J. S. ELLIOTT.

MACHINE FOR MIXING THE MATERIALS TO FORM ARTIFICIAL STONE, &c.

No. 110,023. Patented Dec. 13, 1870.

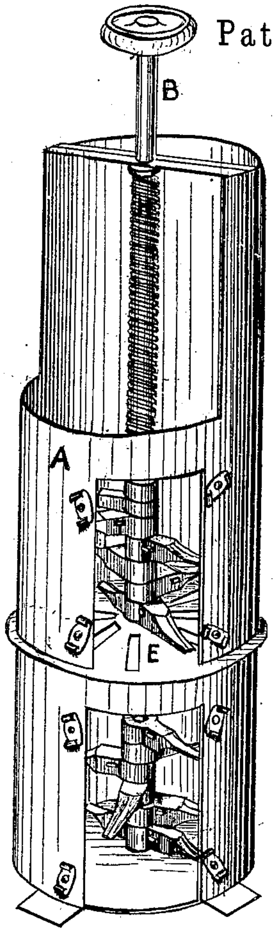

Fig. 1

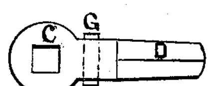

Fig. 3

Fig. 4.

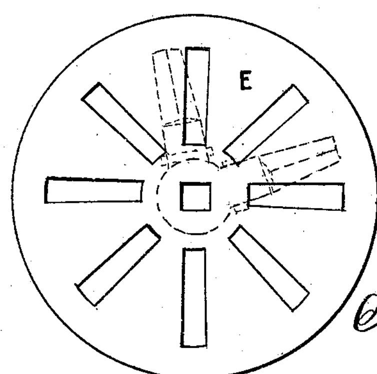

Fig. 2

Josiah S Elliott

Inventor

Witnesses { Henry F. French
Jn. O. Wood

United States Patent Office.

JOSIAH S. ELLIOTT, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO "THE UNION STONE COMPANY," OF SAME PLACE.

Letters Patent No. 110,023, dated December 13, 1870.

IMPROVEMENT IN MACHINES FOR MIXING THE MATERIALS TO FORM ARTIFICIAL STONE, &c.

The Schedule referred to in these Letters Patent and making part of the same.

Be it known that I, JOSIAH S. ELLIOTT, of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Mixing-Machines for mixing materials, whether dry or wet, for forming artificial stone or other compounds.

In manufacturing artificial stone, emery wheels, and the like, for the Union Stone Company, we find the process of mixing the materials by hand-labor laborious and expensive.

I am aware that various machines for mixing materials for bricks and the like have been used, but I know of none suitable for our purposes.

The first part of my invention relates to a slotted diaphragm, which divides the cylinder into two or more parts, sustaining the mass of materials, so that they may not pack heavily by their own weight, assisting to cut in pieces and grind any lumps, and giving double effect to the machine.

The second part relates to forming the knives or cutting portions in two parts, consisting of a socket and blade, so that the blade may be readily and cheaply replaced when worn out or broken, and fastening the blade to the socket with a key of wood, which holds together the socket and blade firmly, without danger of breaking, and is easily driven and removed.

The third part relates to the spring by which the knives are relieved when a stone or other hard substance gets between them and the diaphragm, and which tends to keep the knives firmly down upon the diaphragm in ordinary use.

Descriptions of the Drawing.

Figure 1 is an elevation of the whole machine.

Figure 2 is a plan of the diaphragm.

Figure 3 is a view of the knives and sockets from above.

Figure 4 is a side view of knife and socket.

A is the cylinder inclosing the machine, which may be of iron, wrought or cast.

B is the central shaft, to which the power is applied and upon which the knife-sockets slide.

C is a knife-socket, and

D is a knife-blade.

The knives which run upon the diaphragm are flat upon the under side. The other knives may be beveled on both sides.

E is the diaphragm, of iron or other metal, which divides the cylinder, having slots, through which the materials fall in the process of mixing, the edge of the slots being beveled on the under side, to form a cutting-edge on the upper side.

G is the wooden key, which holds the knife in its socket.

H is the spiral spring around the shaft, which keeps the knives down in place in ordinary operation, but allows the knives which run upon the diaphragm to lift and prevent breaking when a stone or other substance too hard to be cut passes between the diaphragm and the knives.

The opening at the top is for convenient feeding the machine, and the other openings are for relieving the machine when clogged, and for access for repairs, and for removing the materials when mixed.

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

1. The slotted diaphragm, which divides the cylinder into two or more parts, constructed substantially as and for the purposes described.

2. The knives, made in two parts, of socket and blade, substantially as and for the purposes described.

3. The spiral spring, substantially as and for the purposes described.

JOSIAH S. ELLIOTT.

Witnesses:

JNO. F. WOOD,

HENRY F. FRENCH.