaid linoleums and the like fabrics through flat or cylindrical stencils; and it consists in traversing the linoleum material in a stream over and along a narrow slit close to or in contact with the surface of the stencil-plates, said slit being at right angles to the direction of the traverse of the molds for the purpose of facilitating the passage of the linoleum material through the openings of the stencil-plates while a second stream of linoleum material is traversed in a trough or channel above and parallel to the first stream, but preferably in a contrary direction, the said trough or channel being provided with adjustable openings, so that the lower stream can be fed at different points of its length from the upper stream in such a manner as to compensate for the flow of material through the stencil-openings and to keep the depth of the lower stream uniform over its length with the object of insuring uniformly dense filling or charging of the mold-compartments. I attain these objects by mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal section of the driving end of a cylindrical stencil fitted, for example, to linoleum machinery with molds having compartments formed by retractile webs. Fig. 2 is an end view, and Fig. 3 a cross-section. Fig. 4 represents a longitudinal vertical section through the center of the mechanism used with a flat stencil.

The same letters refer to the same parts throughout the several views.

a is the stencil-cylinder, carried by means of the ring *b*, fitting in a groove in the side frame or standard *c*, the latter being mounted on the side frame *d* of the linoleum-machine.

e is a toothed wheel fixed or cast on the ring *b* and driven from the rack *f*, attached to the side of the mold-frame *g*, through the gear-wheels *h* and *i* on a stud *j* and the intermediate wheel *k*, the diameter of the wheel *h* being in the same ratio to the diameter of the wheel *i* that the diameter of the cylinder *a* is to that of the gear-wheel *e*, in order to drive the stencil-cylinder *a* with a circumferential speed exactly equal to the speed of the travel of the molds, while the intermediate wheel *k* is to obtain the proper direction of rotation of the stencil-cylinder. By narrowing—*i. e.*, coning the end of the cylinder *a*—the pitch diameter of the wheel *e* may be made exactly the same as the exterior diameter of the stencil-cylinder *a*, and the wheel *e* can then be geared direct to the rack *f*.

l is a feed-hopper from which the linoleum material is delivered to the end of the trough or channel *m* in the upper part of the cylinder *a* and carried from the end frames or standards *c*. In this trough *m* is fitted a worm conveyer *n*, the shaft *o* of which is carried in bearings cast on the end frame or standards *c* and driven by any convenient means. In the lower part of the trough are provided openings *p*, which can be more or less opened and closed by means of the shutters *q*, operated from the rod *r*. This rod is pulled or pushed longitudinally by hand, according to the need of opening or closing. The said shutters are thereby caused to slide over or away from their respective openings *p*. Thus part of the linoleum material as it is traversed along the trough or channel *m* in the direction indicated by the arrow can be allowed to fall through these openings to the lower stream, which is immediately hereinafter referred to. On reaching the opposite end of the cylinder the linoleum material falls from this end of the trough or channel *m* through an opening *m'*, Fig. 4, to a lower trough or channel, which, as shown in the drawings, may be conveniently formed by two inclined shields *s* and *t*, which leave a narrow slit between their lower edges close to the stencil-plate and immediately over or about the line of contact of the stencil-cylinder *a* and the top of the mold-compart-

ments—*i. e.*, the retractile webs *u*. The construction of these webs and of the molds with which they are used will be found fully described in my Patent No. 561,400, dated June 2, 1896. The lower edge of the shield *s* may be provided with a flexible scraper *x* to scrape off any linoleum material which may attach itself to the surface of the stencil-cylinder and which would be liable to fall inopportunely through the openings in the stencil-cylinder. A second worm conveyer *v* traverses the linoleum material in a backward stream over the just-mentioned slit, and in proportion as the linoleum material falls through the openings in the stencil-plates to fill the compartments of the mold additional supply is dropped from the upper stream through the openings *p*, as just above mentioned, so that the depth of this lower stream is kept practically uniform, insuring the uniformly dense filling of the different compartments. This method of filling practically necessitates passing a surplus of linoleum material through the feeding apparatus, such surplus passing off down the chute *w* and being returned to the hopper *l* by any convenient means.

The number of cylinders or stencil-plates varies of course with the number of colors and shades in the pattern to be produced. No alteration of the means for causing and regulating the two streams of linoleum material is used when flat stencil-plates are laid over the molds instead of using rotary stencil-cylinders.

In Fig. 4 a perfectly flat stencil Z is employed, resting on a mold-frame or receptacle *g*, supported by legs *d*. To the sides of this mold-frame or receptacle bracket-plates Z′ are fastened by screws *z*, presenting horizontal upper faces, on which and on the sides of the mold-frame the said flat stencil-plate is supported. The said mold-frame and superposed stencil-plate are moved together by any suitable feeding mechanism in a horizontal direction at right angles to the line of feed for the material. The mold-frame has the upper edges of its side walls flush with the surfaces of the plates Z′, and it contains the usual webs *u*, which form mold-compartments arranged to receive the material that falls through the openings in the stencil-plate. The standards *c* for supporting the upper part of the machine are fixed on the side frame *d*, which also supports the mold-frame aforesaid. The conveyer-shafts, arranged as hereinbefore described, have their bearings *o′ v′* rigid with these standards. The arrangement and construction of the conveyers, the troughs, the hopper, the shutters, and the chute *w* are the same as in the other form of the machine first described; but of course the rotary stencil-cylinder, its rack, and the gear-wheel are wanting, their place being taken by the flat stencil-plate Z and such means (not shown) as may be used for moving the latter.

When the cylindrical stencil is used, the end of the machine away from the hopper (not shown in the first three figures) is given the construction illustrated by Fig. 4, excepting only the substitution of one kind of stencil for the other.

Less conveniently traveling scrapers or other equivalent means may be employed in place of the worm conveyers.

I am aware that worm conveyers for producing a distribution of linoleum material in feeding-troughs have been previously used; but such have not been previously used to produce a flow or moving stream of material along a slit close to the stencil-plates.

Having fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In mechanism for feeding the molds used in the manufacture of mosaic and inlaid linoleum or similar fabric, the combination with said molds, of a stencil having openings formed therein and movable with the said molds of means for conveying a stream of linoleum material along and over the said stencil and delivering the same thereto and means for conveying said material in an upper stream of reverse direction and delivering successively portions of such material from the upper stream to the lower substantially as set forth.

2. In combination with linoleum-molds and a rotating stencil having openings arranged to discharge into them, means arranged within the said stencil for feeding two streams of linoleum material in reverse directions and means for permitting the discharge of the material from the upper stream into the lower and from the lower stream on the discharging part of the stencil substantially as set forth.

3. In combination with a series of linoleum-molds and a longitudinally-movable support therefor, a rack carried by said support, a cylindrical stencil arranged above the said molds and provided with openings at intervals, a gear-wheel turning with the said stencil, means for feeding the linoleum material to the discharging part of the said stencil, and gearing interposed between the said rack and the gear-wheel first above mentioned, a part of this gearing having the same ratio of diameters as the stencil and its gear-wheel, for the purpose set forth.

4. In combination with a series of linoleum-molds and a stencil movable above them, two superposed troughs arranged above the discharging part of the said stencil, and conveyers operating respectively in the said troughs and in reverse directions, these troughs being provided with discharge-openings substantially as set forth.

5. In combination with a series of linoleum-molds and a stencil movable above them, a pair of superposed troughs provided with downwardly-discharging openings arranged as described, a series of gates and an operat-

ing-rod controlling the openings of upper trough, and conveyers operating in reverse directions in said troughs substantially as set forth.

6. A series of molds, endwise movable collectively and a rack moving therewith, in combination with a cylindrical stencil, a gear-wheel thereon, gearing between the said rack and wheel, two troughs having outlets which are superposed within the said stencil but do not turn therewith, conveyers operating in said troughs to feed the material in reverse streams, and means for governing the outlets from the upper trough to the lower, substantially as set forth.

7. In combination with a stencil, molds supplied therethrough, a trough above the said stencil adapted to discharge thereon and a screw conveyer arranged within the said trough and adapted to maintain by simultaneous action on the material at several points a continuous movement of material lengthwise of the same substantially as set forth.

8. In combination with a stencil, molds supplied therethrough, and means for automatically maintaining, by simultaneous action on the material at several points, a continuous movement of material above the stencil, and permitting it to be discharged thereon substantially as set forth.

JOHN INGLEBY.

Witnesses:
J. CLARK JEFFERSON,
HARRY BURNS.