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LOCAL DEVELOPMENT II URBAN PROJECT

Submitted to
USAID / CAIRO

Submitted by
WILBUR SMITH ASSOCIATES

in association with

PUBLIC ADMINISTRATION SERVICE
DEVELOPMENT CONSULTING OFFICE

DELOITTE HASKINS AND SELLS
ENGINEERING AND GEOLOGICAL
CONSULTING OFFICE

**Proposal for Establishing
A New Vocational Center
In
Manshiet Nasser, Cairo**

January 1989

LOCAL DEVELOPMENT II URBAN PROJECT

GAMAL EL DIN ABOUL MAHASSEN, GARDEN CITY . CAIRO, EGYPT . 354-6469 . 355-7078 . TELEX (927) 22252 SERVE UN

Special Projects - Cairo
LD-II/89/06
January 30, 1989

Mr. Mahmoud El Kholi
Secretary General
Cairo Governorate

Dear Mr. Mahmoud El Kholi,

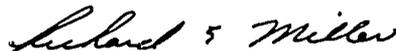
With the assistance of your Consultant for Technical Affairs and the Director of the Beaulac Vocational Training Center as well as others, and the guidance contained in your paper on "Developing the Training Center in Manshiet Nasser" we have completed the preparation of the special project documentation for "Establishing A New Vocational Center in Manshiet Nasser Cairo". Two Arabic and two English copies of the project data are included in this submission. Should you require additional copies please advise me as to how many copies are needed. Should you have any questions about the project data we will be most happy to meet with you and discuss or clarify any portion or items that may be in question.

Should you find the project scope and detail suitable for your needs, the next step in the procedure is to submit the project data, in Arabic and English, to the ULDC for review and approval by that body. Upon ULDC approval the project will be forwarded to the AMANA for further review. Kindly note that a copy of this letter and project documentation is being sent directly to Mr. Gisiger of USAID.

We appreciate your support and assistance in implementing the various components of the LD-II Program.

With deep respect,

WILBUR SMITH ASSOCIATES



Richard E. Miller
Project Director

cc: Mr. John Gisiger, USAID

WILBUR SMITH ASSOCIATES

OTTE HASKINS AND SELLS
VELOPMENT CONSULTING GROUP

PUBLIC ADMINISTRATION SERVICE
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Abstract

A special project is developed for using an inoperable unused one floor existing facility (about 1050 m²) in Manshiet Nasser, Cairo Governorate as a Vocational Training Center offering training courses in carpentry, furniture manufacture, metal cutting and turning, and manufacture of leather products. The project comprises application of minor renovations to the building, construction of a new floor on a part of the building roof and supply of machinery needed for training. Revenues obtained by selling products manufactured by trainees will be used for establishing a second phase consisting of construction of an additional annex and purchase of equipment needed for training in other trades. Project budget amounts to LE 475,000. The project is proposed to be completed within 33 weeks.

A proposal for future extension (Phase II works) is also presented.

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I. Definition

A new vocational training center is proposed to be established in Cairo Governorate through staffing and equipping an existing facility in Manshiet Nasser in Cairo. The facility as shown in Figs. (1) & (2) consists of one floor, with adequate height and with an area of 1050 m², mainly of reinforced concrete framing with brick walls, fairly finished.

The report which follows proposes certain means for equipping and staffing the center to be utilized for training unskilled labor and students who do not complete their preparatory stage education. Activities included in the project consists of:

1. Purchase of necessary equipment and tools.
2. Renovation of existing building comprising completion of internal electrical and fire fighting networks, conducting some modifications to the building interior and construction of new classes and toilets on top floor (see Fig (1)).
3. Provision of technical and managerial advise, and training to center staff, assistance in developing training courses and preparaticn of appropriate examinations to ascertain the levels and ability of trainees.

Public utilities will be connected to the building by Cairo Governorate before project implementation.

II. Project Justification

1. Egyptian economy and social life suffers major constraints due to problems of unemployment and existence of unqualified personnel who do not complete their preparatory educational stages or fail in preparatory certificate examinations and therefore do not proceed to further educational stages.

It is obvious that the establishment of vocational training centers, delivering extensive training courses in several trades, will certainly participate in reducing the problem severity and will play a key role in increasing the country's human technical resources and its ability for exportation of qualified labor to the neighboring Arab and African countries.

2. The conversion of unskilled teenagers to apprentices, legally certified for performing special jobs will raise their standard of living and will consequently protect them as well as the society against tolerances to immoralities and criminality.
3. The project will feed the private sector industrial business with qualified labor. In addition, some of the graduates may establish their own business.
4. Although the project can be looked upon as a service institution non-profit project, revenues will be gained by selling products of the center departments such as carpentry, leather products and furniture and by provision of metal machining and cutting services. This procedure is currently applied in Beaulac Vocational Training Center (see Fig 4) and can be adopted for this project.

The Governorate will use this source of revenues for construction of additional annexes as described in Appendix (2) of this report (Phase II Works) and to cover running expenses of the Center.

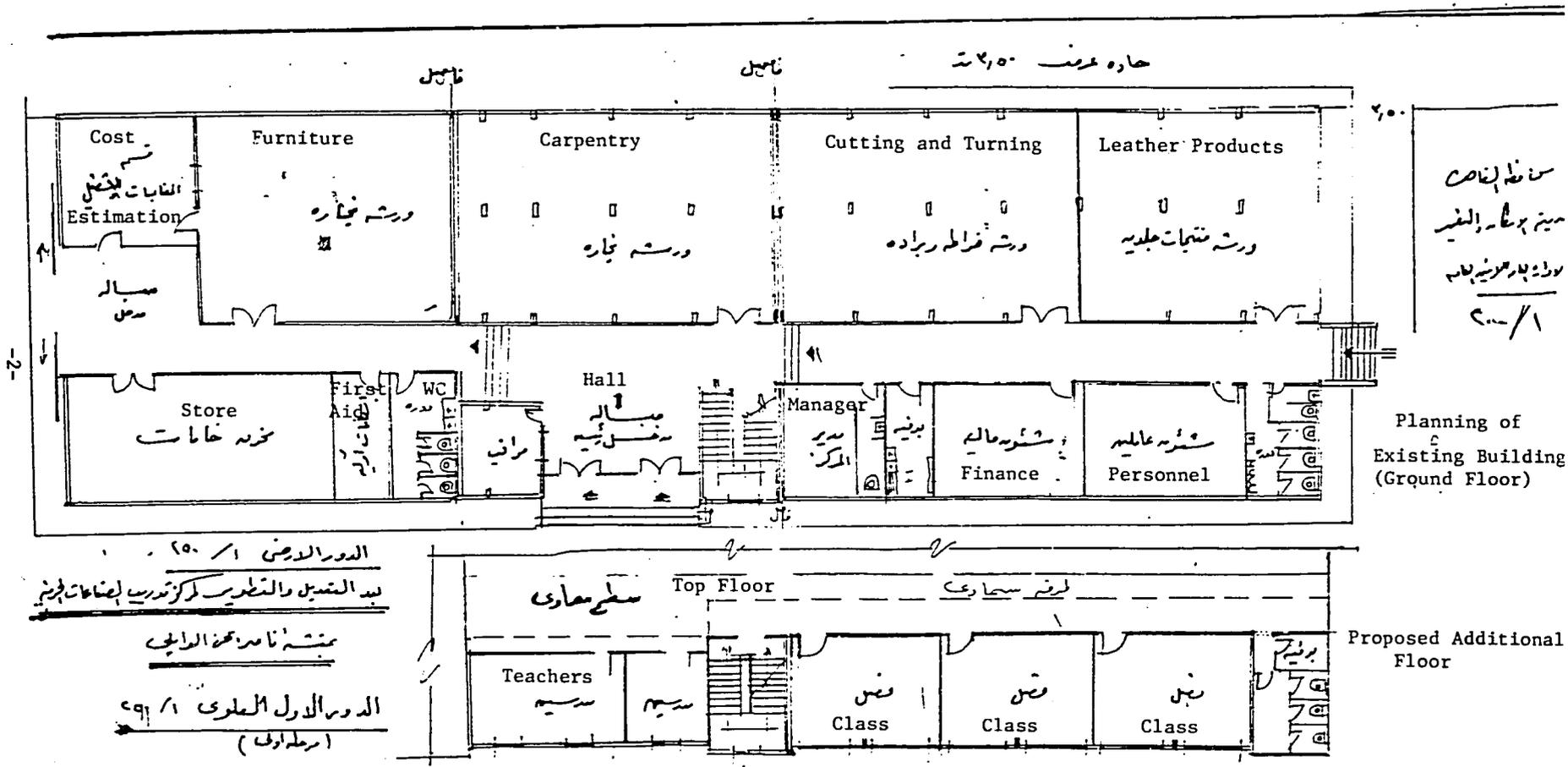
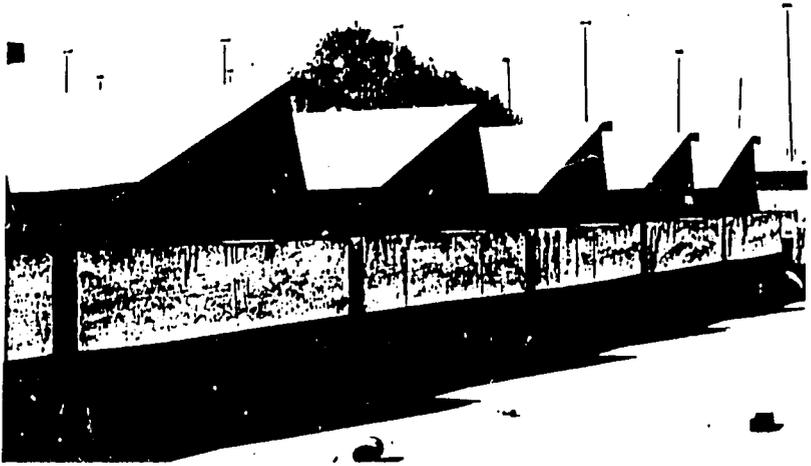
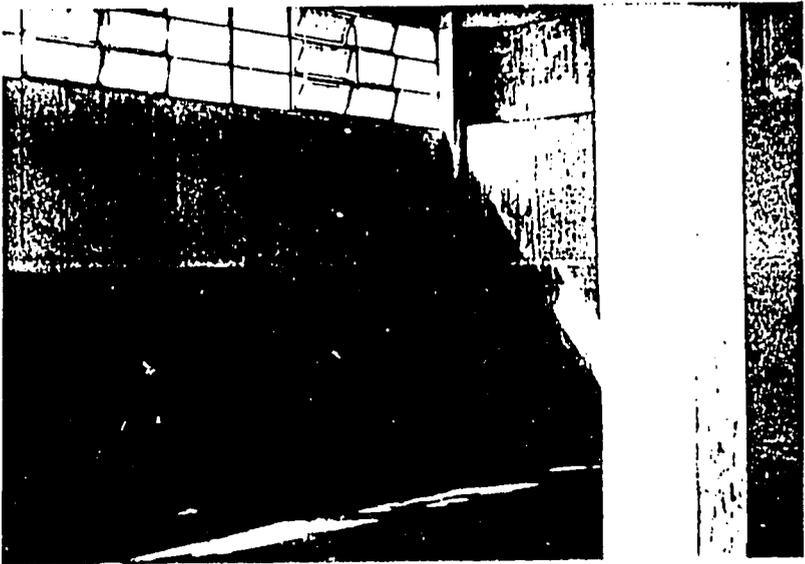


Fig (1) Plan of existing building (Menshiat-Nasser) and proposed additional floor



Facade



Building Interior

Fig (2) Existing Building in Menshiat Nasser

5. The project will convert an existing "inoperable" unused facility to a vocational center offering training services to "hundreds" of needful citizens. Also the center will evoke an educational spirit within a poor crowded area (Manshiet Nasser) (see Fig. 3) and will encourage the district inhabitants to be trained, produce and earn.
6. As noted in Figure (4), the existing vocational training center in Beaulac is overcrowded with trainees and will not allow further increase in their number. Moreover, the building is considered to be of historical value (originally a stable of former monarch of Egypt, noted for its old oriental feature) and therefore could not be modified or renovated to make room for more trainees.

III. Existing Facility

See Figures (1), (2), (3)

IV. Project Budget

1. Purchase of Equipment

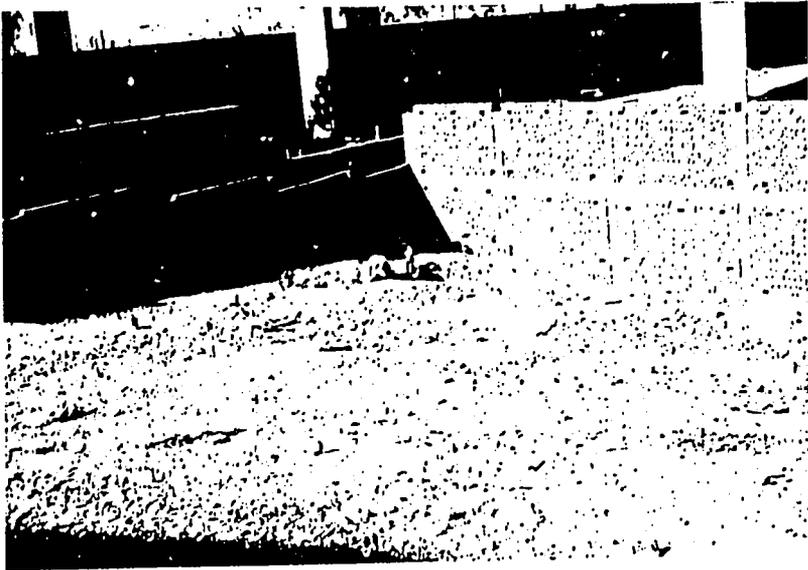
(N.B.) Specifications of Equipment are mentioned in Sec (V). Refer also to attached catalogues in appendix (1).

A. Carpentry and Furniture Machinery

1) Wood planer (locally made) 50 cm	LE 5,700
2) Wood thickness planer (locally made) 63 cm	LE 9,300
3) Spindle moulding machine (locally made)	LE 3,950
4) Wood saw (splitting saw), 90 cm (locally made)	LE 5,250
5) Window shutter slot cutting machine (locally made)	LE 4,400
6) Wood turning lathe with copying device (Italy)	LE 12,000
7) Mortising machine, (locally made)	LE 1,750
8) Hand-operated milling machine for dovetail joints (Italy)	LE 4,500
9) Shaft tenoner (Italy)	LE 12,000
10) Hand carpentry tools, mechanically operated	LE 8,000
Sub-total for Carpentry Machines	LE 66,850



Adjacent Street



Front Yard

Fig (3) Neighboring Vicinity of the Existing Building in Menshiet Nasser



Center Yard



Training Class

Fig (4) Vocational Training Center in Bulaque - Cairo

B. Metal Machining

1) Lathe, general purpose (locally made) 1400/162 with accessories	LE 18,100
2) Lathes, general purpose, (locally made), 1000/162 (2x15,250)	LE 30,500
3) Shaping machine, 50 cm, (locally made)	LE 11,200
4) Vertical drill, 35 mm, (locally made)	LE 7,800
5) Vertical drill, 12 mm, (locally made)	LE 750
6) Vertical milling machine with accessories (western made)	LE 60,000
7) Mechanical saw (5 hp)	LE 4,500
8) Grinding machine (locally made) 2 x 2,000	LE 4,000
9) Blacksmith forge (locally made) hammer & anvil	LE 1,500
10) Hand tools, electrically driven tools (drillers, sanding)	LE 6,650 -----
Sub-total Metal Machining	LE 145,000

C. Upholstering Machines

1) Single-needle, lock stitch sewing machine	LE 2,250
2) Single needle, lock stitch, high speed sewing machine with drop feed	LE 2,850
3) Carton scissors	LE 600
4) Fondi Machines with oil pumps 2 X 2,000	LE 4,600 -----
Sub-total Upholstering Machines	LE 10,300
Sub-total (Equipment)	LE 222,150 -----

2. Civil Works

Addition of the classrooms:

a. Civil works	LE 34,550
b. Doors and windows	4,150
c. Plumbing	3,300
d. Electricity	4,200 -----
Sub-total	LE 46,200

Rehabilitation of the existing building:

a. Civil works	LE 16,100
b. Doors and windows	4,400
c. Plumbing and fixtures	3,600
d. Electricity	33,000
e. Fire fighting system	55,000
f. Landscaping	4,250

Sub-total -----
LE 116,350

Sub-total Construction Cost -----
LE 162,550

3. **Consultations, Design & Periodic Supervision** LE 7,000

4. **Furniture**

a. Desks, tables, chairs, cupboards, blackboards, store racks, stationary	LE 50,000
---	-----------

Sub-total Furniture LE 50,000

5. **Training**

Two Egyptian experts (in management and Technical Training) for two months.

Compensation 2 experts for 2 months @ LE 2,000 per month	LE 8,000
Overhead 64%	5,120
Fringe Benefits 26 %	2,080
Profit 6%	480

Sub-total Training Cost LE 15,680

6. **Material for Initial operation**

(e.g wood for carpentry and furniture) LE 16,000

* Total Cost of Project LE 473,380

Round to LE 475,000

V. **Bidding & Contract Procedures**

A. **Civil Works**

1. Only well known registered Contractors will be invited to bid.

2. Tender Documents shall include general and special conditions, detailed drawings, specifications and bills of quantities. Tender documents may be submitted to the technical assistance contractor of USAID prior to issuance of call for tenders.
3. Quantities of works, included in tender, shall be accurately measured so that the project budget shall not be exceeded.
4. Existing building shall be preserved with minimum spoilage during construction of new floor and renovations. Remedy of any spoiled parts, proved to be due to construction operations, shall be paid for by the Contractor.
5. Evaluation of tenders is to be made on the basis of lowest price bid in compliance with conditions of contract and specifications.
6. Handing over the site to the selected contractor, will take place at the time of contract award.
7. After contractor's initial handing over of work, a completion certificate will be issued by the Governorate.
8. Final completion certificate will be issued and performance bond returned to contractor after lapse of one year from time of issuance of initial completion certificate.

B. Mechanical Equipment

1. Documents pertaining to bids for procurement and installation of equipment listed in item IV (1) (Purchases of mechanical equipment) shall include general conditions, special conditions, specifications, bills of quantities, maximum delivery periods, period of guarantee (one year) and spare parts requirements. Technical assistance contractor of USAID may review tender documents prior to issuance of tender.
2. Equipment suppliers shall be limited to non-communist countries.
3. Tenders shall include complete detailed catalogues of equipment as well as the lists of spare parts recommended by the manufacturer.
4. It shall be clearly stated in the tender conditions that the employer (Cairo Governorate) shall have the full right to purchase any of items included in any of tenders, separately, without considering other items.
5. The following specifications cover the main equipment required to be supplied under Contract. Wherever, a certain trade mark is mentioned herein or in the attached catalogues, an approved similar will be acceptable.

a. Carpentry

1) Planer 50 cm (Fig. 7)

- | | |
|---------------------------|------------------|
| o Bed plate width | 500 mm to 515 mm |
| o Length of bed plate | 2900 mm |
| o Cutting depth | 20 mm |
| o Speed | 5000 rpm |
| o Angle | 45.5° |
| o Number of cutting tools | 4 |

2) Wood thickness planer 63 cm (Fig 8)

- o Max width 630 mm
- o Max thickness 230 mm
- o Max thickness of eliminated layer 12 mm
- o Min thickness of eliminated layer 3 mm
- o Speed of blade holder mandrel 5000 rpm
- o Mandrel motor power 7.5 hp
- o Power of controlling surface motor 1 hp

3) Spindle moulding machine (local) (Fig 9)

- o Table dimensions 650 x 110 mm
- o Height 870 mm
- o Shaft 35 mm
- o Speeds 3200/8000 rpm
- o Motor 5.5 hp

4) Wood saw 90 cm(Fig 10)

- o Diameter of wheel 900 mm
- o Motor Power 7.5 hp
- o Speed 540 rpm
- o Width of wheel 45 mm
- o Table width 1250 x 820 mm

5) Window shutter slot cutting machine (Fig 11)

- o Number of slots per minute 52
- o Slot adjustable 0/110 mm
- o Slot tilting up to 0/45
- o Max depth of work piece 200 mm
- o Min size of work piece 20 x 40 cm
- o Max size of work piece 100 x 100 cm
- o Motor 2 hp

6) Wood turning lath with copying device (Fig 12)

A wood turning lath of minimum distance between heads = 150 cm, with copying device.

7) Mortising machine (Fig 13)

- o Length of table 500 mm
- o Width of table 300 mm
- o Longitudinal motion of table 180 mm
- o Transversa motion of table 200 mm
- o Vertical motion of table 220 mm
- o Mortising chuck / mm 0 - 20
- o Motor power 3 hp

8) Hand operated milling machine for dovetail joints (Fig 14)

Suitable for making several kinds of dovetail joints at high speed with accuracy.

Useful width of working	280 mm
Max thickness of piece	45 mm
Motor power	1.5 hp
Speed of tool holder spindle	16,500 rpm

9) Shaft tenon (Fig 15)

Proper for carrying out a safe and accurate machining of straight, oblique and slanting tenons.

Cutter bearing heads diameter	85 mm
Length of tenons (max)	100-120 mm
Circular blade	250 mm
Thickness of tenon (max)	50 mm
Thickness of tenon (min)	5 mm
Inclination of the plane	20 gr
Inclination of the frame	30 gr
Moulding motor	3.5 hp
Heads motor	3 hp
Revolution of moulding head	3000 n
Revolution of heads	5300 n

b. Metal Machining

1) Lathe, general purpose, 1400/162

A lathe, produced by Egyptian Military Factories:

- Distance between heads	1400 mm
- Maximum diameter of work piece	400 mm
- Power of main motor	7 kw
- RPM of main motor	1200 rpm

including all accessories

2) Lathe, general purpose, 1000/162

A lathe, produced by Egyptian Military Factories:

- Distance between heads	1000 mm
- Maximum diameter of work piece	400 mm
- Power of main motor	7 kw
- RPM of main motor	1200 rpm

3) Shaping machine 50 cm

A shaping machine manufactured by Egyptian Military Factories:

- Max distance for shaping	500 mm
- Distance between head and disk	400 mm
- Max vertical distance	170 mm

- Number of speeds 8
- Power 45 kw

4) Vertical drilling machine, 35 mm

A vertical drilling machine produced by Egyptian Military Factories:

- Max diameter of drill (in steel) 35 mm
- Max stroke of spindle 229 mm
- Revolutions of spindle 68-1100 rpm
- Power 4.5 kw
- Cooling pump power 135 watt

5) Vertical bench drilling machine, 12 mm

A vertical drilling machine produced by Egyptian Military Factories:

- Max diameter of drill 12 mm
- Max stroke of spindle 100 mm
- Revolution of spindle (5 speeds) 450-4500 rpm
- Power 0.6 kw

6) Vertical milling machine

- Longitudinal stroke 700 mm
- Transfer stroke 270 mm
- Vertical stroke 400 mm
- Table size 1200 x 300 mm
- Automatic feed 9 feeds
- Feed motor power 4 hp
- Spindle motor power 10 hp
- Spindle speed 12 speeds

c. Upholstering

1) Single-needle lock-stitch, flat bed sewing machine with drag feet (with intermittent wheel and roller presser) (Fig 16)

- Maximum sewing speed (spm) 1800
- Motor speed in rpm, 50 hz 1400
- Needle size (Nm in 1/100 mm) 90-100
- Motor power 0.37 kw
- Max stitch length 5 mm
- Fabric clearance 7 mm

2) Single needle, lock stitch high speed sewing machine with drop feed (Fig 17)

- Max s.p.m 5,000
- Motor speed in rpm, 50 hz 2,800
- Max stitch length in mm 4-5
- Needle size (NM in 1/100 mm) 90-100
- Motor power 0.55 kw
- Fabric clearance 9 mm

VI. Project Implementation

1. The implementation of the Project is subject to completion of all connections to Public Utilities (Electrical cables, water pipes, sewage pipes) by Cairo Governorate.
2. Special attention shall be paid to the procedure of installation of machinery inside the existing building and sufficiency of doors opening sizes to allow entering of equipment.
3. Organization of personnel into an efficient management system will be accomplished during the two month training period. A proposed organization chart is shown in Fig. (5)
4. The implementation schedule is determined by means of the critical path method. Schematic arrow diagram of Fig. (6) outlines the necessary implementation activities included in Table (1).

Table (1)
Project Activities

<u>Activity</u>	<u>Duration Weeks</u>	<u>Preceding Activity</u>
a. Commencement of work after completion of utilities connections and project approval	0	-
b. Preparation of Civil Works tender	6	a
c. USAID/TAC review of civil work tenders	1	b
d. Civil works tenders evaluation and contract award	2	c
e. Execution of civil works	14	d
f. Preparation of equipment and furniture tenders	4	a
g. USAID/TAC review of equipment and furniture tenders	1	f
h. Evaluation of equipment tenders and selection of suppliers	4	h
i. Purchase and installation of equipment	8	i
j. Purchase and installation of furniture	2	i&e
k. Assignment of staff by the governorate	8	a
l. Management and technical training	8	k&j

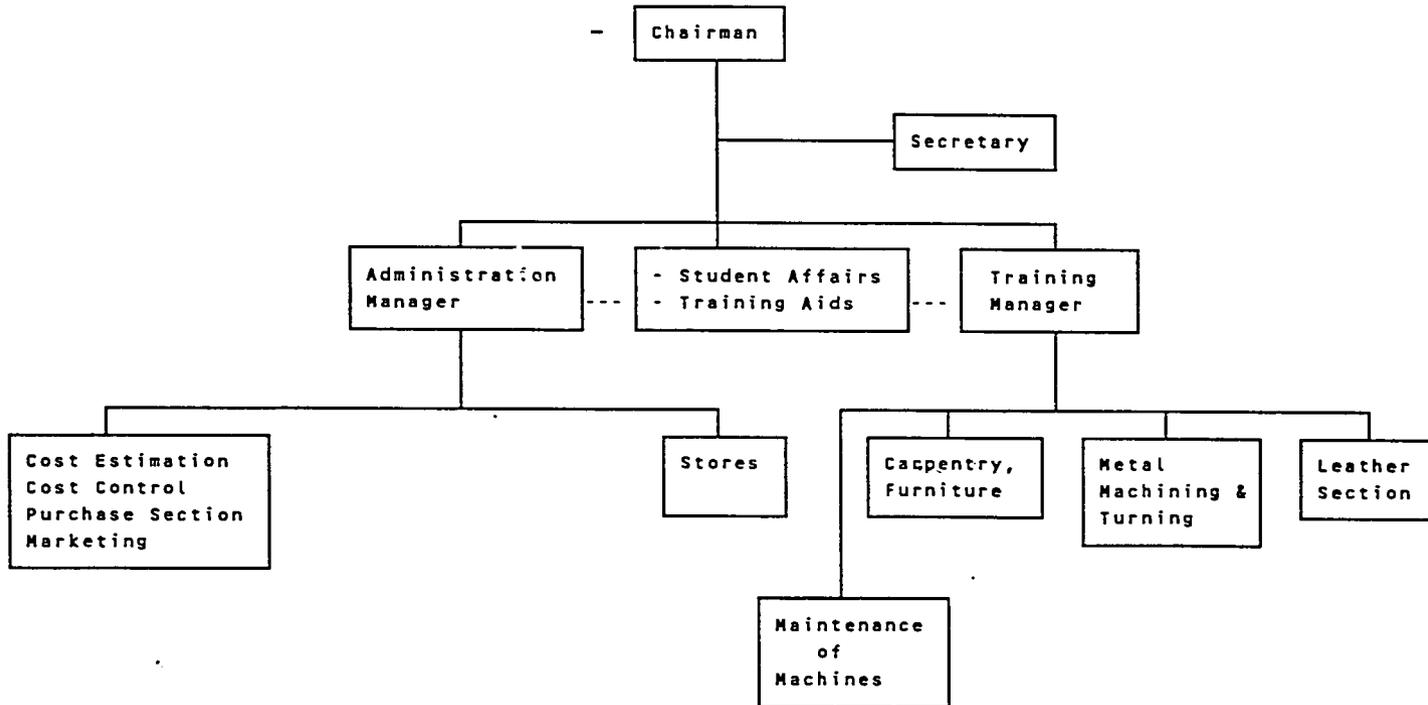
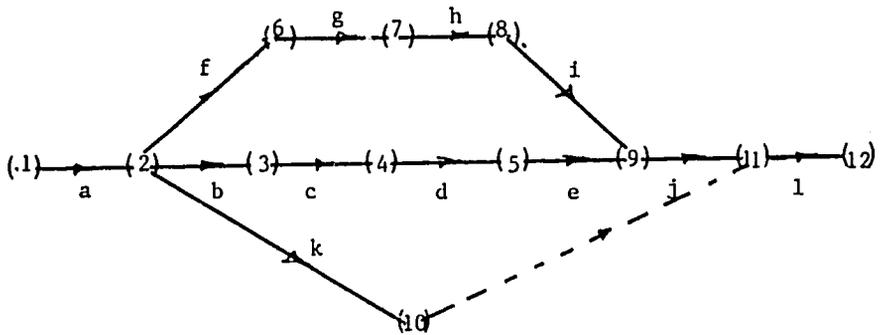


Fig (5) Proposed Organization for Menchiat - Nasser Vocational Training Center

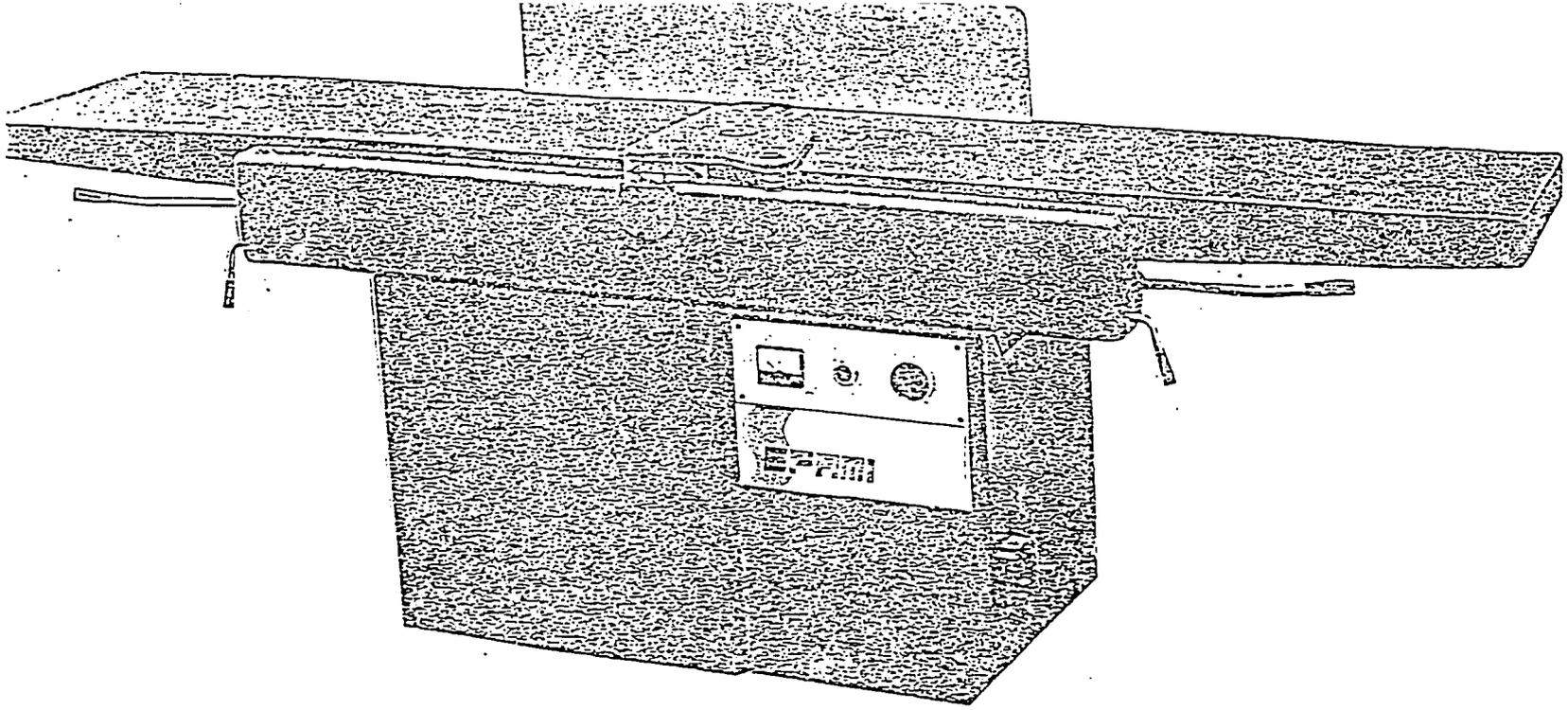


Critical Path, activities a,b,c,d,e,j,l
 ■ 33 weeks
 including 8 weeks
 for training

Arrow diagram of main activities of the Project

Fig (6)

Appendix (1)
Catalogues of Equipment



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Fig (7) Planer 50 cm

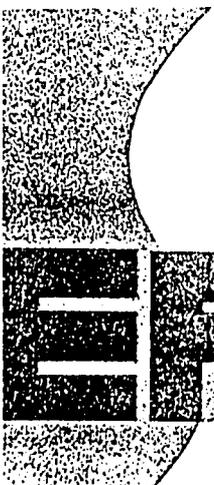
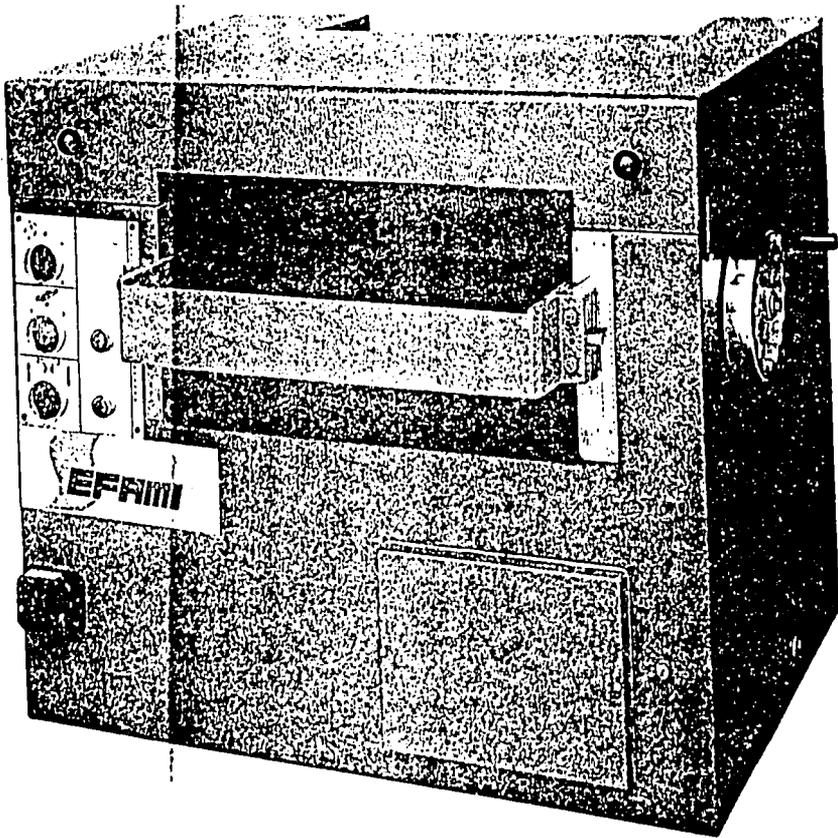
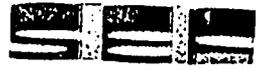
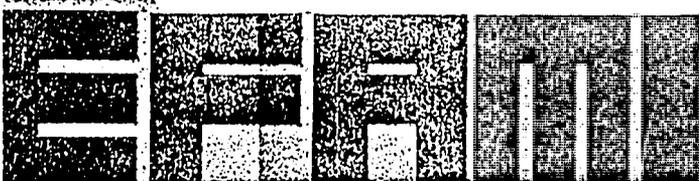


Fig (8) Wood Thickness Planer



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1100

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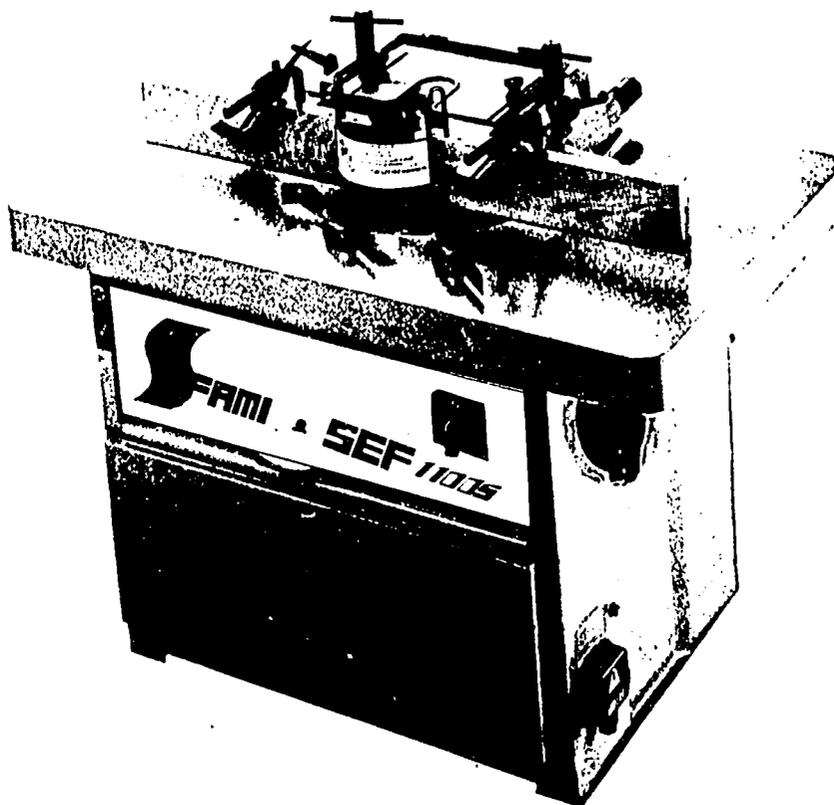
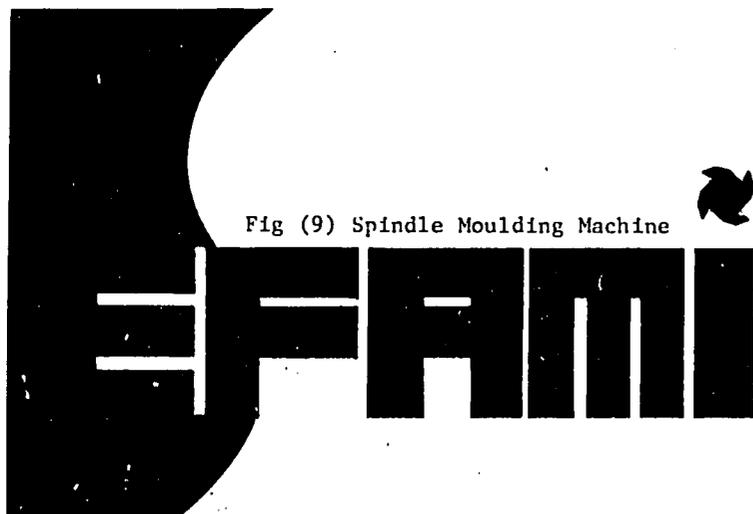
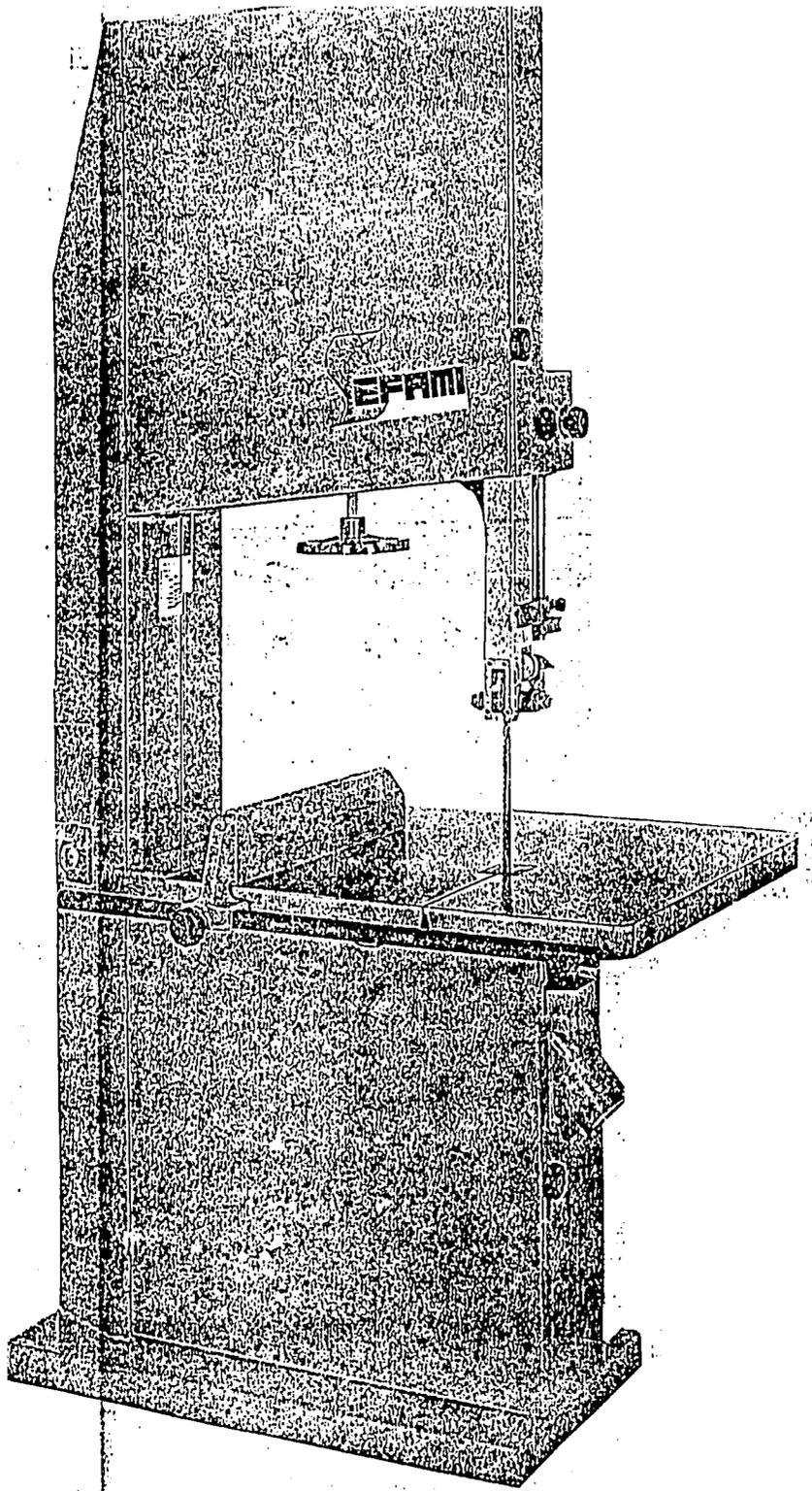


Fig (9) Spindle Moulding Machine





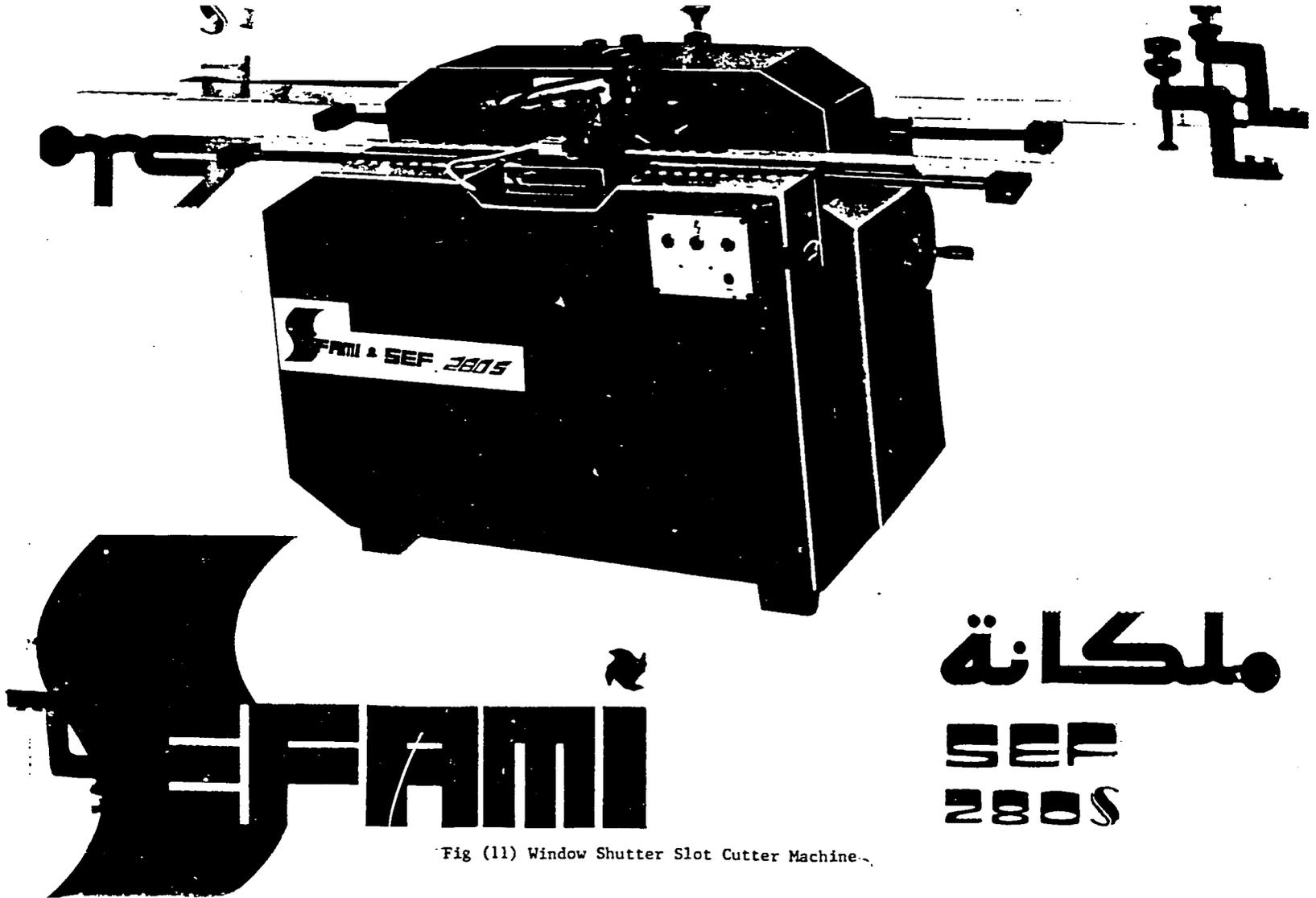


Fig (11) Window Shutter Slot Cutter Machine.

LGF

LTC 1200
LTC 1500

TORNI PER LEGNO CON COPIATORE
TOURS A BOIS AVEC COPIATEUR
WOOD TURNING LATHES WITH COPYING DEVICE
HOLZDREHBÄNKE MIT KOPIERAGGREGAT

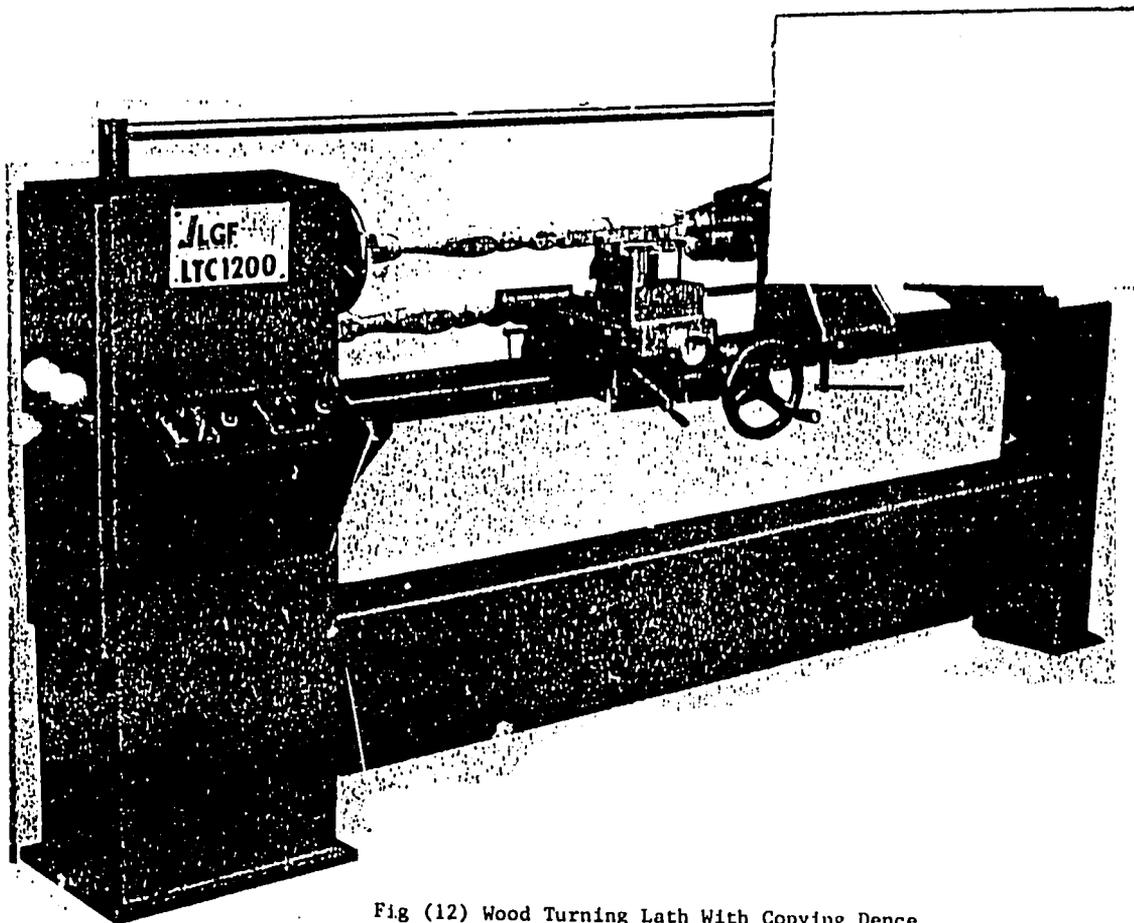
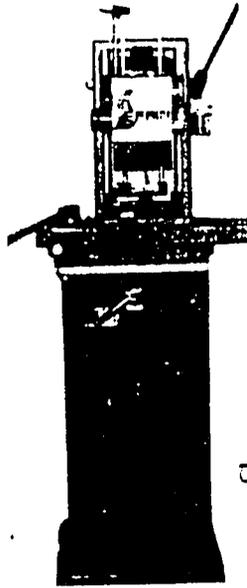


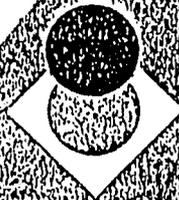
Fig (12) Wood Turning Lath With Copying Dence



منقار جنزیر ۲ ج

SEF 281

Fig (13) Mortising Machine



omec 450-M

FRESATRICE MANUALE PER INCASSI A CODA DI ANONDE
HAND OPERATED MILLING MACHINE FOR DOVETIAL JOINTS
FRÄISEUR MANUELLE POUR ASSEMBLAGE À QUEUE D'ANONDE
HANDHABMASCHINE FÜR SCHWALBENSCHWANZINCASSI
FREZABORNA MANUAL PARA ENSEMBLAJOS DE CODA DE MILANO

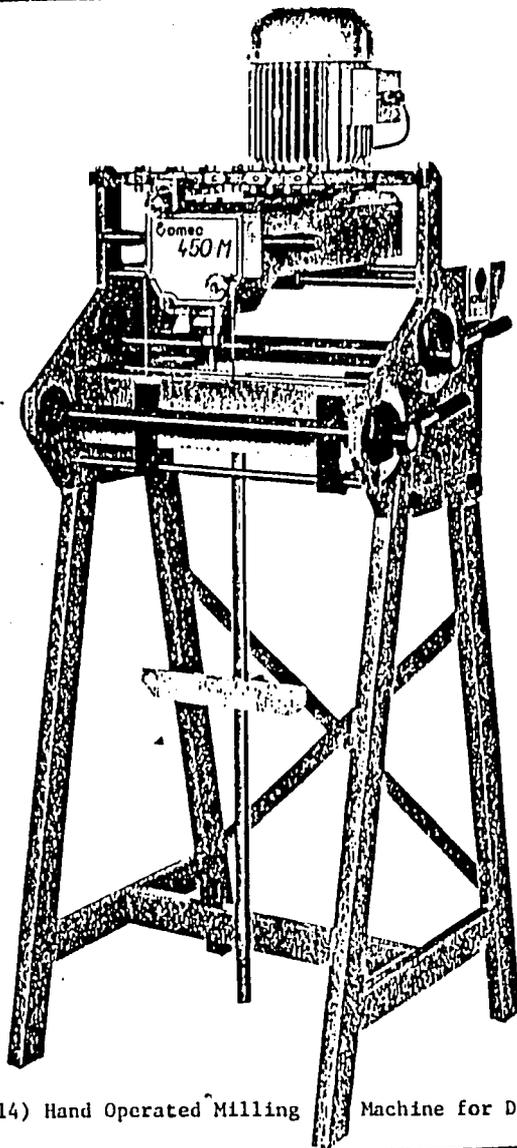
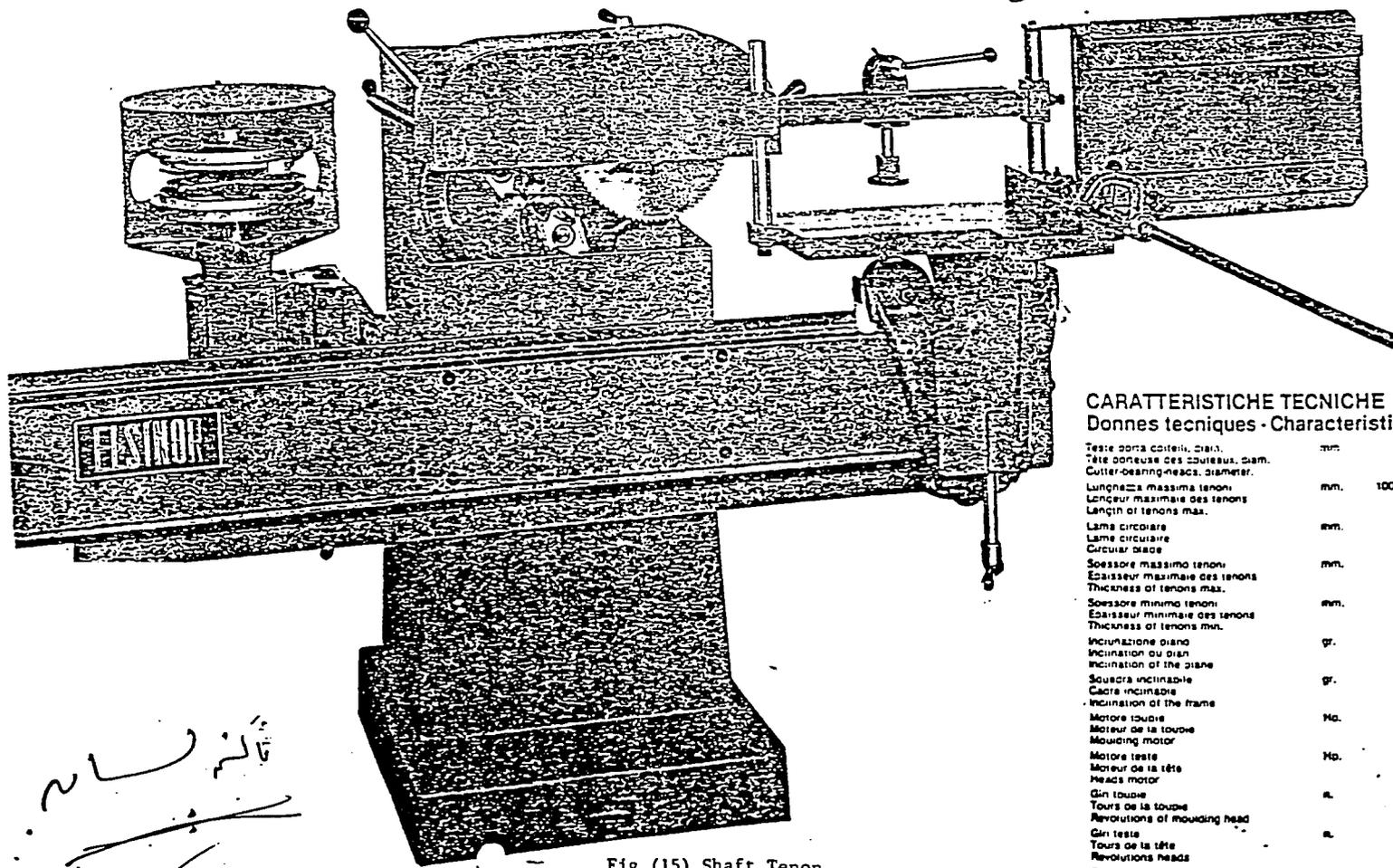


Fig (14) Hand Operated Milling Machine for Dovetial Joints

OMEC s.r.l. - 50052 CERTALDO (FI) Italy - Tel. 0571/668650 - Cav. Post. n. 10 - Telex 571664 OMEC-I



TENONATRICE A 4 ALBERI T 100/120



CARATTERISTICHE TECNICHE Donnes techniques - Characteristics

Teste porta coltelli, diam. Tête porteuse des couteaux, diam. Cutter-bearing-heads, diameter.	mm.	85
Lunghezza massima tenoni Longueur maximale des tenons Length of tenons max.	mm.	100-120
Lama circolare Lame circulaire Circular blade	mm.	250
Spessore massimo tenoni Épaisseur maximale des tenons Thickness of tenons max.	mm.	50
Spessore minimo tenoni Épaisseur minimale des tenons Thickness of tenons min.	mm.	5
Inclinazione piano Inclination du plan Inclination of the plane	gr.	20
Scuadra inclinabile Cadré inclinable Inclination of the frame	gr.	30
Motore toupe Moteur de la toupe Moulding motor	Hp.	3,5
Motore teste Moteur de la tête Heads motor	Hp.	3
Giri toupe Tours de la toupe Revolutions of moulding head	n.	3000
Giri teste Tours de la tête Revolutions heads	n.	8000
Peso circa Poids environ	kg.	900

Fig (15) Shaft Tenon

تالنه لسانه

34

Einnadel-Doppelsteppstich-Flach-Nähmaschine mit Hüpftransport

Single-needle, lock-stitch, flatbed sewing machine with drop feed

Machine à coudre plateau à point noué une aiguille, avec entraînement par griffe sautillante

Pespuntadora de base plana y una aguja, con arrastre a cuatro tiempos

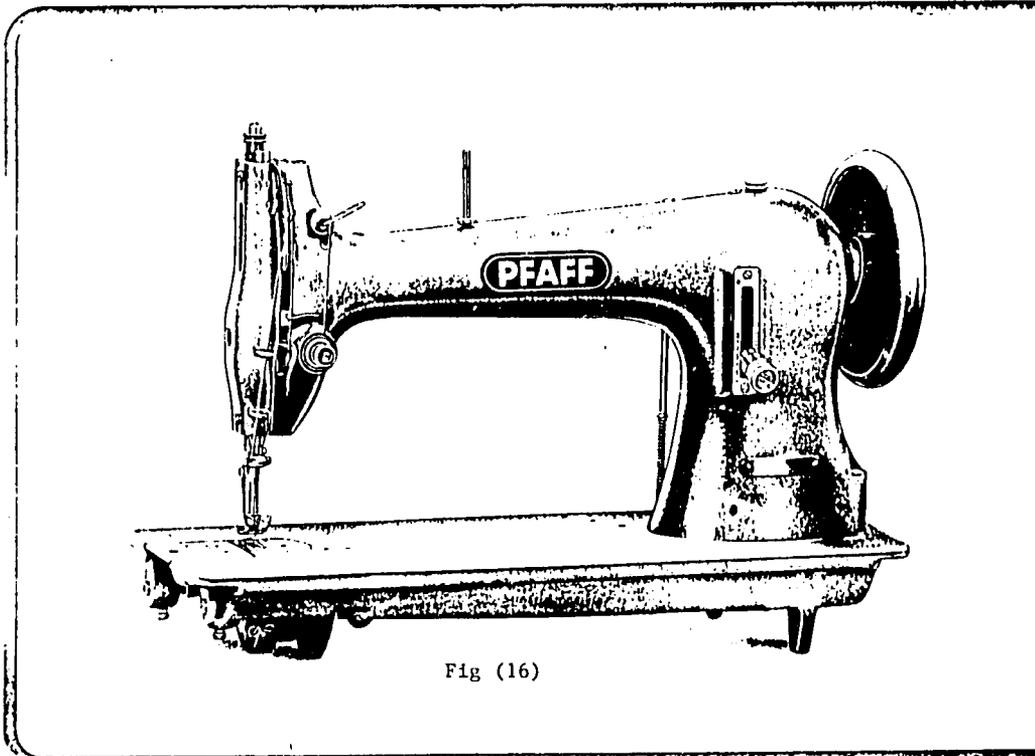


Fig (16)

11 6133

Einsatzmöglichkeiten:

Für Klein- und Mittelbetriebe der Bekleidungs- und Lederwarenindustrie.

Applications:

For small- and medium-sized firms in the clothing and leathersgoods industries.

Utilisations:

Pour les petites et moyennes entreprises de confection et de maroquinerie.

Posibilidades de aplicación:

Para la pequeña y mediana empresa de la industria de la confección y de artículos de piel.

-705/03

PFAFF

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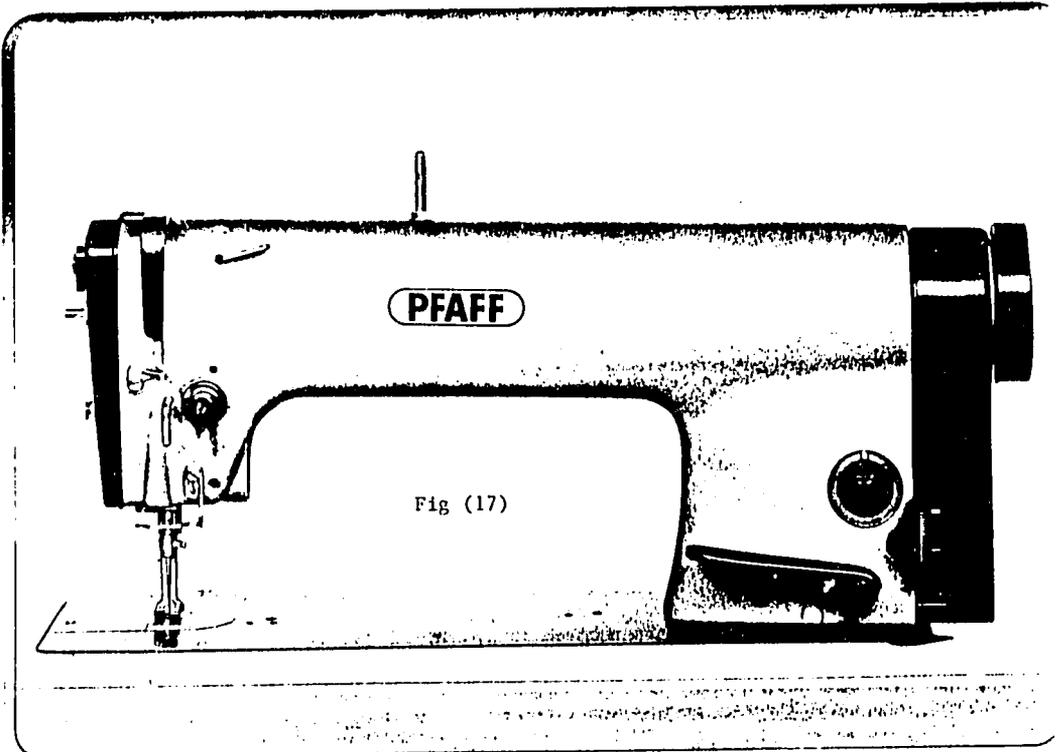


Einnadel-
Doppelsteppstich-
Schnellnäher mit
Untertransport

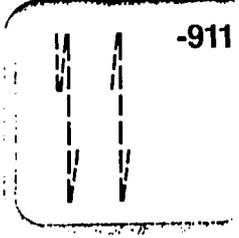
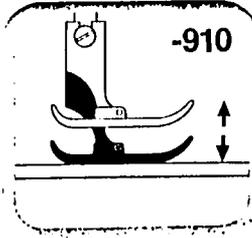
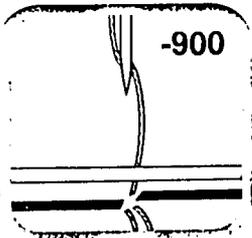
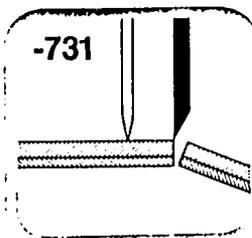
Single-needle
lockstitch high-speed
sewing machine with
drop feed

Piqueuse à point noué
une aiguille à entraî-
nement par griffe

Pespuntadora
rápida de una agu-
ja con arrastre inferi-
normal



0 12977



Appendix (2)
Phase II Project

Phase II - Project Proposal

A. Introduction

Proposal for vocational training center extension (Phase II) consists of:

- a. Addition of a new second floor to the existing building (see Fig. 18).
- b. Construction of a new building to accommodate new training sections (see Fig. 19).
- c. Supply of mechanical equipment and tools needed to operate the following training sections
 - (1) Paintings
 - (2) Khan Khalili crafts
 - (3) Welding, comprising arc welding and oxy-acetylene
 - (4) Electrical and battery charging
 - (5) Plumbing

The new extension is proposed to be totally financed by Cairo Governorate depending mainly on the revenues obtained by selling products manufactured by the trainees in Phase I.

B. Phase II Estimated Cost

(Costs mentioned in this item do not include the costs required for filling of the area of the new building (see hatched area - Fig. 19) and the construction of a retaining wall (if needed) to withstand filling pressures - see Fig. (3) of original report).

1. Cost of Civil works

o Additional second floor	LE 25,000
o New building	150,000

Total Civil Works	LE 175,000

2. Cost of Mechanical Equipment & Tools

a. Welding Unit

o Oxyacetylene cylinder with accessories	LE 1,600
o Welding transformer and arc welding torch	1,000

b. Battery

o Battery charger (slow & fast)	LE 1,000
o Measuring devices	250

c. Electrical

o Tools and measuring device (voltmeter, ammeter, etc.)	LE 2,000
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d.	<u>Plumbing</u>		
	o	Tools for marking, reaming (master tap, reaming tap), screw threading, clamping and handtools	LE 1,500
	o	Water closet for training (washing basins, stainless steel sinks, eastern and western cisterns, hot and cold water mixer, bath tub showers, ... etc)	3,500
e.	<u>Khan Khalili</u>		
	o	Craft tools	LE 1,500
f.	<u>Painting</u>		
	o	Painting tools	LE 500

		Total Mechanical Equipment and Tools	LE 12,850
C.	<u>Furniture</u>		LE 10,000
		Approximate Total of Phase II Works	LE <u>197,850</u>
		Rounded to	LE <u>200,000</u>

