

(No Model.)

J. S. SMITH.

REVOLVING TABLE FOR TILE MILLS.

No. 300,909.

Patented June 24, 1884.

Fig. 1.

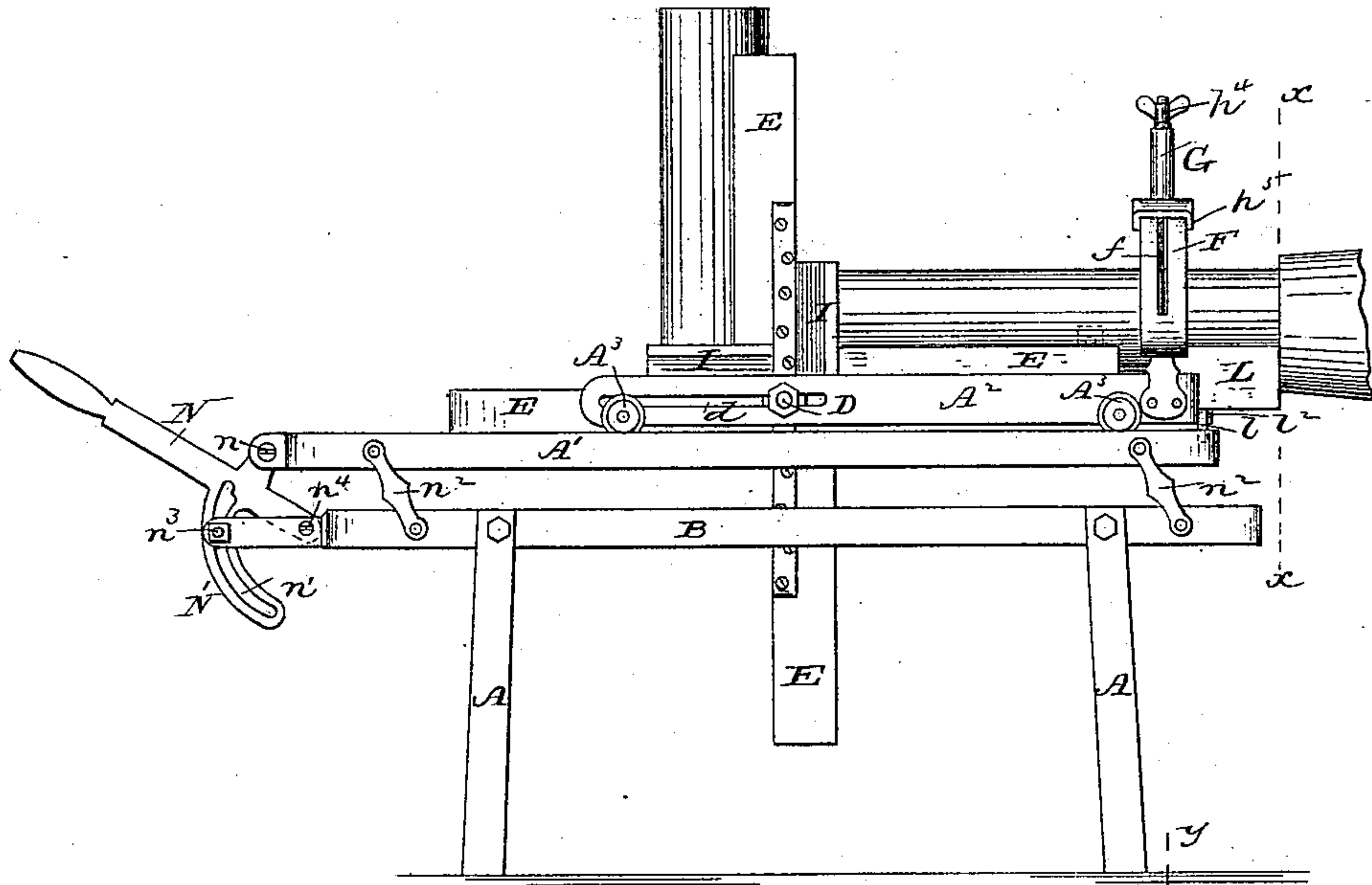


Fig. 2.

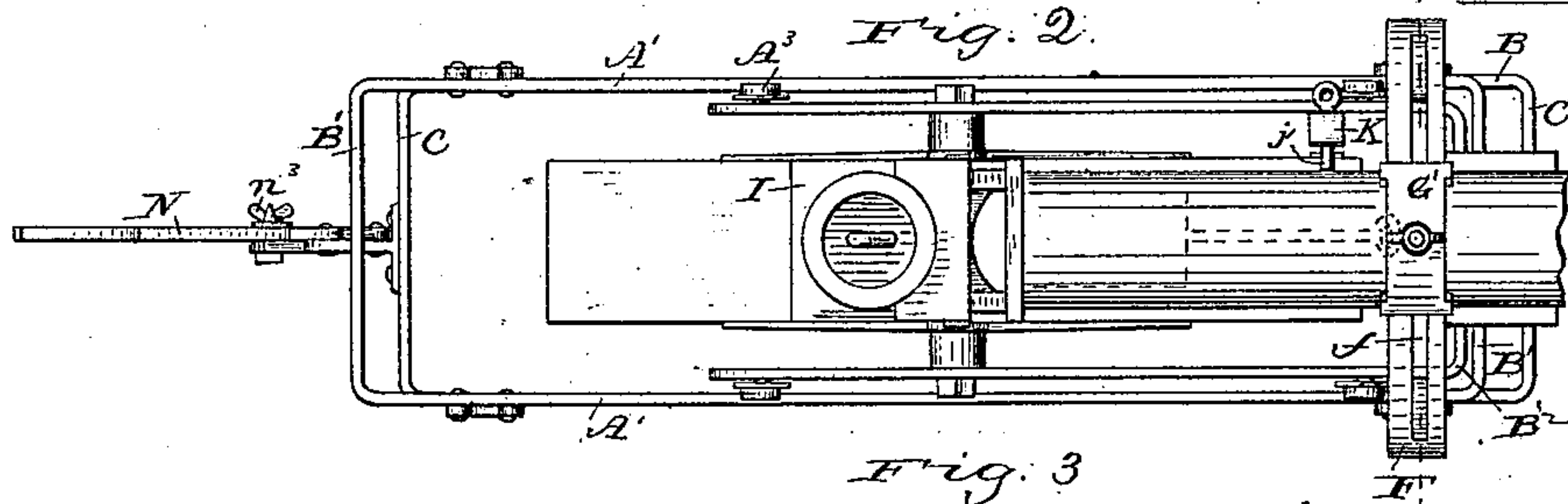
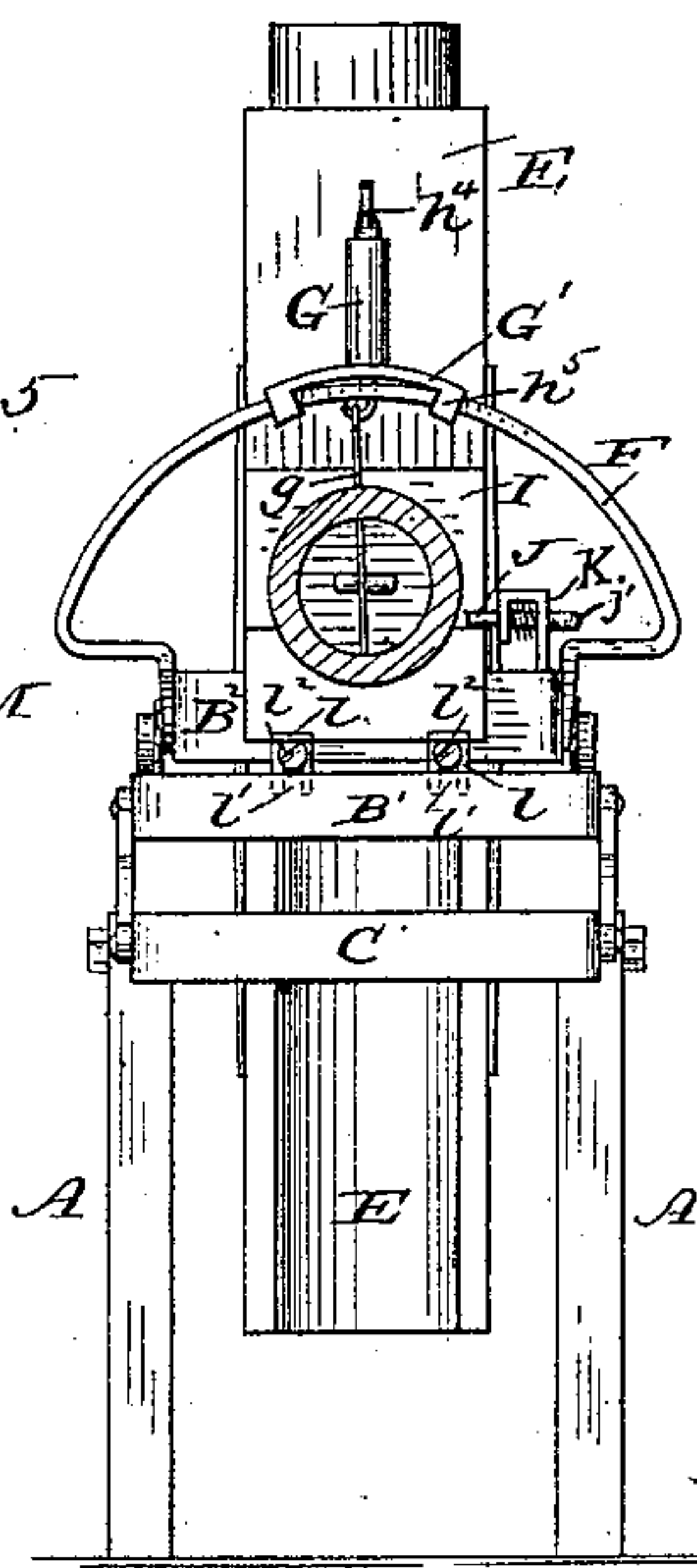
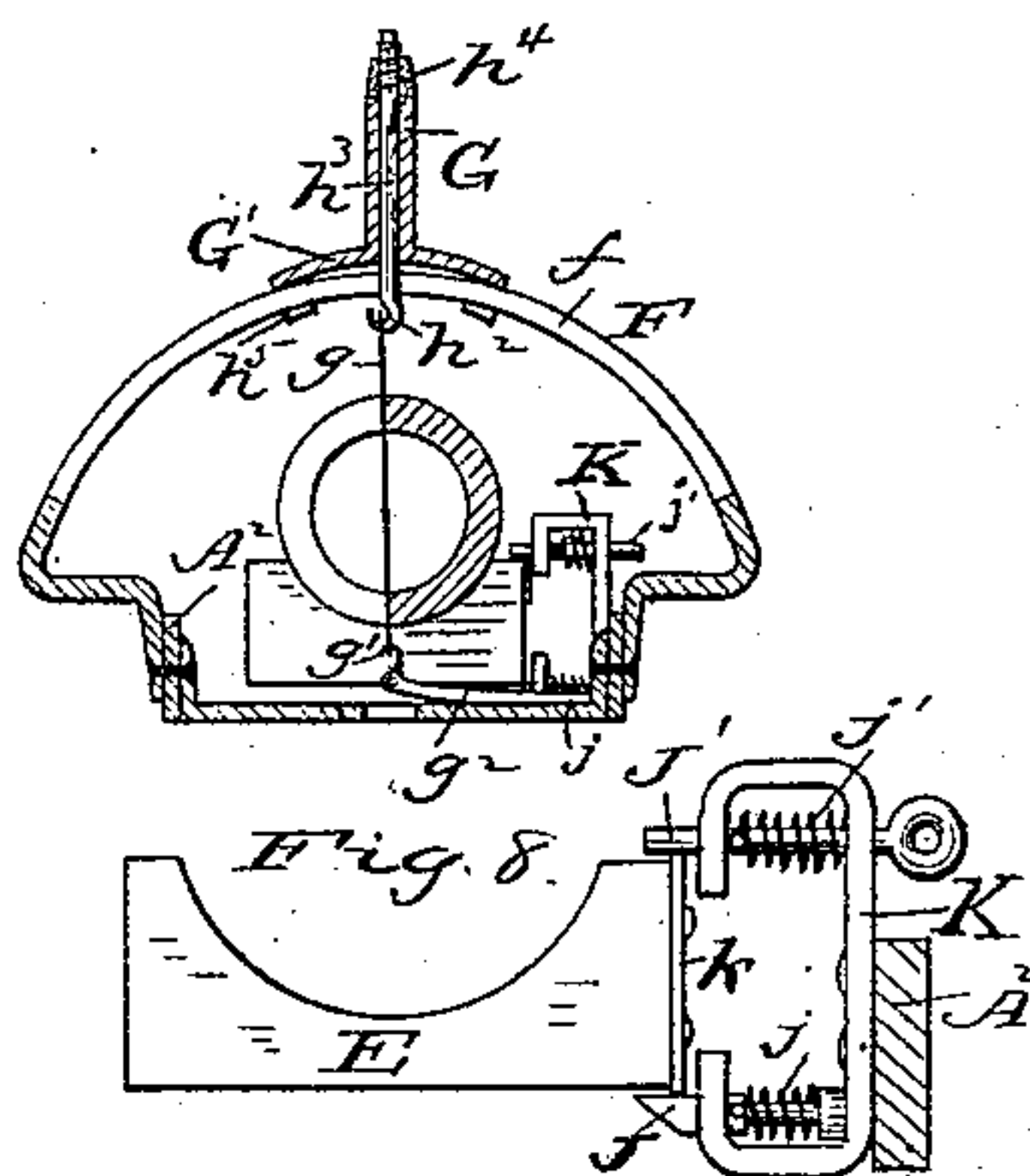


Fig. 3



y Fig. 4.



Inventor:

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UNITED STATES PATENT OFFICE.

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REVOLVING TABLE FOR TILE-MILLS.

SPECIFICATION forming part of Letters Patent No. 300,909, dated June 24, 1884.

Application filed May 29, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOHN S. SMITH, of the city of Jackson, county of Jackson, and State of Michigan, have invented certain new and
5 useful Improvements in Revolving Tables for Tile-Mills, of which the following is a specification.

My said invention consists in a revolving table mounted upon an axis, the wings where-
10 of are severally adapted to receive the tile as it issues from the mill and then be advanced, and a catch or means of holding said table at the points severally where it is desired that it shall stop, as will be presently more fully de-
15 scribed.

It further consists in the combination, with a tile-mill, of a revolving table, the surface of one side of the wings whereof is concave and the other flat. It does not, however, consist,
20 broadly, in the combination, with a tile-mill, of a revolving table adapted to receive the tile on their sides as they issue horizontally from the mill and afterward raise them on end; nor of such a table one side of each arm whereof
25 is formed to act as a rest for the newly-formed tile, and the other to sustain a pallet or plate on which the tile shall be received as the table revolves.

Letters Patent No. 267,760, dated November
30 21, 1882, having been issued on an application which was a division of this case, the subject-matter of said application is of course included in this specification; but it will be understood that such subject-matter forms no
35 part of the invention herein claimed.

Referring to the accompanying drawings, which are made a part hereof, and on which similar letters of reference indicate similar parts, Figure 1 is a side elevation of a machine
40 embodying my improvements; Fig. 2, a top or plan view thereof; Fig. 3, an end elevation, as seen from the dotted line *xx* in Fig. 1; Fig. 4, a section of the upper frame on the dotted line *yy* in Fig. 2; Figs. 5, 6, and 7, views of
45 the interior supporting-drum, and Fig. 8 a detail view of the spring-catch and one of the wings of the table while in engagement therewith.

The machine, or the parts thereof essen-
50 tially intended to carry out my invention, may

be combined with a tile-mill of any of the well-known forms, or with one of any preferred character. It may be mounted upon a frame-work of any suitable character more or less different from that shown.

In the drawings, I have shown a main supporting-frame constructed of the uprights or legs A A, the sills or longitudinal pieces B B, and the cross-pieces C C. The legs or supports A A may be permanently fastened to the
55 other parts of the frame, or they may be detachably connected thereto, and also may be made in such manner that the height of the machine can be adjusted upon them. Upon this frame is mounted another, adapted to be
60 moved up and down to a limited extent, the latter frame consisting of the side pieces, A', and two or more cross-pieces, B' B'. These two frames are connected by means of links n^2 and curved connecting arm or bar N'. The
65 said bar is slotted, as at n' , and pivoted at n to the upper frame, there being a set-screw, n^3 , in the slot n' , by which the frame A' B' may be supported in any desired position.

N is an adjustable handle carried by the
75 frame N' and pivoted at n^4 to the frame B. By means of this the adjustment can be readily and instantly made. A sliding frame is supported upon the frame A' B' and arranged to carry the revolving tile-supports. It is con-
80 structed of side bars, A², and an end bar, B², and is mounted upon the frame A' B', preferably by means of rollers A³, which permit it to easily slide upon the lower frame. Upon this frame is mounted a transverse shaft, D.
85 To the shaft are secured four wings, E E E E, or recessed plates, they being situated at, substantially, ninety degrees apart. At one end of the frame A² B² there is arranged a cut-off mechanism. Preferably it consists of an arched
90 plate, F, provided with a slot, f , and the wire-carrying arm G. The wire g is so arranged that as the arm or handle G is caused to traverse the arched plate F the wire cuts the tube of clay and forms a tile of the proper
95 length. In the construction shown in the drawings, the wire has its lower end attached to an eye, g' , which is connected by a hinge with the spring g^2 , the spring being arranged to yield somewhat, so that when the wire 100

comes in contact with small stones or other hard substances in the clay the wire may yield sufficiently to prevent a marring of the tile. At the upper end the wire is attached
5 to an eye or hook, h^2 , at the lower end of a threaded rod, h^3 . This threaded rod is held in the carrying-arm G, which is provided with a longitudinal aperture to receive it.

h^4 is a thumb-nut engaging by thread connection with the rod h^3 , and by means of it the tension of the wire may be delicately adjusted. The wire-carrying arm G is cast with or secured to a curved plate, G' , which conforms as accurately as possible to the outer face of
15 the arched-plate F, it being formed with lugs or ears h^5 , which are turned down and under the plate F, to provide a clamp to hold the plate F in place. The inner end of the wire-carrying rod h^3 moves back and forth in the
20 slot f . However, I do not limit myself to this exact form of cutter, for some of the features of my machine may be embodied without its being restricted to this form of cutter, though I find that my form possesses advantages when
25 combined in the way shown with the parts to be hereinafter described.

Before the tile is cut the frame $A^2 B^2$ is moved up into proper position relatively to the tile-mill. As the tile issues from the mill
30 it is deposited upon the trough or curved plate E, that has been brought up to receive it. It moves along said trough or plate until it strikes against a removable plate, I, that is placed against the back of the wing E, which is in a
35 vertical position. After it strikes against the vertical plate I, the upper frame moves relatively to the lower frame, and the tile is then cut. As soon as cut the shaft D is revolved one-quarter of a revolution, which brings the
40 tile from the horizontal position into the vertical position, it resting, after being brought into the vertical position, upon the removable plate I. It can be readily taken away while standing vertically by removing the plate I,
45 which has now been brought into a horizontal position. Throwing the tile into the vertical position, and with it the wing E, with which it is in contact, brings the next wing or curved plate into a horizontal position proper
50 to receive the next tile. Before the succeeding tile has been entirely received upon the wing, the upper frame should be removed back into its original position relatively to the tile-mill.

It will be seen that the four wings E E E E form a revolving table, and that each part of the table in turn receives a tile in a horizontal position and raises it on end before it is removed from the table. With the revolving
60 table I combine a spring-catch which operates to stop the table in a proper position to receive the tile, and which can be withdrawn to permit the next movement of the table. I have shown in the drawings one form
65 of spring-catch, though others will readily suggest themselves, adapted to perform sub-

stantially the same operations. The one shown consists of a laterally-moving piece, J, which permits the plates successively to come up to a horizontal position, and a lateral part, J' ,
70 which prevents them from rising above said position until it (said part J') has been intentionally withdrawn by the operator. The part J of the stop prevents the plates from moving downward while they are receiving
75 the tiles. Both of these parts J J' may be made in one piece of metal, as will be readily understood. For some purposes, however, I prefer to construct them separately, as shown, and provide each of them with an independent
80 spring, part J being beveled or having its inner lower edge rounded, so as to permit the upward movement of the parts of the revolving table, it (said part J) moving out of the path until the plate or trough has passed it, and then
85 moving again below the plate or trough, this movement being caused by the spring j . The part J' is held across the path of the plate or wing by means of a spring, j' . When the spring-catch is thus constructed and arranged,
90 I mount the parts thereof in a bracket-piece, K, carried by the frame which supports the table.

To prevent the plates or wings from being worn away by the action of the spring-catch, I provide each of them with wearing-
95 plates $k k$, so situated that when the catch engages with the plates the contact shall be received by them.

With the revolving table I (to get the best
100 results) combine a stationary table or trough, L, so situated as to first receive the tile as it issues from the mill and before it is cut. It is secured in position by means of angle-irons
105 $l l$, which are slotted, as at l' , to receive the clamping-screws l^2 , whereby the trough L is secured to the frame. If vertical adjustment is necessary, it is permitted by the slots l' . As the tile issues from the mill, I insert into the
110 end thereof a detachable cylinder or drum, M, of suitable length, the external diameter of which is substantially the same as the internal diameter of the pipe or tube of clay. I leave it there until the tile has been turned
115 upon end, after which I draw the drum through the tile from the end into which it was inserted to the other. The objects of this are, first, to keep the end of the tile from flattening as it runs along the trough; and, secondly,
120 to form a perfect cylinder of clay and remove or clean away the ragged edges that are generally left by the wire on the inside of the tile, in this way obviating the tedious process of trimming or finishing with a knife that is now necessary. The revolving table is adjustable
125 in the rolling-frame which carries it, the adjustment being effected by means of slots $d d$ in the side pieces of the frame, and the shaft D, which can be moved in said slots and secured in different positions by means of clamping-
130 nuts $d' d'$.

The drum or cylinder M is preferably con-

structed as shown—that is, with heads *m m* and slats *m'*, fastened thereto. In order to draw it easily through the tile, a handle may be attached to it, as shown in Figs. 4 and 5, or a separate handle may be used in withdrawing it, as shown in Fig. 7; but I do not limit myself to the use of such handles, as the purposes of the drum can be accomplished without such a device.

10 Having thus fully described my said invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of a tile-mill, a frame, a revolving table mounted in said frame, and 15 catches secured to said frame, and adapted to engage with and hold the wings of said table.

2. In a tile-mill, the combination of the revolving table consisting, essentially, of wings mounted on an axis, and a spring-catch, said 20 wings being arranged to be consecutively caught and retained by said catch.

3. The combination, with the revolving table consisting of wings *E*, provided with wearing-plates *k*, of a catch for holding the table, said 25 plates being arranged to come in contact with said catch as the table revolves.

4. The combination, with a revolving table, of a catch consisting of a bracket, *K*, and spring-pins mounted therein, substantially as set forth. 30

5. The combination, with the wings of a revolving table for tile-mills, of a catch consisting, essentially, of two spring-mounted pins, *J* and *J'*, substantially as described, and for the purposes specified. 35

6. The combination, with a revolving table for tile-mills, consisting, essentially, of wings to receive the tile, coming together at a common center and mounted on a shaft, of means for catching and holding said wings consecu- 40 tively, substantially as set forth.

7. In combination with a tile-mill, a revolving table, the surface of one side of the wings thereof being concave and the other flat.

In testimony whereof I affix my signature in 45 presence of two witnesses.

JOHN S. SMITH.

Witnesses:

A. E. VANDERCOOK,
ERASTUS PECK.