

THE INFLUENCE SEWING MACHINE ON FOOTWEAR MOCCASIN ECONOMIC INDICATORS OF ASSEMBLY OPERATIONS

MALCOCI Marina¹, PASCARI Ioana², CALDARE Olga³

^{1, 2, 3} Technical University of Moldova, Chisinau, Republic of Moldova, E-Mail: mmalcoci2005@yahoo.com

Corresponding author: Malcoci Marina, E-mail: mmalcoci2005@yahoo.com

Abstract: With the evolution of time changes, grows and improves, construction, form, rationality and argumentation usefulness of various types of footwear, namely machines. In the present paper analyzes a number of sewing machines, bound for achieving moccasin shoes. With sewing machines can perform a wide variety of stitches, they create an aesthetically pleasing, but all at once enable product diversification with minimum expenses. Sewing machines moccasins are distinguished by technological parameters, number of stitches, design and affordability. Sewing operation carried out in these machines is carried out within 72 seconds to manual operation - 22 minutes. A flow diagram mechanical requires a reduced number of workers (e.g., 3 workers), to a manual flow diagram - 38 workers. Labour productivity in the use of sewing machines increase by 10 times, and operation cost decreases from 3,7 to 5,7 lei. Regardless of the sewing moccasins construction company helps to increase productivity, quality completion of the operation, ie products, reducing the time required to manufacture the products, shortening manufacturing cycle. Among the cars analyzed, the most recommended sewing machine as OS 7700 P Global company because it represents the best technical features. Sewing machines for manufacturing footwear moccasin were implemented in Moldova in 2010, at the "Cristina Mold Rom Simpex" in Chisinau. Because, company management understood beneficial role of sewing moccasins on quality operation, but also on other economic indicators. Currently the majority of footwear enterprises in Moldova sewing moccasins are done manually. One problem is the high price of sewing machines moccasins.

Key words: sewing machine, moccasins, stitch, productivity, time, enterprise.

1. INTRODUCTION

First moccasins were made of suede, consisting of a single landmark. Currently moccasins kept only certain elements of the original moccasins [1]. Current moccasins are light, made from home with the idea of giving a leg lightness in movement, appearance of freedom in movement is very well suited to the relaxing aspect of the foot. Therefore, we can say that moccasins are practical footwear that mediates the transition from sports shoes to classic shoes [2].

Moccasins have become a very sought after in recent years because they are very comfortable and stylish products, which can be worn both in summer and in the cold.

2. STUDY SEWING MACHINES FOR MANUFACTURING FOOTWEAR MOCCASIN

One of the characteristics of this type of footwear is the way to combine parts assembly (figure 1). Moccasin stitching is done both manually and mechanically special sewing machine [3].

As follows are several types of sewing machine that sews moccasin (figure 2-5) [4-7].



Fig. 1: Examples of moccasins [3, 4]

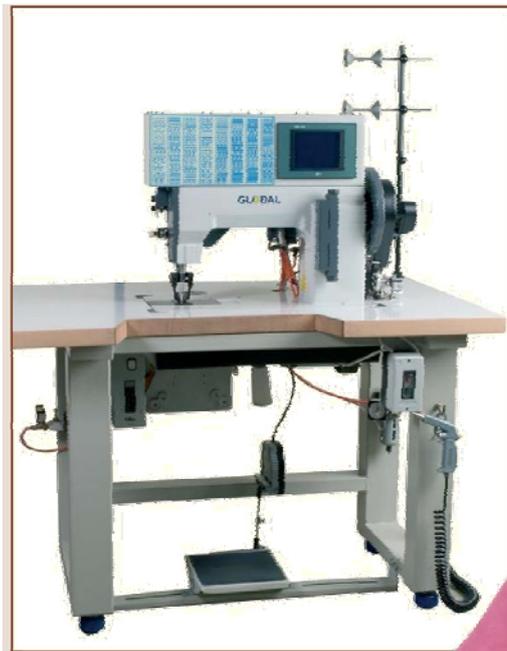


Fig. 2: The sewing machine OS 7700 P, Global [4]



Fig. 3: The sewing machine FA-226, FAMAS [5]



Fig. 4: The sewing machine FT 50, Falan [6]



Fig. 5: The sewing machine FM 70, Falan [7]

In table 1 presents the technical characteristics of sewing machines loafers.

Table 1: Study sewing machines for manufacturing footwear moccasin

No crt.	Brand and company sewing machine	Sewing machines feature
1	OS 7700 P, Global [4]	<ul style="list-style-type: none"> • The number of needles - 2 • Machine speed - up to 400 rev / min • Stitch length – 6,5 mm • Distance lifting the foot - 10 mm • Needle - DY × 23 • The number of standard models - 100 • Pneumatic switching needle • The control unit is in 9 different languages • Programmable memory function
2	FT 50, FALAN [6]	<ul style="list-style-type: none"> • Machine speed - 400 rev / min • Stitch length - 8 mm • thread thickness - 1 mm • Needle - 320-214 x 2 • Engine - EFKA DC 1550 vol / min, 220 V, 50-60 Hz • Net weight of the machine - 160 kg
3	FA-226, FAMAS [5]	<ul style="list-style-type: none"> • The number of pins - 1-2 <ul style="list-style-type: none"> • stitch length - 0-12 mm • Machine speed - 500 rev / min • needle length - 4-7 mm • Needle - 328/214 x 1 • table height - 110 mm • Engine - EFKA DC 1550 230 V, 50/60 • Car Noise LpA = 72 • Net weight machine - 130 kg • Gross weight machine - 150 kg • Provides the ability to make pleats
4	FM 70, FALAN [7]	Machine speed - 500 rev / min. Stitch length - 0-12 mm. Thread thickness - 1.2 mm Needle length - 4-7 mm Needle - 1 x 320-214 Table height - 110 mm Engine - EFKA DC 1550, 220 V, 50-60 Hz Net weight of the machine - 145 kg Gross weight of the machine - 165 kg

With sewing machines can perform a wide variety of stitches (fig. 6 - 7), they create an aesthetically pleasing, but all at once enable product diversification with minimum expenses.

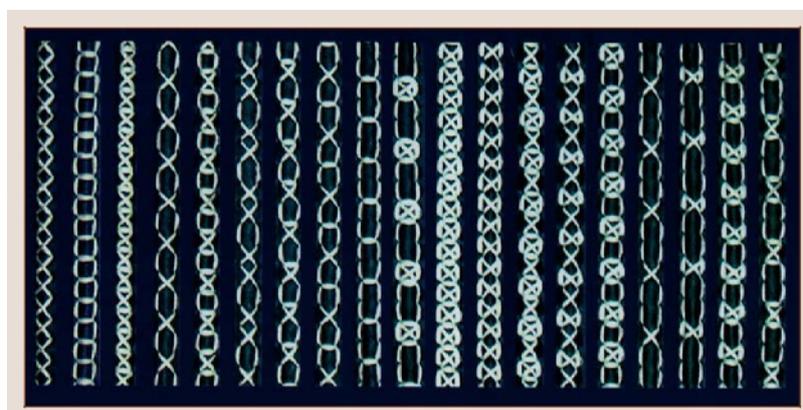


Fig. 6: Types of stitches

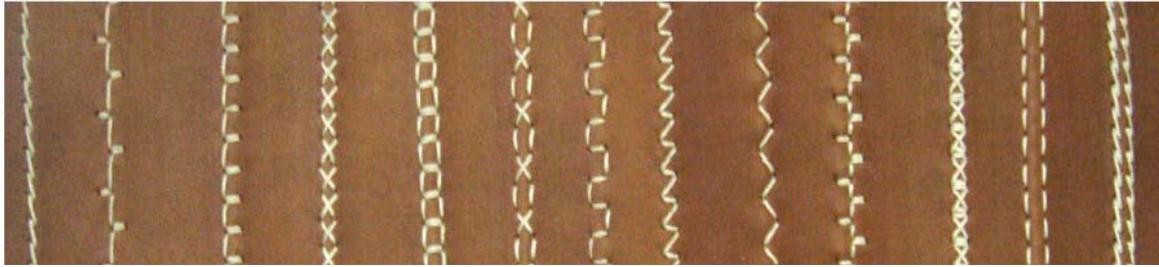


Fig. 7: Types of stitches

3. STUDY THE INFLUENCE OF FOOTWEAR MOCCASIN SEWING MACHINE ON ECONOMIC INDICATORS OF OPERATION ASAMBBLARE

Sewing machines for manufacturing footwear moccasin were implemented in Moldova in 2010, at the "Cristina Mold Rom Simpex" in Chisinau. Because, company management understood beneficial role of sewing moccasins on quality operation, but also on other economic indicators. Currently the majority of footwear enterprises in Moldova sewing moccasins are done manually. One problem is the high price of sewing machines loafers. Table 2 presents a comparative analysis of the technical and economical operation of the assembly of parts (eg, pound with a vamp).

Table 2. Comparative analysis of the economic indicators assembly operation

No. crt.	Indicators technical and economic	Type of operation	
		manual	mechanical
1	Number of workers, pers.	38	3
2	The time required for processing a landmark	22 min.	72 sec.
3	The cost of the operation, lei	5-7	1,30
4	Productivity, per/8h	24 - 28	240

Analyzing the data in table 2 shows that the operation performed mechanically require less cost to the company for making moccasin shoes.

4. CONCLUSIONS

1. Labour productivity in the use of sewing machines increase by 10 times, and operation cost decreases from 3,7 to 5,7 lei.

2. Sewing operation carried out in these machines is carried out within 72 seconds to manual operation - 22 minutes.

3. A flow diagram mechanical requires a reduced number of workers (e.g., 3 workers), to a manual flow diagram - 38 workers.

4. Regardless of the sewing moccasins construction company helps to increase productivity, quality completion of the operation, ie products, reducing the time required to manufacture the products, shortening manufacturing cycle, reducing the number of workers involved in the technological assembly of flexible parts.

REFERENCES

- [1] G. Mălureanu, A. Mihai. *Fundamentals of footwear design*. Iași: Ed. Performance, 2003.
- [2] <http://www.wisegeek.com/what-are-moccasin-slippers.htm> (accesat pe 26.09.2013).
- [3] <http://www.bestchoicereviews.org/clothing/mens/shoes/top-10-best-mens-slippers/> (acesat pe 16.09.13).
- [4] <http://www.sinmos.ru/catalog/49/118/124/194.html>. (accesat pe 30.09.2013).
- [5] <http://b2b-lightindustry.ru/tovari/5317> (accesat pe 16.09.13).
- [6] <http://www.leibrock-msm.com/oborudovanie/falan/proizvodstvomokasin/ft50/default.aspx> (accesat pe 26.09.2013).
- [7] <http://www.leibrock-msm.com/oborudovanie/falan/proizvodstvomokasin/fm70/default.aspx>. (accesat pe 30.09.2013).