

No. 881,432.

PATENTED MAR. 10, 1908.

G. A. MILLER.

BINDING ATTACHMENT FOR BALING PRESSES.

APPLICATION FILED MAY 4, 1907.

2 SHEETS—SHEET 1.

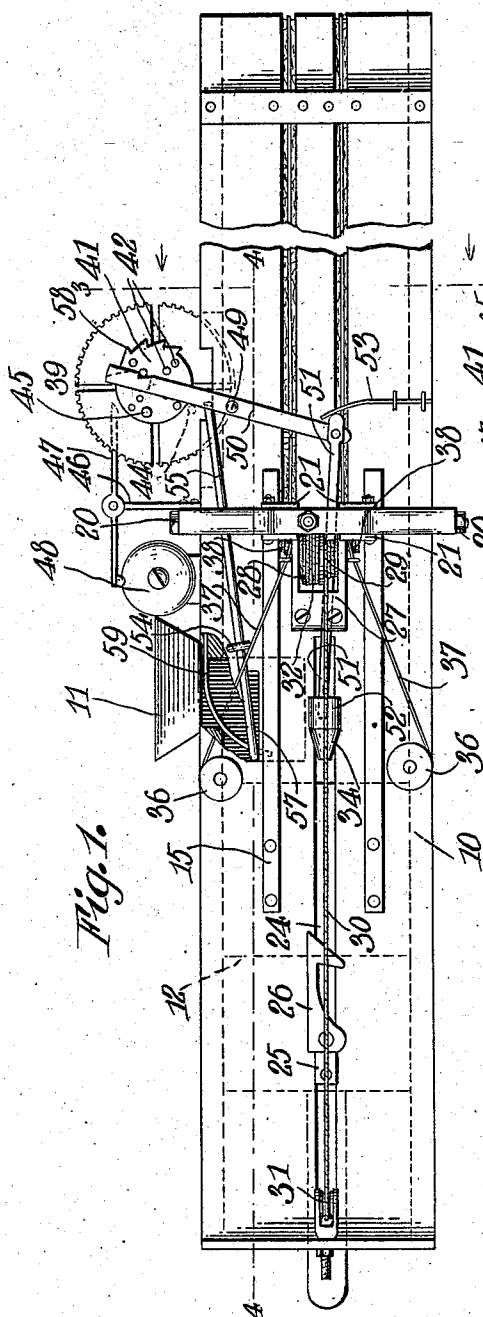


Fig. 1.

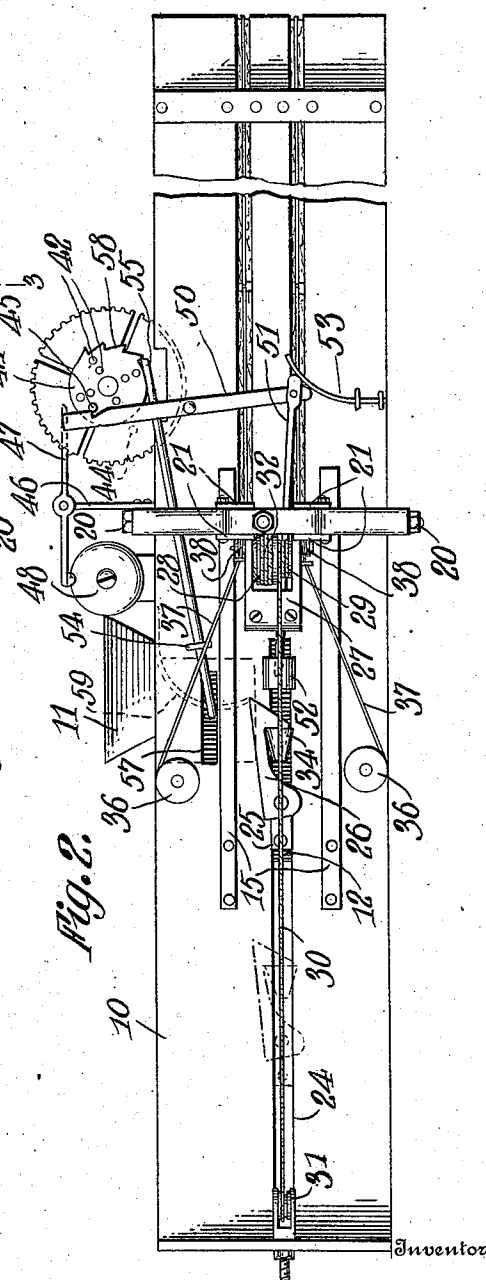


Fig. 2.

Witnesses

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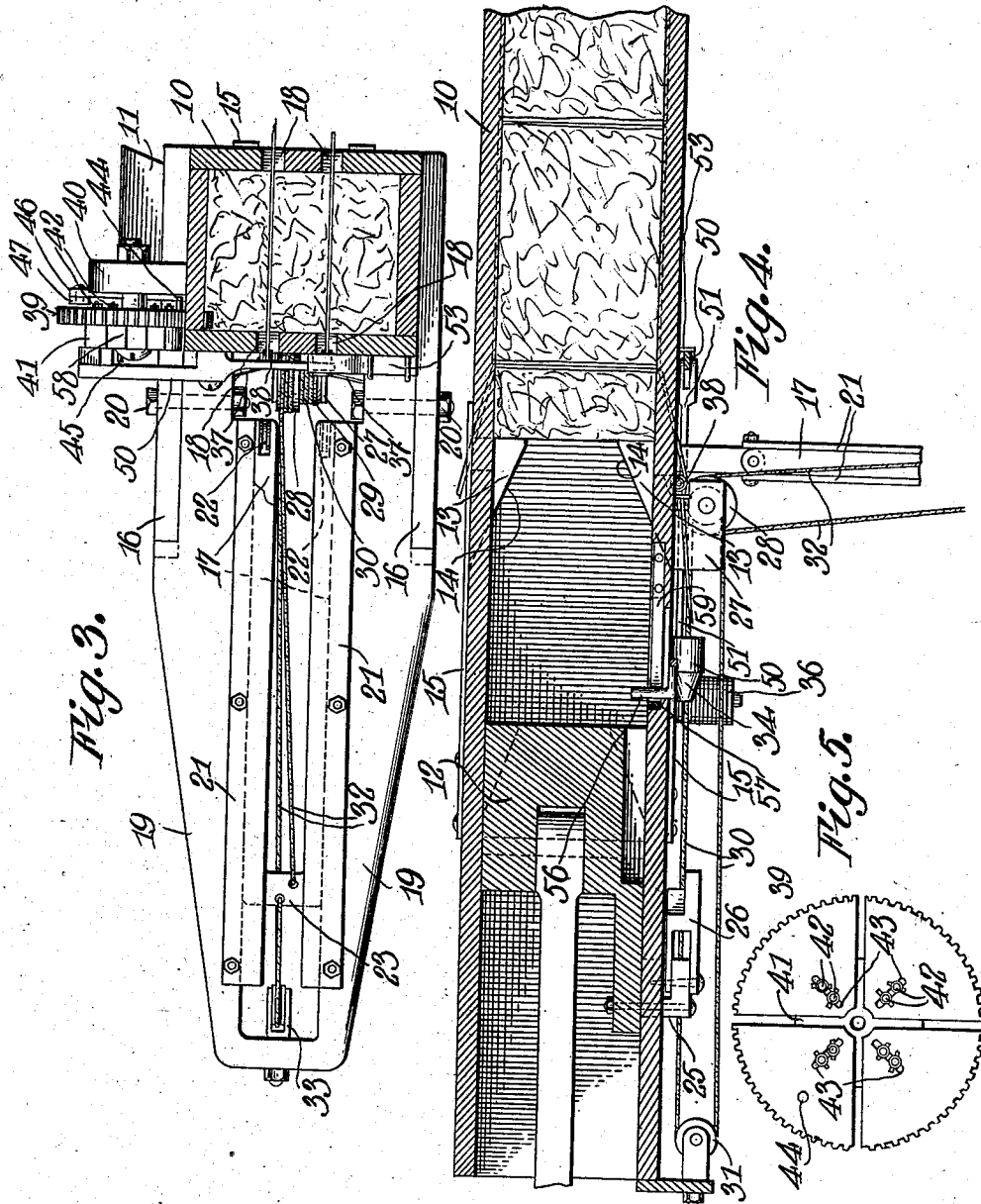
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UNITED STATES PATENT OFFICE.

GEORGE ALLEN MILLER, OF TAMAROA, ILLINOIS.

BINDING ATTACHMENT FOR BALING-PRESSES.

No. 881,432.

Specification of Letters Patent.

Patented March 10, 1908.

Application filed May 4, 1907. Serial No. 371,863.

To all whom it may concern:

Be it known that I, GEORGE ALLEN MILLER, a citizen of the United States, residing at Tamaroa, in the county of Perry and State of Illinois, have invented certain new and useful Improvements in Binding-Attachments for Baling-Presses, of which the following is a specification.

This invention is a binding-attachment for baling-presses, and more particularly that kind comprising a pair of needles which carry the binding wire through the compression-chamber across the rear end of the bale.

The object of the invention is to provide an improved mechanism actuated by the plunger and timed by the bale for operating the needles.

In the accompanying drawings, Figure 1 is an elevation partly broken away showing the position of the parts when the charge is being compressed. Fig. 2 is an elevation showing the needle-operating mechanism in action. Fig. 3 is a transverse section on the line 3—3 of Fig. 1. Fig. 4 is a horizontal section on the line 4—4 of Fig. 1. Fig. 5 is a rear elevation of the timing-wheel hereinafter referred to.

Referring specifically to the drawings, 10 denotes the box of a baling-press having a hopper 11 through which the material is fed to the compression-chamber. The plunger for compressing the charge is indicated at 12 and may be actuated in any suitable manner. At the front end of the compression-chamber are the usual retaining dogs 13 which are beveled on one side as indicated at 14 and project into the chamber through slots in the side walls thereof. The dogs are spring-pressed, being made fast at their outer ends to strong flat springs 15 which are secured on the outside of the side walls of the press. The successive charges of material are forced by the plunger past the dogs which by reason of their beveled sides are forced outwardly to let the material pass, and then spring back behind it to prevent its return. The plunger is recessed on its sides to enable the charge to be pushed beyond the dogs, and at the end of the compression-stroke the dogs enter said recesses.

To the top and bottom of the press-box are secured beams 16 which project laterally from one side thereof, and to said beams is hinged so as to swing in a horizontal plane, a frame in which the needles 17 are mounted. In line with the needles, openings 18 are

made in the side wall of the compression-chamber. The needle-frame comprises top and bottom bars 19 connected at their outer ends. The hinge connection is made by means of bolts 20 passing vertically through the bars 19 and the beams 16. The needles travel between guide pieces 21 on the bars 19, and carry at their forward ends rollers 22. At the opposite end the needles are connected by a cross-bar 23.

Projecting from one side of the plunger 12, through a slot 24 in the side wall of the press, is a stem 25 on which a catch 26 is pivoted. This catch travels back and forth with the plunger. On the side wall of the press adjacent the needle-frame is mounted a frame 27 in which are mounted on a common axle, drums 28 and 29. A cable 30 passes through an opening in the stem 25 and over a pulley 31 on the side wall of the press, and over the drum 29. On the drum 28 is wound a cable 32 connected to the cross-bar 23 and passing over a pulley 33 at the outer end of the needle-frame. By this arrangement of cables, when the cable 30 is drawn one way, the needles will be pushed through the openings 18 across the compression-chamber, while an opposite movement of the cable withdraws them therefrom.

The cable 30 extends parallel to the side-wall of the press and that portion which is next to said wall is in the path of the catch 26, and on this part of the cable is made fast a button 34 engageable by the catch. The button 34 is beveled as shown, and the catch 26 is in the form of a hook, and being pivoted it will ride over the beveled portion of the button and drop over the front end thereof. This connects the plunger to the cable, and upon operating the plunger the needles will be actuated as already described.

The button 34 is so located that it will be engaged by the catch 26 at the end of the forward or compression-stroke of the plunger. The catch then engages the button as already described, and when the plunger is retracted the needles are pushed through the openings 18 into the compression-chamber behind the charge therein. At the next forward stroke of the plunger, the button is pushed forward by the engagement of the stem 25 therewith, which moves the cable 30 in the opposite direction and retracts the needles.

The spools 36 which carry the binding wire are mounted on the same side of the press as the needles, and adjacent the openings 18

are rollers 38 over which the wires pass. The wire is pushed through the compression-chamber by the rollers 22 on the needles and is thus doubled to make the wire for the rear end of one bale and also for the front end of the next bale.

Means are provided for timing the operation of the binding-mechanism to prevent its operation while the charge is being compressed. Such means comprise the following instrumentalities: 39 indicates a timing-wheel mounted in bearings 40 on top of the press-box, and extending through a slot therein into proper position to engage the bale. The wheel is made in four sections or quadrants which are secured to a disk 41 by means of bolts 42, the sections being slotted as indicated at 43 to receive said bolts. By making the timing-wheel in sections and connecting said sections to the disk as stated, it can be adjusted by increasing or reducing its size which is done by setting the sections further apart or closer together. From the face of one of the timing-wheel sections projects a pin 44, and from the face of the disk 41 projects a pin 45. Adjacent the timing-wheel is a post 46 on which is pivoted the hammer 47 of a bell 48. One end of the hammer is in the path of the pin 44. On the side wall of the press-box is pivoted as indicated at 49 a lever 50 arranged at one end in the path of the pin 45, and joined at the other end to one end of a rod 51 which is connected at its opposite end to a block 52. A spring 53 presses on the rod 51 and holds the block 52 normally in contact with the front end of the button 34. The block has an opening through which the cable 30 passes. When the block is in contact with the button as shown in Fig. 1, the catch 24 will ride up the incline of the latter, but cannot drop in front thereof and is thus prevented from being operatively connected to the button. The needles therefore will not be actuated. When the block is drawn away from the button as shown in Fig. 2 the catch can engage the latter to operate the needles. On the side wall of the press-box is mounted in a guide-loop 54 a dog 55 having at one end a lateral bend 56 which passes through a slot 57 in the side walls and extends into the path of the plunger 12 in front thereof. The opposite end of the dog is engageable with ratchet-teeth 58 on the periphery of the disk 41. These ratchet-teeth do not extend entirely around the periphery of the disk. In the slot 57 is mounted a spring 59 which bears on the bend 56 for the purpose of retracting the dog.

The timing-mechanism herein described operates in the following manner: When material is fed into the press through the hopper 11 the parts are in the position shown in Fig. 1, the needle-actuating mechanism being inoperative as already described. As the

charge is being compressed by the successive movements of the plunger, the movement of the bale rotates the timing-wheel. The dog 55 is also reciprocated but it does not reach the ratchet-teeth 58 as they are as yet out of reach. The bale continues to travel and the timing-wheel to rotate as long as the feed is continued. The pin 44 when it reaches the bell hammer 47 actuates the same to sound the bell. This will be notice to the attendant to discontinue the feed, and consequently the bale will stop traveling. By this time the timing-wheel has been rotated sufficiently by the bale to bring the ratchet-teeth 58 within reach of the dog whereupon the rotation of the timing-wheel is continued by the action of the dog on the ratchet-teeth. This continued rotation of the timing-wheel and the disk carries the pin 45 into engagement with the lever 50 and swings the same over into the position shown in Fig. 2, which, through the connection 51 pulls the block 52 away from the button 34 as shown to permit the catch to engage the latter. The dog is not required to trip the lever 50 at one stroke, but to make as many strokes as there are ratchet-teeth, thus permitting the plunger to straighten up the end of the bale before the wires are pushed through the compression-chamber. The spring 53 will not return the lever 50 between the strokes of the dog as long as the timing-wheel is in contact with the bale by reason of the friction between the wheel and the bale. The parts are so arranged that the next to the last of the return strokes of the plunger brings the needles through the compression-chamber and the last forward stroke pushes the disk around sufficiently to disengage the pin 45 from the lever 50 whereupon the spring 53 pushes the rod 51 back to bring the block 52 into position in contact with the button 34 as shown in Fig. 1 which returns the parts to their normal position and the press is then ready for the next charge. The bell 48 is only for the purpose of giving notice to the person to stop the feed. When the press is not in operation the needle-carrying frame can be folded alongside the press-box.

I claim:—

1. The combination in a baling-press, of a plunger, a wire carrier working transversely through the compression-chamber behind the charge, means operated by the plunger to actuate the carrier, and a timing-mechanism for said means operated initially by the bale and finally by the plunger.

2. The combination in a baling-press, of a plunger, a wire carrier working transversely through the compression-chamber, a cable connected to the carrier, a catch carried by the plunger and engageable with the cable to actuate the wire carrier, and a timing-mechanism for said catch operated by the bale and the plunger.

3. The combination in a baling-press, of a plunger, a wire carrier working transversely through the compression-chamber behind the charge, a cable connected to the wire carrier, a button on the cable, a catch carried by the plunger and engageable over the button, a block normally in contact with the button to prevent engagement of the catch, and timed means for withdrawing the block from the button.

4. The combination in a baling-press, of a plunger, a wire carrier working transversely through the compression-chamber behind the charge, a cable connected to the wire carrier, a button on the cable, a catch carried by the plunger and engageable over the button, a block normally in contact with the button to prevent engagement of the catch, a timing-wheel actuated by the bale and plunger, and a connection between said wheel and the block for withdrawing the same from the button.

5. The combination in a baling-press, of a plunger, a wire carrier working transversely through the compression-chamber behind the charge, a cable connected to the wire carrier, a button on the cable, a catch carried by the plunger and engageable over the button, a block normally in contact with the button to prevent engagement of the catch, a timing-wheel actuated by the bale and plunger, a projecting-pin carried by said wheel, and a lever connected at one end to the block and arranged at the other end in the path of the aforesaid pin.

6. The combination in a baling-press, of a plunger, a wire carrier working transversely through the compression-chamber behind the charge, a cable connected to the wire carrier, a button on the cable, a catch car-

ried by the plunger and engageable over the button, a block normally in contact with the button to prevent engagement of the catch, a timing-wheel actuated by the bale, a ratchet-disk on the wheel, a dog carried by the plunger for operating the disk, a pin projecting from the disk, and a lever connected at one end to the block and arranged at the opposite end in the path of the aforesaid pin.

7. The combination in a baling-press, of a plunger, a wire carrier working transversely through the compression-chamber behind the charge, a cable connected to the wire carrier, a button on the cable, a catch carried by the plunger and engageable over the button, a block normally in contact with the button to prevent engagement of the catch, a timing-wheel actuated by the bale and plunger, a connection between said wheel and the block for withdrawing the same from the button, and a signal device actuated by the timing-wheel.

8. The combination in a baling-press, of a plunger, a wire carrier working transversely through the compression-chamber behind the charge, a cable connected to the wire carrier, a button on the cable, a catch carried by the plunger and engageable over the button, a block normally in contact with the button to prevent engagement of the catch, a bale and plunger-actuated sectional and adjustable timing-wheel, and a connection between said wheel and the block for withdrawing the same from the button.

In testimony whereof I affix my signature, in presence of two witnesses.

GEORGE ALLEN MILLER.

Witnesses:

JACOB J. MILLER,
HARRY MILLER.