

No. 785,908.

PATENTED MAR. 28, 1905.

J. J. McCLELLAND.  
SAND MOLDING MACHINE.  
APPLICATION FILED JULY 26, 1904.

3 SHEETS—SHEET 1.

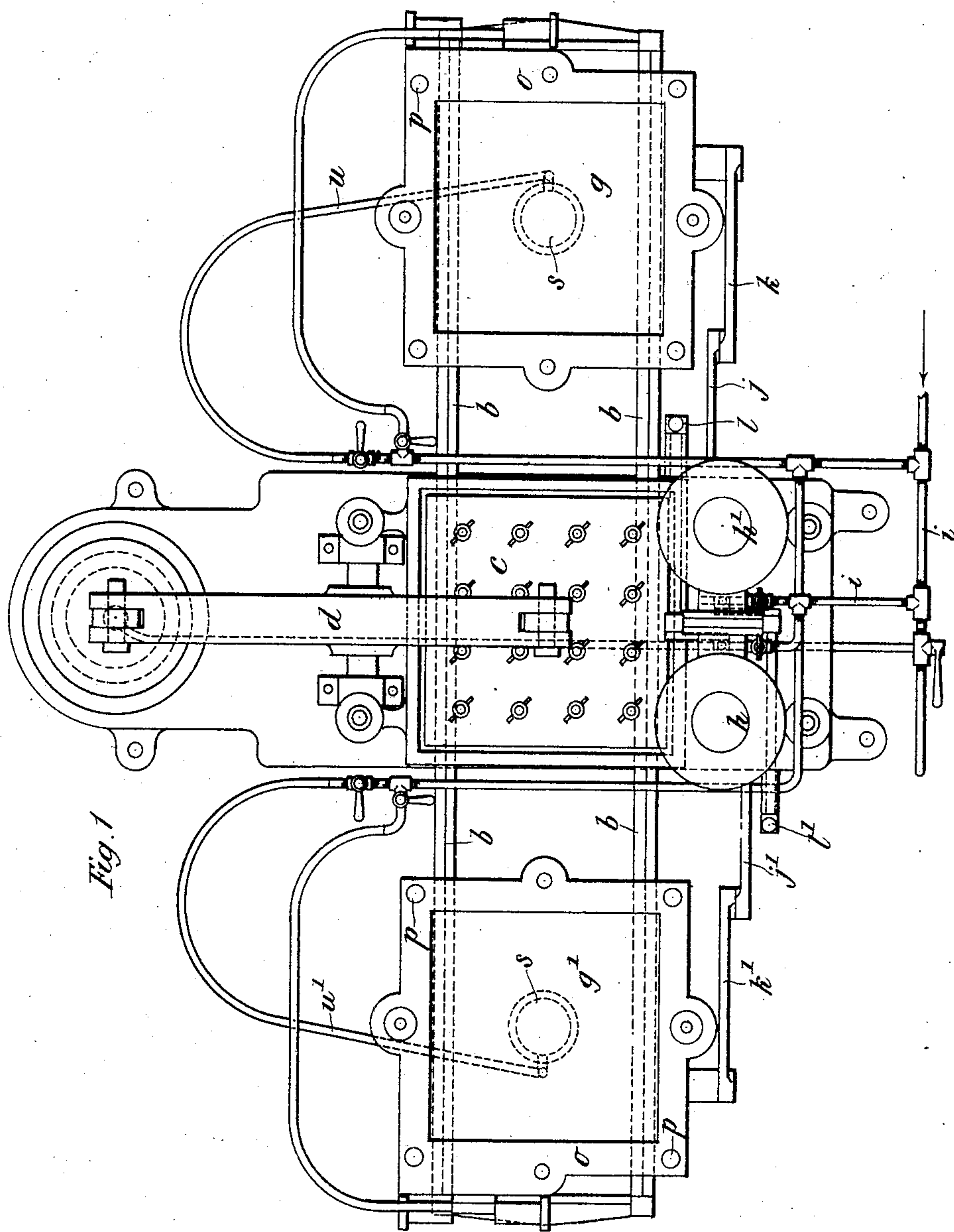


Fig. 1

Witnesses :  
F. S. Hachenberg.  
Henry Thieme.

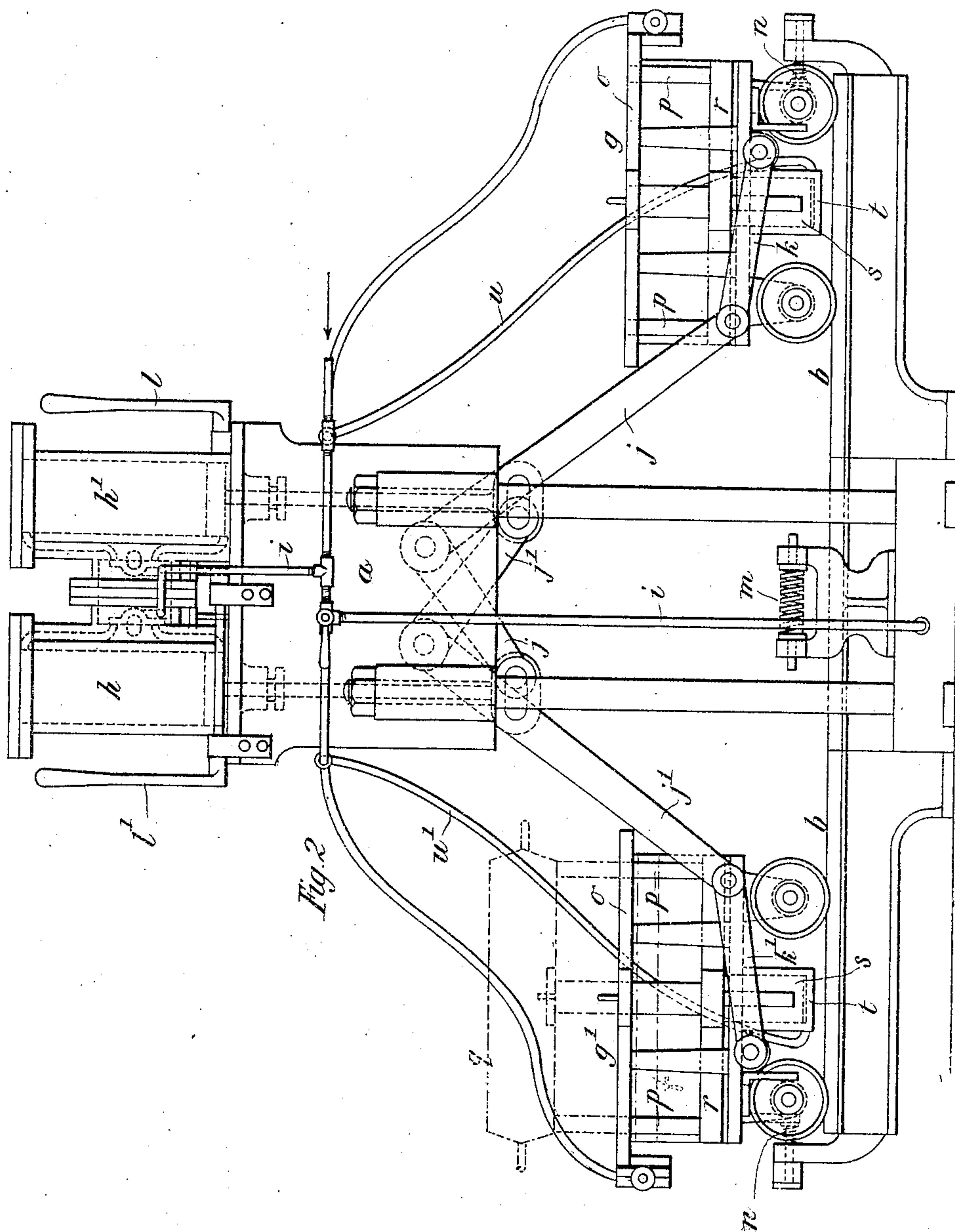
Inventor:  
John James McClelland  
By Brown & Howard  
his Attorneys

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*Witnesses:*  
*F. G. Hachenberg.*  
*Henry Thime.*

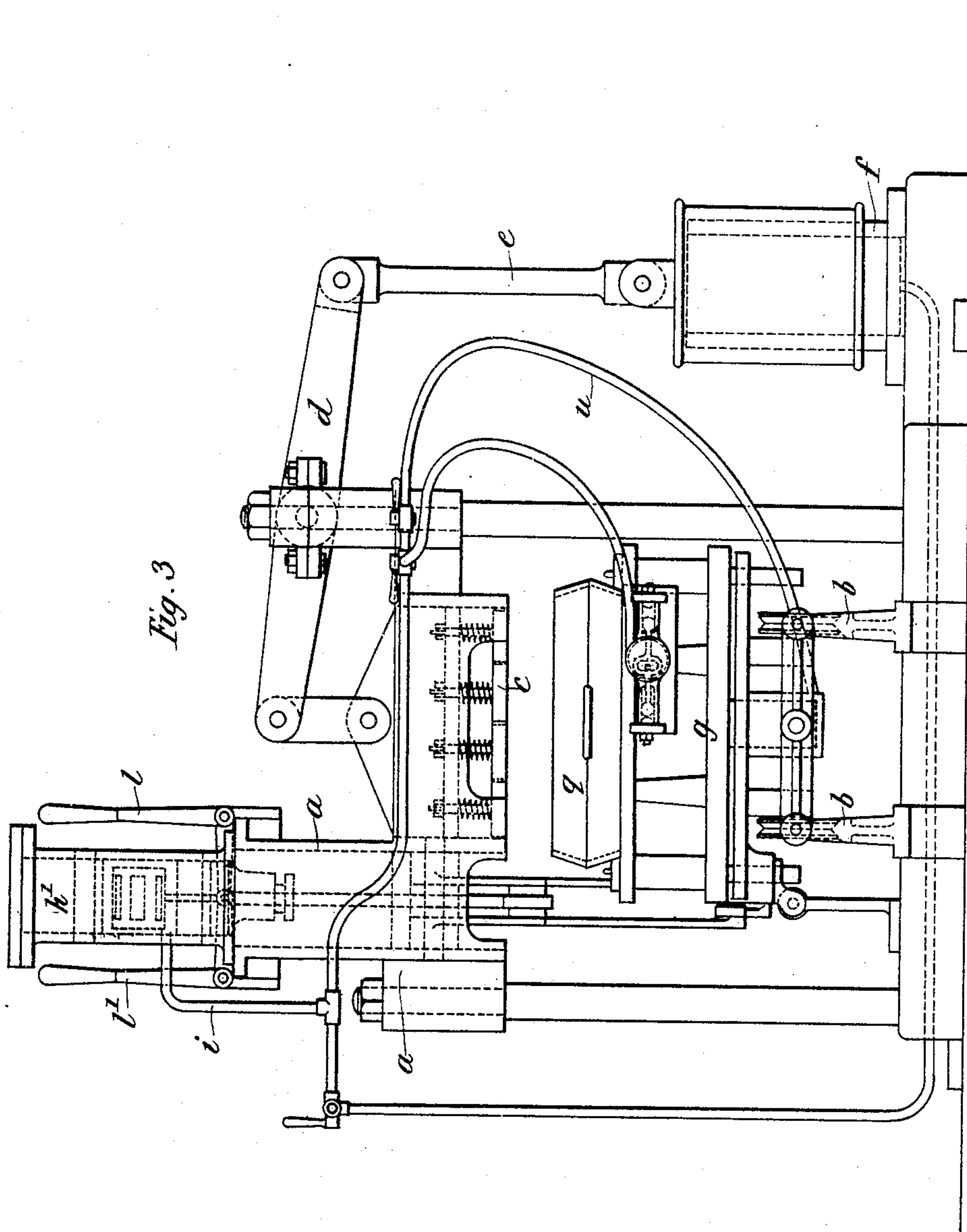
*Inventor:*  
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3 SHEETS—SHEET 3.



**Witnesses:**

F. S. Hachenberg.

Henry Thieme.

**Inventor:**  
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# UNITED STATES PATENT OFFICE.

JOHN JAMES McCLELLAND, OF LONDON, ENGLAND, ASSIGNOR TO THE  
SAFETY TREAD SYNDICATE LTD., OF LONDON, ENGLAND.

## SAND-MOLDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 785,908, dated March 28, 1905.

Application filed July 26, 1904. Serial No. 218,266.

*To all whom it may concern:*

Be it known that I, JOHN JAMES McCLELLAND, foreman iron-molder, a subject of the King of Great Britain, and a resident of 73 Harrowgate road, South Hackney, London, England, have invented certain new and useful Improvements in Sand-Molding Machines, of which the following is a specification.

The present invention has reference to sand-molding machines wherein the mold boxes or flasks inclosing the patterns are carried by trolleys which run on tracks beneath a rammer-head which is used for ramming tight the sand in the flasks.

The object of the present invention is to provide suitable and convenient means for running the trolleys mechanically to and from the rammer-head in such manner that they may be used alternately or that either one may be used without the other.

In the accompanying drawings I have shown a machine embodying the present improvements.

Figure 1 is a plan view; Fig. 2, a front elevation, and Fig. 3 an end elevation.

*a* is a framing overhanging a track *b* and supporting in suitable guides a rammer-head *c*. This rammer-head is worked by a rock-lever *d*, coupled by a link *e* to the piston-rod of a compressed air or other cylinder *f*. *g g'* are trolleys running on the track *b*. So far this arrangement is similar to that in common use; but I will now proceed to describe how the trolleys and mold-boxes are manipulated according to my present invention.

Upon the framing *a* is an extension which supports a pair of cylinders *h h'* separately and independently mounted and supplied with motive fluid by means of the pipes *i*. The piston-rod of the cylinder *h* engages by means of its slotted end with a pin on the short limb of the cranked lever *j*, pivoted to the framing. The other limb of the lever *j* is jointed to a link *k*, connected to the trolley *g*, so that when the lever is rocked the trolley will move to and fro. The piston-rod of the cylinder *h'* is connected by a similar lever *j'* and link *k'* with the trolley *g'*.

*l l'* are hand-levers for operating the slide-valves of the cylinders *h h'*, so that the latter may be caused by their pistons to pull the trolleys to and fro on the track at the will of the attendant toward and away from the rammer-head.

*m n* are spring-buffers to prevent the trolleys from overrunning their set positions.

The trolleys comprise plates *o*, whereon the patterns rest, and through these plates pass pillars *p*, upon the ends of which rest the mold boxes or flasks *q*. (See Figs. 2 and 3.) The pillars *p* are mounted upon frames *r* beneath the trolleys, which frames are supported on the rods of pistons *s*, working in cylinders *t*.

Flexible pipes *u u'* are provided, whereby pressure may be led to the cylinders, so as to raise the pistons, and with them the frames *r* and mold-boxes *q*, thereby lifting them clear of the patterns, which are left behind on their plates.

In Fig. 2 I have shown in dotted lines the mold-box raised by the piston of the trolley *g'*. From that position it is readily lifted by hand and placed ready for the casting.

Any convenient form of rammer may be employed.

Although the machine as illustrated shows trolleys which may be brought alternately into position under the rammer to have the molds rammed, there being a separate means for moving each trolley, either one with its mold-box can be moved to and fro while the other remains at rest, and hence in cases wherein it may be desirable the mold-box on one trolley alone may be used and no power need be wasted in moving the other one to and fro.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a molding-machine comprising a rammer and trolleys for carrying mold-boxes beneath the said rammer, the combination with said trolleys of motive-power cylinders and pistons working therein, one such cylinder and piston for each trolley, and independent connections between each piston and its respective trolley.

2. In a sand-molding machine comprising a

rammer and trolleys for carrying mold-boxes  
beneath the said rammer, the combination with  
said trolleys of motive-power cylinders and  
pistons, one such cylinder and piston for each  
5 trolley, a lever connected with each of said  
pistons and a link-rod connecting said lever  
with its respective trolley.

In testimony whereof I have signed my name  
to this specification in the presence of two sub-  
scribing witnesses.

JOHN JAMES McCLELLAND.

Witnesses:

ALFRED V. BISHOP,

HERBERT D. JAMESON.