

No. 659,934.

Patented Oct. 16, 1900.

W. A. MERRALLS.  
MORTAR FOR STAMP BATTERIES.

(Application filed July 11, 1900.)

(No Model.)

Fig. 1.

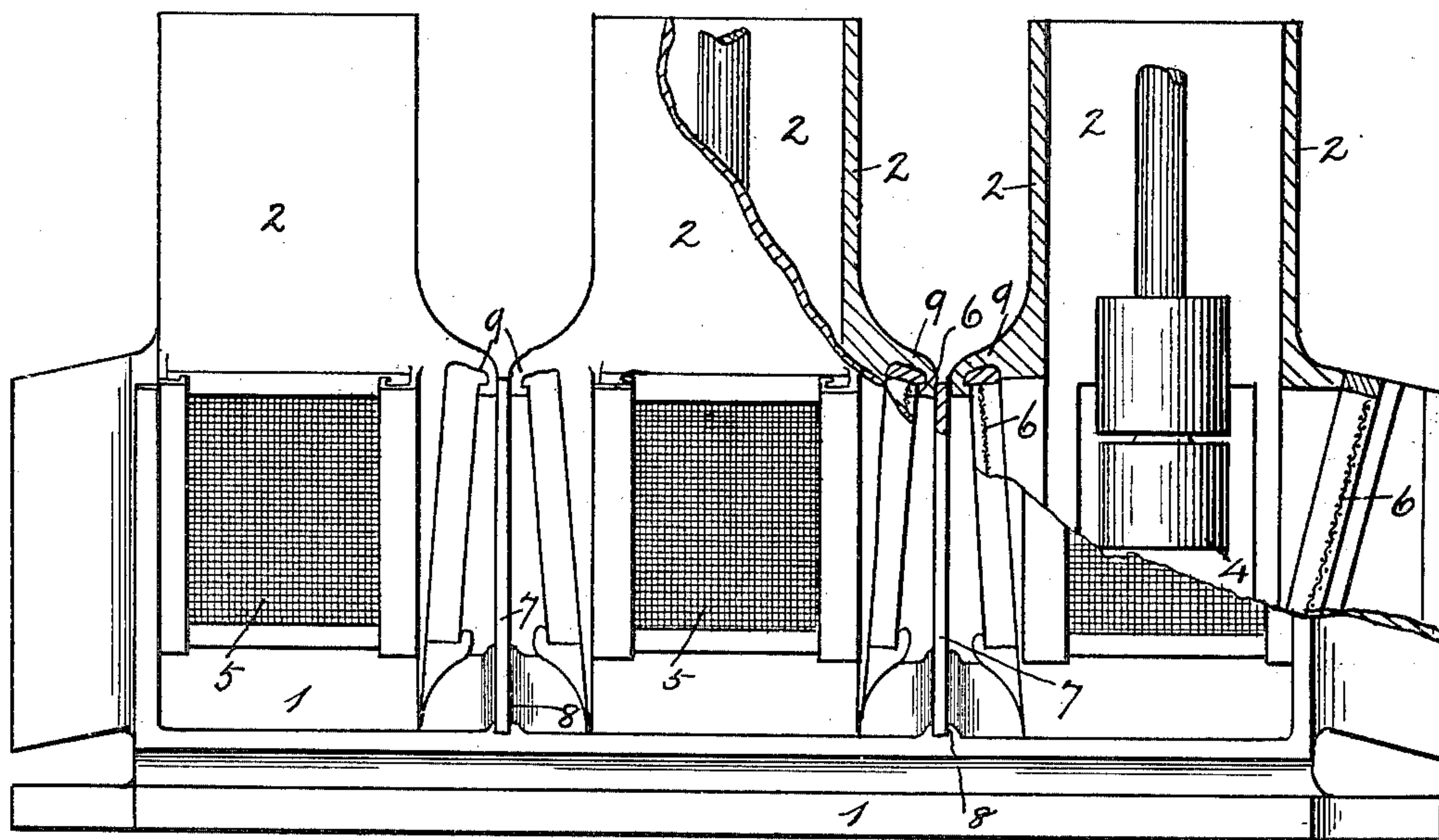
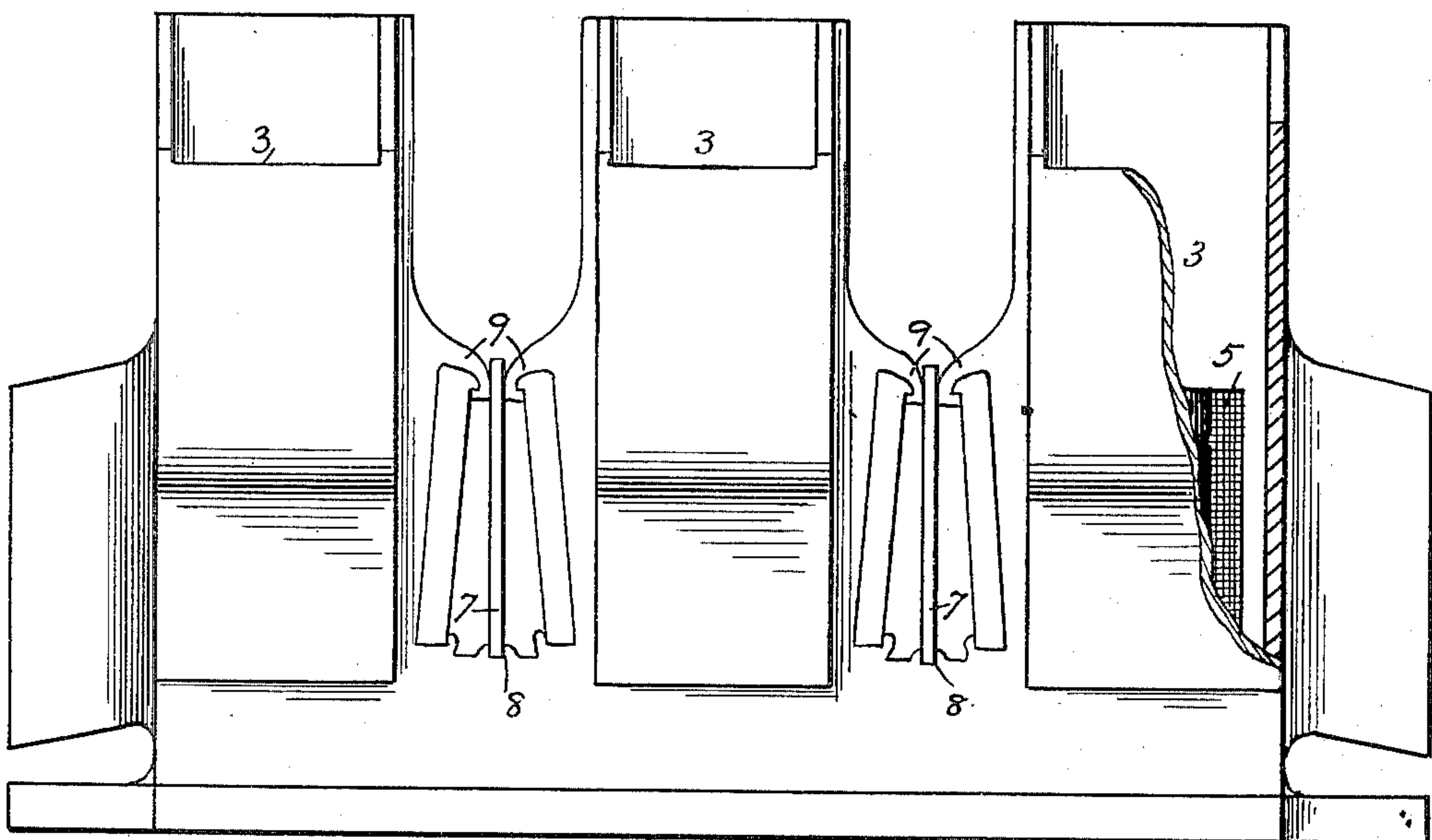


Fig. 2.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

WILLIAM A. MERRALLS, OF SAN FRANCISCO, CALIFORNIA.

## MORTAR FOR STAMP-BATTERIES.

SPECIFICATION forming part of Letters Patent No. 659,934, dated October 16, 1900.

Application filed July 11, 1900. Serial No. 23,265. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM A. MERRALLS, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Mortars for Stamp-Batteries, of which the following is a specification.

Three single-stamp mills have a greater capacity than a three-stamp mill of the ordinary construction, because the capacity of a mill is limited by its screen area, and the screen area of three single-stamp mills is to that of a three-stamp mill of the ordinary construction as nine to five. On the other hand, the three-stamp mill has advantages over three single-stamp mills—namely, it occupies less space, it has only a single shaft and two shaft-boxes, one at each end, and a single pulley instead of three shafts, six shaft-boxes, and three pulleys. The three or five stamp mill, although it does less work than three or five single-stamp mills, is always preferred as being less expensive in first cost and in maintenance, requiring less attention, and taking up less room.

The object of my invention is to combine the advantages of both a plurality of single-stamp mills and a mill of a plurality of stamps in a single construction. This object cannot be attained by merely assembling a plurality of single-stamp mills in line and operating them from a single shaft and a single driving-pulley. If the single mortars were placed directly on the mortar-block, they would under the heavy jarring and pounding of the stamps settle unevenly, and on account of their comparatively small base area a slight irregularity in the settling of the base would cause a decided lateral shift in the top of the mortar, so that the stamp-stems would bind on the choke-boards on the top of the mortar and cause the shoe to strike unevenly on the die. If it were attempted to interpose broad anvils or false bottoms between the mortars and the mortar-block, there would be, first of all, the expense of this construction, for the bottom of the mortar and the top and bottom of the false bottom or anvil would have to be planed, and even then the arrangement would not be practical, for if the mortars were bolted to the anvils the bolts would jar loose

and the quicksilver and pulp discharged through the battery-screens would get into the crevices between the mortars and the anvils or false bottoms and make it very hard to clean up, besides the waste of quicksilver.

In my former patents, Nos. 637,471 and 637,472, of November 21, 1899, I have disclosed inventions in which it was attempted to combine the above-stated advantages of the different kinds of stamp-mills by employing mortars having separate chambers for the several stamps, but cast all in one piece, in which each stamp has a triple discharge. I find that this construction while satisfactory as regards the capacity is not satisfactory in other respects. On account of the greater mass of metal at the base of the mortar than at the top, this lower part will cool and solidify much more slowly than the upper portion. Hence the continued contraction of the lower portion of the mortar in cooling, taking place while the upper portion has virtually ceased to contract, will produce an internal strain in the upper portion. The consequence is that when the mortar is put into effective duty cracks appear in the back down through the feed-pockets, causing a leak and impairing the effectiveness of the mortar.

One object of my invention is to overcome these defects while retaining the advantages of the large screen area and great capacity of the batteries shown in said patents.

An additional object is to provide a construction by which a partition may be inserted between two adjoining side screens either from the front, rear, or top.

In the accompanying drawings, Figure 1 is a front elevation of a three-stamp battery constructed in accordance with my invention, parts being broken away; and Fig. 2 is a rear elevation of the same.

Referring to the drawings, 1 represents the metallic base of the mortar, having a plurality of chambers for the stamps, each chamber having four individual walls 2 cast integral with the base. At the rear of each chamber is the feed-opening 3 for the stamps 4. Each chamber has a triple discharge through the front screen 5 and the side screens 6. Between opposing side screens 6 are inserted partitions 7, said partitions sliding at their lower edges in grooves 8 and at their upper



edges between the extensions 9 from the chambers which form the upper guides for the side screens 6. By this construction I provide a practical mortar for three stamps, so that the battery has as great a capacity as three single-stamp mills. It is evident that mortars for two, four, five, or any number of stamps may be constructed on the same principle.

10 I claim—

1. A mortar for a stamp-battery having a single metallic base and a plurality of chambers thereon for the stamps, each chamber having four individual walls cast integral with the base, and each chamber being formed with spaces for the reception of discharge-screens on three sides, substantially as described.

2. A mortar for a stamp-battery having a

single metallic base and a plurality of chambers thereon for the stamps, each chamber having four individual walls cast integral with the base, and each chamber being formed with spaces for the reception of discharge-screens on three sides, each chamber having also formed upon it extensions from adjacent sides of the adjacent chambers, said extensions being sufficiently near each other to form a guide for the upper edge of a partition between adjacent side screens, substantially as described.

In witness whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WILLIAM A. MERRALLS.

Witnesses:

FRANCES M. WRIGHT,  
Z. A. DANIELS.