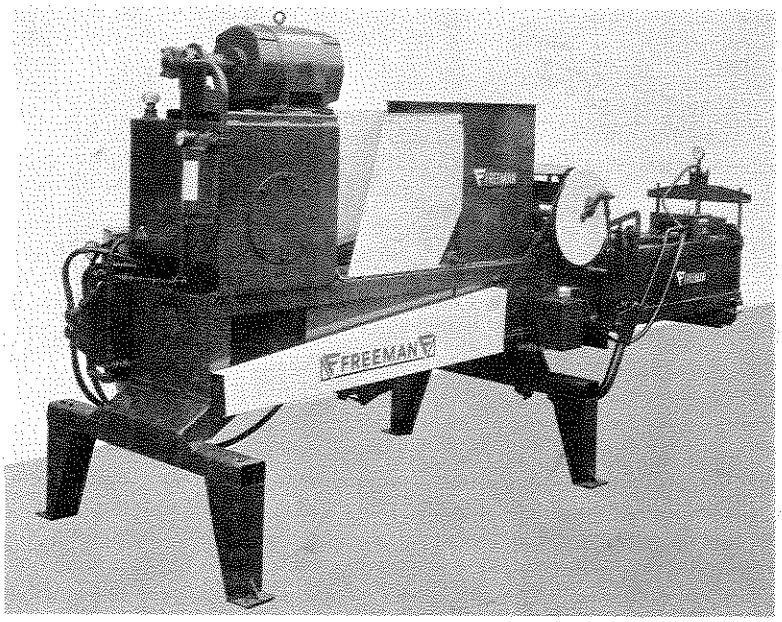
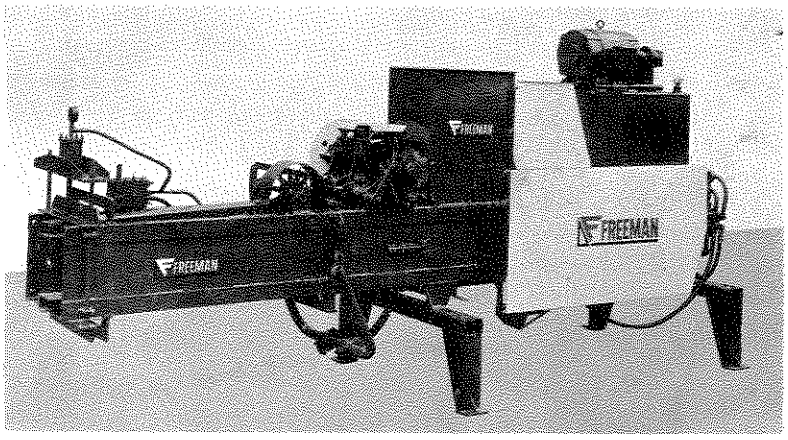
SERVICE BULLETIN NO. 11567

FREEMAN

COTTON MOTES

BALER





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BALER STARTING PROCEDURE

I Starting

1. Start motor and check rotation. Pump must turn according to arrow on pump housing. See Ref. 41, Fig. 1.

II Wire Threading

1. Put wire in wire box with "start" end facing flared holes in box. Slide box under middle of baler with flared holes facing wire guides, Ref. 35, Fig. 5. Thread wire through eye and between the three rollers of the wire guides, Ref. 35, Fig. 4 and 5. Tie wire to cross frame, Ref. 48, Fig. 4. Knotter will thread itself when baler is in operation.

III Operation

1. Turn tension adjusting screws, Ref. 36, Fig. 2, all the way down. As cotton packs in chamber open gauge valve, Ref. 45, Fig. 3. Check pressure on compression stroke. When pressure reaches 1000 psi., back off tension adjusting screws four or five turns at a time until pressure is stabilized at 900 to 1000 psi.
   CAUTION: Do not allow pressure to exceed 1000 psi.

   CAUTION: Keep gauge valve closed, except when reading pressure.

   For Balers equipped with automatic tension control, see adjusting procedure on Page 5.

2. Check pressure about once every hour. If pressure drops below 900 psi., tighten tension adjusting screws about four turns. If pressure exceeds 1000 psi., loosen screws about four turns.

IV Lubrication

1. Lubricate all trip parts and linkage with grease or #140 transmission oil at least once daily.

BALER SEQUENCE OF OPERATION

(Front End of Baler is the end on which Motor and Pump are installed)

1. Packer Ref. 16, Fig. 8. operates continuously except during operation of plunger, Ref. 22, Fig. 6.

2. The packer moves the packer toggle quadrant, Ref. 15, Fig. 7. At the end of each downward and upward stroke the shifting packer toggle control lever, Ref. 10, Fig. 7, pivots and in turn moves the packer valve operating rod, Ref. 17, Fig. 7, the packer valve operating lever, Ref. 18, Fig. 9, the valve control bar, Ref. 19, Fig. 9, and the packer valve, Ref. 20, Fig. 9. The action of the packer valve causes the hydraulic cylinder connected to the packer to reverse its direction, thereby causing the packer to reverse its direction.

3. Material free falls into packer chamber, and is progressively compressed until the material is dense enough to overcome the trip door spring, Ref. 3, Fig. 5, causing the trip door, Ref. 1, Fig. 5, to move downward during the compression stroke of the packer.

BALER SEQUENCE OF OPERATION, Cont.

4. When the trip door moves downward, the trip door latch, Ref. 4, Fig. 6, catches over the end of the trip door spring hanger, Ref. 1B, Fig. 6, holding trip door, Ref. 1, Fig. 5, in down position. At the same time the packer toggle catch, Ref. 12, Fig. 7, is moved downward into engaged position.

5. The packer toggle catch, Ref. 12, Fig. 7, stops the packer toggle lever, Ref. 9, Fig. 7, as it is being shifted and while packer is in down position. This stops the packer valve, Ref. 20, Fig. 9, in a neutral position and locks the packer down.

6. As the packer toggle is being stopped, it moves the packer toggle lever catch, Ref. 12, Fig. 7, backward. The rearward movement of the packer toggle catch releases the plunger toggle catch, Ref. 31, Fig. 9.

7. When the plunger toggle catch, Ref. 31, Fig. 9, is released, the plunger toggle lever, Ref. 23, Fig. 9, shifts, moving the plunger valve, Ref. 33, Fig. 9, to the compression stroke position.

8. The plunger, Ref. 22, Fig. 6, moves rearward on the compression stroke, compressing the prepacked material until the bar driving stud, Ref. 27, Fig. 9, moves the plunger operating bar, Ref. 26, Fig. 6, sufficiently to shift the plunger toggle lever, Ref. 23, Fig. 9.

9. When the plunger toggle lever, Ref. 23, Fig. 9, shifts the plunger valve, Ref. 33, Fig. 9, to the plunger return position, the plunger returns to the forward position.

10. As the plunger moves forward, the trip door reset lever, Ref. 6, Fig. 6, drives the reset operating lever, Ref. 7, Fig. 6, to the reset position, allowing the trip door, Ref. 1, Fig. 5, to return to its upper position.

11. The packer toggle catch, Ref. 12, Fig. 7, is disengaged during the reset operation, allowing the packer, Ref. 16, Fig. 8, to resume normal operation.

12. The packer toggle catch, Ref. 12, Fig. 7, moves forward when it is released. This movement engages the plunger toggle catch Ref. 31, Fig. 9. When the plunger moves forward sufficiently the plunger toggle lever Ref. 23, Fig. 9, is shifted until it contacts the plunger toggle catch, Ref. 31, Fig. 9. The plunger valve, Ref. 33, Fig. 9, is then stopped in neutral position, and the plunger is at reset position. This completes the compression cycle, and normal feed operating cycle is resumed.

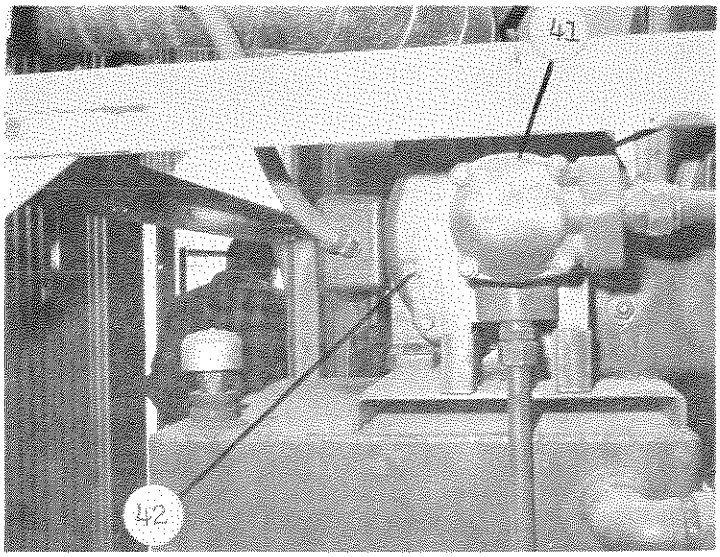

Fig. 1

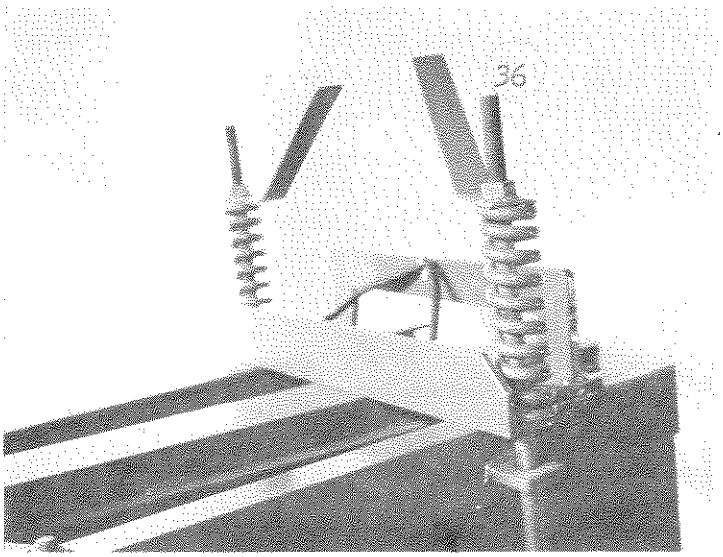

Fig. 2

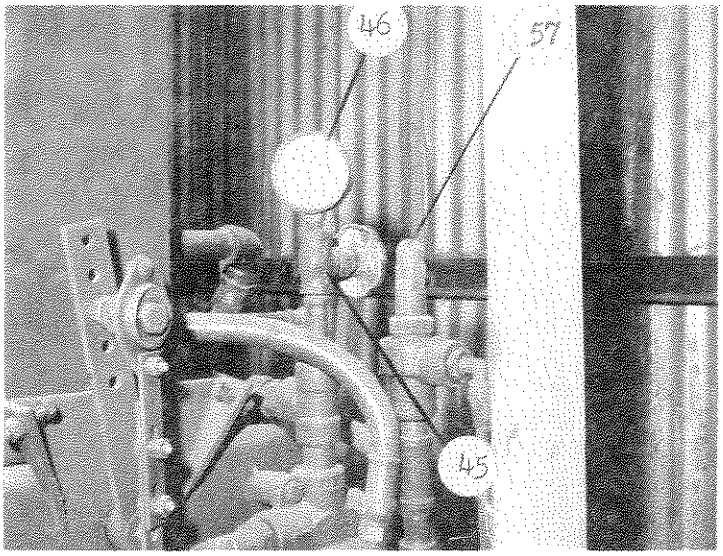

Fig. 3

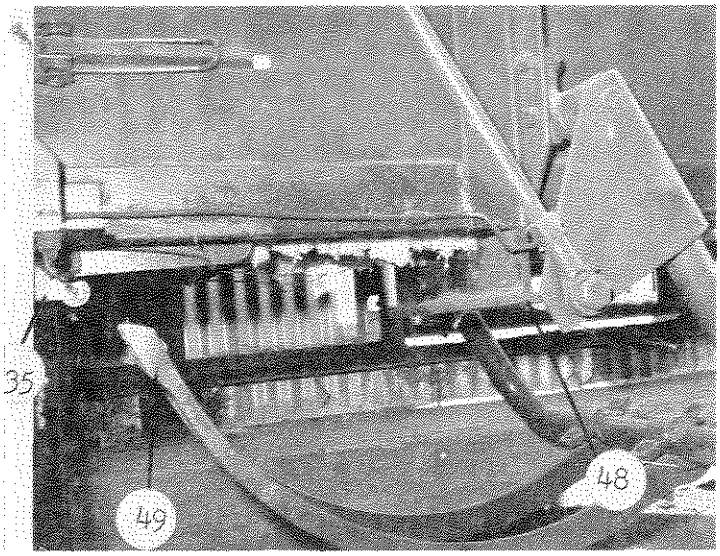

Fig. 4

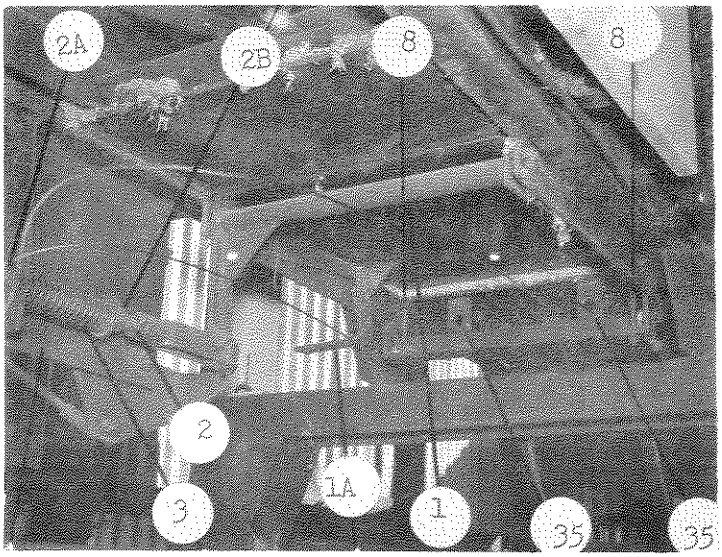

Fig. 5

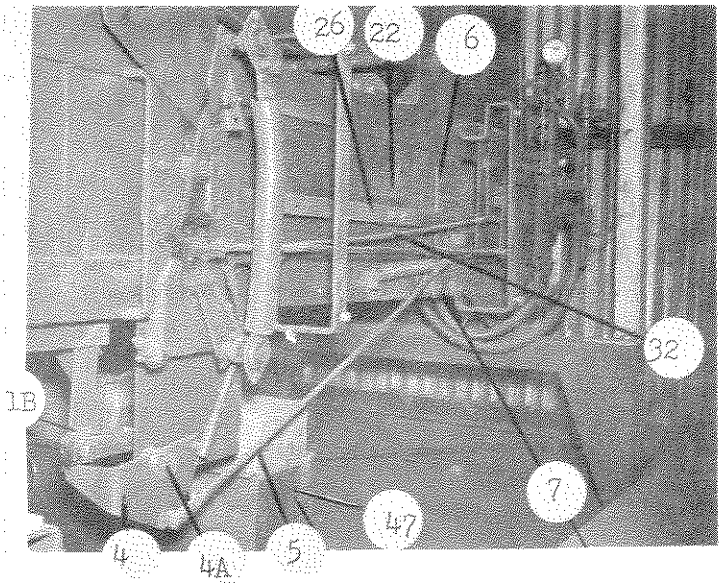

Fig. 6

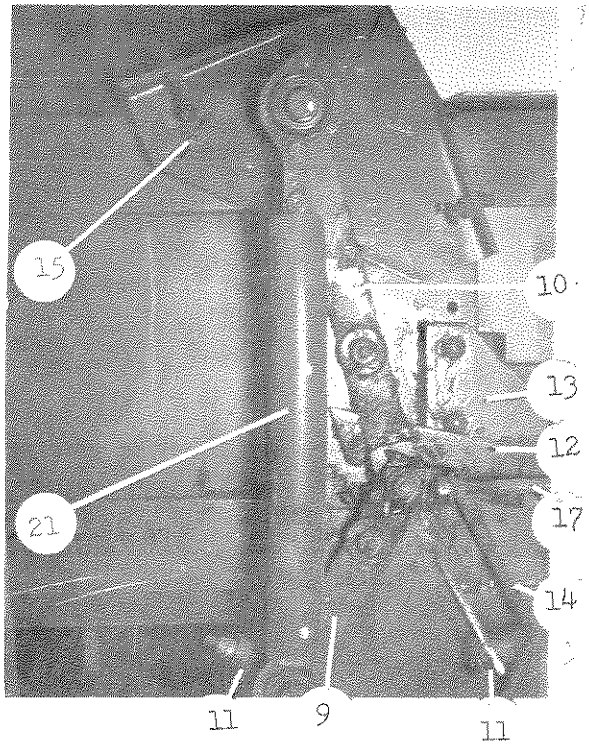

Fig. 7

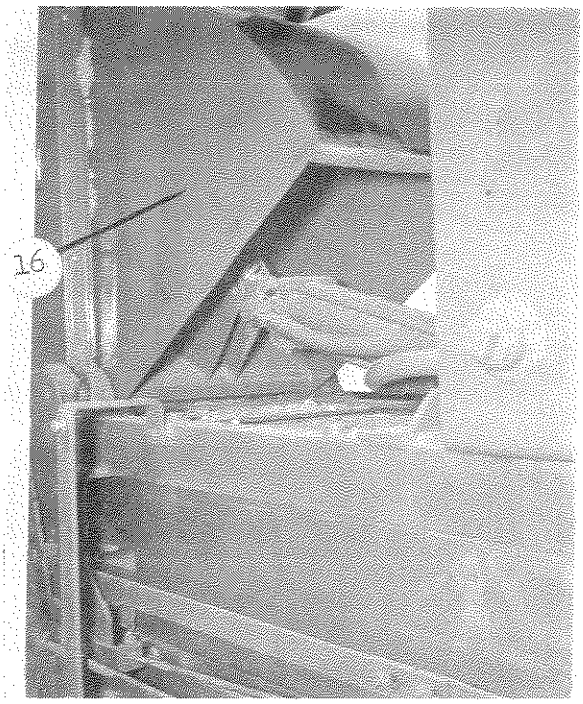

Fig. 8

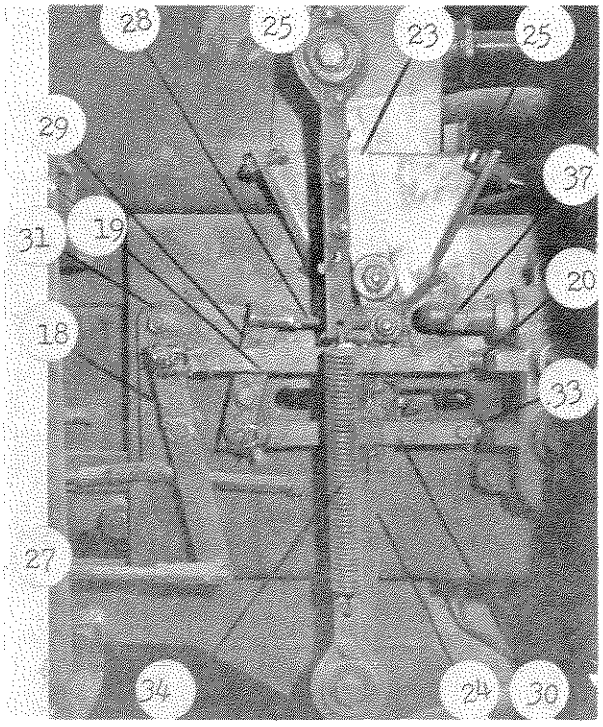

Fig. 9

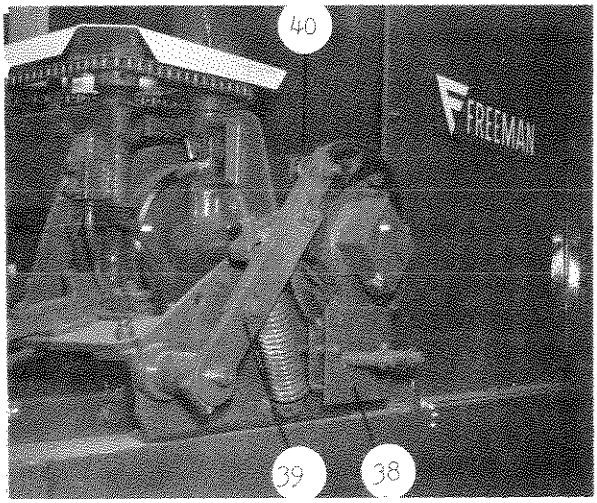

Fig. 10

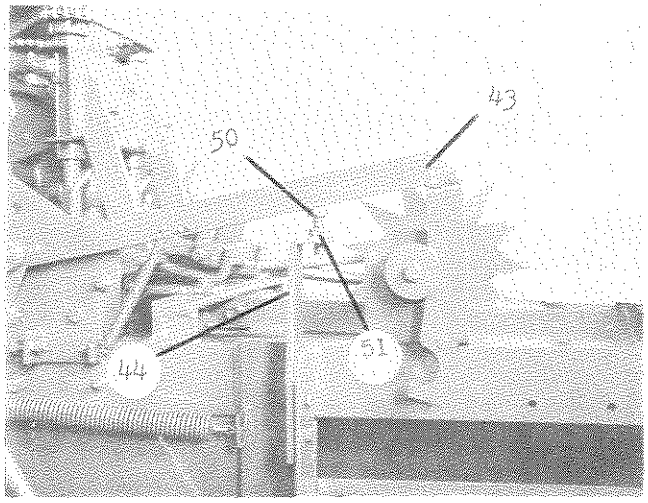

Fig. 11

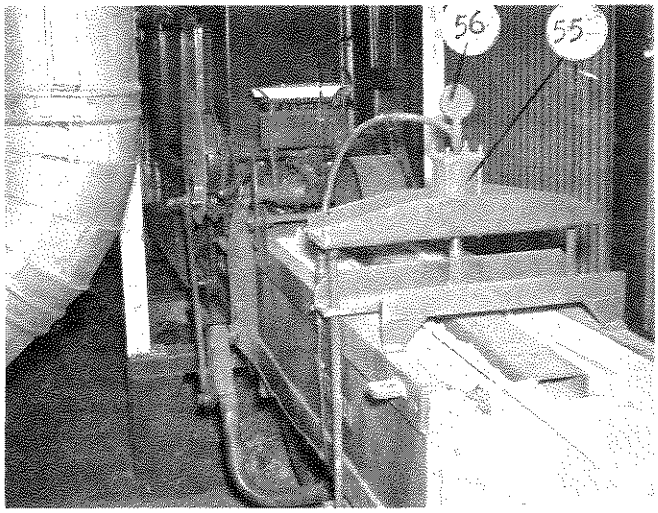

Fig. 12

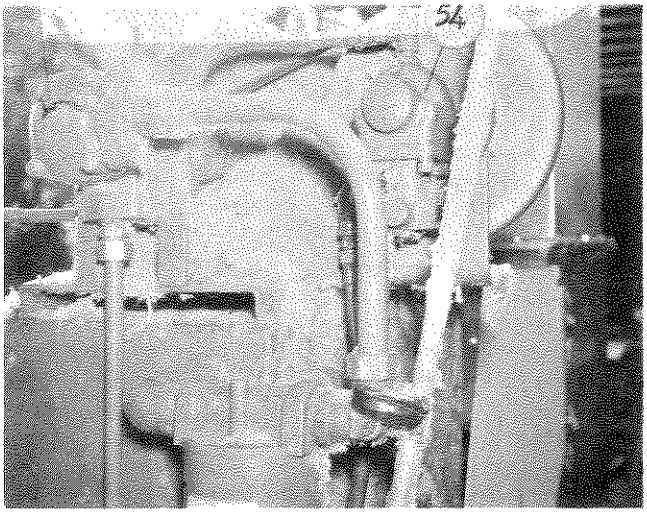

Fig. 13

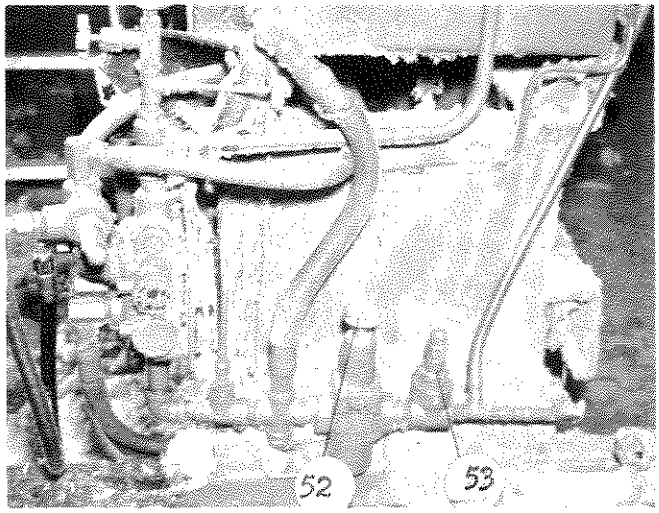

Fig. 14

AUTOMATIC TENSION CONTROL ADJUSTMENT

Start baler, adjust tension control relief valve, Ref. 52, Fig. 14, to obtain 1400 PSI on tension control gauge, Ref. 56, Fig. 12.

Turn hand valve on tension control by-pass valve, Ref. 53, Fig. 13, all the way down. Begin feeding material into baler, as material fills chamber and packs, open the gauge valve, Ref. 45, Fig. 3, and observe pressure as plunger makes compression stroke. Turn hand wheel on tension control valve counter-clockwise to maintain pressure at 1300 psi. Under normal conditions this system should require no further adjustment.

ADJUSTING PROCEDURE

If baler is not operating properly, first check the hydraulic pressure to see if it is excessive. If it is all right, check adjustments as listed below.

1. Adjust toggle spring, Ref. 21, Fig. 7, tensions to 60 lbs. when toggle is on center.

2. Adjust trip door spring adjusting nuts Ref. 2B, Fig. 5, to obtain 10 lbs. force on trip door handle Ref. 1A, Fig. 5.

3. Adjust trip rod stop nuts, Ref. 2A, Fig. 5, until rear tip of trip door, Ref. 1, Fig. 5, is one inch above bottom plate of baler.

4. Adjust trip door stop bolts, Ref. 8, Fig. 5, to stop rear tip of trip door flush with bottom plate of baler.

5. Adjust latch pivot bolt, Ref. 4A, Fig. 6, in trip door latch, Ref. 4A, Fig. 6 to position latch to allow 1/32" clearance between latch and trip door spring hanger, Ref. 1B, Fig. 6, when trip door, Ref. 1, Fig. 5, is against stop bolts, Ref. 8, Fig. 5.

6. Adjust trip door reset rod, Ref. 5 Fig. 6 to allow trip door latch to catch 1/2" over end of trip door spring hanger, Ref. 1B, Fig. 5.

7. Adjust packer toggle catch operating rod, Ref. 14, Fig. 7, to position bottom tip of hook on packer toggle catch, Ref. 12, Fig. 7, 1/8" above pin in packer toggle lever, Ref. 9, Fig. 7.

8. Start baler with packer, Ref. 16, Fig. 8, operating. Adjust packer valve operating rod, Ref. 17, Fig. 7, with nuts on rear end until toggle lever exerts the same force as it shifts past center in each direction.

9. Adjust packer toggle control stops, Ref. 11, Fig. 7, to move packer valve, Ref. 20, Fig. 9, fully to each end of valve, but leaving linkage free. This adjustment may be made by removing or installing washers under rubber bumpers.

10. Adjust plunger toggle spring, Ref. 34, Fig. 9 to 60 lbs. tension when plunger toggle lever, Ref. 23, Fig. 9, is centered.

11. Disconnect reset rod, Ref. 5, Fig. 6. Start baler and depress trip door by pressing down on trip door handle, Ref. 1A, Fig. 5. The plunger will now run continuously. Adjust plunger valve operating rod, Ref. 28, Fig. 9, until toggle lever, Ref. 23, Fig. 9, exerts same force as it shifts past center in both directions.

12. Adjust plunger toggle catch, Ref. 31, Fig. 9, by loosening mounting bolt until plunger valve, Ref. 33, Fig. 9, is moved to neutral (center) position as toggle lever, Ref. 23, Fig. 9, is caught by plunger toggle catch, Ref. 31, Fig. 9.

13. Adjust plunger toggle catch operating rod, Ref. 32, Fig. 6, with nuts on rear end of rod to position upper tip of hook on plunger toggle catch, Ref. 31, Fig. 9, 1/8" below pin on plunger toggle lever, Ref. 23, Fig. 9, when plunger is moving toward rear of baler.

14. Adjust plunger control lever stops, Ref. 25, Fig. 9, to move plunger valve, Ref. 33, Fig. 9, fully to each end of travel as plunger toggle lever shifts in each direction, but leaving linkage free.

15. Adjust plunger operating bar, Ref. 26, Fig. 6, by installing bolts in its center, in alternate holes, until plunger, Ref. 2, Fig. 6, travel toward rear of baler is 1/2 inch less with bolts removed than it is with bolts installed.

16. Adjust trip door reset lever, Ref. 6, Fig. 6, until it catches reset operating lever, Ref. 7, Fig. 6, 3/16 inch below its upper tip. This adjustment is made by loosening pivot bolt on reset lever, Ref. 6, Fig. 6, and sliding vertically in slotted hole in plunger, Ref. 22, Fig. 6.

17. Adjust bolts on toggle operating quadrant, Ref. 15, Fig. 7, until face of packer, Ref. 16, Fig. 8, is even with inside of bottom of top plate at end of compression stroke, and even with wiper above packer at the end of return stroke.

18. To adjust maximum hydraulic pressure, remove center bolts from plunger toggle operating bar, Ref. 26, Fig. 6. Depress trip door handle, Ref. 1A, Fig. 5, allowing plunger to extend to the end of its stroke. Adjust plunger relief valve, Ref. 37, Fig. 9, to obtain hydraulic gauge reading of 1500 psi.

19. Packer is protected by a relief valve. To check pressure, disconnect packer valve control bar Ref. 19, Fig. 9. Pull out packer valve, Ref. 20, Fig. 9, start baler and packer will go down to the end of its stroke. Adjust packer relief valve Ref. 57, Fig. 3, to 150 psi, on gauge, Ref. 46, Fig. 3.

NEEDLE TIMING

With knotter in reset position and plunger in reset position, place chain on knotter sprocket so that notch in clutch disc is 1/2 inch to the rear of clutch pawl roller.

BALE LENGTH

Adjust bale length by loosening nut, Ref. 50, Fig. 11, and turn bolt, Ref. 51, Fig. 11, up to shorten bale and turn down to lengthen bale.

PARTS IDENTIFICATION

Ref.	Fig.	Description
1	5	Trip Door
1A	5	Trip door handle
1B	6	Trip door spring hanger
2	5	Trip door return rod
2A	5	Rod stop nuts
2B	5	Spring adjusting nuts
3	5	Trip door return spring
4	6	Trip door latch
4A	6	Latch pivot bolt
5	6	Trip door reset rod
6	6	Trip door reset lever
7	6	Reset operating lever
8	5	Trip door stop bolts
9	7	Packer toggle lever
10	7	Packer toggle control lever
11	7	Packer toggle control stops
12	7	Packer toggle catch
13	7	Packer toggle catch bracket
14	7	Packer toggle catch operating rod
15	7	Toggle operating quadrant
16	8	Packer
17	7	Packer valve operating rod
18	9	Packer valve operating lever
19	9	Packer valve control bar
20	9	Packer valve
21	7	Packer toggle spring
22	6	Plunger
23	9	Plunger toggle lever
24	9	Plunger toggle control lever
25	9	Plunger control lever stops
26	6	Plunger toggle operating bar
27	9	Bar driving stud
28	9	Plunger valve operating rod
29	9	Plunger valve operating lever
30	9	Plunger valve control bar
31	9	Plunger toggle catch
32	6	Plunger toggle catch operating rod
33	9	Plunger valve
34	9	Plunger toggle spring
35	4, 5	Wire guides
36	2	Tension adjusting screws
37	9	Pressure relief valve
38	10	Knotter brake
39	10	Knotter saddle lever
40	10	Knotter saddle roller
41	1	Hydraulic pump
42	1	Motor
43	11	Knotter trip bar
44	11	Knotter trip bar stop
45	3	Gauge valve
46	3	Hydraulic gauge
47	6	Wire box
48	4	Cross frame
49	4	Needles
50	11	Knotter trip bar stop bolt
51	11	Locking nut
52	14	Tension control relief valve
53	14	Tension control by-pass valve
54	13	Tension control pump
55	12	Tension control ram
56	12	Tension control gauge
57	3	Packer relief valve