

S. COBURN.
SAND BLAST TUMBLER.
APPLICATION FILED DEC. 8, 1919.

1,343,350.

Patented June 15, 1920.

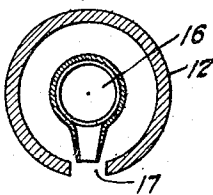
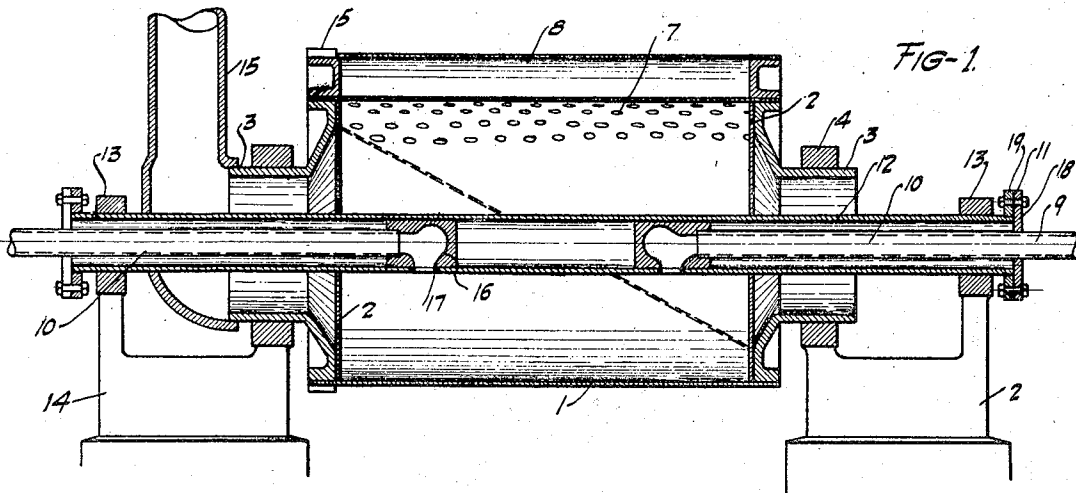
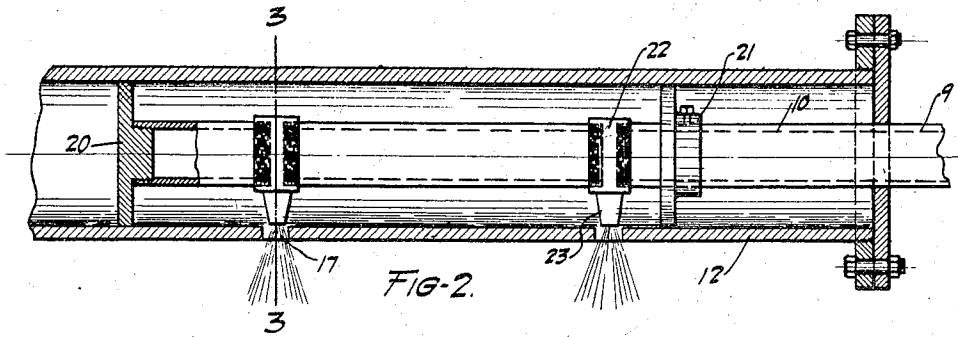


FIG-3

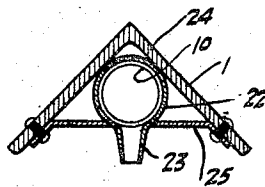


FIG-4

INVENTOR
SAMUEL COBURN
BY *[Signature]*
ATTORNEY

UNITED STATES PATENT OFFICE.

SAMUEL COBURN, OF BIRMINGHAM, ALABAMA.

SAND-BLAST TUMBLER.

1,343,350.

Specification of Letters Patent. Patented June 15, 1920.

Application filed December 8, 1919. Serial No. 343,349.

To all whom it may concern:

Be it known that I, SAMUEL COBURN, a citizen of the United States of America, residing at Birmingham, in the county of Jefferson and State of Alabama, have invented certain new and useful Improvements in Sand-Blast Tumblers, of which the following is a specification.

My invention relates to a tumbler equipped with a novel sand blast mechanism, the chief characteristic of which is the provision of a housing or protecting pipe or cover for the sand blast pipes arranged concentric with the tumbler and readily removable with the sand blast pipe through the tumbler trunnions without interrupting the operation of the tumbler. The sand apparatus can thus be removed, inspected, repaired and replaced without requiring the tumbler to be dismounted and in fact the changes can be made without stopping the tumbler. In accordance with my arrangement the tumbler is provided with hollow trunnions at either or both ends and the air blast guard or protector is detachably mounted in separate bearings or brackets therefor at each end of the tumbler.

My invention also comprises the novel details of construction and arrangements of parts, which in their preferred embodiment only are illustrated in the accompanying drawings which form a part of this specification, and in which:—

Figure 1 is an enlarged vertical sectional view through the tumbler.

Fig. 2 is a cross sectional view of a modified arrangement of the sand blast nozzles in the guard pipe.

Fig. 3 is a sectional view taken through the line 3—3 of Fig. 2; and

Fig. 4 is a similar sectional view taken through a modified type of guard for the sand blast pipe.

Similar reference numerals refer to similar parts throughout the drawings.

As illustrated in the drawings, 1 represents formally any standard type of round, steel-plate, barrel tumblers having heads 2 at each end to which are attached hollow trunnions 3 which turn in bearings 4, the tumbler being driven by a spur gear 5 meshing with a driving gear (not shown), or may be driven in any manner commonly practised in this art. The tumbler is provided with one or more perforated plates 7 for the escape of surplus sand, this perfo-

rated section of the drum being covered outside of the body of the tumbler by a steel pocket 8 so constructed that it will collect and discharge the sand in the boot of an elevator not shown, or any suitable conveyer. A pipe 9 leading from any suitable source of compressed air and sand serves to deliver the mingled air and sand through a blast pipe 10 at each end of the tumbler, each pipe 10 being connected by a coupling 11 to a guard pipe 12 in which the sand blast pipe 10 is mounted, this guard pipe being mounted at each end in bracket supports 13 disposed adjacent to the bearings 4 and preferably mounted on the same bearing bases 14 with said bearings. The pipe 12 extends from end to end through the trunnions 3 and heads 2 of the drum and through a duct collecting pipe 15 with which the adjacent drum trunnion is adapted, in its normal operation, to rotate free of frictional contact. A sand blast nozzle 16 on the end of each pipe 10 is arranged in the guard pipe 12 opposite sand blast ports 17 in the underside of the guard pipe. The nozzles fit slidably in the guard pipe and both support and center the sand blast pipes therein.

I have shown the supply pipe 9 and blast pipe 10 as formed integrally, but this is not essential. In such an arrangement the coupling 11 comprises a disk 18 which has a central hole to receive and center the blast pipe in the guard pipe, this plate 18 being bolted to a ring 19 adapted to screw on the end of the guard pipe so as to be readily detachable, in which case the nozzle and blast pipe can be drawn out of the guard pipe and the guard pipe slipped endwise out of its bearings.

In Fig. 2 I show a modified arrangement with the supply pipe entering only one end of the tumbler drum. Here the blast pipe 10 is closed at its outer end by a flange plug 20, which forms a support and guide for the pipe at its inner end while its other end, if needed, may be supplied with a centering flange 21. The blast pipe is formed in sections with interposed screw coupling sleeves 22, each of which is provided with a sand blast nozzle 23 and as worn the nozzle couplings can be removed and replaced. They are arranged opposite the sand blast ports 17 in the guard pipe 12, which is mounted as in Fig. 1, or in any other suitable manner in the drum.

As shown in Fig. 4 the guard may be in

the shape of an inverted angle iron 24 instead of the pipe, the iron being bolted to the brackets 13 or otherwise detachably secured in place. Clips 25 serve to mount the sand blast pipe 10 in the apex of the angle iron 24.

The pipe 12 or guard 24 serve to protect the sand blast pipe and nozzles from damage from the castings in the tumbler and being disposed concentric with the drum the guard and sand blast pipe or pipes can be removed together at any time desired by dismounting the coupling 11 from the pipe 12 and drawing the latter endwise through the drum, carrying with it the nozzle bearing end 10 of the sand pipe and thus permitting the latter to be dismounted, repaired and replaced without interrupting the operation of the tumbler.

The sand blast can be applied from either end of the machine most convenient, and the most important feature of my invention is the simplicity and ease with which the sand blast can be repaired and the inexpensive character of its construction and manner of mounting.

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

1. In a tumbler, a drum having end trunnions, one at least of which is hollow, a guard adapted to be passed through the hollow trunnion and disposed substantially centrally through the drum, means to fixedly

support the ends of said guard, and a sand blast pipe entering the drum through a trunnion and projecting thereinto under and in position to be protected by the guard, said pipe having a sand blast nozzle, there being an aperture in the guard opposite said sand blast nozzle, substantially as described.

2. A tumbler mounted to turn on hollow trunnions, trunnion bearings, a sand blast pipe entering the tumbler through an end trunnion, and a fixed guard for said sand blast pipe mounted externally and independently of the drum and projecting centrally into the drum through a trunnion thereof.

3. The combination in a tumbler, of a drum having hollow end trunnions, end bearings for the trunnions, a guard projecting substantially centrally through the drum and through its trunnions but free of engagement therewith, external bracket supports for the guard, a sand blast pipe projecting through the trunnions into the drum in position to be protected overhead by said guard, and means to support said pipe from the guard, said guard and pipe being removable independently of the drum through its trunnions.

In testimony whereof I affix my signature.
SAMUEL COBURN.

Witness:

NOMIE WELSH.