WIRING MECHANISM FOR BALING PRESSES.
APPLICATION FILED MAR. 18, 1909.
Patented June 21, 1910.

5 SHEETS—SHEET 1.

Witnesses
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By: Congress.
Att'y.
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5 SHEETS—SHEET 5.
To all whom it may concern:

Be it known that I, Josiah S. Tuttle, a citizen of the United States of America, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Wiring Mechanism for Baling-Presses, of which the following is a specification.

This invention relates to baling presses and more especially to wiring and knotting mechanism therefor, and my object is to produce means whereby a bale may be efficiently and expeditiously wired and the ends of the wires reliably secured together by the attendant who feeds the machine and controls the draft animals employed in its operation, in other words, my object is to produce a baling press, having efficient and reliable wiring and knotting attachments, which can be effectively handled by a single attendant.

A further object is to produce a machine of the character outlined possessing the desirable features of simplicity, strength, durability and inexpensiveness of construction.

With these general objects in view the invention consists in certain novel and peculiar features of construction and organization as hereinafter described and claimed; and in order that it may be fully understood reference is to be had to the accompanying drawings, in which:

Figure 1 is a side elevation of a part of a baling press embodying my invention. Fig. 2, is a horizontal section taken on the line II—II of Fig. 1. Fig. 3, is a horizontal section on a larger scale, taken through the baling-case just above the cutting and knotting mechanism. Fig. 4, is a vertical section taken on the line IV—IV of Fig. 2. Fig. 5, is an enlarged view of the inner side of the wire gripping, cutting and knotting mechanism. Fig. 6, is a vertical section on the line VI—VI of Fig. 5. Fig. 7, is a horizontal section to disclose means for withdrawing the needles from the path of the plunger. Fig. 8, is a side view of the construction disclosed by Fig. 7. Figs. 9, 10, 11 and 12 are diagrammatic views illustrating successive positions which the baling wires are caused to assume in encircling or embracing a bale. Fig. 13, is a sectional perspective view of the wire-gripping and cutting mechanism with the wire gripped on the lower gripping jaw thereof. Fig. 14, is a similar view with the wire gripped on the upper gripping jaw thereof. Fig. 15, is a cross section of a part of the baling-case, and shows in end view, a part of a completed bale with the ends of the wire knotted together.

In the said drawings, 1 indicates a baling-case of the usual type, 2 a reciprocatory plunger therein, 3 the plunger-beam and 4 a shoulder projecting laterally from the beam and adapted at times to be withdrawn from the baling-case.

Pivoted at 5 to the upper and lower sides of the baling-case is a U-shaped frame 6 having a handle 7, and equipped with a pair of rearwardly-extending needles 8 arranged horizontally one above the other and curved concentrically of pivotal point 5, the needles being of such length that when the needle-carrying frame 6 is disposed in the position shown in Fig. 2, said needles stand wholly at one side of the machine. The free ends of the needles are pointed and barbed as at 9 and the barbs are equipped with grooved anti-friction rolls 10. When the handle 7 is grasped and the frame swung to the position shown in dotted lines, Fig. 7, the needles pass through the inner ends of a pair of longitudinal slots 11 in the adjacent side of the baling-case and also through similar slots 12 in the opposite side of the case, the points of the needles attaining substantially the position shown in Fig. 9.

Secured to the last-named side of the baling-case is a frame 13 forming a journal for a pair of reels 14, only one of which appears, and extending forward from said reels and toward the baling-case are baling-wires 15.

Pivoted for vertical movement, to a pair of supporting brackets 16 projecting from the same side of the case as and forward of the reels is a pair of yieldingly-depressed arms 17 provided with forwardly-flaring...
eyes 18 through which said wires extend. Initially said wires extend forward from said yieldingly-depressed guides, as the arms 17 will be hereinafter termed, as shown in Fig. 9.

Secured to and projecting from the side of the baling-case containing slots 11 and below the same are plates 19 having outwardly-projecting arms 20. Brackets secured upon the arms of each plate, each embody parts 21 and 22 extending substantially parallel with the baling-case, part 21 terminating short of the rear end of part 22 and being arranged between the same and the baling-case, and projecting toward the latter forward of its side-walls, from parts 21, and disposed in the horizontal planes of slots 11, are guide-lugs 23 having grooves 24 in their inner ends. The rear ends of parts 21 are bifurcated to produce upper and lower tines 25 and 26, the lower tines being bent upwardly to form pockets 27 and the upper tines upwardly to provide flaring mouths 28 for said pockets. The rear ends of parts 22 are rounded to produce shoulders 29 to cooperate with tines 25 in guiding the baling-wires, as hereinafter explained, in the pockets 27 and into transversely aligned pockets 30 formed in parts 22 by bifurcating the same downwardly and forwardly, the portions of parts 22 overhanging pockets 30 forming guide-lines 31 of angular form in plan view so that their major portions shall be disposed outward of the body-portions of parts 22, as shown most clearly in Figs. 3 and 4, and form upper stationary gripping jaws; the lower stationary jaws being numbered 32 and rigidly secured to or formed with parts 22 and disposed parallel with and a slight distance outward of the tines or jaws 31. The upper edges of jaws 32 are recessed by preference, so as to correspond substantially in form to and lie in the same horizontal planes as the bottom of the pockets 30.

Pivoted on bolts 33 bridging the space between parts 22 and jaws 32 and adapted for alternate engagement with the inner sides of the lower jaws 32 and the outer sides of the upper jaws 31 and movable jaws 34. The inner lower edges of said jaws forward of pivots 33, form cutting edges to act in conjunction with the upper outer edges of stationary cutting jaws 35, the upper edges of which jaws occupy the same horizontal planes as the corresponding edges of jaws 32 and the bottoms of pockets 30, and interposed between said stationary jaws 35 and the parts 22 are fillings 36 which may be strips secured in such position or ribs cast integral with parts 22, it being noticed in this connection, that the gripping and cutting mechanisms above described are disposed between the baling-case and the points of the needles when the latter occupy their initial or withdrawn positions.

Pivoted to the inner sides of the parts 21 are wire-adjusting levers 37, one of which is equipped with a handle 38, and said levers at the opposite sides of their pivotal points from their free ends, are pivotally connected together by a link 39, it being also noticed that the movable jaws 34, are pivotally connected together by a link 40 and that one of them is extended to form a handle 41 where-by both may be operated simultaneously.

42 are twister-shafts arranged transversely of the machine in line with pocket 27 and below pocket 30, said shafts being journaled in parts 22 and in brackets 43 secured to the outer ends of the arms 20 of plates 19, the outer end of one of said shafts being equipped with a crank handle 44. The inner ends of the twister-shafts terminate between parts 21 and 22 outward of pockets 27, and are equipped with substantially semi-circular cranks 45, and in order that the operation of one of the twister-shafts shall impart like movement to its companion twister-shaft, they are provided with sprocket-wheels 46, connected by a sprocket-chain 47, this sprocket gearing being disposed outward of the paths of the needles, as shown most clearly in Fig. 2.

To prevent the plunger from striking the needles should the attendant fail to completely withdraw the same from the baling-case, the following mechanism is provided; 48 is a bar pivoted at its front end to the needle-carrying frame 6 and terminating at its rear end in an inwardly-projecting cam 49, and extending through a guide-clip 50 secured to the adjacent side of the baling-case. Should the needles project into the baling-case, the cam-equipped end of bar 48 stands in the path of shoulder 4 of the plunger-beam 3 so that the advance of the plunger will result in the engagement of said shoulder with said end of the bar and force the latter forward and consequently swing the needle-carrying frame in the same direction and withdraw the needles from the path of the plunger, it being also noticed that the cam will engage the rear end of the baling-case and be forced outward thereby from the path of shoulder 4 to avoid interfering with the continued advance of the same and hence of the plunger.

Before the baling-operation is started, wire is drawn from the reels and threaded through the guides 17 as shown in Fig. 9. Handle 7 is then grasped and the needles are swung through slots 11 and 12 to the position shown in said figure, in which position the grooved rolls of the needles are engaged with the opposite side of the wire from the
baling case, it being noted that the pivoted guides 17 will yield upward slightly as the barbs of the needles strike and force the wire upwardly in passing the yielding guides and thus avoid kinking the wires. There is, of course, but little chance of this occurring in the operation of the needles preliminary to the baling operation because the front ends of the wires leading from the reels are free, but in subsequent operations, that is, when the wires forward of the guides are encircling a bale of hay and are therefore tensioned forward of the guides, it is desirable that the latter be capable of yielding upward. After the needles are engaged with the wires as explained, they are swung back to their original positions and double the wires and draw them in such condition transversely through the baling-case, as shown in Fig. 10, the forward portions, which in this preliminary operation are the free portions, being incidentally drawn through the flaring mouths 28 into the pockets 27 and also into the pockets 30. The rear portions of the doubled wires, viz., those extending from the guides to the needles abut against the rounded shoulders 29 and are held thereby beyond the range of the cutting and gripping mechanism. The handle 41 is then grasped and pulled upward to effect the severance of the wires between the movable and stationary jaws 34 and 35 respectively, the pieces cut off inward of the knife being waste. Incidental to the cutting of the wires they are caught at the outer sides of jaws 34 between the same and the lower stationary gripping jaws 32, the movable jaw 34 forming the cooperating gripping jaw. The needles are then swung forward slightly so as to slack and free the doubled portions of the wires, viz., the portions engaging the rolls of the needles receiving this freeing of such portions of the wire being positive because in the slight forward movement of the needles their barbs act as wedges to force the portions of the wires contiguous to the rolls upward beyond said barbs.

Assuming that the baling-case has received a charge of hay, the machine is started and the advance of the plunger forces such charge forwardly against the wires and bows or pouches the same in a forward direction, the wires feeding from the reels because their front ends are held by the gripping mechanism. Under the forward pressure referred to the wires slide over the rounded shoulders 29 and enter pockets 27 through their flaring mouths 28, and also enter pockets 30 and extend from the lower stationary gripping jaws over the movable combined gripping and cutting jaws, as shown in Fig. 13. With each successive charge of material advanced by the plunger the pouches portions of the wires grow deeper the additional wire necessary being drawn off from the reels, and said wires at the side of the bale adjacent to the gripping and cutting mechanism engage the grooves 24 of lugs 23 and extend therefrom transversely to the gripping and cutting mechanism. They also extend from said grooves longitudinally to the front end of the bale and thence across such end and straight back to the reels through the guides, as shown clearly in Fig. 11. When sufficient baling material has been condensed in the pouched wires to form a bale, the attendant depresses handle 41 and thus raises movable jaws 34 so as to release the ends of the wires from gripping jaws 32 and instantly grasp them between said upward-moving jaws 34 and the upper stationary jaws 31, as shown in Fig. 14. He then grasps and operates handle 7 as hereinafore explained to cause the needles to swing through the baling-case beyond the bale, pick up the wires adjacent to and forward of guides 17 and double and draw such doubled wires through the baling-case as shown in Fig. 12, the front strands of such doubled portions being brought by such action against the rear end of the baling-material and into the mouths of the pockets 27 and 30, it being noted that the baling material is prevented from undue rearward expansion in the baling-chamber by the customary spring-actuated detents 51. The rear portions of such doubled wires bear the relation to the gripping and cutting mechanism shown most clearly in Figs. 3, 10 and 12 and that the said front portions lie below and within the range of downward movement of the hook-shaped levers 37, which, irrespective of the position of the plunger, are simultaneously depressed by an upward pull by the attendant on handle 38, for the purpose of adjusting the said portions of the wires, that is to say, for the purpose of disposing the said portions of the wires in the pockets 27 and 30 and between the elevated combined gripping and cutting jaw 34 and jaws 35 and 32. The bowed rear end of the bale ordinarily will prevent the needles from disposing the front portions of the doubled wires between said jaw, and to insure that said portions attain such positions the adjusting levers 37 are provided as otherwise the attendant would find it necessary to delay operations until the next stroke of the plunger,—viz., the first stroke in the condensing of the next bale—flattened the said bowed rear end of and advanced the first bale sufficiently to dispose said wires between said jaws. With the parts thus assembled the attendant pulls upward on handle 41 and
thus simultaneously depresses the movable jaws 34 and releases the front ends of the wires from between said jaws and jaws 31, and in conjunction with the cutting jaws 55 sever the wires between the rear ends of the bale and the needles and clamps the ends of the portions of such wires extending outward to the needles, against stationary jaws 32. The next action of the movable jaws frees the ends of the free-wires encircling the bale and leaves such ends extending through the pockets and in the path of the curved cranks 45 of the twister-shafts 42, which are turned simultaneously by the proper manipulation of crank handle 44, the result being the two ends of each free wire are twisted together, as shown most clearly in Fig. 3. In this twisting operation the twists occur between the twister shafts and the bale and the free ends of such wires under the pressure of the twister shaft crank-arms 45 and the resistance of parts 32, are caused to bend to a position substantially at right angles to the twisted portions as shown in Fig. 3. As this is accomplished the operator gives the crank handle 44 a half-turn backward so as to release the twisted wires without restraightening the bent portions outward of the twists or knots. This twisting operation occurs at about the same time the plunger forces forward the first charge of baling material for the next bale and in such action flattens the bowed rear end of the completed bale so that the wires around said bale are slackened sufficiently to enable the operator to make one or more twists in excess of the number which he could otherwise make, and thus produce a more compact or dense bale.

Immediately after the twister-shafts are turned backward as explained to effect the release of the twisted wires, and after the recoil of the plunger, the bale expands sufficiently to take up the slack between the rear end of the bale and lugs 23 of the encircling wires so that the latter shall tightly embrace the bale. The expansion of the bale tends to untwist the twisted portions of the wires, and causes said portions to swing upward or downward until arrested by engagement with the side of the bale, in which positions they form locks against untwisting movement. All subsequent operations are repetitions of those described.

From the above description it will be apparent that I have produced a baling press which may be termed a one-man press, as a single attendant can control the horses, feed the press, operate the needles and the gripping, cutting and twisting mechanism, and I wish it to be understood that I reserve the right to make such changes in the form, proportion, detail construction and organization of the parts as properly fall within the spirit and scope of the appended claims. Having thus described the invention what I claim as new and desire to secure by Letters-Patent is:

1. In a baling press, a pivoted jaw having a cutting edge at its lower inner margin, a second cutting jaw having its cutting edge at its upper outer margin to cooperate with the cutting edge of the pivoted jaw, and a stationary gripping jaw to cooperate with the lower outer margin of the pivoted jaw, all the new end of a wire leading from the point of supply as a piece is cut therefrom by the cutting mechanism.

2. In a baling press, a pivoted jaw having a cutting edge at its lower inner margin, a second cutting jaw having its cutting edge at its upper outer margin to cooperate with the cutting edge of the pivoted jaw, a stationary gripping jaw to cooperate with the lower outer margin of the pivoted jaw in gripping the new end of a wire leading from the point of supply as a piece is cut therefrom by the cutting mechanism, and a second gripping jaw to cooperate with said pivoted jaw in gripping said end of the wire when the action of the movable jaw is reversed and the wire is released from between it and the first-named gripping jaw.

3. In a baling press, a cutting jaw and a gripping jaw spaced apart, a needle for swinging from the same side of the baling case as said jaws through said case to the opposite side and at such side catching and doubling a wire and drawing it transversely through the baling-case and disposing the front portion of such doubled wire over said jaws, a movable jaw to move between said spaced jaws and sever such wire against the said cutting jaw and cooperate with said gripping jaw in gripping the new end of the part of the wire leading from the point of supply, and means whereby the wire leading from the point of supply is pushed forwardly in the baling-case, and drawn inward over the movable jaw after such wire is released from the needle.

4. In a baling press, a cutting jaw and a gripping jaw spaced apart, a needle for swinging from the same side of the baling case as said jaws through said case to the opposite side and at such side catching and doubling a wire and drawing it transversely through the baling-case and disposing the front portion of such doubled wire over said jaws, a movable jaw to move between said spaced jaws and sever such wire and cooperate with said gripping jaw in gripping the new end of that part of the wire leading from the point of supply, means whereby the wire leading from the point of supply is
pouched forwardly in the baling-case, and drawn inward over the movable jaw after such wire is released from the needle, and a second gripping jaw to cooperate with the movable jaw in gripping the wire as such wire is released from the first-named gripping jaw by reverse movement of said movable jaw.

5. In a baling press, a cutting jaw and a gripping jaw spaced apart, a needle for swinging from the same side of the baling case as said jaws through said case to the opposite side and at such side catching and doubling a wire and drawing it transversely through the baling press and disposing the front portion of such doubled wire over said jaws, a movable jaw to move between said jaws with the said front part of the wire, a movable jaw to move between said jaws, and means for knotting the two ends of the wire together after the needle has made a second operation and again doubled and drawn such doubled portion of the wire transversely through the baling-case and has disposed the front portion of the doubled part of the wire in the first-named pair of jaws and such portion has been severed by a second operation of the cutting mechanism and the opposite end of the severed portion has been released by said second cutting movement of said movable jaw, and means for insuring the disposition of the front part of the doubled portion of the wire over said cutting and gripping jaw.

7. In a baling press, a cutting jaw and a gripping jaw spaced apart, a needle for swinging from the same side of the baling case as said jaws through said case to the opposite side and at such side catching and doubling a wire and drawing it transversely through the baling press and disposing the front portion of such doubled wire over said jaws, a movable jaw to move between said jaws and sever such wire and cooperate with said gripping jaws in gripping the new end of that part of the wire leading from the point of supply, means whereby the wire leading from the point of supply is pouched forwardly in the baling case and drawn inward over the movable jaw after such wire is released from the needle, a second gripping jaw to cooperate with the movable jaw in gripping the wire as such wire is released from the first-named gripping jaw by reverse movement of said movable jaw, and means for knotting the two ends of the wire together after the needle has made a second operation and again doubled and drawn such doubled portion of the wire transversely through the baling-case and has disposed the front portion of the doubled part of the wire in the first-named pair of jaws and such portion has been severed by a second operation of the cutting mechanism and the opposite end of the severed portion has been released by said second cutting movement of said movable jaw, by reverse movement of said movable jaw, means for knotting the two ends of the wire together after the needle has made a second operation and again doubled and drawn such doubled portion of the wire transversely through the baling-case and has disposed the front portion of the doubled part of the wire in the first-named pair of jaws and such portion has been severed by a second operation of the cutting mechanism and the opposite end of the severed portion has been released by said second cutting movement of said movable jaw, and a wire-adjusting lever to force the front portion of said wire between the first-named jaws and the movable jaw.

8. In a baling press, a cutting and a gripping jaw spaced apart, a needle for swinging from the same side of the baling case as said jaws through said case to the opposite side and at such side catching and doubling a wire and drawing it transversely through the baling press and disposing the front portion of such doubled wire over said jaws, means to prevent the rear part of such doubled portion from being drawn by the needle over said jaws with the said front part of the wire, a movable jaw to move between said spaced jaws and sever such wire
and cooperate with said jaw in gripping the new end of the part of the wire leading from the point of supply, means whereby the wire leading from the point of supply is pouched forwardly in the baling case, and drawn back over the movable jaw after such wire is released from the needle, and a second gripping jaw to cooperate with the movable jaw in gripping the wire as such wire is released from the first-named gripping jaw by reverse movement of said movable jaw.

9. In a baling press, a pair of spaced parts having pockets, at one side of the baling-case, a cutting and a gripping jaw spaced apart and arranged at the opposite side of said parts from the baling-case, a pivoted jaw to simultaneously cooperate with the cutting jaw and said gripping jaw, means to double a wire and dispose the front portion thereof through said pockets and over said first-named jaws to be severed by the pivoted jaw in conjunction with the cutting jaw and gripped between said pivoted jaw and the gripping jaw at its end leading from the point of supply, means to pouch and dispose the portion of the wire leading from the point of supply over the depressed pivoted jaw, a second gripping jaw to cooperate with the pivoted jaw in gripping the end of the wire leading from the point of supply as such end is released from the first-named gripping jaw and the pivoted jaw by the upward movement of the latter, and means for twisting the two ends of the wire together between the said parts and bending such ends at the outer end of the twist at an angle to the twisted portion after the portion of the wire leading from the point of supply has been again doubled and drawn through the case and its front portion has been disposed over the first-named jaws and has been severed by a second operation of the pivoted jaw and the ends of the severed portion have been released by the pivoted jaw and the second gripping jaw by the second cutting movement of said pivoted jaw.

10. In a baling press, a pair of spaced parts having pockets at one side of the baling-case, a cutting and a gripping jaw spaced apart and arranged at the opposite side of said parts from the baling-case, a pivoted jaw to simultaneously cooperate with the cutting jaw and said gripping jaw, means to double a wire and dispose the front portion thereof through said pockets and over said first-named jaws to be severed by the pivoted jaw in conjunction with the cutting jaw and gripped between said pivoted jaw and the gripping jaw at the end leading from the point of supply, means to pouch and dispose the portion of the wire leading from the point of supply over the depressed pivoted jaw, a second gripping jaw to cooperate with the depressed jaw in gripping the end of the wire leading from the point of supply as such end is released from the first-named gripping jaw and the pivoted jaw by the upward movement of the latter, and a twister-shaft journaled and terminating between the said parts and provided with a crank-arm to operate between said parts.

11. In a baling press, a pair of spaced parts having pockets at one side of the baling-case, a cutting and a gripping jaw spaced apart and arranged at the opposite side of said parts from the baling-case, a pivoted jaw to simultaneously cooperate with the cutting jaw and said gripping jaw, means to double a wire and dispose the front portion thereof through said pockets and over said first-named jaws to be severed by the pivoted jaw in conjunction with the cutting jaw and gripped between said pivoted jaw and the first-named gripping jaw at the end leading from the point of supply, means to pouch and dispose the portion of the wire leading from the point of supply over the depressed pivoted jaw, a second gripping jaw to cooperate with the depressed jaw in gripping the end of the wire leading from the point of supply as such end is released from the first-named gripping jaw by the upward movement of the latter, a transversely arranged twister-shaft suitably journaled below the said jaws and terminating at its inner end between the said parts in a curved twisting crank, and means whereby said shaft may be rotated in opposite directions alternately.

12. In a baling press, a baling-case having wire-guiding means at one side and a pair of spaced parts at the opposite side having transversely aligned pockets, a cutting mechanism outward of said parts, comprising a stationary jaw and a movable jaw and a needle capable of moving through the baling-case and catching the baling wire and doubling it and drawing it transversely through the baling-case and disposing the front portion of the doubled part of the wire in said pockets and between said jaws to be severed thereby.

13. In a baling press, a baling-case having slots in the front ends of its side walls, a reel suitably journaled at one side of the case, a guide forward of the reel and holding a wire running from the latter, in the plane of said slots and close to the corresponding side of the case, a pair of spaced parts at the opposite side of the case, having transversely aligned pockets, a cutting mechanism outward of said parts, comprising a stationary jaw and a movable jaw, and a
needle capable of moving from the cutting mechanism side of the baling case beyond the opposite side and back again, through the slots thereof, and of catching the balingwire forward of the wire-guide and doubling it and drawing it transversely through the baling-case and disposing the front portion of the doubled part of the wire in said pockets and between said jaws to be severed thereby.

14. In a baling press, a baling-case having wire-guiding means at one side and a pair of spaced parts at the opposite side having transversely aligned pockets, a cutting mechanism outward of said parts comprising a stationary jaw and a movable jaw, a needle capable of moving through the baling-case and catching the baling wire and doubling it and drawing it transversely through the baling-case and disposing the front portion of the doubled part of the wire in said pockets and between said jaws to be severed thereby, and a gripping jaw between which and the said movable jaw the new end of the portion of the wire leading from the point of supply is gripped as such severance occurs.

15. In a baling press, a baling case having slots in the front ends of its side walls, a reel suitably journaled in one side of the case, a guide forward of the reel and holding a wire running from the latter in the plane of said slots and close to the surrounding side of the case, a pair of spaced parts at the opposite side of the case, having transversely aligned pockets, a cutting mechanism outward of said parts, comprising a stationary jaw and a movable jaw, a needle capable of moving through the baling-case and catching the baling wire and doubling it and drawing it transversely through the baling-case and disposing the front portion of the doubled part of the wire in said pockets and between said jaws to be severed thereby, and a gripping jaw between which and the said movable jaw, the new end of the portion of the wire leading from the point of supply is gripped as such severance occurs.

16. In a baling press, a cutting jaw and a gripping jaw spaced apart, a movable needle having a pointed barbed front end for catching and doubling a wire and drawing it transversely through the baling-case and disposing the front portion of such doubled wire over said jaws and its rear portion over the pointed barbed end, a movable jaw to move between said spaced jaws and sever such wire and cooperate with such gripping jaw in gripping the new end of the portion of the wire leading from the point of supply is pounced forwardly in the baling-case, and drawn inward over the movable jaw after such wire is released from the needle, and a second gripping jaw to cooperate with the movable jaw in gripping the wire as the same is released from the first-named gripping jaw by reverse movement of said movable jaw.

17. In a baling press, a cutting jaw and a gripping jaw spaced apart, a pivoted curved needle for swinging through the baling-case from a point outward of the said jaws to and beyond the opposite side of the press and back again and in such movement catching the wire at said opposite side and doubling it and drawing it doubled transversely through the case and disposing the front portion of the doubled part over said jaws, a movable jaw to move between said spaced jaws and sever such wire and cooperate with said gripping jaw in gripping the new end of the portion of the wire leading from the point of supply, means whereby the wire leading from the point of supply is pounced forwardly in the baling-case, and drawn inward over the movable jaw after such wire is released from the needle, and a second gripping jaw to cooperate with the movable jaw in gripping the wire as the same is released from the first-named gripping jaw by reverse movement of said movable jaw.

18. In a baling press, a pair of spaced parts at one side of the baling case, and provided with transversely aligned pockets, a wire-guiding means forward and inward of the pocket of the part nearest the baling-case, a cutting jaw and a gripping jaw spaced apart and arranged outward of the first-named parts, means for catching and doubling a wire located at the opposite side of the case from the said jaws and drawing such doubled portion of the wire transversely through the baling-case and disposing the front portion of such doubled wire over said jaws and in said pockets, a movable jaw to move between said spaced jaws and sever such wire and cooperate with said gripping jaw in gripping the new end of the portion of the wire leading from the point of supply, means whereby the wire leading from the point of supply is pounced forwardly in the baling-case and drawn inward over the movable jaw and against the inner side of the said guiding means, after such wire is released by the means which disposed it over the said jaws, and a second gripping jaw to cooperate with the movable jaw in gripping the wire as the same is released from the first-named gripping jaw by reverse movement of said movable jaw.

19. In a baling press, a pair of spaced parts at one side of the baling-case, provided with transversely-aligned pockets, a wire-guiding means forward and inward of the
pocket of the part nearest the baling-case, a cutting jaw and a gripping jaw spaced apart and outward of the first-named parts, means for catching and doubling a wire located at the opposite side of the case from the side jaws and drawing such doubled portion of the wire transversely through the baling-case and disposing the front portion of such doubled wire over said jaws and in said pockets, a movable jaw to move between said spaced jaws and sever such wire and cooperate with said gripping jaw in gripping the new end of the point of the wire leading from the point of supply, means whereby the wire leading from the point of supply is pouched forwardly in the baling-case and drawn inward over said movable jaw after the looped end of the wire has been disengaged from the barbed end of the needle by a slight movement of the latter, and a second gripping jaw to cooperate with the movable jaw in gripping the wire as the same is released from the first-named gripping jaw by reverse movement of said movable jaw.

21. In a baling press, a baling-case, a needle pivoted thereto and adapted to swing at its free end through the case from one side to the other and back again, a reciprocatory plunger in the case, a plunger-beam to actuate the same, and means whereby advancing movement of the plunger and beam shall effect the withdrawal of the needle from the baling-case and the path of the plunger should the needle project into said case.

22. In a baling press, a baling-case, a needle pivoted thereto and adapted to swing at its free end through the case from one side to the other and back again, a reciprocatory plunger in the case, a plunger-beam to actuate the same, means whereby advancing movement of the plunger and beam shall effect the withdrawal of the needle from the baling-case and the path of the plunger should the needle project into said case, and means whereby the needle and the plunger shall be isolated to permit the former to cooperate without affecting the needle.

23. In a baling press, the combination of a baling-case, a reciprocatory plunger therein, a plunger-beam connected to the plunger and provided with a laterally-projecting shoulder, a needle pivoted to the press and adapted to swing through the same from one side to the other and back again within the range of movement of the plunger, a bar pivoted at its front end to the needle and arranged at one side of the baling-case and provided with an inwardly-projecting cam portion at its rear end, a guide-grip loosely supporting said bar near its rear end and guiding the same so that it shall occupy the path of forward movement of said shoulder when the needle is projecting into the baling-case and its cam portion shall strike the rear end of the baling-case and be forced outward thereby and from the path of said shoulder to permit the latter to pass.

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

JOSIAH S. TUTTLE.

Witnesses:

THOS. A. SCHEERER,
R. E. BERGHOFER.