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H. GEBHART & J. R. G. KINNARD, ADMINISTRATORS.

BAILING MACHINE.

APPLICATION FILED DEC. 27, 1907.

924,995.

Patented June 15, 1909.

2 SHEETS—SHEET 1.

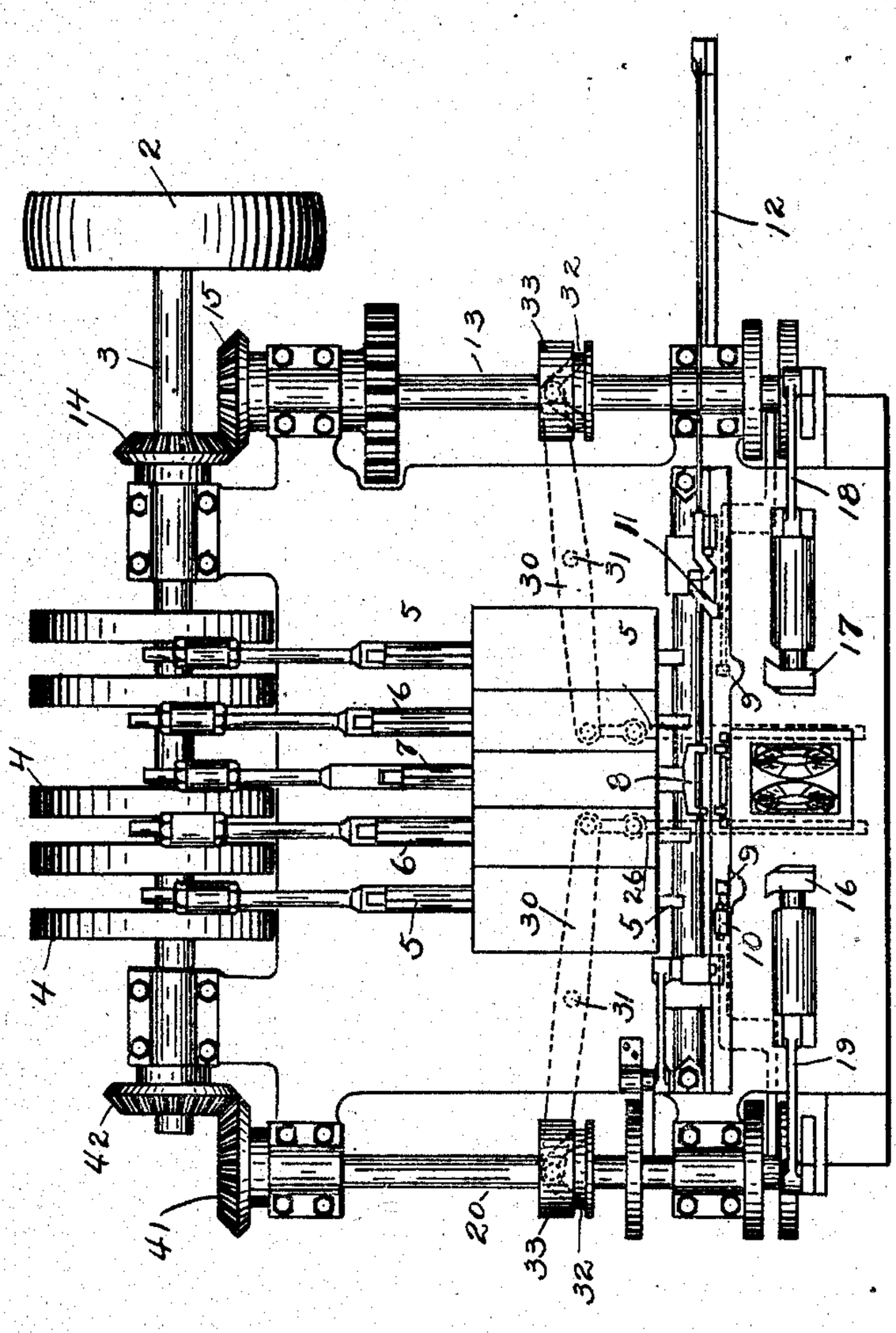

Fig. 1.

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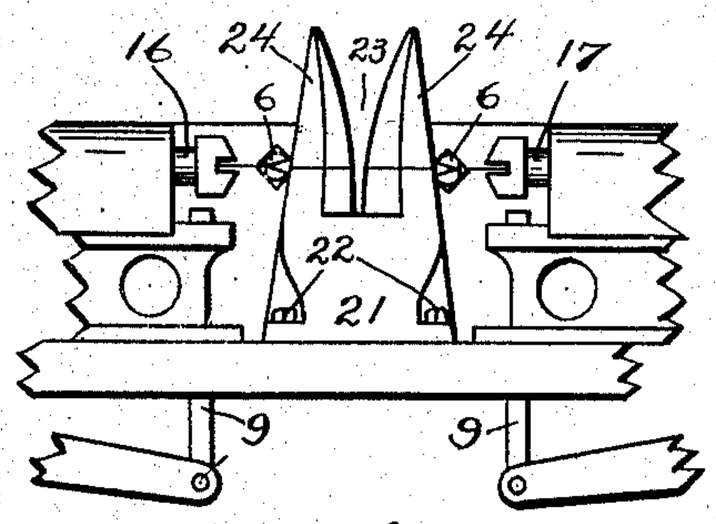

Fig. 2.

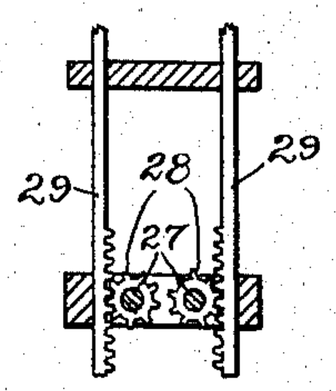

Fig. 3.

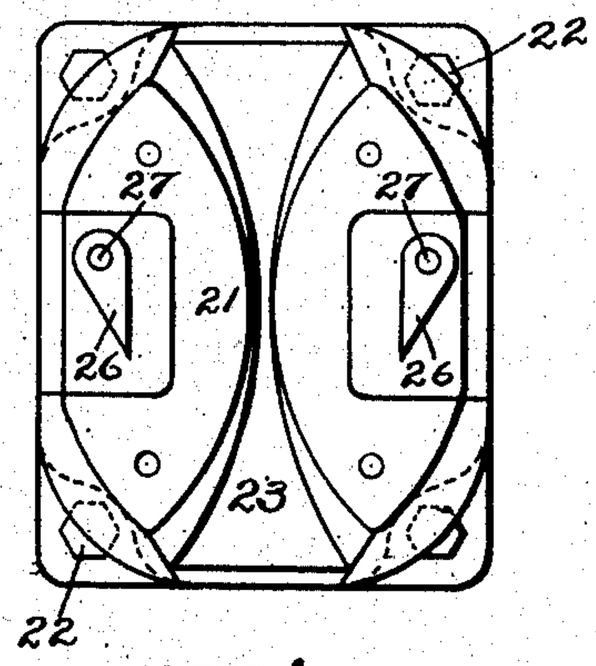

Fig. 4.

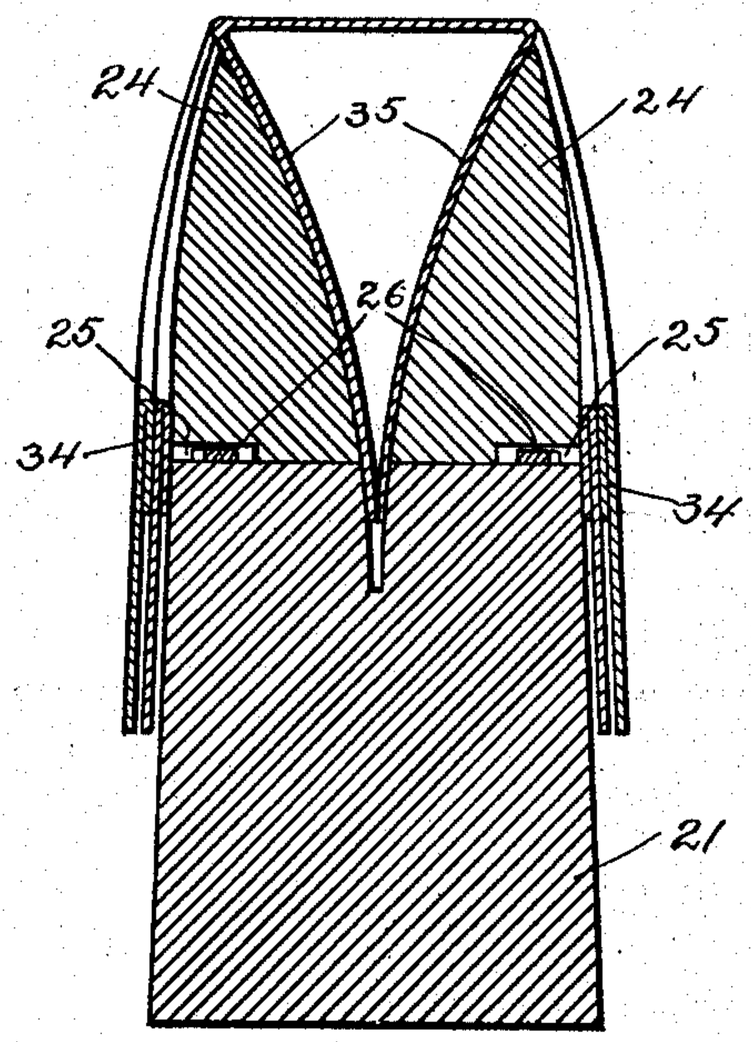

Fig. 5.

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UNITED STATES PATENT OFFICE.

WILL M. KINNARD, OF DAYTON, OHIO; HARRY GEBHART AND JOSEPH R. G. KINNARD, ADMINISTRATORS OF SAID WILL M. KINNARD, DECEASED, ASSIGNORS TO THE KINNARD MFG. CO., OF DAYTON, OHIO, A CORPORATION OF OHIO.

BAILING-MACHINE.

No. 924,995. Specification of Letters Patent. Patented June 15, 1909.

Application filed December 27, 1907. Serial No. 408,317.

To all whom it may concern:

Be it known that I, WILL M. KINNARD, a citizen of the United States, residing in Dayton, county of Montgomery, State of Ohio, have invented certain new and useful Improvements in Bailing-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to improvements in the construction of the form blocks for bailing machines, whereby the block or form for holding the pail shall be so constructed that the bail will be prevented from passing through the side walls of the vessel during the bailing operation.

In bailing machines, as heretofore constructed, a solid form block of the size and shape of the vessel to be bailed has been provided, the vessel inverted over the block, and the machine mechanism has then formed the wire bail and driven its bent ends through the side walls of the pail and clenched the wire ends inside of the walls by clenching devices located within the form block.

It is the purpose of my invention to provide a construction in which the over-lapping side folds of the pail may be separated from the side walls, and the mechanism so arranged that the bent ends of the bail shall be clenched only through the over-lapping flaps, leaving the side walls of the pail free and unpierced and thus avoiding the objectionable features resulting where the ends of the bail project through the inner walls of the vessel.

In the drawings Figure 1 is a plan view of the bailing machine, with my improved form block. Fig. 2 is a detail front elevation of the form block, and part of the bail driving mechanism. Fig. 3 is a detail view showing the racks and pinions for operating the clenching devices. Fig. 4 is an enlarged plan view of the form block, with the upper part removed. Fig. 5 is a central vertical section of the block, with a pail in place thereon.

In the drawings I have not thought it necessary to show in detail the construction and operation of a bailing machine, except so much as may be necessary to explain my improved construction. I have illustrated in the top plan view a bailing machine such as is shown and described in the patent to Marsh, No. 846,589 issued March 12th, 1907.

The operating parts of the bailing machine are mounted in suitable bearings on the substantial table and framework 1, the mechanism being driven by the driving pulley 2, on the driving shaft 3, journaled across the rear of the machine. On this driving shaft are mounted a series of cam wheels 4, 4, each provided with a cam groove in its side face, which grooves are engaged by rollers on lever arms pivoted to the frame-work at the bottom and coupled at the upper ends with a series of horizontally moving plungers 5, 5, 6, 6, and 7. The central plunger 7, carries the fork 8, at its forward end for holding the wire bail in position. The outer plungers 5, 5, form the outer right angle bends of the bail around the posts 9, 9, which stand in the pathway of the plungers 5, 5, until this first bend is made, when these posts 9, 9, are retracted to permit of the subsequent bending of the bail.

The wire to form the bail is fed to the machine from a spool (not shown) through the wire holder 10, and the wire is drawn across the machine in front of the bending plungers by the reciprocating clamp 11, which clamp is driven by the connecting rod 12, and gearing connecting same with the shaft 13, which is in turn connected with the driving shaft 3, by the miter gears 14, 15.

16, 17, are the driving plungers by means of which the ends of the bent bail are driven through the paper vessel. These driving plungers are reciprocated by the pitmen 18, 19, coupled to the cranks on the shafts 13, 20, the shaft 20 being driven by the gears 41, 42, from the main driving shaft in the same way, and at the same rate of speed as the shaft 13, is driven.

The general plan and operation of the bailing machine will be evident from the foregoing description without any further detail.

As already stated, my present invention relates particularly to the construction of the form block upon which the paper pail is placed for the bailing operation. 21 is this form block which is of the size and shape of the vessel to be bailed, and this form block is bolted by the bolts 22, upon a supporting portion of the table, between the bail driving plungers. Instead of providing a solid form

block, however, the form block is cut away at its middle portion at 23, to form two upwardly extending horns or projections 24, 24. For convenience of the construction, these horns 24, 24, are separable from the body of the block 21, and are merely held in place by dowel pins. On both sides of the depression 23, at the proper height for receiving the ends of the bail, horizontal slots 25, 25, are cut in the sides of the form block, and in these slots the clenching plates 26, 26 are mounted. These clenching plates are secured on the ends of rods or shafts 27, 27, which pass down through the form block, and carry pinions 28, 28, at their lower ends, which pinions are engaged by the racks 29, 29, supported on the frame in suitable guides and the racks are actuated by the lever arms 30, 30, shown in dotted lines Fig. 1, pivoted at about their middle points at 31, 31 on the frame, and having their outer ends engaging the cam slots 32, 32, in the sleeves 33, 33, mounted on the side shafts 13, 20. The action of the driving plungers 16, 17, is so timed in connection with the reciprocation of the racks 29, 29, that as the ends of the wire bail are driven in to the recesses 25, 25, the shafts 27, 27, will be rotated to turn outwardly the clenching plates 26, 26, and thus to bend over and clench the staple.

In the operation of the machine, the paper pail is inverted and placed upon the form block, with the over-lapping folds 34, 34, of the pail on the outside of the horns 24, 24, and the inner side walls of the pail 35, 35, inside the horns 24, 24. The machine is then set in operation, the bail formed and the ends of the bail driven through the over-lapping folds 34, 34, by the driving plungers 16, 17, and against the side edges of the plates 26, 26. At the same time the shafts 27, 27, are turned which throws the clenching plates outwardly and clenches the ends of the bail on the inner surface of the over-lapping side folds of the pail, and it will be evident from the construction that the ends of the bail are prevented from piercing the side walls 35, 35, of the pail.

With my improved construction of a divided form block, the operator by merely depressing or pushing in the inner side walls of the pail can place the pails on the divided form block about as rapidly as can be accomplished with a solid form block.

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

1. In a bailing machine, the combination, with a driving mechanism for driving the bent ends of the bail through the sides of the vessel, of a form block to hold the vessel during the bailing operation, said block being provided with a central depression to receive the inner walls of the vessel, and means for clenching the ends of the bail located on opposite sides of said depression, whereby the bail will be prevented from passing through the side walls of the vessel.

2. In a bailing machine, the combination, with a driving mechanism for driving the bent ends of the bail through the sides of the vessel, of a form block to hold the vessel during the bailing operation, said block being provided with a central depression to receive the inner walls of the vessel, and a pair of clenching plates mounted within said form block, one plate on each side of said central depression, with means for operating said plates to clench the ends of the bail without passing same through the inner walls of the vessel.

3. In a bailing machine, a form block for holding the vessel to be bailed in inverted position, said block provided with a pair of outwardly extending projections to separate the inner walls of the vessel from the outer portions thereof, and means for clenching the bail located on each side to prevent the ends of the bail passing through the inner walls of the vessel.

4. In a bailing machine, a form block for holding the vessel to be bailed, means for clenching the bail mounted in said block to receive and clench the bail on two opposite sides of the block, said block having a depression separating the clenching means, and extensions of the block on each side of said depressions to enter between and separate the inner walls of the vessel from the outer portions thereof, whereby the bail may be prevented from passing through the inner walls of the vessel.

5. In a bailing machine, the combination with a driving mechanism for driving the bent ends of the bail through the sides of the vessel, of a holding device, comprising members adapted to fit between the inner and outer folds of the walls of the vessel, and means for clenching the ends of the bail located in said members.

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Witnesses:
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