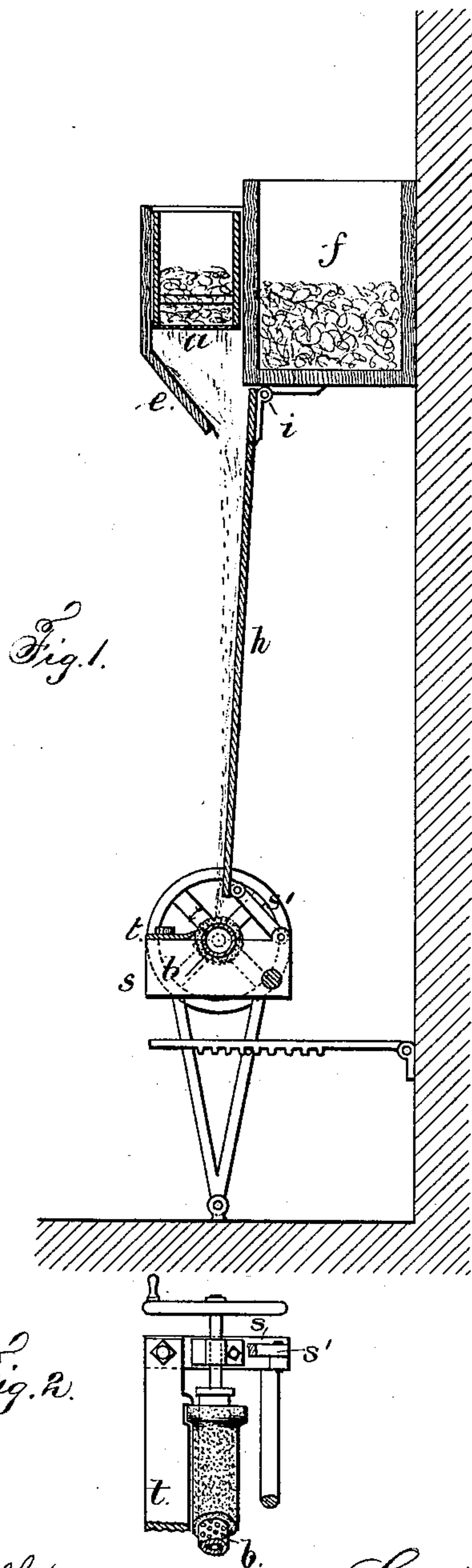


(No Model.)

L. G. GOLDSMITH.  
MAKING CORES FOR CASTING.

No. 256,209.

Patented Apr. 11, 1882.



Witnesses

Chas H. Smith  
Harold Ferrell

Inventor

Lewis G. Goldsmith  
By Samuel W. Ferrell  
att'y

# UNITED STATES PATENT OFFICE.

LEWIS G. GOLDSMITH, OF PORT CHESTER, ASSIGNOR TO THE J. L. MOTT  
IRON WORKS, OF NEW YORK, N. Y.

## MAKING CORES FOR CASTINGS.

SPECIFICATION forming part of Letters Patent No. 256,209, dated April 11, 1882.

Application filed January 30, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, LEWIS G. GOLDSMITH, of Port Chester, in the county of Westchester and State of New York, have invented an Improvement in Making Cores for Castings, of which the following is a specification.

Cores for casting iron pipes are made upon a perforated tube or core-bar by the use of molding-sand that is in a sufficiently moist condition to be adhesive. The same is packed around the core by hand while the bar is revolved. The surplus sand is turned or cut off by a knife or cutter. It is tedious and expensive to form these cores, and there is difficulty in packing the sand with uniformity. If it is too dense, the moisture does not escape inwardly with sufficient freedom. If it is not packed with sufficient firmness, the core is liable to break.

My invention relates to a method of and means for making sand cores, whereby the operation is rendered very much more perfect and the expense for labor is lessened. If the moist or "green" sand, as it is termed, is allowed to fall from a sufficient height, it will adhere and pack by the force of gravity, and the concussion and consequent density of the core will depend upon the height from which the sand is allowed to fall, or the unobstructed circumstances of such fall.

My invention therefore consists in the method of forming sand cores, consisting in causing the sand to fall from a proper height upon the core-bar to cause it to adhere thereto and pack, and revolving such core-bar during the fall of the sand, so that the sand is packed all around upon such core-bar, and then removing the surplus sand by a knife or cutter to render such core cylindrical and of the proper size and shape; also, in the mechanism by which this method is carried into operation in an easy and efficient manner.

In the drawings, Figure 1 represents a vertical section of the devices employed by me for making the said sand cores; and Fig. 2 is a partial plan, representing one end of the frame and adjacent parts.

The sieve *a* is placed at a sufficient height above the core-bar *b* that the sand sifted

through said sieve will always fall with the necessary velocity and strike upon the core-bar with the required initial force to cause it to adhere and to pack with the maximum density. This sieve is of any desired construction, and it should be as long as the longest core to be formed. It can be hung from the ceiling, and the necessary endwise shaking motion be given by any suitable means. The deflector *e* serves to direct the sand as it is sifted so that it falls upon the revolving core.

There may be a bin or receptacle, as at *f*, from which sand is thrown from time to time into the sieve, and I remark that the sieve may be suspended by ropes and pulleys, so as to vary the height from which the sand falls upon the core; but it will generally be preferable to employ the swinging deflector-board *h*, that is hinged at *i*, and upon which the sand falls and is guided to the core. If this deflector is nearly vertical, it does not perceptibly lessen the speed of the falling sand; but the more it is inclined the more the momentum of the sand will be checked. This deflector therefore becomes an easy means for regulating the density with which the sand of the core can be packed. This deflector may be moved into a more or less inclined position by any convenient means; but as its lower edge should be above the center of the core, I prefer to connect the deflector at its lower end by a link, *s'*, to the frame *s*, that carries the revolving core, and to move that frame and the core laterally by a lever or any other convenient device which will hold the frame and core in any position to which it may be moved.

It is to be understood that the tubular core-bar *b* is of perforated metal, and that it is mounted at its ends upon centers, so that it can be revolved in a manner similar to an article to be turned in a lathe, such core and its centers and revolving devices being well known in the manufacture of cylindrical cores. In the drawings, the frame *s* represents the frame at one end carrying one center for the core, and *t* the knife for cutting off surplus sand. As the sand falls and adheres to the tubular metal core-bar such bar is turned around gradually and increases in size by the accumulation



of the adhering sand. The sand that does not adhere falls down below the core upon the floor. So also does the surplus sand cut off by the knife *t*. As soon as the core is formed so  
5 that its entire surface is cylindrical the sieve should be stopped, so that no more sand will fall, and the core will be of the shape produced by the standing knife taking off surplus sand as the core is revolved. The core-bar and core  
10 are then removed and another core-bar inserted and the operation repeated.

The screen should have cross-pieces within it to aid in spreading the sand uniformly upon the sieve.

15 The sand may be taken away from below the core by an apron and may be supplied into the sieve by elevator-buckets.

I claim as my invention—

1. The method of forming sand cores, consisting in causing the sand to fall from the  
20 proper height upon the core-bar to cause it to adhere thereto and pack, revolving such core-bar during the fall of the sand, and then removing the surplus sand by a knife or cutter, substantially as set forth. 25

2. The combination, with the revolving core-bar and stationary cutter, of the elevated sand-screen and the swinging deflector, substantially as set forth.

Signed by me this 26th day of January, A. 30  
D. 1882.

LEWIS G. GOLDSMITH.

Witnesses:

GEO. T. PINCKNEY,  
WILLIAM G. MOTT.