

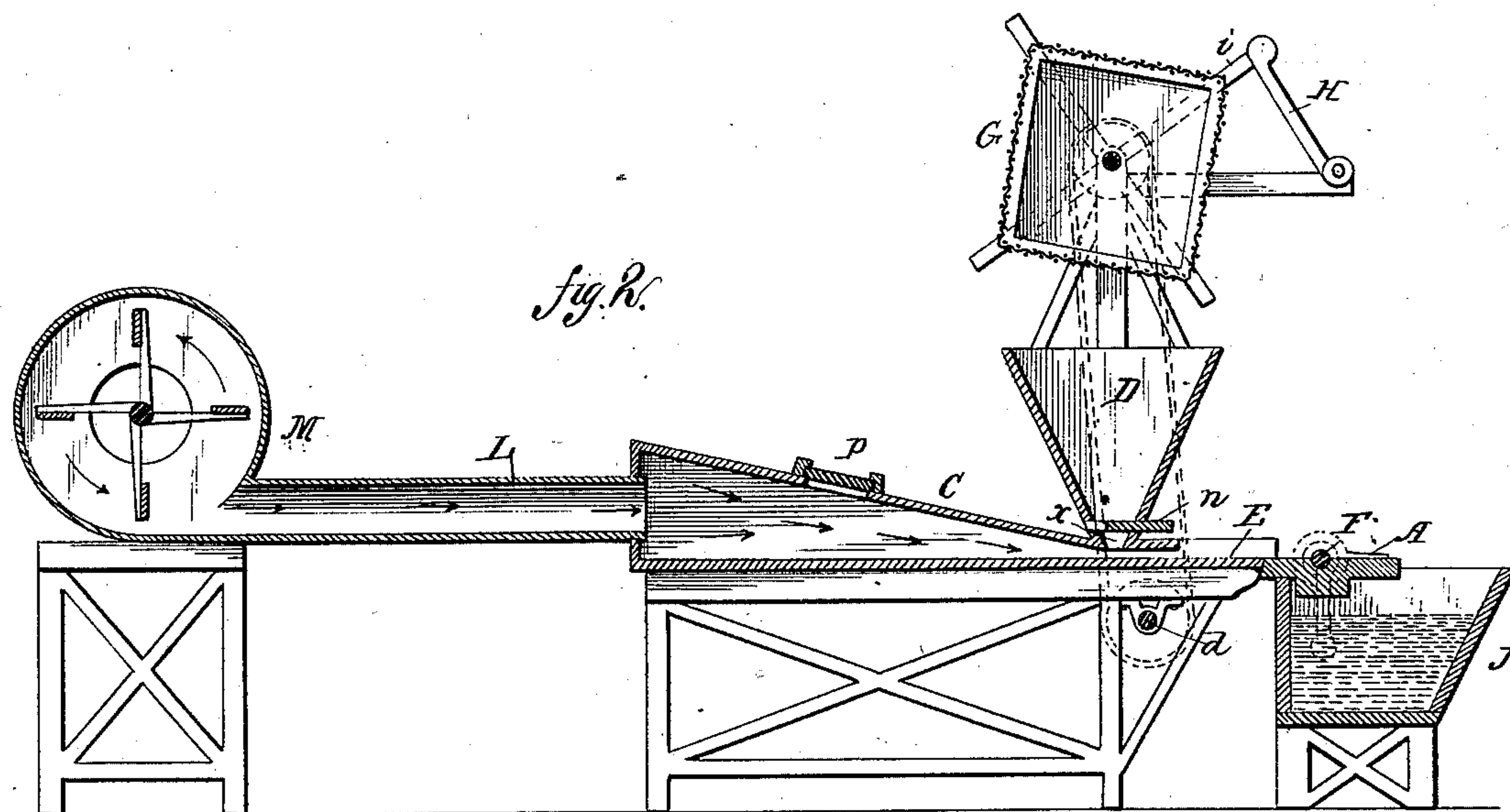
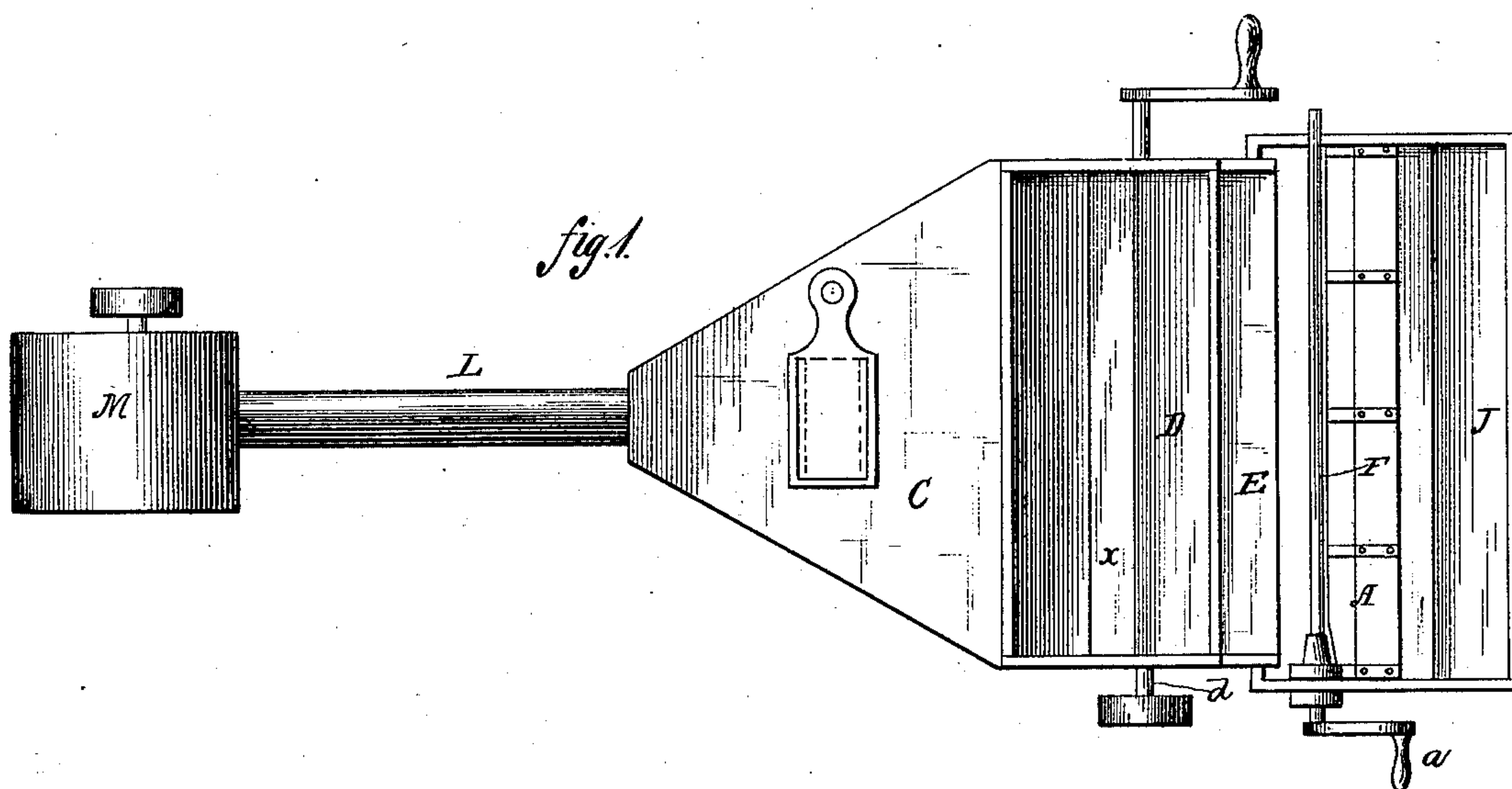
(No Model.)

J. SCULL.

MACHINE FOR MAKING GREEN SAND CORES.

No. 297,172.

Patented Apr. 22, 1884.



Witnesses:  
*John H. Ambel*  
*Wm. J. Fayers.*

*James Scull*  
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*By Foster & Freeman*  
Atty.



# UNITED STATES PATENT OFFICE.

JAMES SCULL, OF JERSEY CITY, NEW JERSEY, ASSIGNOR OF ONE-HALF TO  
SAMUEL VANCE, OF SAME PLACE.

## MACHINE FOR MAKING GREEN-SAND CORES.

SPECIFICATION forming part of Letters Patent No. 297,172, dated April 22, 1884.

Application filed February 21, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES SCULL, a citizen of the United States, residing at Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Machines for Making Green-Sand Cores, of which the following is a specification.

My invention has for its object to form solid, hard, and durable sand cores for casting, and to effect the construction thereof with rapidity; and my invention consists, in combination with a revolving mandrel, of devices for throwing the green sand with great force upon a revolving mandrel, so as to pack the same thereon so firmly as to secure a core of the desired hardness and durability.

In the drawings, Figure 1 is a sectional elevation of a machine by which the cores are manufactured. Fig. 2 is a plan view, the hopper removed.

The solid or hollow perforated mandrel F turns in suitable bearings above a sand-box, J, and is revolved by means of a handle, a, opposite the end of a flat plate or tube, E, equal in width to the length of the mandrel, and extending from a wind-box, C, into which a blast of air is forced through a tube, L, by means of the fan M, or other suitable blowing apparatus.

Above the tube or wind-box is a hopper, D, which communicates with the tube through a narrow opening, x, at the bottom, regulated by a slide or valve, n, and above the hopper revolves a riddle, G, into which the green sand is put, and through which it is sifted into the hopper. The sand falls from the hopper in a regular thin stream and is struck by the rapid current of air forced forward by the blower, and is carried with great force against the sides of the mandrel and densely packed thereon as the same is revolved, a knife, A, trimming down excrescences until the core is of the proper size.

I am aware that cores have been formed by dropping the sand upon a revolving mandrel; but this means of projecting the sand does not pack it upon the mandrel with sufficient

density to form a core as hard and durable as is required for many purposes, but an air-blast projects the sand with such force upon the mandrel as to form a hard, solid coating, better capable of withstanding the pressure of the molten metal than a core built up by hand in the usual manner.

The use of the riddle G prevents the introduction into the opening x or tube E of large pieces which might obstruct the same and interfere with the formation of the core, and also separates the particles, so that they are carried by the air-blast without contact with the tube or plate E, and thereby prevented from adhering thereto. The riddle is revolved from a shaft, d, by means of a belt and pulley, and a hammer, H, is lifted by arms i to fall on and strike the riddle at regular intervals, so as to loosen the sand from the sieves, preventing the latter from becoming clogged up.

To regulate the force of the air-current, the box C is provided with an opening covered by a slide, p, which may be moved to a greater or less extent to permit the escape of a portion of the air, and thereby reduce the pressure in the box.

It will be obvious that the air-passage may be supplied with sand by feeding it in any other manner than that described that will secure the introduction of small quantities across the whole width of the passage in a regular manner.

I do not here claim the process of packing sand in cores, herein set forth, as the same constitutes the subject of a separate application.

Without therefore limiting myself to the precise construction and arrangement of parts described,

I claim—

1. The combination, in a core-making machine, of a mandrel and means for turning the same, a tube arranged with its end opposite the mandrel and communicating with a blowing apparatus, and means, substantially as described, for feeding green sand regularly into the tube, substantially as set forth.

2. The combination of the mandrel, tube

communicating with the blowing apparatus, and hopper arranged above and communicating with the tube, substantially as specified.

3. The combination of the mandrel, tube, blowing apparatus, hopper, and riddle arranged above the hopper, for the purpose set forth.

4. The combination, with the mandrel, blowing apparatus, and hopper, of a riddle

and hammer arranged to strike the riddle at intervals, substantially as specified.

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

JAMES SCULL.

Witnesses:

WM. H. VANCE,

EDWARD BLANCHARD.