INTRODUCTION

The IMS 1270 board operates in IMS computer systems as a system master or slave CPU board. The board is based on the Z80B processor with 128K of RAM, 8K of EPROM and two (2) serial I/O ports. When used as the master, the board communicates with other system devices via the S100 bus. The slaves and master communicate with each other via the IMS S100+ network. The attached pictorial representation of the board provides a guide to shunt and connector locations.

The 1270 board works with the following IMS peripheral controllers: (Recommended interrupt vectors are given)

IMS P/N	DESCRIPTION	INTERRUPT
480	Serial I/O Board	2 <-(NOT IMS
630	Serial/parallel I/O Board	2 <- STANDARD)
820	Winchester Disk Controller	4
930	DMA Floppy Disk Controller	5
1100	DMA Winchester Disk Controller	4
1120	QIC-02 Tape Interface Controller	N/U
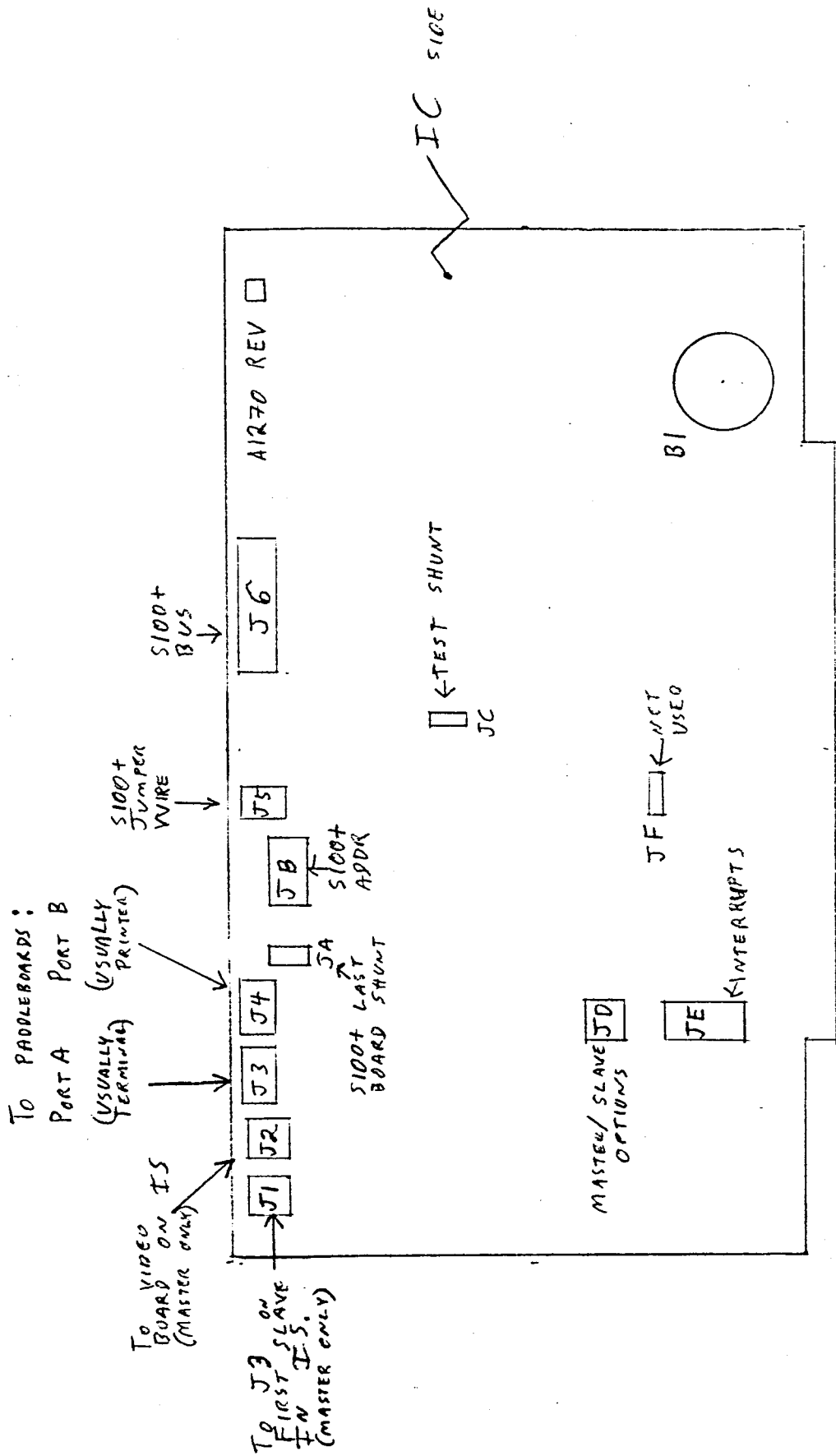
FIG 1. Z80B MASTER/SLAVE SHUNTS AND EXTERNAL CONNECTORS

IC SIDE

IC

A1270 REV

B1

S100+ BUS → J6

TEST SHUNT
JC

S100+ JUMPER WIRE → J5

JB ← S100+ ADDR

JA ← S100+ LAST BOARD SHUNT

JF ← NCT USED

JE ← INTERRUPTS

MASTER/SLAVE JD OPTIONS

To PADDLEBOARDS:
PORT A   PORT B
(USUALLY TERMINAL)   (USUALLY PRINTER)

J3   J4

To VIDEO ON IS (MASTER ONLY)
J2

To J3 ON FIRST SLAVE IN IS. (MASTER ONLY)
J1

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BOARD SET-UP PROCEDURE

The 1270 is used as the master in a multi-user system or as the only board in a single-user system. It is also used as a slave in an S100+ based system.
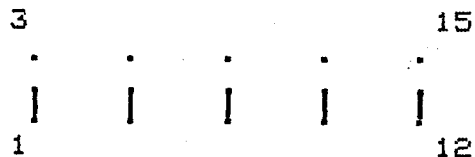
Each board sent from the factory has been fully tested, however, a quick visual inspection is recommended to ensure that no obvious damage has occured to the board (bent connectors, dislodged IC, etc). Orient the board with the IC side facing you with the S100 connectors towards the bottom. Refer to Figure 1 for the following steps:

1. Shunts for master boards. (The shunt jack locations are as shown in Figure 1):
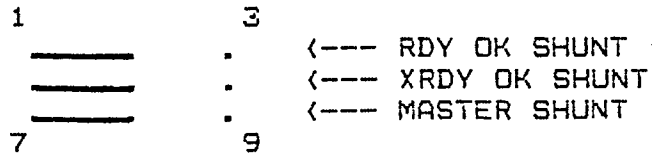
    a. JA (S100+ Options)

    ```
                    1                           1
    single          |               multi-      .
    user:           .               user:       |
                    3                           3
    ```
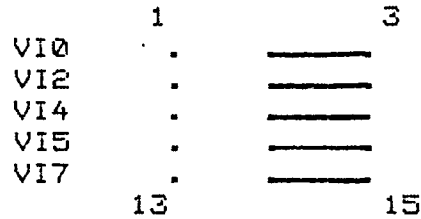
    b. JB (S100+ Address 0)

    ```
         3                           15
         .       .     .     .     ..
         |       |     |     |     |
         1                           12
    ```

    c. JC (Test Shunt) - leave open

d. JD (Master/Slave options)

```
        1              3
        ━━━━━━━    .    <--- RDY OK SHUNT
        ━━━━━━━    .    <--- XRDY OK SHUNT
        ━━━━━━━    .    <--- MASTER SHUNT
        7              9
```

e. JE (Interrupts)

```
            1              3
    VI0     ·    .    ━━━━━━━
    VI2          .    ━━━━━━━
    VI4          .    ━━━━━━━
    VI5          .    ━━━━━━━
    VI7          .    ━━━━━━━
            13             15
```

f. JF (leave open)

2. Shunts for slave cards:

a. JA (S100+ Control)

```
                        1                           1
                        .                           ┆
    Intermediate        ┆       Last                ┃
    Board on            ┃       Board               .
    S100+:              3       S100+:              3
```

b. JB (S100+ Address)

```
    One         3       6       9       12      15
                ·       ·       ·       ·       ·

                2.      .       .       .       .14

    Zero        ·       ·       ·       ·       ·
                1       4       7       10      13
               SLD4    SLD3    SLD2    SLD1    SLD0
```
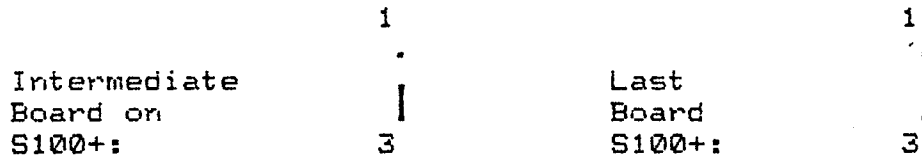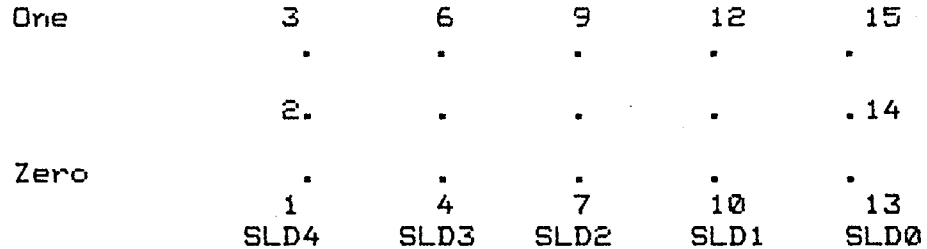
Slaves may be addressed as #1. through #30. (1-1E hex). Setting the proper board address is based on the binary address as shown in table 1 at the back of this document. (Slaves all have the same priority regardless of their addresses).

c.   JC (Test Shunt) - Leave open

d.   JD Master/Slave Options


```
1           3
 .    ━━━━    <------- Shunt "parked"
 .    ━━━━    <------- Shunt "parked"
 .    ━━━━    <------- Slave Shunt
7           9
```
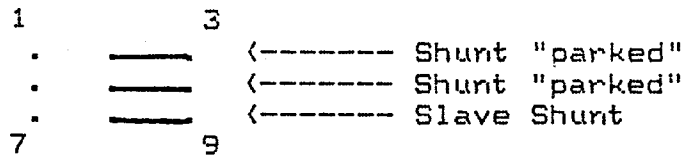

e.   JE (All shunts "parked")


```
  1           3
   ━━━━━    .
   ━━━━━    .
   ━━━━━    .
   ━━━━━    .
   ━━━━━    .
  13          15
```
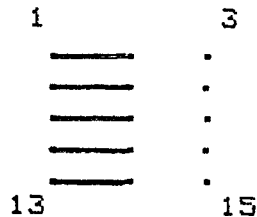

f.   JE, JF: Leave all shunt Jacks open.

3. External connections:

a.   J1 on the master and J3 on the first slave are used to
     allow the transference of the master console at boot
     time to be used as the terminal for the first slave.
     If this feature is used, a special cable connection is
     made between the master's J1 and the slave's J3. These
     connections are made from J1-2 to J3-6, and J1-3 to
     J3-10.

b. If a built in video display terminal is used, it may be
    connected to port J2 of the master in a single or multi-
    user system.   This connection is made with a 3-conductor
    master/slave cable from J2 on the 1270 board to J5 on the
    video board (IMS 1060 series).   The following pins are
    interconnected:

	1270 J2	1060 J5
1270 Receive	1	2
1270 Transmit	2	1
Ground	3	3

    (Note: For IMS 660 series video boards, the external
    RS-232 connection must be used, as J5 on the 660 is
    not compatible with the 1270).

c. J3 is the serial I/O port "A" connector and is usually
    used for the board's terminal I/O device.   (Except in the
    cases given above in (B) where J2 is used instead of J3
    for serial port "A" I/O).   J3 is connected to a serial
    driver paddleboard using a 14 conductor flat cable.

d. J4 is the connector for serial I/O port B.   It is con-
    nected to a serial driver paddleboard using a 14 con-
    ductor flat cable.

e. J5 is the S100+ bus priority connector and must be
    connected on all 1270 boards in multi-user systems.   It
    is connected from J5-2 on the first board to J5-1 on the
    next.   Each J5-2 is connected to J5-1 on succeeding
    boards.   No connection is made to J5-1 on the first board
    or to J5-2 on the last one.   Each connector on the inter-
    board cable must connect to a board until the last one is
    connected.

f. J6 is connected on all boards in a multi-user system using a single 26 conductor flat cable with multiple connectors. A sample system interconnect appears as Figure 2. Handle this cable with care as excessive twisting or pulling on it can create internal signal shorts.

4. Signal paddleboards are installed in place of RS232 receptacles on the backpanel of IMS machines. Standard female screw locks are used to mount the paddleboards. Since the ground for the boards is supplied by the backpanel, the screw locks must be securely connected. When the 14 conductor cable from a 1270 is connected to the header on the paddleboard, ensure that there are no twists in the cable.

5. To change the lithium battery (B1), remove the existing battery and replace with a BR2325 or equivalent. The real time clock will need to be re-initialized by the operating system following this procedure.

References:

IMS 1270 Hardware-Software Interface Document.
TurboDOS Installation Manual.
IMS 1270 Hardware Specification.

STANDARD SCREWLOCK
RECEPTACLE
BACK PANEL
PADDLEBOARD (IC's UP)

PERIPHERAL CONTROLLERS

TO TERMINAL PADDLEBOARD

J1   J2   J3   J4   J5   J6

ADDR 4 — LAST SLAVE

TO TERMINAL PADDLEBOARD

ADDR 3 — SLAVE 3

TO TERMINAL PADDLEBOARD

ADDR 2 — SLAVE 2

J2   PIN 1
6   10

ADDR 1 — SLAVE 1

TO PRINTER PADDLE BOARD

1 2 3
1 2 3

ADDR 0 — MASTER

J1   J2   J3   J4   J5   J6   IC SIDE

TO VIDEO BOARD J-5
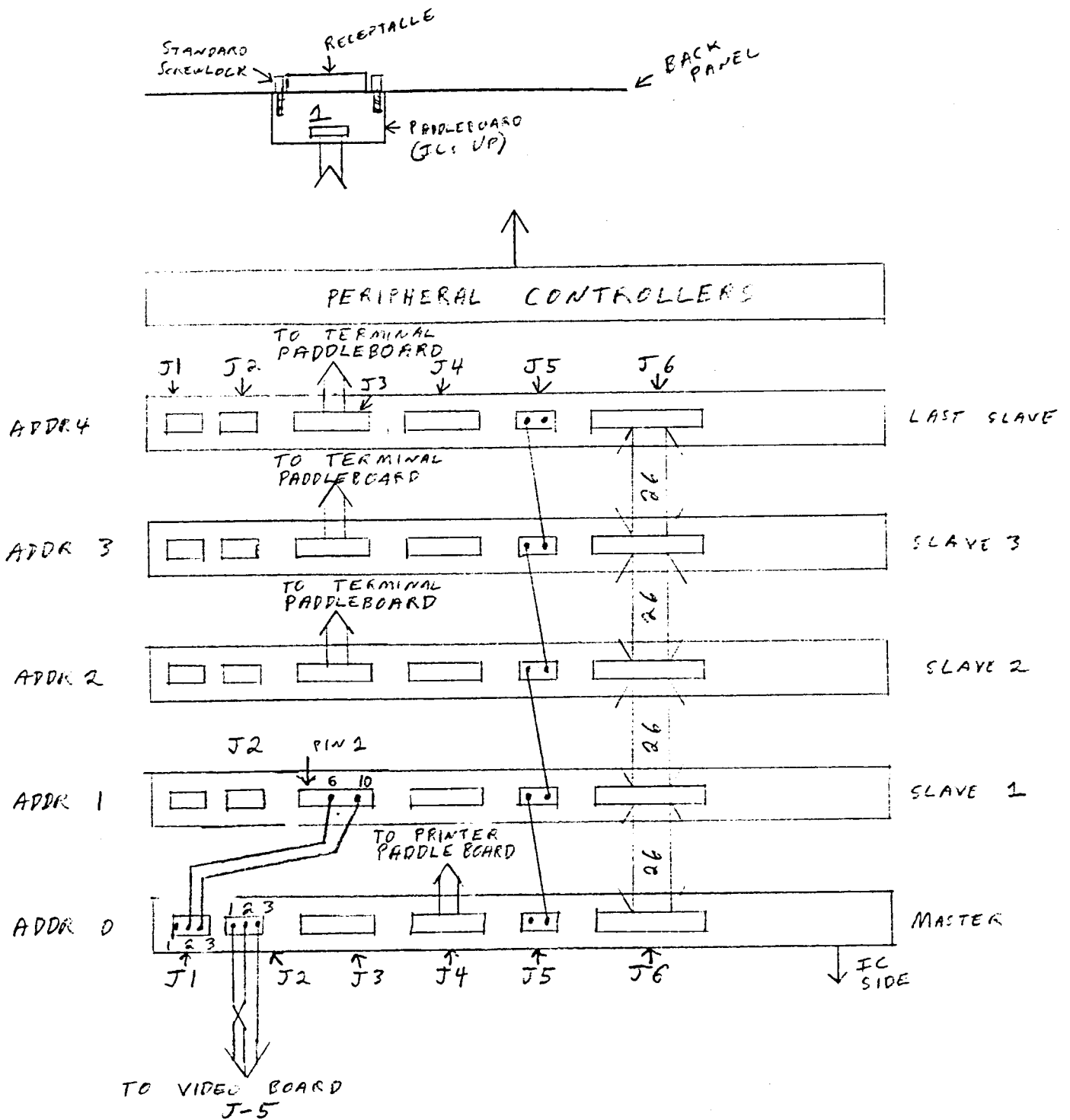
FIG 2 - TYPICAL 5000 IS/1270 SYSTEM
VIEW FROM TOP

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SLAVE ADDRESS   JB

1

PIN 1
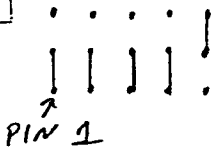
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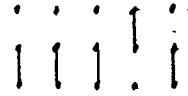
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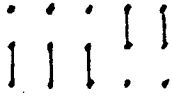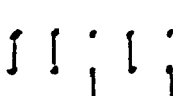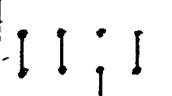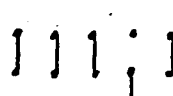
4
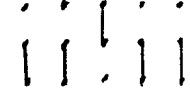
5

6

7
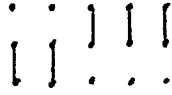
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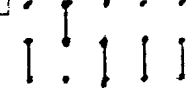
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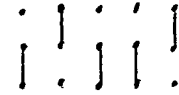
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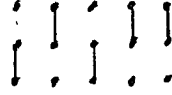
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13
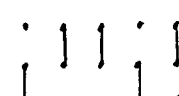
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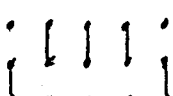
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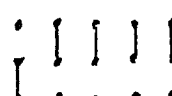
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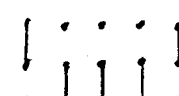
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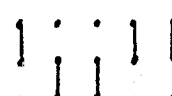
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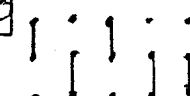
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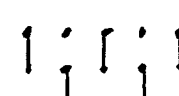
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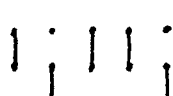
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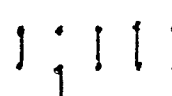
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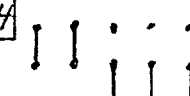
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