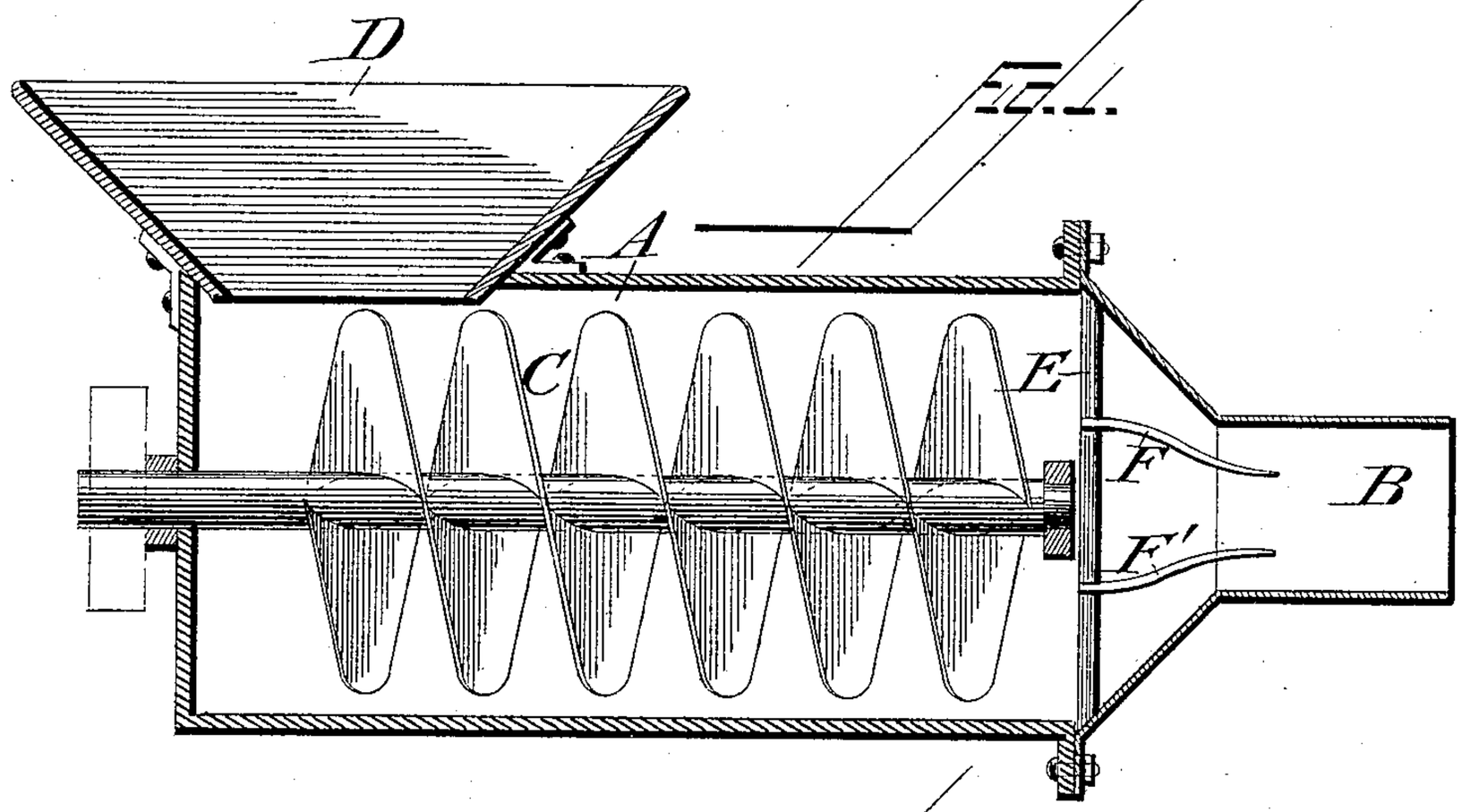
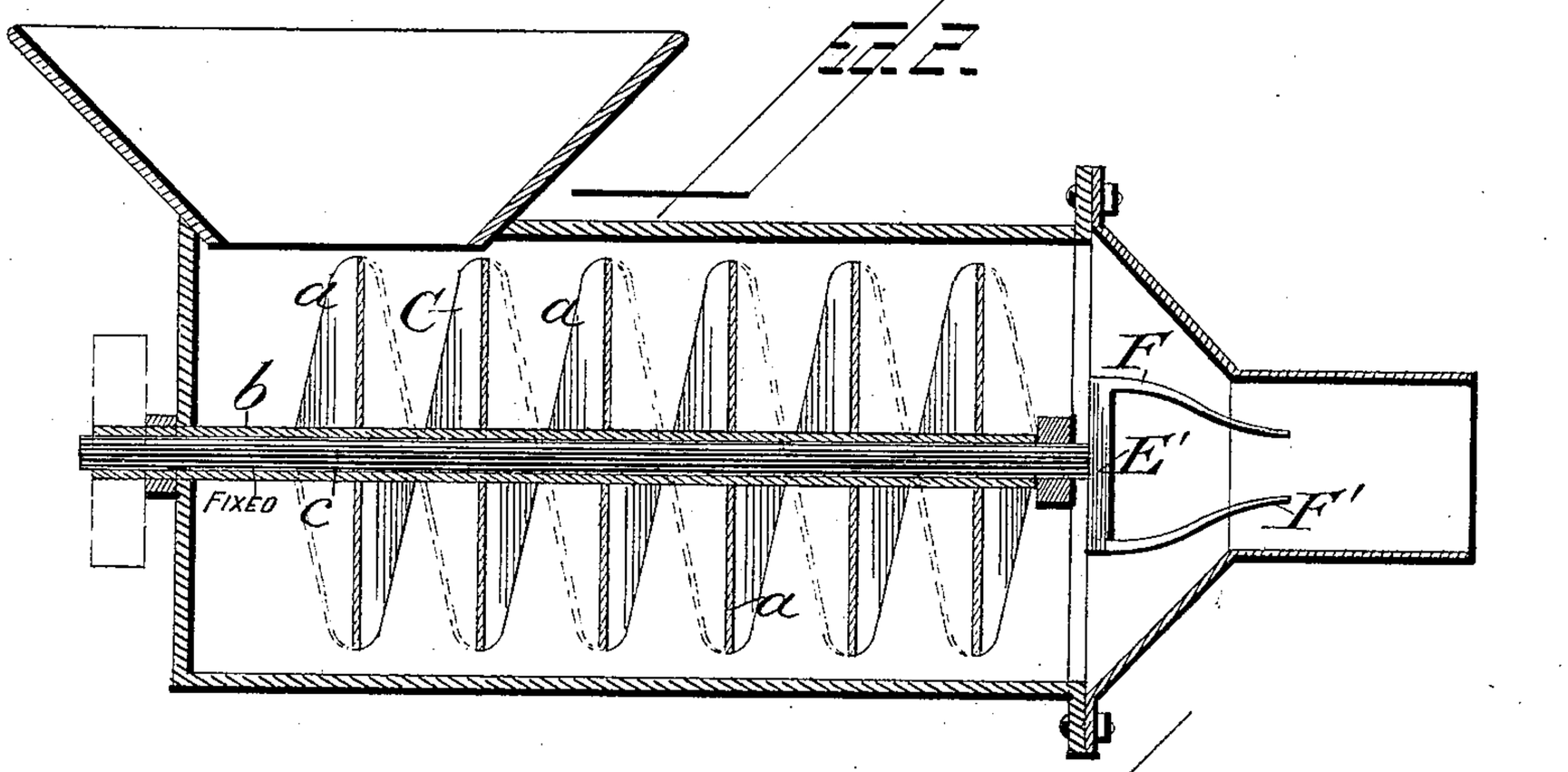
(No Model.)

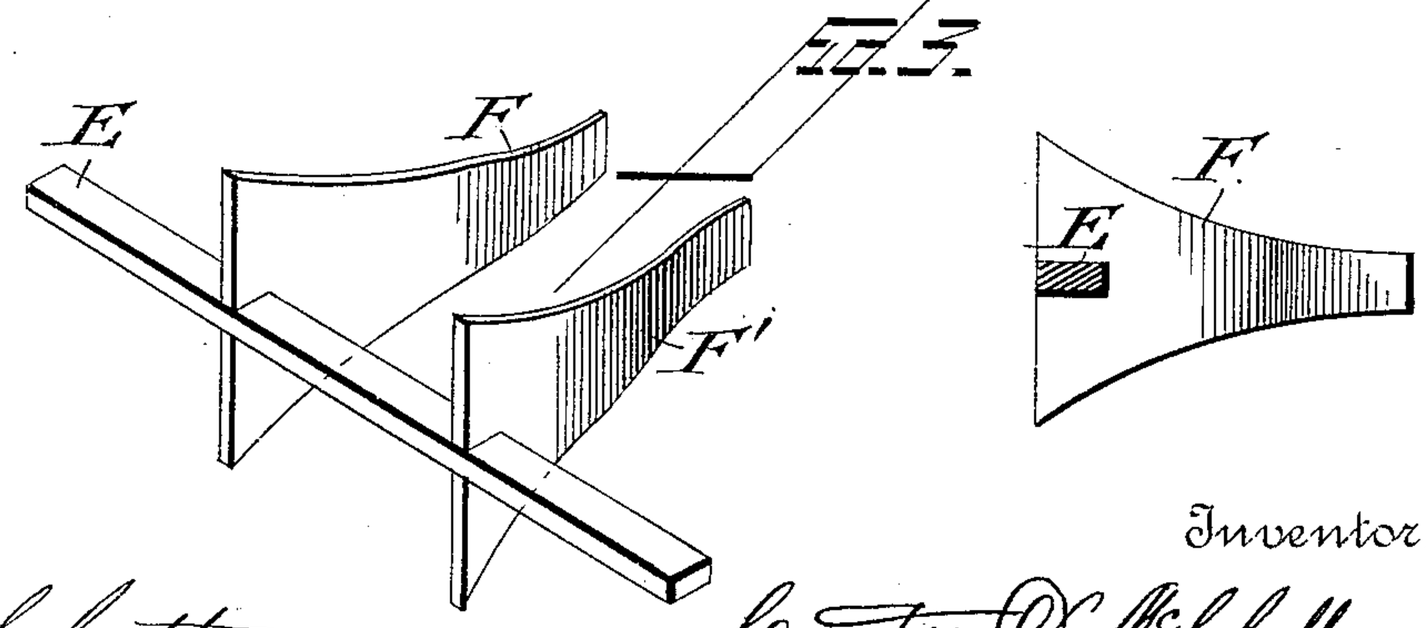
C. D. McCLELLAN.

DEVICE FOR BREAKING UP THE LAMINATIONS OF THE CLAY IN SCREW BRICK MACHINES.

No. 390,879. Patented Oct. 9, 1888.







Witnesses.

F. H. Schott.

Fred. E. Tasker.

Inventor.

Curtis D. McClellan.

By his Attorney John C. Tasker.

N. PETERS. Photo-Lithographer. Washington, D. C.

UNITED STATES PATENT OFFICE.

CURTIS D. McCLELLAN, OF KEOTA, IOWA.

DEVICE FOR BREAKING UP THE LAMINATIONS OF THE CLAY IN SCREW BRICK-MACHINES.

SPECIFICATION forming part of Letters Patent No. 390,879, dated October 9, 1888.

Application filed February 2, 1888. Serial No. 262,726. (No model.)

To all whom it may concern:

Be it known that I, CURTIS D. McCLELLAN, a citizen of the United States, residing at Keota, in the county of Keokuk and State of Iowa, have invented certain new and useful Improvements in Devices for Breaking Up the Laminations of the Clay in Screw Brick-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in brick-machines, and more particularly to that class of brick-machines wherein the clay is fed forward to the mold by means of a feed-screw, the object of the invention being to break up the laminations or spiral structure of the clay or other substance caused by the peculiar folding of the clay or mud in thin layers by the screw mixer, plunger, or feeder; and the invention consists in the construction, arrangement, and combination of parts, substantially as will be hereinafter described and claimed.

In the accompanying drawings, illustrating my invention, Figure 1 is a sectional side elevation of a brick-machine provided with my improvement. Fig. 2 is a similar view showing a modification of the invention. Fig. 3 is a detail view of the device which serves to break up the laminations in the clay when the latter is forced against it.

Similar letters of reference denote corresponding parts throughout the different figures.

A represents a horizontal chamber, preferably of cylindrical form, which contains the feed-screw C or other device, by means of which the clay, which enters said horizontal apartment through some convenient feed-trough, as D, is fed forward to the brick-mold or clay-chute B, arranged upon the end of the horizontal clay-chamber. Through the part B the clay is forced in such a manner that it will emerge from the outer end in compact bars, the sides and edges of which will have the proper form, which bars may be cut into the desired lengths for bricks by any convenient cut-off mechanism.

I have just enumerated the essential parts of the simplest form of a brick-machine of the class to which my invention is particularly applicable. I do not confine myself to any special arrangement, form, or construction of these parts, inasmuch as my invention is useful with all the different forms of brick machinery wherein a feeding device forces the clay into a brick-mold, whence it emerges as a bar of clay.

It is well known by those versed in the art of brick-making that the clay which is acted upon by a feed-screw or other rotative forcing device will have imparted to it a spiral structure. The continued action of the rotating screw upon the mud or clay causes the latter to be folded into thin layers; hence it is common to find that the bricks formed out of this clay are not solid, but consist of spiral or convoluted laminations, so that consequently they are of an inferior quality. It is to obviate this difficulty and to destroy this spiral structure in the clay that I have devised the present invention, and I accomplish my object by interposing in the path of the clay at a point in advance of the end of the feed-screw and before the mouth of the clay chute or mold certain devices, which will now be described.

In the end of the horizontal cylinder or chamber A a bar, E, is fixed vertically, as is shown in Fig. 1, so as to lie centrally across the entrance to the chute B. I confine myself to no particular and definite arrangement of the bar E further than that it shall lie between the chute B and the cylinder A, so that the clay will strike it before it enters the part B. This bar E supports arms or plates F F′, affixed rigidly thereto and extending horizontally therefrom toward the passage B, which they may enter for a short distance, if desired, as will be perceived in Fig. 1.

The shape of the plates F F′ which I preferably adopt is best shown in Fig. 3. They are somewhat of a triangular form and affixed to the bar so as to present one long side to the advancing clay, while the apex of the triangle opposite said side projects into the chute B. Furthermore, as regards their relative position it is preferable to have them incline toward each other, as shown in Fig. 1. The peculiar shape and arrangement of these parts just described enables the central portion of the mud or clay column to be retarded in its advance movement, and thus checked or held back, so that the mud as it goes into the brick-

mold will have a straight grain and the spiral structures be destroyed. All unevenness in the density of the mud or clay will be broken up, leaving it with an even density, so that when cut by the cut-off mechanism into bricks they will be free from all tendency or liability to warp or crook out of the proper shape after they have been placed in the kiln to dry before burning. It will be perceived that by the use of my improved mechanism the central portion of the clay column will not be more compact than the outermost parts. It is in this way that the resulting brick is so formed as to be permitted to dry equally. A brick true in form is produced—one that will not bulge on the side or the end while undergoing the drying process, and one, also, that can be cut by a trowel with equal facility as a hand-molded brick.

A slight modification in the arrangement of parts of my invention is shown in Fig. 2. There the shaft *b* of the feed-screw, which carries the augers *a a*, instead of being solid, is made hollow. Inside of this hollow shaft *b* is a stationary solid rod, *c*. To the extremity of this solid rod *c* located nearest to the brick-mold is secured a bar, E′, which corresponds to and is the equivalent of the bar E of Fig. 1. The bar E′ has secured to it the plates or arms F F′ similarly to the manner in which these same parts are secured to the bar E in Fig. 1.

I have above described the preferable way in which the arms or plates F F′ may be constructed; but I do not limit myself to this form, but reserve the liberty of varying their structure to meet the exigencies of individual cases, so that the best results may in each case be accomplished.

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

1. In a brick-machine, the combination, with the clay-cylinder and the brick-mold, of suitable devices arranged near the mouth of the mold for the purpose of destroying the laminations in the clay, and consisting of a supporting-bar and horizontal plates or arms secured thereto and projecting toward the mold, substantially as and for the purposes described.

2. In a brick-machine, the combination, with the clay-cylinder, the rotative feed-screw or other device therein, and the brick-molding devices, of devices for destroying the laminations in the clay, consisting of suitable horizontal plates or arms arranged on a bar in the path of the clay and before the mouth of the mold, substantially as and for the purposes described.

3. In a brick-machine, the combination, with the clay-cylinder and the brick-mold, of the tapered plates and the supporting-bar therefor arranged before the mouth of the mold, substantially as described.

4. In a brick-machine, the combination, with the clay-forcing mechanism and the brick-mold, of the devices for destroying the laminations in the clay, consisting of the plates F F′, shaped substantially as specified, and the supporting-bar E for said plates, all arranged to operate in the manner set forth.

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

CURTIS D. McCLELLAN.

Witnesses:

A. S. FOLGER,

ALBERT PHILPS.