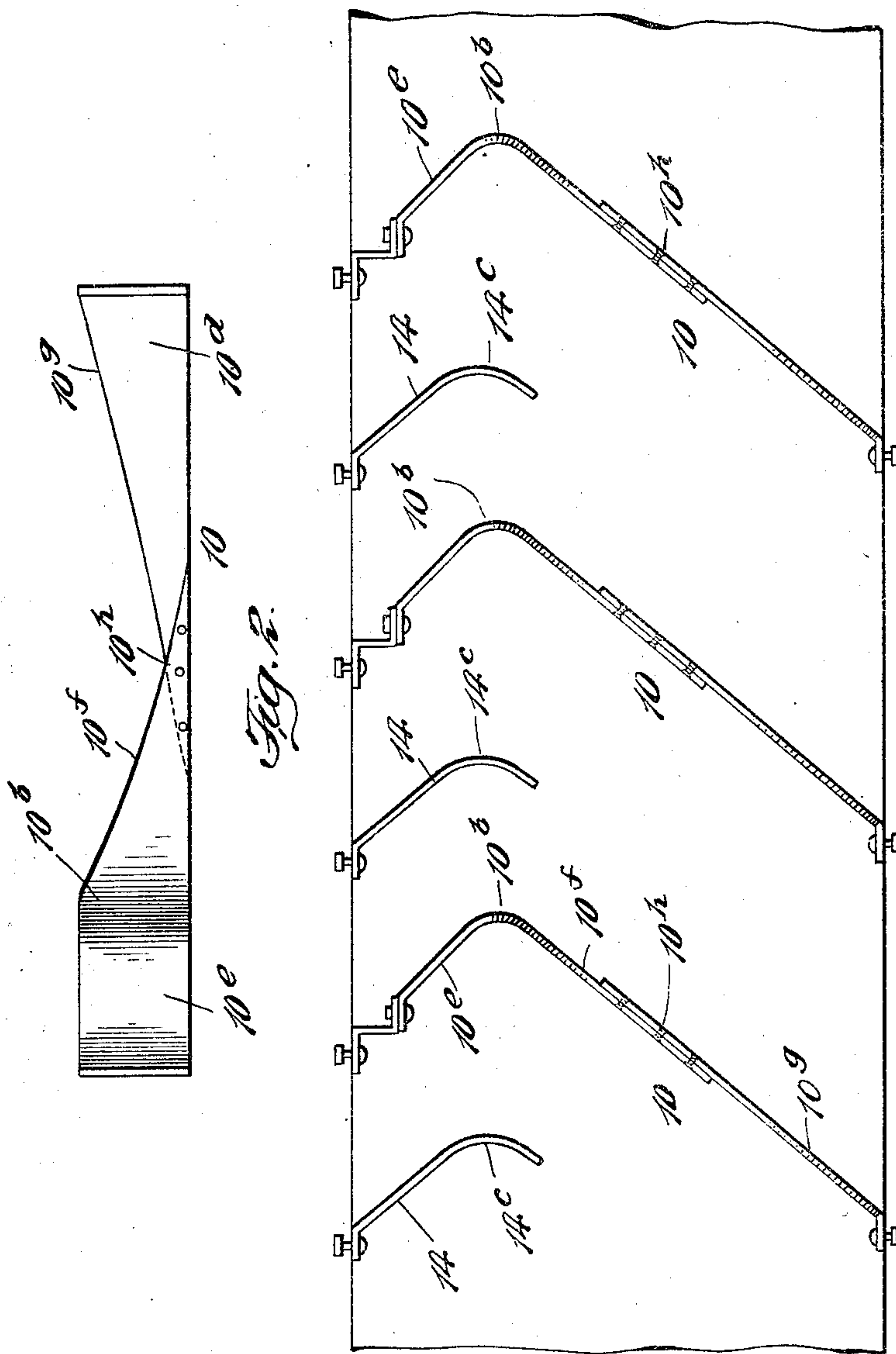


A. W. RANSOME.  
 CONCRETE MIXER.  
 APPLICATION FILED DEC. 30, 1908.

982,020.

Patented Jan. 17, 1911.



WITNESSES  
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# UNITED STATES PATENT OFFICE.

ARTHUR W. RANSOME, OF NEW YORK, N. Y.

CONCRETE-MIXER.

982,020.

Specification of Letters Patent.

Patented Jan. 17, 1911.

Application filed December 30, 1908. Serial No. 470,028.

*To all whom it may concern:*

Be it known that I, ARTHUR W. RANSOME, of the borough of Richmond, city and State of New York, have invented certain new and useful Improvements in Concrete-Mixers, of which the following is a full, clear, and exact specification, 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 rotary drum concrete mixers and particularly in that forming the subject matter of my prior Patent No. 870,797, dated November 12, 1907.

The object of the present invention is to increase the capacity of the mixer and prevent splashing or spilling the contents thereof out through the open ends of the drum. I attain this end by certain novel features of construction and arrangement of parts which will be fully set forth hereinafter and particularly pointed out in the claims.

Reference is had to the accompanying drawings which illustrate, as an example, one manner of embodying my invention, in which drawings,

Figure 1 is a view of the interior of the drum with the advancing and return blades, the drawing supposing that a section of the drum has been rolled out flat better to exhibit the subject matter; and Fig. 2 is a detail of one of the advancing blades.

In the practice of my invention I have found that the tendency of the operations within the drum is to bank the material higher toward the heads or ends of the drum than in the middle; and I have also found that if a sufficient number of advancing blades be employed to insure, with their lifting pockets, a rapid discharge of the concrete such blades tend, when the machine is operated to mix and not to discharge, to throw the concrete from the lifting pocket of one blade into the lifting pocket of the following blade with the result that the same material is again lifted but without being subjected to the action of the return blades. This difficulty is remedied by decreasing the number of advancing blades, but in so doing the speed of discharge is cut down owing to the decrease in the number of the lifting pockets. These disadvantages I have overcome by my present improvements. The desired results are effected by a peculiar construction of the

advancing blade rendering it narrower in the middle than at the ends and by a change in the construction of the return blades which enables them not only to serve as means for effecting the return motion of the concrete, but also as lifting pockets. In this way I cause the material to bank in the middle of the drum and I insure a rapid back and forth mixing action without cutting down the speed of the discharge.

In the drawings, 10 indicates the advancing blades and 14 the return blades the same as in my prior patent above referred to. The advancing blades, however, I prefer to construct in two parts or sections designated 10<sup>a</sup> and 10<sup>b</sup>. Of these sections the latter, 10<sup>b</sup>, has a lifting pocket 10<sup>c</sup> therein and its inner edge from the lifting pocket toward the middle slants outward toward the wall of the drum as indicated at 10<sup>d</sup>. The section 10<sup>a</sup> has its inner edge 10<sup>e</sup> slanted inward similarly and the two tapered extremities of the sections 10<sup>a</sup> and 10<sup>b</sup> are lapped past each other and riveted together as indicated at 10<sup>h</sup>. This not only strengthens the blade and enables the same to be made with less waste material than heretofore, but it gives the blade a decreased width at its middle portion. The result is that as the blade lifts with the rotation of the drum, it gathers a larger quantity of concrete at its ends than at its middle and it, therefore, takes this comparatively large mass of concrete from the end portions of the drum reducing the concrete at this point. As the motion of the drum continues and the blade advances its elevation, the natural tendency of the concrete loaded thereon is to slip toward the lower or narrow middle portion of the blade and the major portion of the concrete instead of being discharged from the blade at its ends, slips to the middle of the blade and is discharged from the same into the middle portion of the drum. By this improvement, therefore, I cause the concrete to arch up in the middle of the drum and thus enable the mixer to be loaded to its full capacity without, however, piling the material in the ends any higher than the outlet openings and, therefore, without endangering spilling the material at this point.

The return blades 14 instead of being straight as shown in Fig. 5 of my prior patent, I form at their inner extremities bends 14<sup>c</sup> illustrated in Fig. 1 of the drawings,



these bends corresponding to the lifting pockets 10<sup>b</sup> of the blades 10. The blades 14, therefore, with my present improvements, serve not only as return blades, but also the additional function of lifting blades and in this manner I get a maximum discharge from the drum in a given time allowing me, however to reduce the number of advancing blades to such an extent that the lifting pockets of said blades will not discharge into the lifting pocket of the blade following, but will discharge just beyond such lifting pocket upon one of the return blades 14 and in this way I insure the back and forth motion of the concrete in the drum which results in a thorough admixture of the various materials:

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. A rotary drum mixer having a mixing blade with a lifting pocket in one end portion thereof and its middle portion of less width than either end portions for the purpose specified.

2. A rotary drum concrete mixer having advancing and return blades the former being narrower at their middle portions than at their ends and the latter having their inner end portions forming lifting pockets for the purpose specified.

3. A rotary drum concrete mixer having advancing and return blades the former constructed of two sections tapering toward the middle and fastened together at said point and the latter having their inner ex-

tremities forming lifting pockets for the purpose specified.

4. A rotary drum concrete mixer having a mixing blade narrower at its middle portion and formed of two sections tapering toward the middle and having their ends overlapped and joined together at the middle to reinforce said narrower portion.

5. A rotary drum concrete mixer having advancing and return blades, the return blades extending inwardly from adjacent one end of the drum, a portion only of the length of the latter and having their inner extremities bent to form lifting pockets.

6. A rotary drum concrete mixer having a mixing blade extending substantially from end to end thereof and formed of two sections, said sections being overlapped and joined together adjacent the middle of the blade to reinforce the latter.

7. A rotary drum concrete mixer having a mixing blade extending substantially from end to end thereof and having one end portion thereof bent to form a lifting pocket, said blade being formed of two sections overlapping and secured together adjacent the center of the blade to reinforce the latter.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ARTHUR W. RANSOME.

Witnesses:

FRANK V. LAWRENCE,  
ARTHUR C. SIEDENTOP.