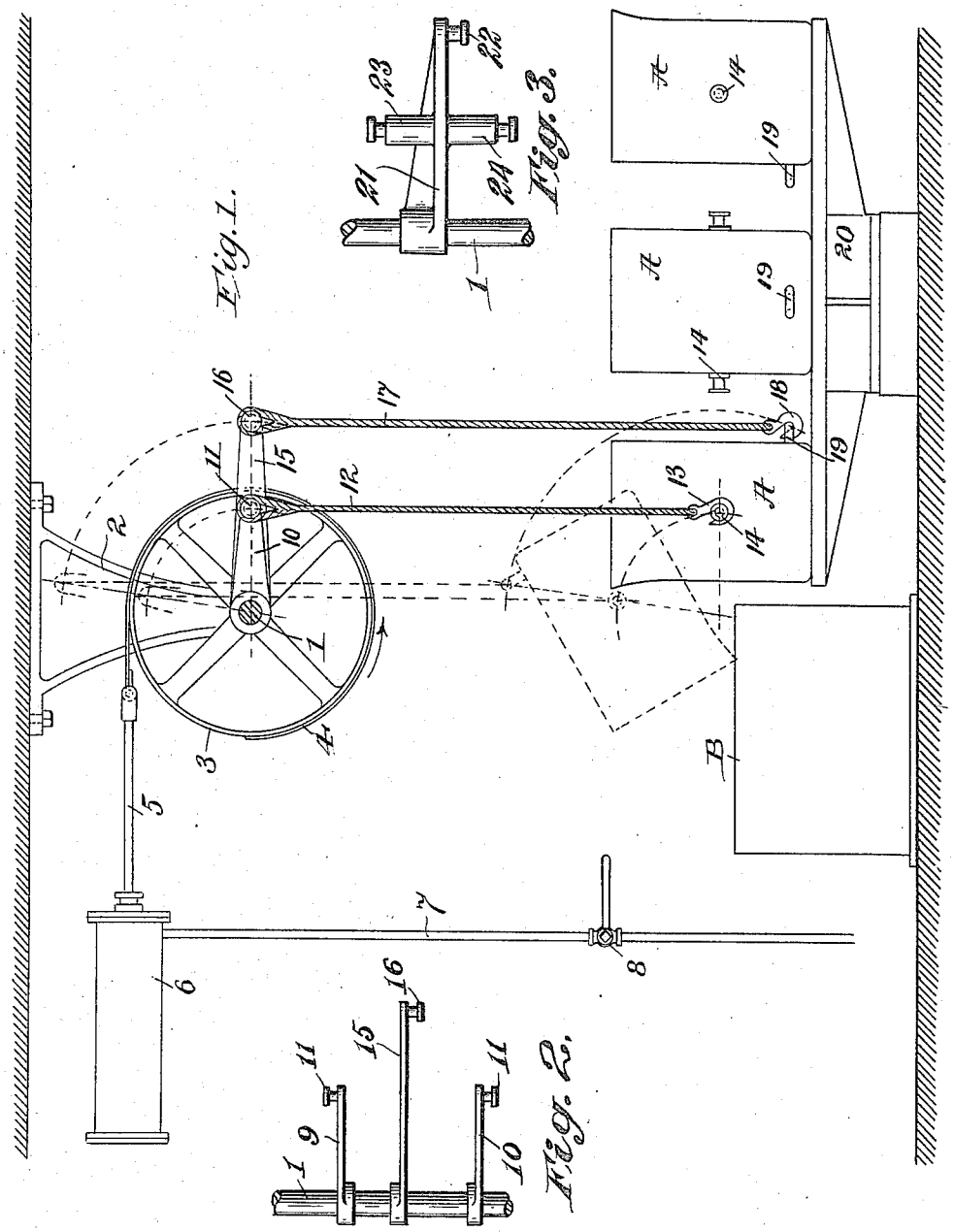
J. C. RAHM.

APPARATUS FOR LIFTING AND EMPTYING RECEPTACLES.

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1,165,900. Patented Dec. 28, 1915.



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APPARATUS FOR LIFTING AND EMPTYING RECEPTACLES.

1,165,900. Specification of Letters Patent. Patented Dec. 28, 1915.

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To all whom it may concern:

Be it known that I, JOHN C. RAHM, a citizen of the United States, residing at Leominster, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Apparatus for Lifting and Emptying Receptacles, of which the following is a specification.

My present invention pertains to an improved apparatus for lifting and emptying receptacles, and is particularly adapted for raising and discharging the contents of pots or containers.

The invention is illustrated in the annexed drawings, wherein:

Figure 1 is a side elevation of the apparatus, the operating shaft being shown in section; Fig. 2 a top plan view thereof; and Fig. 3 is a plan view of a modification of the invention.

In the construction illustrated, the apparatus is adapted for use in lifting nitrating pots and discharging the contents thereof into a centrifugal or other apparatus.

In the drawings, 1 denotes a shaft, carried in suitable hangers 2. To said shaft, preferably at one end thereof, there is fixedly secured a drum or wheel 3. A strap or band 4 passes partially about said drum, one end being secured thereto, while the opposite end is secured to the outer end of a piston-rod 5, adapted to be actuated by a piston mounted in a power cylinder 6. The control pipe 7 is provided with a proper valve such, for instance, as a three-way valve 8, located at any point convenient for manipulation by the operator, which valve controls the inlet and outlet of the fluid pressure to or from said cylinder in front of the piston, as will be readily appreciated. When the fluid is admitted in front of the piston, the rod 5 will be drawn inwardly and consequently the drum will be given a partial rotation and the shaft 1 thereby rotated in the direction of the arrow in Fig. 1. Secured to said shaft 1 is a pair of arms 9 and 10, said arms being of the same length, and preferably carrying at their outer ends laterally-extending lugs or pins 11, upon which cables 12 are suspended, each cable being provided with a hook 13 at its lower end, adapted to engage with the trunnions 14 extending outwardly from the side walls of the container A, as shown in Fig. 1. A third arm 15, is likewise secured to the shaft 1, intermediate the arms 9 and 10, said arm 15 being somewhat longer than the arms 9 and 10, and also provided with a laterally-extending pin or stud 16, from which there is suspended a cable 17, provided at its lower end with a hook 18, adapted to be brought into engagement with an eye or bail 19 extending outwardly from the lower portion of the container A.

A plurality of containers is shown as resting upon a turntable 20, said containers or pots being filled and the table rotated or turned so as to bring them successively into line with the cables 12 and 17. When a container is so positioned, the hooks 13 are attached to the trunnions and the hook 18 brought into engagement with the eye or bail 19, whereupon the operator, by admitting the fluid under pressure to the cylinder 6 causes the drum to rotate, and likewise causes the rotation of the shaft 1. The arms 9 and 10, together with the longer arm, 15, will then be swung upwardly from the horizontal position shown in full lines in Fig. 1, to the dotted-line position in said figure, and as this takes place the container A will be raised and tilted, discharging its contents into any suitable receptacle, as for instance, the centrifugal denoted by B. The arm 15, being longer than the others, describes a larger circle or arc, and as a consequence as the arms 9 and 10 lift the container and transfer it laterally over the receptacle B, the arm 15 tends to tilt it so that when the container reaches a point where it will pour into the receptacle B it is gradually oscillated and the contents thereof fully discharged.

The exhaust of the fluid pressure from the cylinder 6, which is brought about through the manipulation of the valve 8, will permit the parts to make a reverse movement, due to the action of gravity, and the empty container will be again positioned upon the turntable 20. The hooks are then disengaged, the table turned, and another filled container brought into coöperative relation with the hooks and cables, after which it will be raised and emptied as above set forth.

It is, of course, conceivable that instead of employing separate arms 9 and 10, a single arm, provided with laterally-extending brackets, might be used, from which bucket cables 12 could be suspended. Such a structure is shown in Fig. 3, wherein an arm 21,

secured to the shaft 1, is provided with a laterally-extending pin or stud 22 at its upper end, to which the dumping cable is attached. Laterally-extending brackets 23 and 24 are carried by said arm 21, and to the ends of said brackets the bucket-suspending cables 12 are secured. In other words, any arrangement which will effect a greater lifting movement of the dumping cable or member 17 than of the elevating or suspending cables 12, and a bodily movement of translation of the cables falls within the scope of my invention.

Having thus described my invention, what I claim is:

1. In a lifting and dumping apparatus, the combination of a shaft; means for rotating the same; means extending outwardly to one side of said shaft and movable therewith; a pair of lifting cables suspended from said means, and free as the shaft is rotated to approach the axis thereof; and a dumping cable suspended from said means at a point more remote from the shaft than the lifting cables and also free as the shaft is rotated to approach the axis thereof, whereby as the shaft is rotated and the means moved upwardly the lifting cable will move laterally toward the shaft and also upwardly, and the dumping cable will move laterally and also upwardly to a point above the lifting cables.

2. In a lifting and dumping apparatus, the combination of a shaft; means for rotating the same; a pair of arms extending outwardly from said shaft; cables depending therefrom; a third arm likewise extending outwardly from said shaft, said third arm being longer than the other arms; a cable suspended therefrom; and means carried by said cables for attachment to a container, whereby as the shaft is rotated the arms will be elevated and the container moved laterally and emptied of its contents.

3. In a lifting and dumping apparatus, the combination of a shaft; a drum secured thereto; a band attached at one end to said drum; means secured to the opposite end of said band, adapted to pull upon the same and to thereby rotate the drum and the shaft; a pair of relatively short arms secured to and extending outwardly from the shaft; suspending cables secured to said arms and depending therefrom; a third arm extending outwardly from the shaft; a dumping cable depending from the third arm, said arm being somewhat longer than the first-mentioned arms; a container; trunnions extending outwardly from said container and adapted to be attached to the lower ends of the suspending cables; and an eye projecting outwardly from the lower rear wall of the container and adapted to be secured to the lower end of the dumping cable.

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

JOHN C. RAHM.

Witnesses:
ETHEL H. DIVOLL,
JOHN C. HULL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."