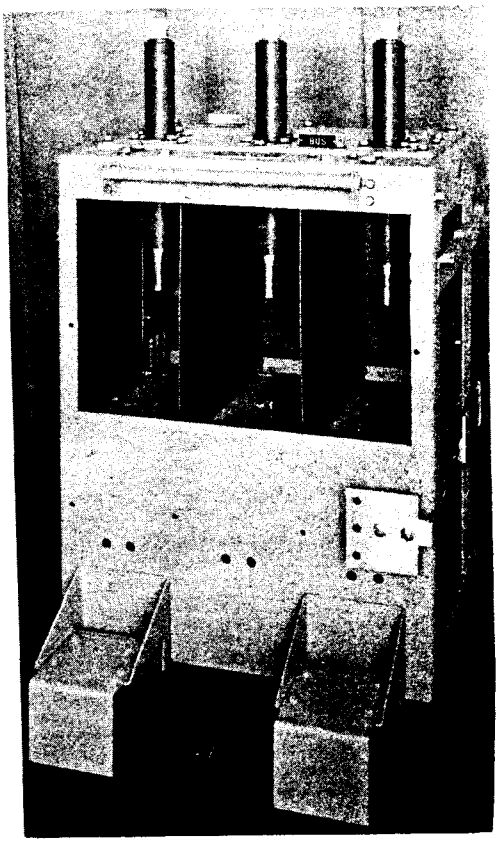
INSTRUCTIONS

GEI-77041A
Supersedes GEI-77041

GROUND AND TEST DEVICE

Types
G.V. 4.16-75, 150 250, 350
G.V. 7.2 - 250, 500
G.V. 13.8-250, 500, 750, 1000



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GENERAL ELECTRIC

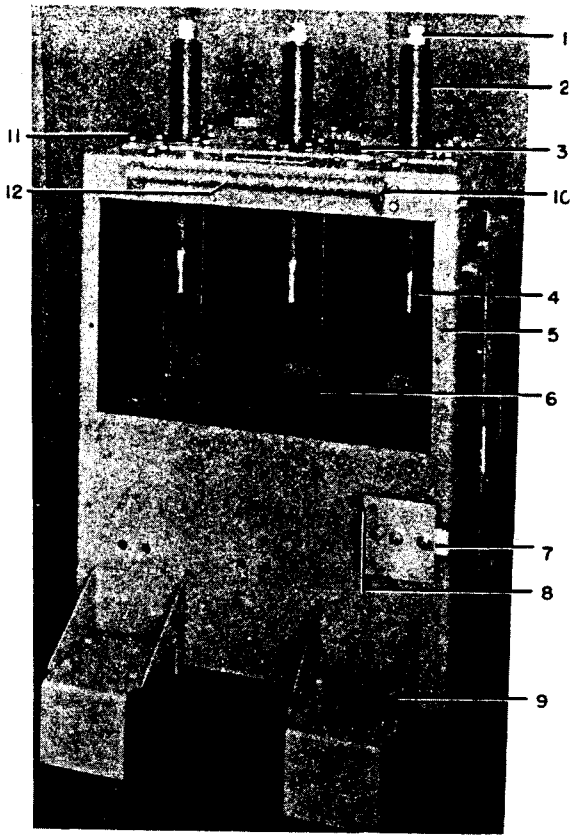

Fig. 1 Front View

1. Ball End of Bushing Assembly
2. Primary Stud Assembly
3. Top Plate Assembly
4. "Bus or Line" Position Nameplate
5. Device Nameplate
6. Device Handle
7. Insulating Barriers
8. Frame
9. Grounding Connections
10. Mounting for Grounding Terminals
11. Wheelbase

1. Ball End of Bushing Assembly
2. Primary Stud Assembly
3. "Bus or Line" Position Nameplate
4. Terminal Location for Cables
5. Frame
6. Insulating Barriers
7. Grounding Connection
8. Mounting for Grounding Terminals
9. Wheelbase Assembly
10. Device Handle
11. Top Plate Bolts
12. Device Nameplate

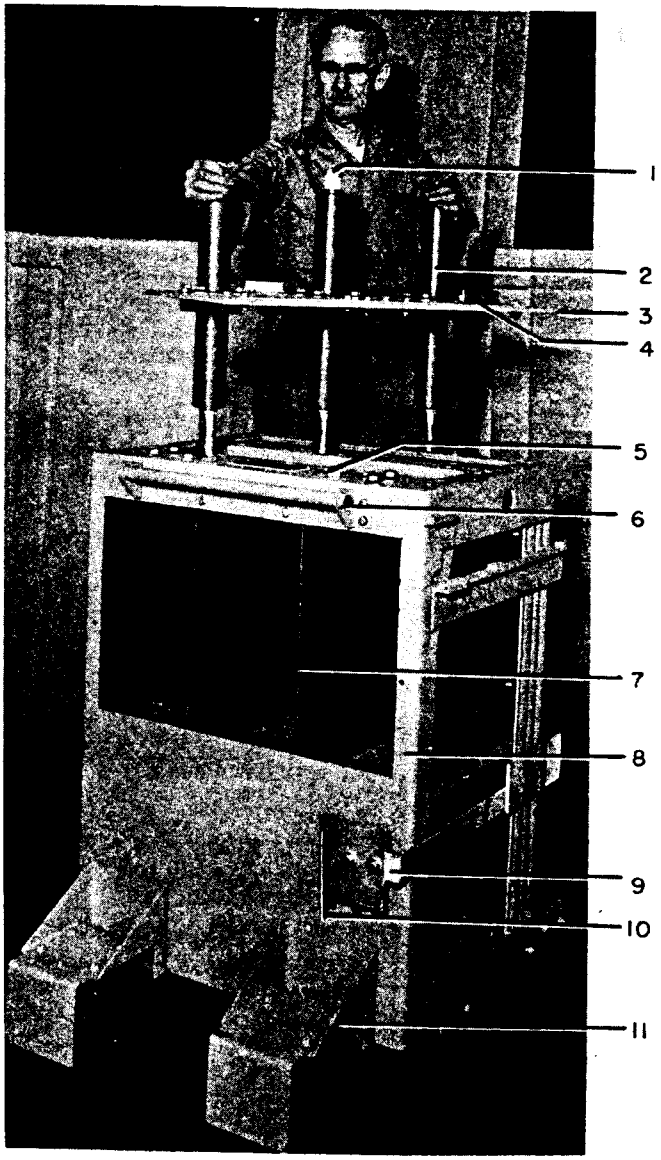

Fig. 2 Front View

Fig. 1 (8028015)

Fig. 2 (8028016)

Cover (8028015)

GROUND AND TEST DEVICE
TYPES G.V. 4.16-75, 150, 250, 350
G.V. 7.2-250, 500
G.V. 13.8-250, 500, 750, 1000

INTRODUCTION

The Ground and Test Device is an auxiliary device for use with vertical lift metal-clad switchgear equipment, designed for use during both the initial installation and at normal maintenance periods. The primary function of the device is to solidly ground the equipment as well as permit various types of tests. It provides a convenient means of grounding the system in order to safeguard personnel who may be working on the equipment. The device can also be used for applying power for high-potential tests, to measure insulation resistance (megger), and for phasing out cables. The Ground and Test Devices are availabe for each rating of its corresponding magne-blast circuit breaker. A single device can, however, be used with either 1200 or 2000 ampere units by using bushing adapters for 2000 amp units. The 3000 amp device may only be used with a 3000 amp unit. The devices have no mechanism or interrupter, therefore, they have no interrupting capacity or closing ability.

RECEIVING, HANDLING AND STORAGE

RECEIVING AND HANDLING

Each Ground and Test Device is carefully inspected and then packed by workmen experienced in the proper handling of electrical equipment. Immediately upon receipt of a device, an exmanination should be made for any damage sustained during shipment. If injury or rough handling is evident, a damage claim should be filed at once with the transportation company and the nearest General Electric Company sales office should be notified promptly.

The device should be removed from the crating with sufficient care so that no damage will result from rough handling. Frequently, "loose parts" associated with the apparatus are included in the crate. Care should be taken to make certain that these parts are not overlooked.

STORAGE

When the Ground and Test Device is not in use, it should be stored in a clean, dry place, free from corrosive gases or fumes. If the device is to be stored for long periods of time, the following precautions must be observed:

1. The device should be carefully protected against condensation, preferably by storing it in a warm, dry room, since water absorption has an adverse effect on the insulation parts.
2. The device should be stored in a clean location, free from corrosive gases or fumes; particular care should be taken to protect the equipment from moisture and cement dust, as this combination has a very corrosive effect on many parts.

If the device is stored for any length of time, it should be inspected periodically to see that rusting has not started and to insure good mechanical conditions. Should the device be stored under unfavorable atmospheric conditions, steps should be taken to dry out the device before it is placed in service.

INSTALLATION

Before rolling the device into the metal-clad unit, check to see that all ground connections on the device are tight. Check to see that the correct size ball end has been added and is tight, and that the studs have been positioned in the proper ("BUS" or "LINE") grounding position, and the top plate tightened to the frame. Lubricate the silver portion of the ball end by rubbing a small amount of contact lubricant D50H47 to form a thin coating on the ball contact.

If the device has been stored for a long period of time, it is recommended that the insulation be checked with a standard 60 cycle hi-potential test. "See Hi-Potential Test".

Grounding cables should not be connected to terminal connections for cables (4), Fig. 1, until the ground and test device is elevated in the metal clad equipment and the studs are checked with a " hot stick " or equivalent to assure the studs are not energized.

DESCRIPTION

There are three styles of G.V. ground and test devices. The reversible three stud (Line or Bus side) used as a standard device, the permanent six stud device, and the permanent three stud (line side) device. All of these devices will fit into a standard metal-clad housing of like size and rating.

Three Stud (Reversible) Device (Ref. to Fig. 1)

The three stud (reversible) device consists of a frame, a set of wheels, grounding connections, three primary studs mounted to a top plate, a set of contact caps for 2000 amps (when required) and a set of insulating barriers. The top plate assembly (including the three studs), may be used either on the "Bus" side or on the "Line" side. To position in one side or the other, remove 6 bolts (11) and rotate complete top plate assembly as shown in Fig. 2. To remove or replace ball contact caps, remove socket head cap screw and caps can easily be removed. Care should be exercised to see that the silvered surface of the ball end does not get chipped or scratched on either the bushing or cap. Provisions are made to attach grounding cables from the bottom of the primary studs to the front termination of the grounding connection.

Six Stud (Permanent) Device (Ref. to Fig. 3)

The six stud (permanent) device consists of a frame, a set of wheels, two doors, grounding connections, six primary studs, a set of contact caps for 2000 amps

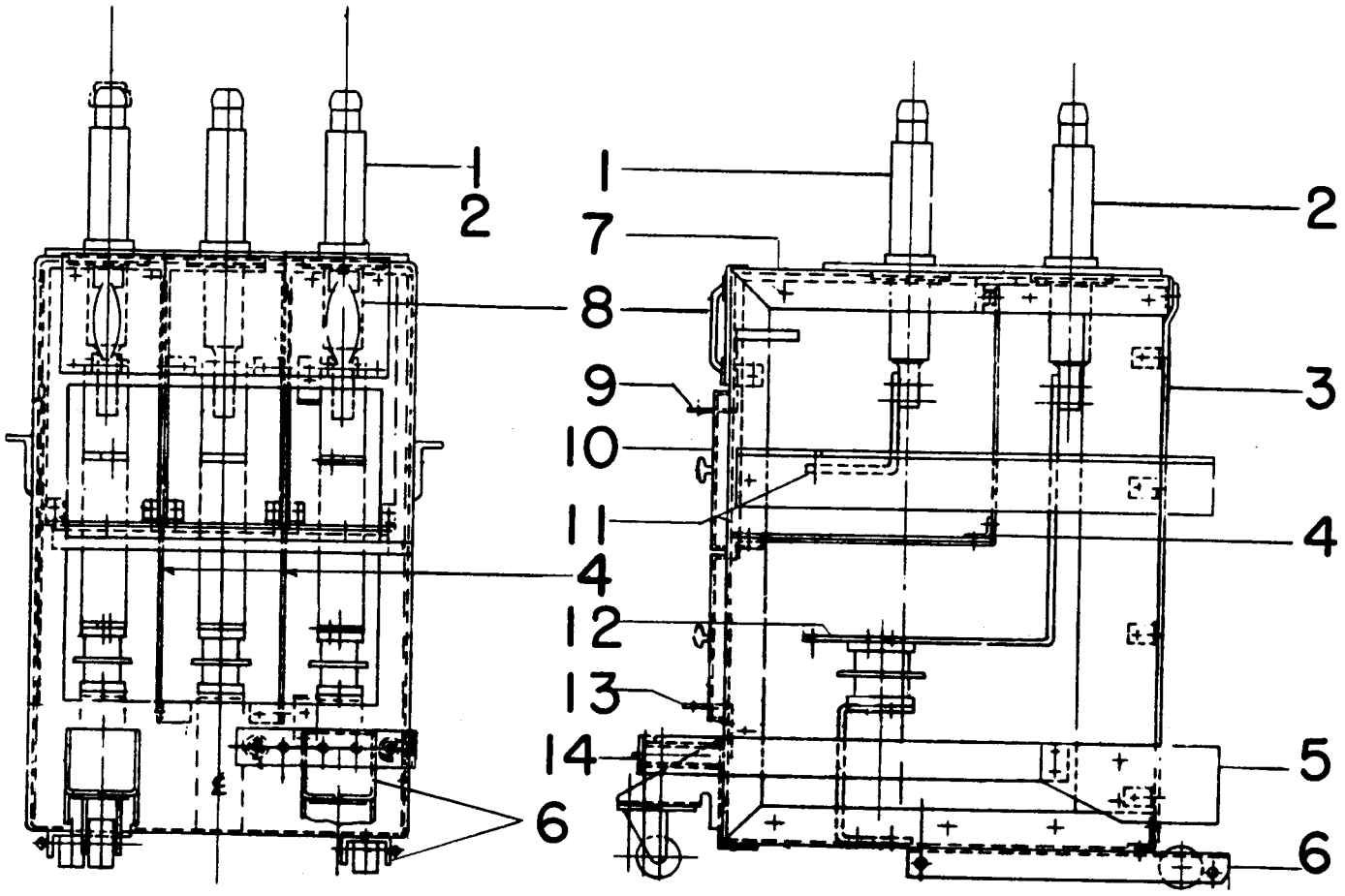

Fig. 3 (962C703)

FRONT VIEW

SIDE VIEW
(SIDE BARRIER REMOVED)

1. Bushing Assembly - "Bus Side"
2. Bushing Assembly - "Line Side"
3. Device Frame
4. Insulating Barriers
5. Device Ground Shoe
6. Device Wheel Base
7. Device "Nameplate"
8. Handle
9. Hasp for Padlocking "Bus Side" Door
10. "Bus Side" Door
11. "Bus Side" Bushing Termination Point
12. "Line Side" Bushing Termination Point
13. Hasp for Padlocking "Line Side" Door
14. Front Connection of Ground Shoe

Fig. 3 Front View and Side View

(when required), and a set of insulating barriers. Access to the "Bus" or "Line" side of the equipment is made through doors mounted on the frame. Provisions are furnished for padlocking each door separately. To remove or replace ball contact caps, remove socket head cap screw and caps can easily be removed.

Care should be exercised to see that the silvered surface of the ball end does not get chipped or scratched on either the bushing or cap. Provisions are made to attach grounding cables from the bottom of the primary studs to the front termination of the grounding connection. Provisions are made to attach grounding cables from the "Bus" or "Line" termination point to the front termination of the grounding contact.

Three Stud (Permanent Line Side) Device
Refer to Fig. 4)

The three stud (permanent "Line" side) device consists of a frame, a set of wheels, one door, grounding connections, three primary studs, (Line side not reversible), a set of contact caps for 2000 amp (when required), and a set of insulating barriers. There is no access to the "Bus" side of the equipment, but entrance to the "Line" side is made through a door mounted on the frame. Provision is made for padlocking the door. To remove or replace ball contact caps, remove socket head cap screw and the caps can easily be removed. Care should be exercised to see that the silvered surface of the ball end does not get chipped or scratched on either the bushing or cap. Provisions are made to

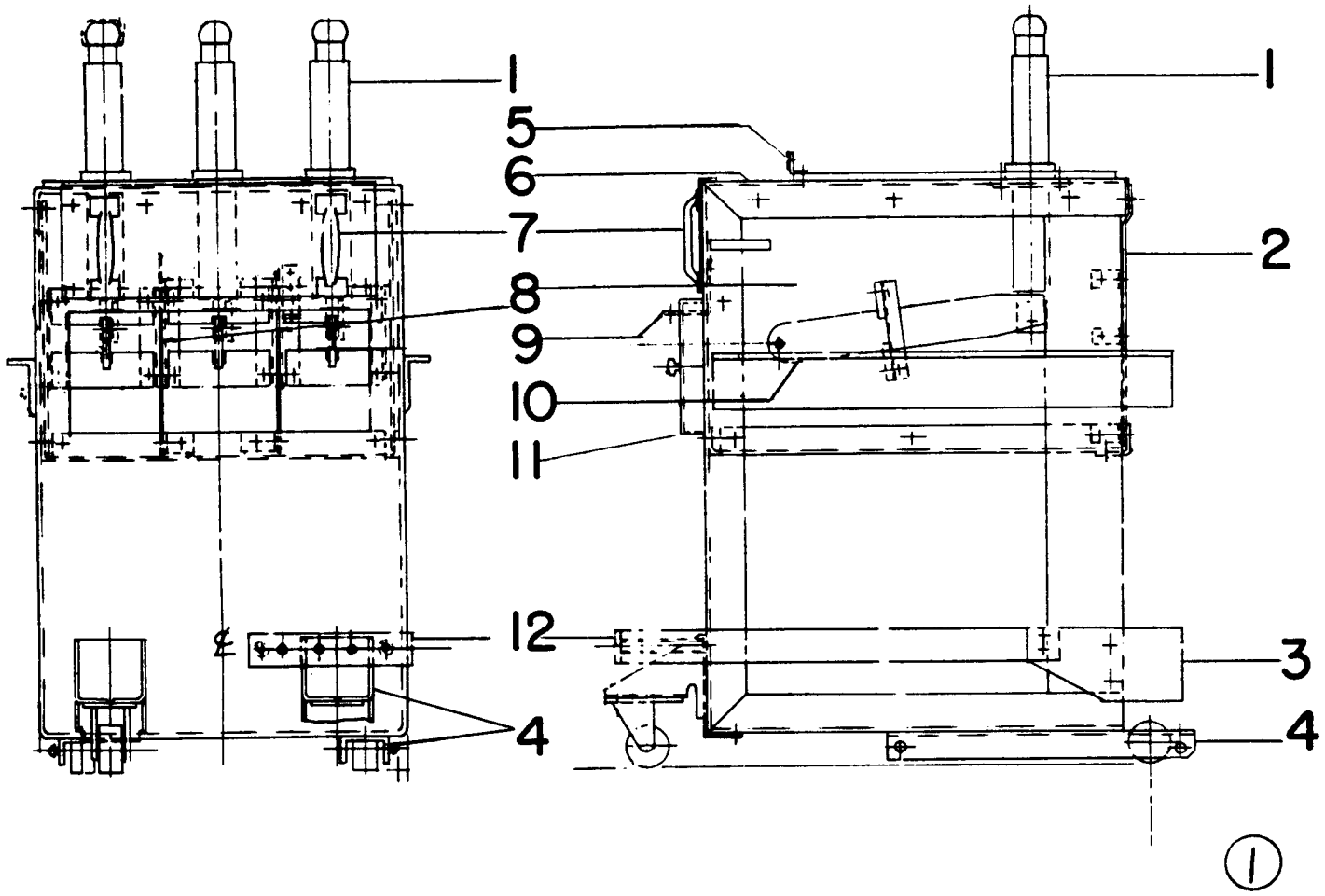

Fig. 4 (9620704)

1. Bushing Assembly - "Line" Side Only
2. Device Frame
3. Device Ground Shoe
4. Device Wheelbase
5. Bushing Position "Nameplate"
6. Device "Nameplate"
7. Handle
8. Insulating Barriers
9. Hasp for Padlocking Door
10. Line Side Bushing Termination
11. Door
12. Front Connection of Ground Shoe

Fig. 4 Front View and Side View

attach grounding cables from the "Line" termination point to the front termination of the grounding contact.

Hi-Potential Test

If the device has been stored for a long period of time, it is recommended that the insulation be checked before it is placed in service. A standard 60 cycle high-potential test at 14,000 volts RMS for the 4.16 kv, and 27,000 volts RMS for the 13.8 kv will normally indicate whether the device is satisfactory for service. Apply the high-potential to each terminal individually for one minute with all other terminals and the frame grounded. After high-potential tests are made, all organic insulating materials should be inspected for visible leakage current paths, and necessary action must be taken to replace insulation that may have been affected by moisture absorption. The high-potential test is also recommended for devices which have been removed from service and stored over an extended period of time under unfavorable atmospheric conditions.

RENEWAL PARTS

The following is a list of the parts in the device most subject to damage or wear. When continuous operation is of major importance, these parts should be carried in stock so that servicing time is minimized in the event that replacement becomes necessary. All parts (except standard hardware, such as screws, bolts, nuts, washers, etc.) are, however, available and may be ordered by description rather than catalog number. Standard hardware should be purchased locally.

When ordering renewal parts, address the nearest General Electric sales office, specifying the complete nameplate information as listed on the device, quantity required, catalog number (if listed), reference number (if listed), and complete description of each part ordered. Price information may also be obtained from the General Electric sales office.

CAT. NO.	NO. PER	DESCRIPTION
121A7968 P-1	3	2000 Amp Caps
N17023012	3	Socket Heat Cap Screws (5/16 - 18 x 3/4 Lg.)

GENERAL ELECTRIC COMPANY
SWITCHGEAR BUSINESS DEPARTMENT
PHILADELPHIA, PA 19142

GENERAL ELECTRIC

12-60

INSTRUCTIONS

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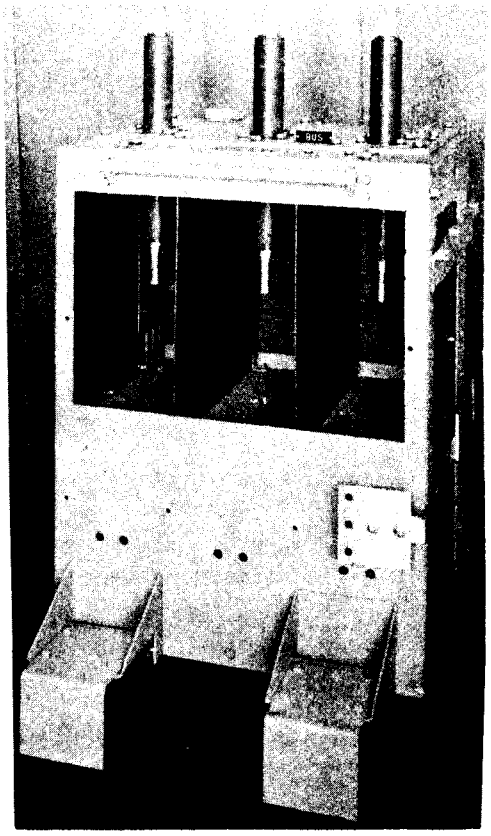

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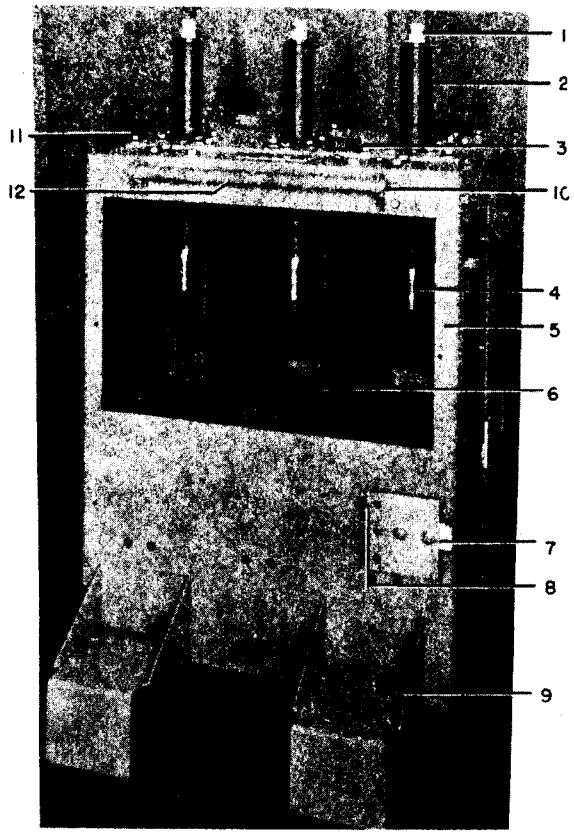
GENERAL ELECTRIC



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8. Frame
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11. Wheelbase

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9. Wheelbase Assembly
10. Device Handle
11. Top Plate Bolts
12. Device Nameplate

Fig. 1 (8028015)

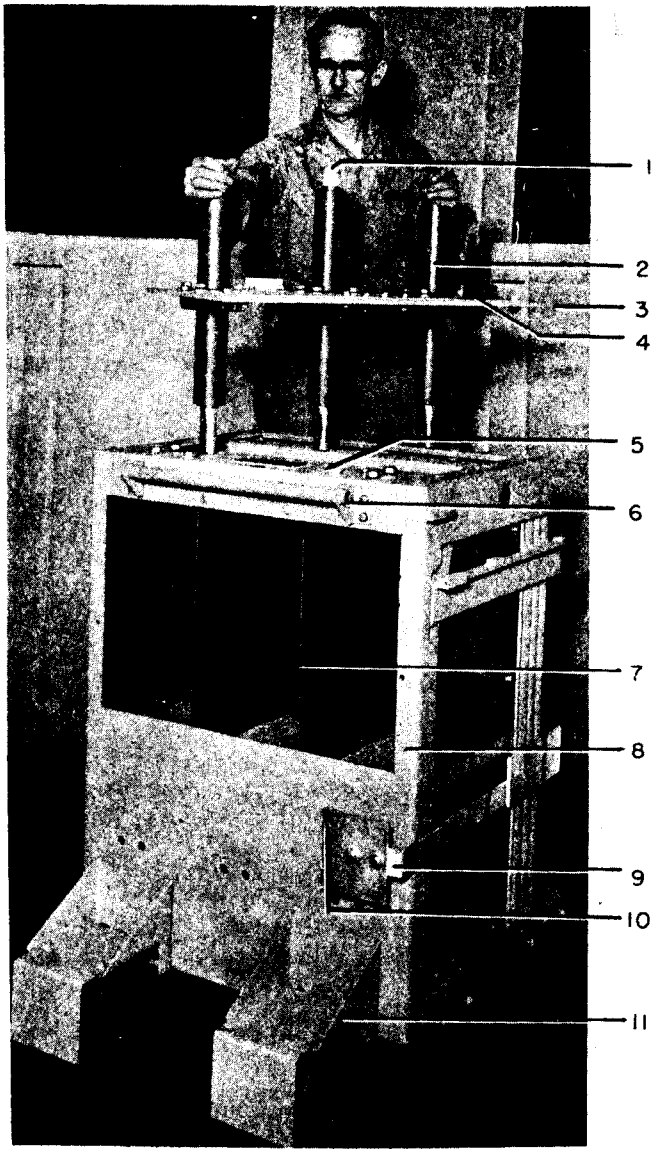

Fig. 2 Front View

Fig. 2 (8028016)

Cover (8028015)

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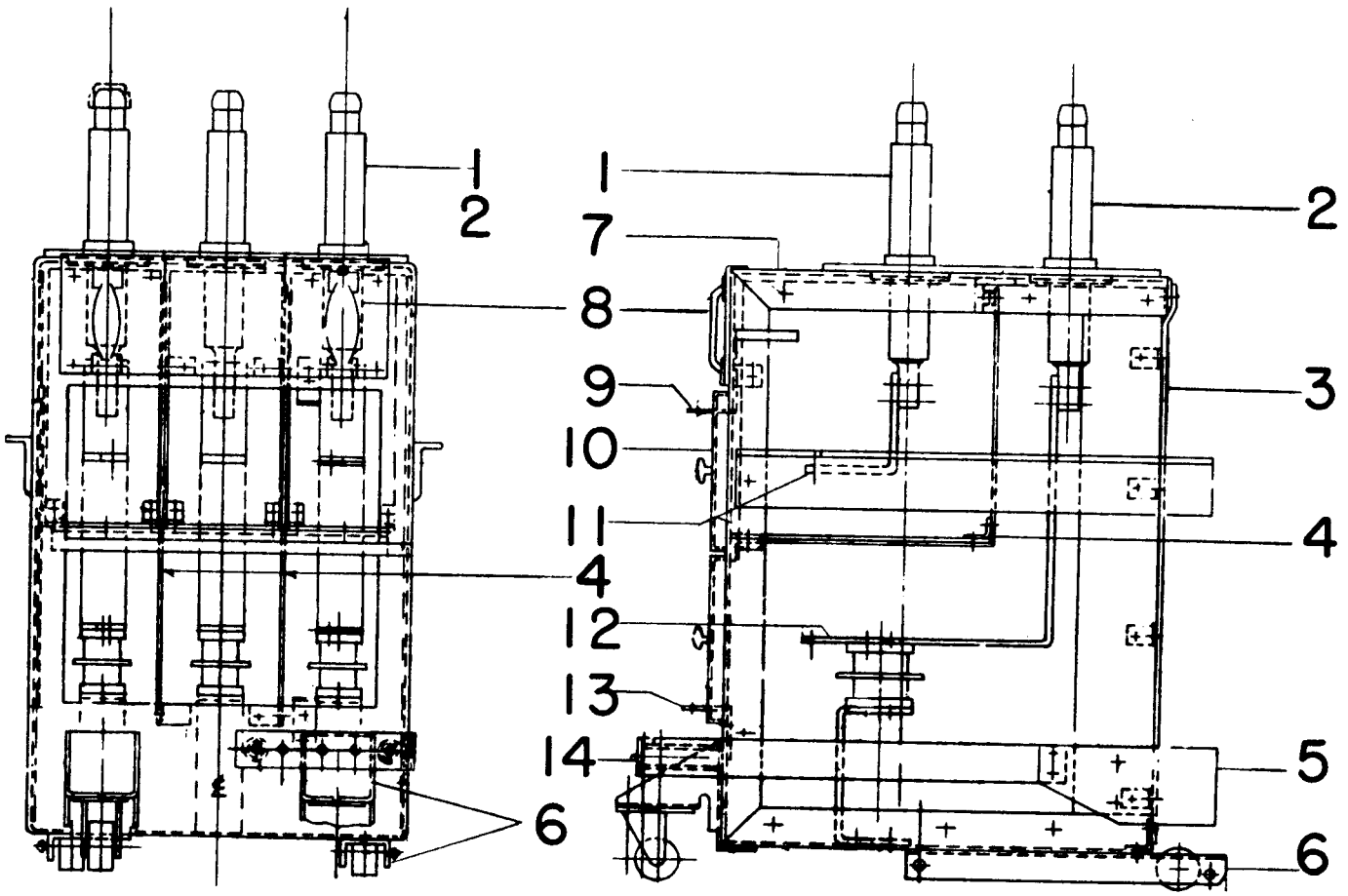

FRONT VIEW

SIDE VIEW
(SIDE BARRIER REMOVED)

1. Bushing Assembly - ''Bus Side''
2. Bushing Assembly - ''Line Side''
3. Device Frame
4. Insulating Barriers
5. Device Ground Shoe
6. Device Wheel Base
7. Device ''Nameplate''
8. Handle
9. Hasp for Padlocking ''Bus Side'' Door
10. ''Bus Side'' Door
11. ''Bus Side'' Bushing Termination Point
12. ''Line Side'' Bushing Termination Point
13. Hasp for Padlocking ''Line Side'' Door
14. Front Connection of Ground Shoe

Fig. 3 Front View and Side View

Fig. 3 (962C703)

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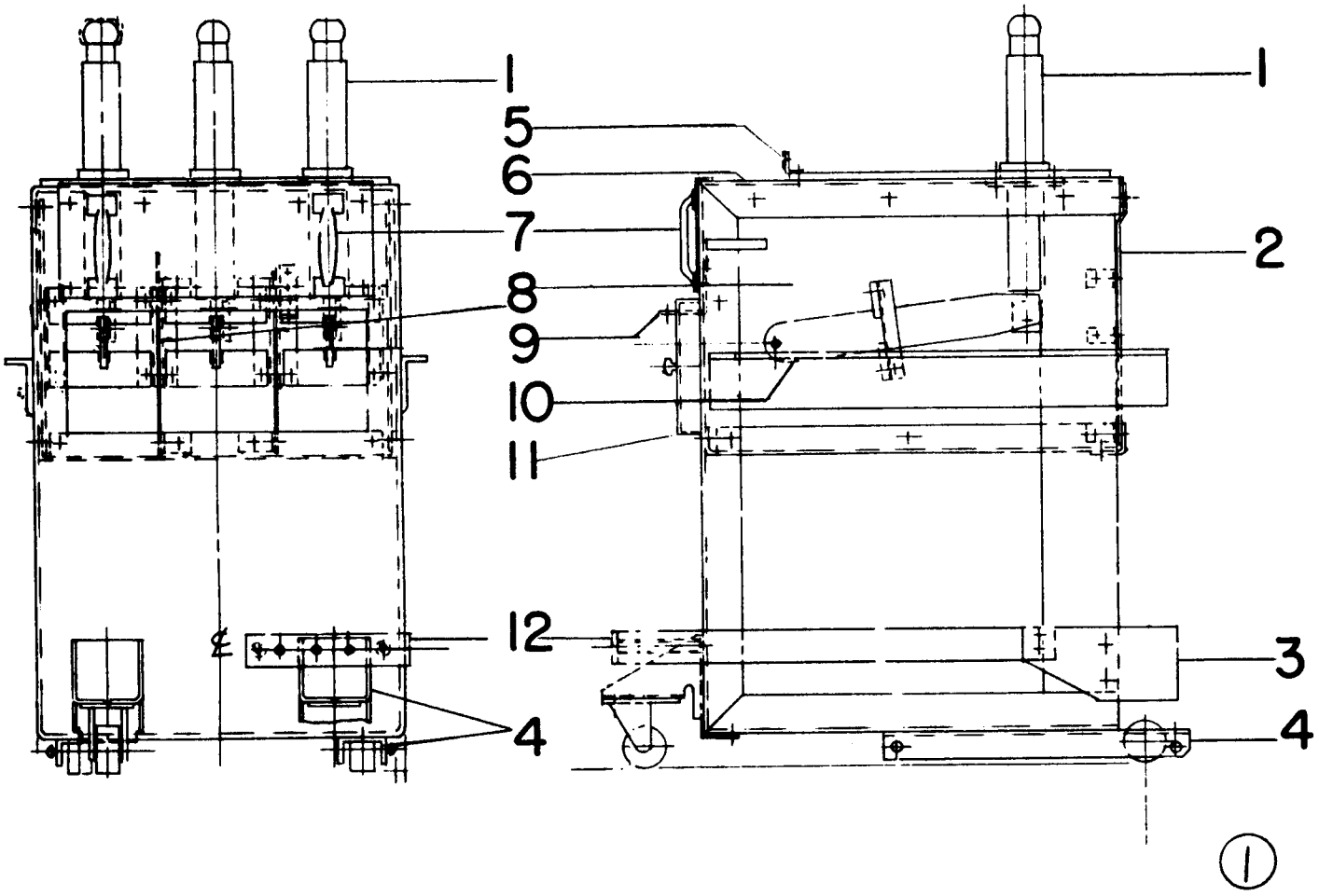

Fig. 4 (962C704)

1. Bushing Assembly - ''Line'' Side Only
2. Device Frame
3. Device Ground Shoe
4. Device Wheelbase
5. Bushing Position ''Nameplate''
6. Device ''Nameplate''
7. Handle
8. Insulating Barriers
9. Hasp for Padlocking Door
10. Line Side Bushing Termination
11. Door
12. Front Connection of Ground Shoe

Fig. 4 Front View and Side View

attach grounding cables from the "Line" termination point to the front termination of the grounding contact.

Hi-Potential Test

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