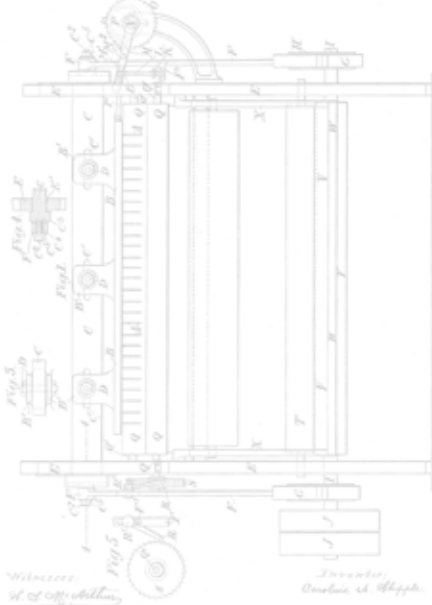
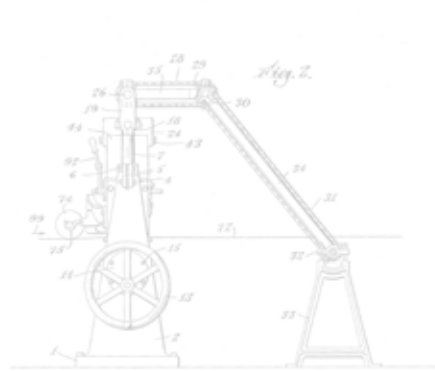


(No Model.)
C. A. WHIPPLE.
FELTING MACHINE.
No. 400,805.
Patented Oct. 6, 1891.

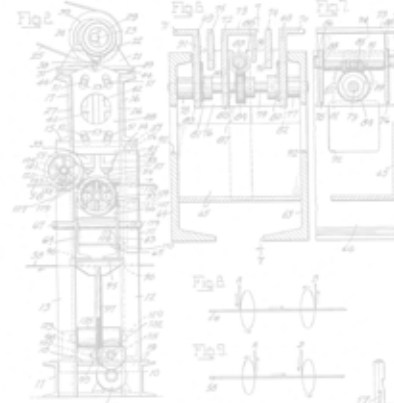


Witness:
H. C. Whipple
J. C. Kramer.
Inventor:
Charles A. Whipple.
By Foster & Freeman
Attorneys.

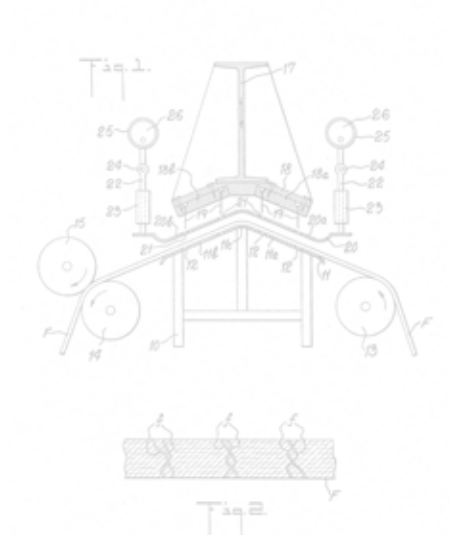
Nov. 7, 1933.
P. H. WALSH
KNITTING MACHINE
Filed May 19, 1930
5 Sheets-Sheet 2



Feb. 28, 1939.
H. G. SPECHT ET AL
FELT NEEDLING MACHINE
Filed July 30, 1937
3 Sheets-Sheet 2



July 28, 1959
F. B. MORRILL
NEEDLE LOOM
Filed April 16, 1958
2,896,303



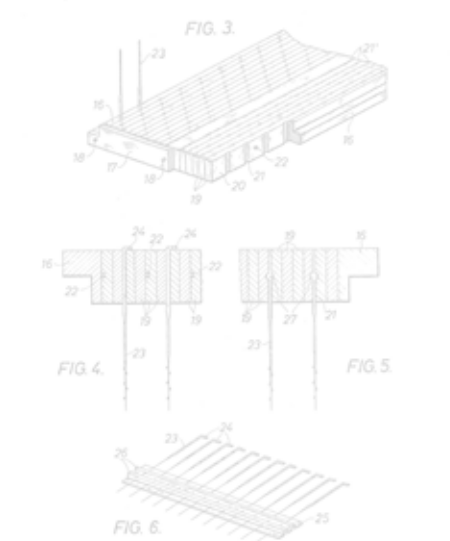
INVENTOR:
FRANK B. MORRILL
BY Barry J. Taylor
Attorney

IRAMATEX
ITALIA

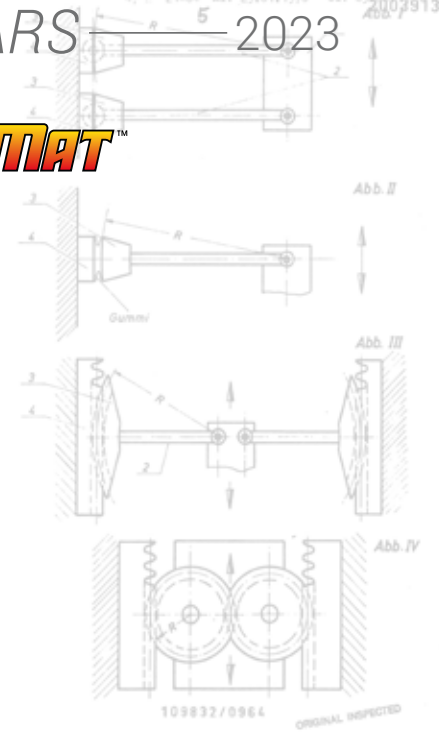
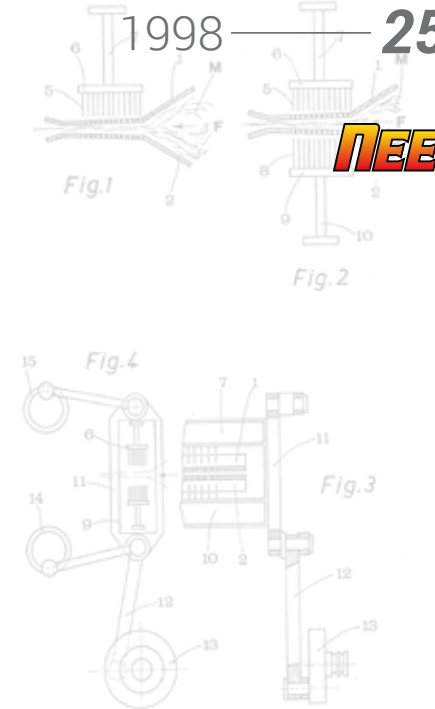
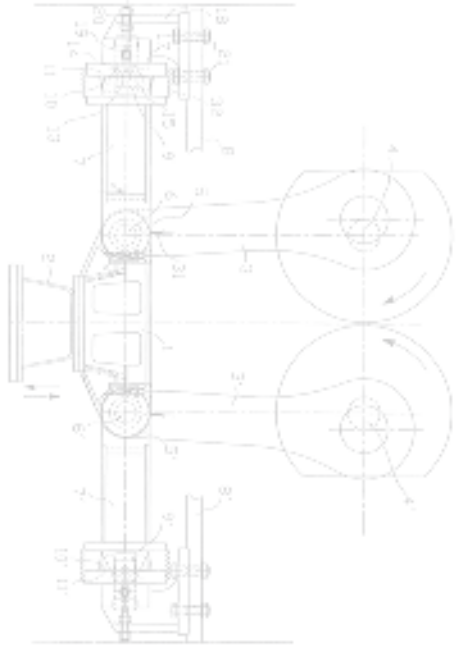
1998 — 25 YEARS — 2023

NEEDLYMAT™

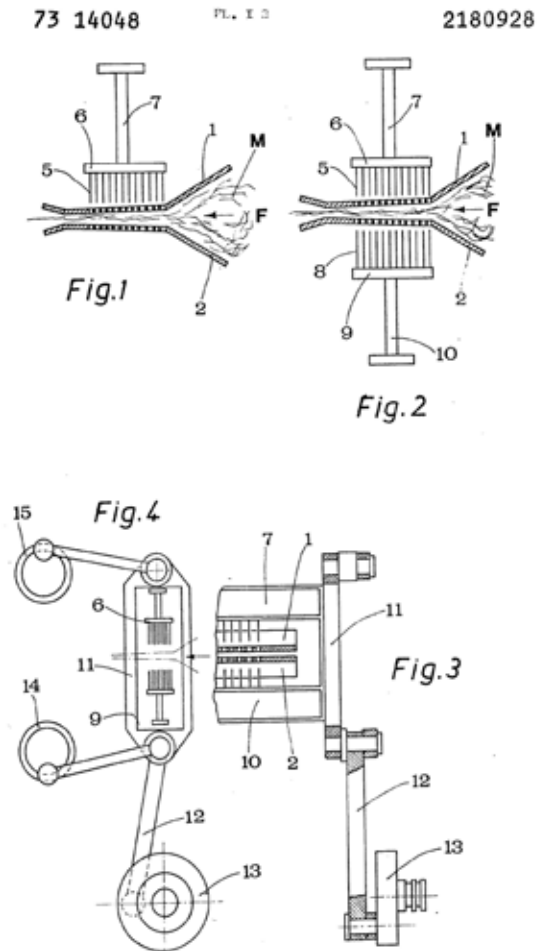
March 21, 1967
K. ASTOR
NEEDLE BOARD FOR FELTING LOOMS AND THE LIKE
Filed April 14, 1965
3,309,753
2 Sheets-Sheet 2



INVENTOR:
Karl Astor
BY
Attorney



Brevetti su agugliatura nei secoli | Patents accross the centuries



United States Patent [19]
Nencini et al.

Patent Number: 3,390,556
Date of Patent: Feb. 21, 1969

CONTROL SYSTEM FOR THE
RECTILINEAR VERTICAL
RECIPROCATING MOVEMENT IN A
NEEDLING MACHINE

Inventors: Massimo Nencini, Via Morali, 10,
Azzurro Nencini, Via Spadino, 144,
both of 21100 Pavia, Gratosio
Nencini, Pavia; Carlo Nencini, Pavia;
Baffale Vassini, Pavia, all of Italy

Assignee: Massimo Nencini, Admin Nencini,
both of Pavia, Italy

App. No.: 152,884

Filed: Jan. 18, 1964

Foreign Application Priority Data

May 18, 1963 (IT) Italy 20064/63

Int. Cl. 1959: D06H 15/00; F16C 11/04

U.S. Cl. 1959: 14/58; 74/54; 16/11

Field of Search 74/53, 42, 44, 45, 46;
74/48, 49A/115, 113, 28/113, 114

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1201085 12/1958 France

636463 12/1959 Germany

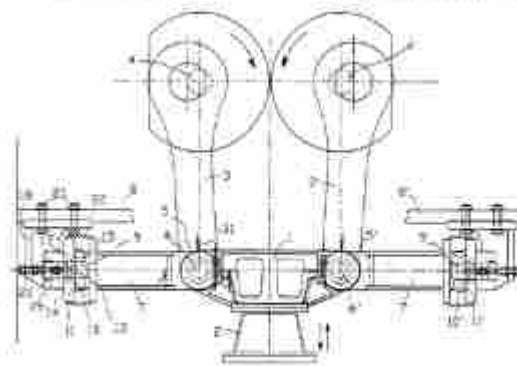
1248422 4/1959 Canada Kingdom

Primary Examiner—Clifford D. Gowdine
Assistant Examiner—John J. Calvert
Attorney—Apert, de Firm—Gerslank, Fisher, Gorb &
Solter

ABSTRACT

Rectilinear vertical reciprocating movement is transmitted to the needle holder beam of a needling machine by a crank mechanism preferably composed of two horizontal auxiliary connecting rods hinged to a support of the beam. The two auxiliary connecting rods are mounted to the two sides of the needle holder beam and support. Each auxiliary rod includes an end hinged to a crank arm connecting rod, with the other end being joined to the structure of the machine by a sliding block and two camming profiles. One of the profiles is fixed and the other profile is mobile. The profiles form a rolling coupling, so that each sliding block, due to the limited auxiliary connecting rod stroke when the crank mechanism runs, between two extreme axial positions. Simultaneously, each profile of the auxiliary connecting rod rolls on the fixed camming profile to remain constantly in contact therewith, along lines that are always located on the horizontal plane in different vertical circular arcs through the center of the main supporting and small end.

17 Claims, 6 Drawing Sheets



March 21, 1967

K. ASTOR

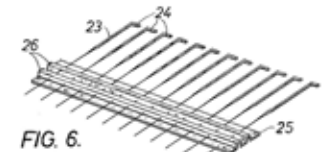
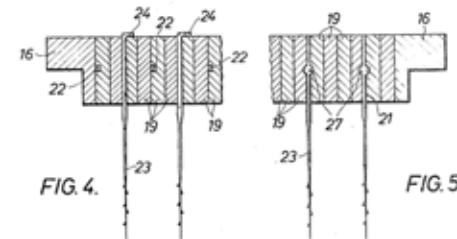
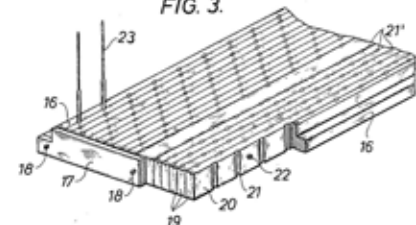
3,309,753

NEEDLE BOARD FOR FELTING LOOMS AND THE LIKE

Filed April 14, 1965

2 Sheets-Sheet 2

FIG. 3.



INVENTOR
KURT ASTOR

BY

Karl G. H.
ATTORNEY

Missione | Mission

Servire il cliente di impianti per il tessuto non tessuto agugliato, fornendo il **miglior valore possibile ed il miglior servizio possibile.**

Supplying of complete non-woven lines giving the **best value an best service.**

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STRUCTURING NEEDLE PUNCHIN MACHINES Patterning
NEEDLE PUNCHIN MACHINES FOR ENDLESS FELT Tubular felt with stretching systems
LAB AND PILOT LINES
ELLIPTICAL NEEDLING
NEEDLE LOOMS ACCESSORIES
END OF LINES
PGM SIMULATION + TOOLS
NEEDLYMAT™ Automatic needle changing machine

Faldatori

Crosslappers



I nostri faldatori sono sviluppati per adattarsi ad ogni tipo di linea.
La nuova elettronica li rende, performanti, affidabili e facili nell'utilizzo.

*Our crosslappers are developed to be adapted to all types of line.
The new control configuration makes ours crosslapper's performance, reliable and easy to control during production.*

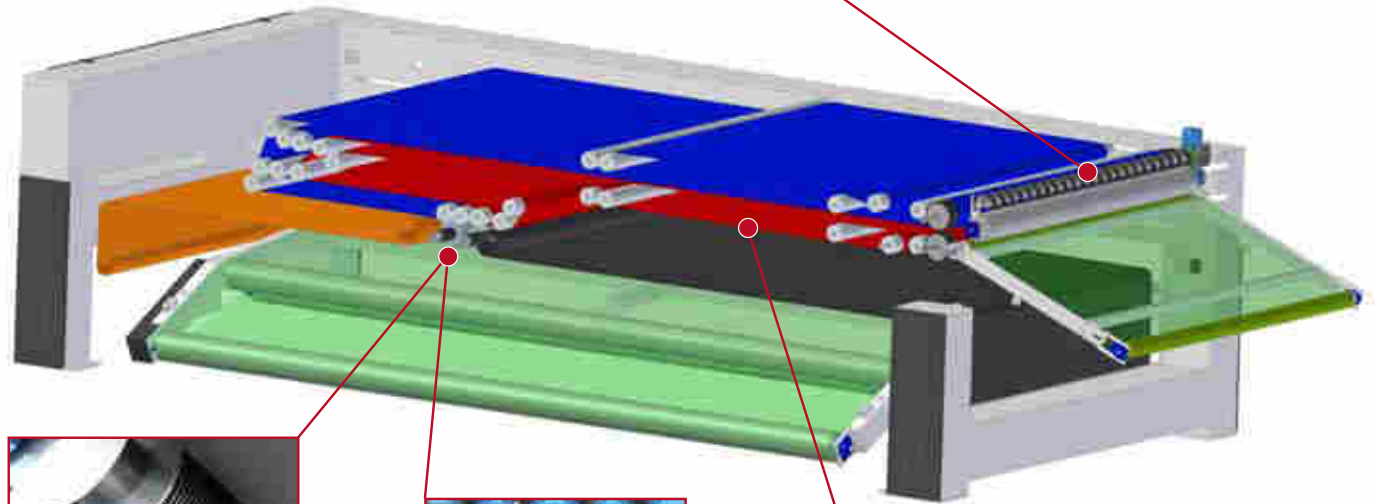
Faldatori

Crosslappers



Interfaccia comandi
Human Machine Interface

Cilindro pressavelo in ingresso macchina
Web presser cylinder on machine inlet



Rulli lamellari
Lamella rollers



Rulli lamellari
Lamella rollers



Tela forata
Mesh apron

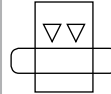
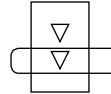
	FA2000T	FA3000TCO	FA5000TCO	FA6000TCO
Max speed in	60-70	60-70	100-120	150
Max width in	3.500	3.500	3.500	3.500
Max width out	10.000	10.000	10.000	10.000
Profiling	X	✓	✓	✓

Agugliatrici

Alcune possibili configurazioni

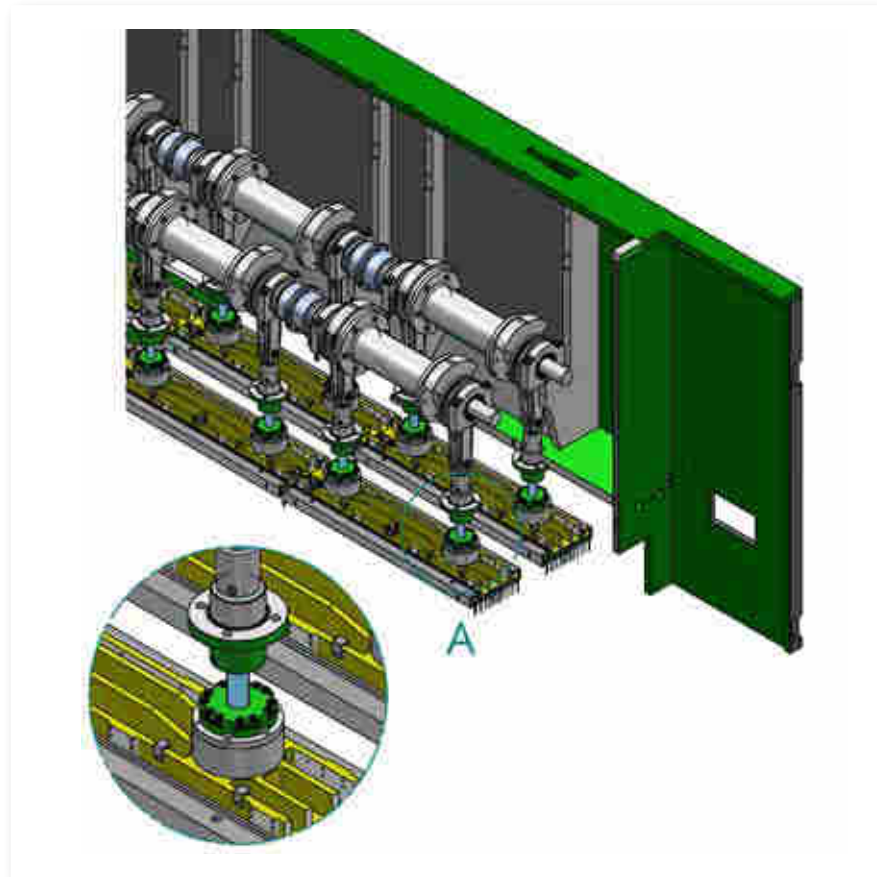
Needle Looms

Some possible configurations

													
Velocità massima <i>Max speed</i>	RPM	1200	1600	1600	1600	1600	1200	1200	2000	2000	1500	1200	1000
Aghi x MT. x Tavola min-max <i>Min-max needle density per board</i>	N/MT	1500 8000	3000+3000 8000+8000	3000+3000 8000+8000	3000 8000	3000+3000 8000+8000	3000+3000 8000+8000	3000+3000 8000+8000	5000+5000 8000+8000	5000+5000 8000+8000	According to gauge to 14000	2000 32000	1000 3000
Lubrificazione <i>Lubrication</i>	Oil	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✗	✗
	Grease	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓
Corsa massima <i>Max stroke</i>	MM	60÷90	40÷60	40÷60	40÷60	40÷70	60÷80	60÷80	30÷50	30÷50	30÷40	60÷70	60÷80
Rimozione polveri <i>Dust extraction</i>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rimozione veloce piastre <i>Quick plate change</i>	✓	✓	✓	✓	✓	✓	✓	✓	✓ only stripper	✓ only stripper	✓ only stripper	✗	✗
Movimento ellittico <i>Elliptical needling</i> Optional		✓ in grease version	✓ in grease version	✓ in grease version	✓ in grease version	✓ in grease version	✓ in grease version	✓ in grease version	✓	✗	✗	✓ in grease version	✗
Entrata applicabile <i>Feeding system applicable</i>	All	 2B	 2BFS	 2B	 2BFS	 2B	 2BFS	 2B	 2BFS	 2B	 2BFS	✗	✗

Agugliatrici

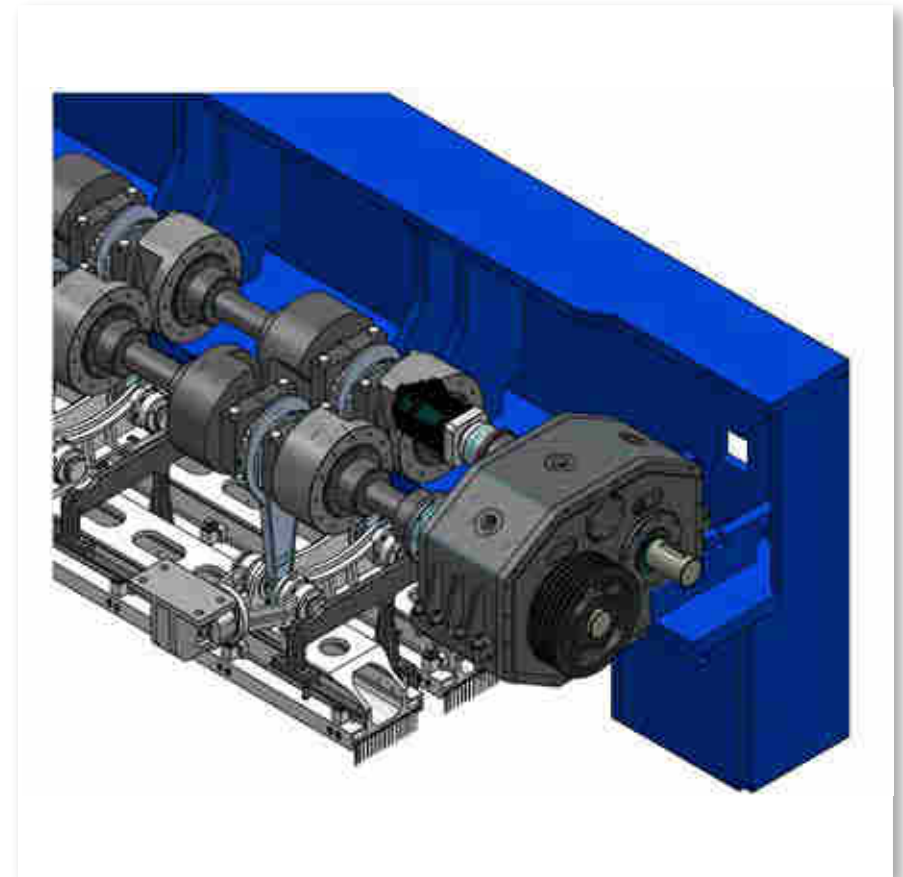
Tipi di macchine prodotte



Lubrificazione ad olio
Oil lubrication

Needle Looms

Types of machines



Lubrificazione a grasso
Grease lubrication

Il solo produttore al mondo per due stili.
The only world wide producer for two versions.

Agugliatrici

Preagugliatura



2BFS

2 nastri a compressione + rulli a dita

2 compressing aprons + finger rollers



2B

2 nastri a compressione a penna media con centraggio automatico nastri

2 aprons with medium nip rollers with apron's self tracking



L'applicazione di uno di questi sistemi rende ogni agugliatrice una pre-agugliatrice.

The application of any of these system turns a needler to a pre-needler.

Agugliatrici

Preagugliatura



Macchina Quadropunch AGTB da 6000 mm
con entrata 2BFS

*Machine Quadropunch AGTB 6000 mm
with batt feeding system 2BFS*



Needle Looms

Pre-needling



Agugliatrice tandem con 2BFS
ed opzione by pass

*Tandem loom with 2BFS **on airlaid**
and by pass option*

I sistemi di introduzione, combinati con un'agugliatrice, vengono personalizzati al meglio per avere il minor stiro possibile.

Batt feeding systems, combined with a needle loom, are customized to have minimum draft web transport.

Agugliatrici

Macchine a finire

▽▽
△△



5000 mm DBU50 macchina
dal basso doppia tavola

*5000 mm DBU 50 double
board upstroke*

6000 mm **Quadropunch** con 6000x4 (24000) N/MT
6000 mm **Quadropunch** with 6000x4 (24000) N/MT

▽
△



Carico di macchina **tandem** da 8000 mm
8000 mm **tandem** loom on loading

Needle Looms

Finishing machines



△△



Dopo la preagugliatura una o più macchine a finire aiutano a compattare il materiale per portarlo alla densità di agugliatura desiderato.

After preneedling the use of one or more finishing looms help to bond the felt to bring the density of needling to the wished level.

Linee agugliatura

Needling lines



Automobilistico larghezza finita 4500 mm
Automotive final working width 4500 mm

Linee agugliatura



Geotessile 3 agugliatrici 7000mm

Needling lines



Geotextile 3 needling looms 7000 mm

Agugliatrici a strutturazione

Velour

Structuring needle punching machines

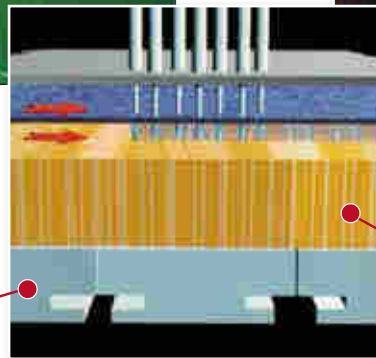
Velour



VELOUR 2500 mm



VELOUR 4200 mm



Guide spazzole
Brushes guides

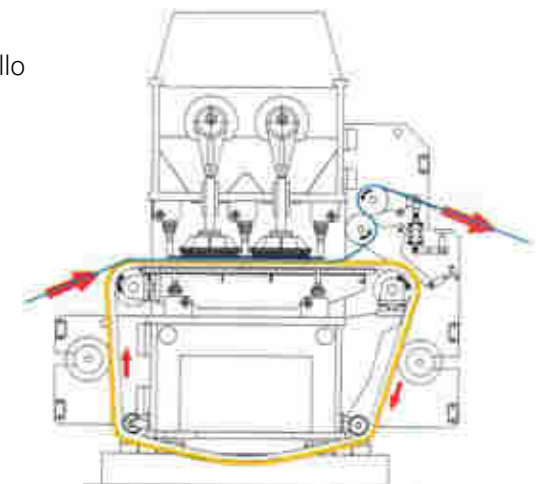
Spazzole
Brushes



Rostro pulitore
Cleaning
spikes roller



Pannello di controllo
Control panel



Svariati sono i settori per questo prodotto: dalla moda all'automotive.

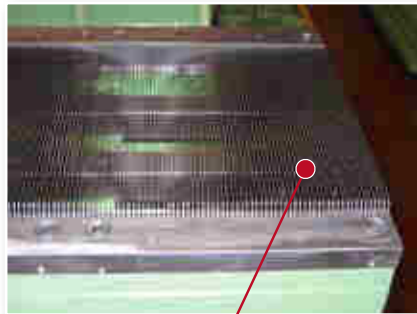
A lot of applications for this product: from fashion to automotive.

Agugliatrici a strutturazione

A disegno

Structuring needle punching machines

Patterning



Piastra lamellata
Lamellas plate



Ramatex è fra i pochi produttori mondiali di agugliatrici a strutturazione.
Questo prodotto viene utilizzato nella pavimentazione tessile e nell'automotive.

*Ramatex is one of the few world producer of structuring needle punching machines.
This product is used as floor covering and in the automotive sector.*

Agugliatrici per feltri senza fine

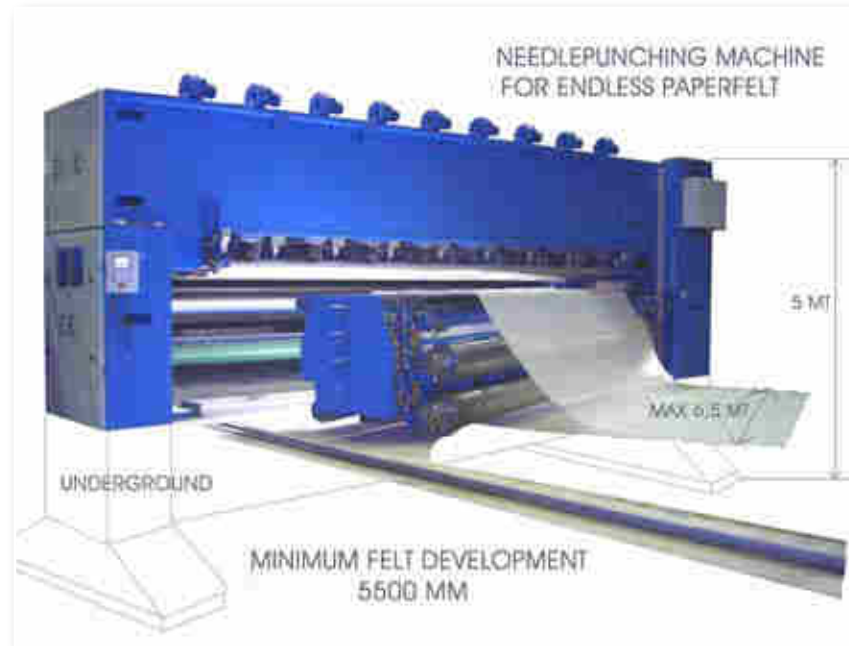
Feltri tubolari

Needle punching machines for endless felt

Tubular felt with stretching systems

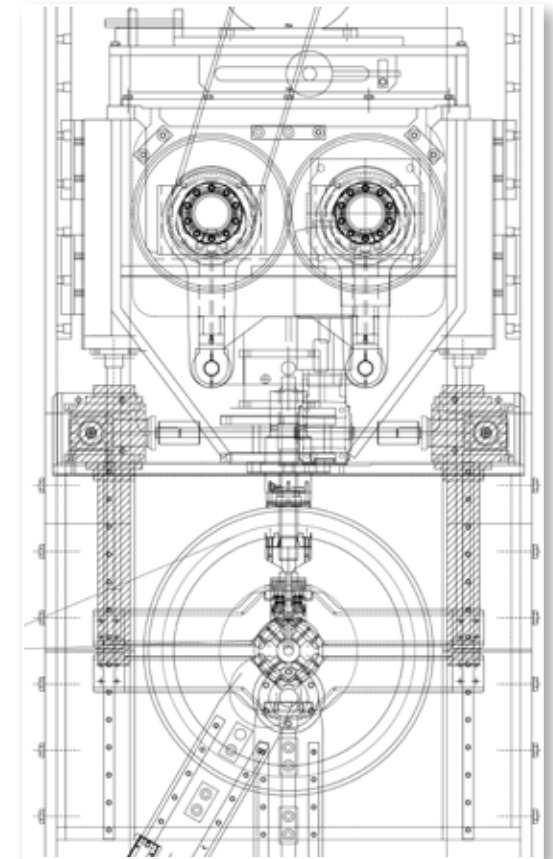


Working width 8000 mm
FELT DEVELOPMENT Minimum 5500 mm - Maximum 80000 mm



FROM SMALL...TO BIG...

...TO SPECIAL



Dal feltro tubolare di piccolo diametro...a quello di grande diametro.
From smaller felt diameter...to big diameter.

Linee laboratorio



Ramatex fornisce linee complete da laboratorio ed in piccola scala.

Ramatex ha fornito molti istituti e centri di ricerca.

Ramatex supplies complete pilote lines.

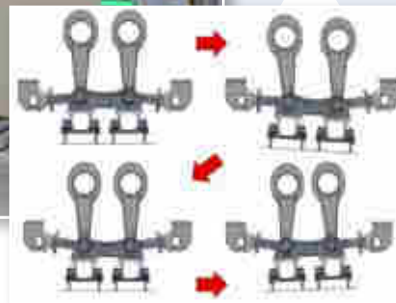
Ramatex already supply some of most important universities and research centers.

Agugliatura ellittica

GAMMA è la nuova generazione nel movimento ellittico della trave porta aghi. Questa tecnologia può essere implementata sull'intera gamma delle nostre agugliatrici per renderle più innovative ed efficienti. Può adattarsi a qualsiasi tipo di corsa dell'agugliatrice.

I vantaggi di questa ricerca ingegneristica sono:

- Riduce il rischio di rottura degli aghi
- Da all'agugliatrice una velocità maggiore di entrata/uscita
- Produce un materiale finito migliore
- Riduce a zero l'avanzamento/colpo

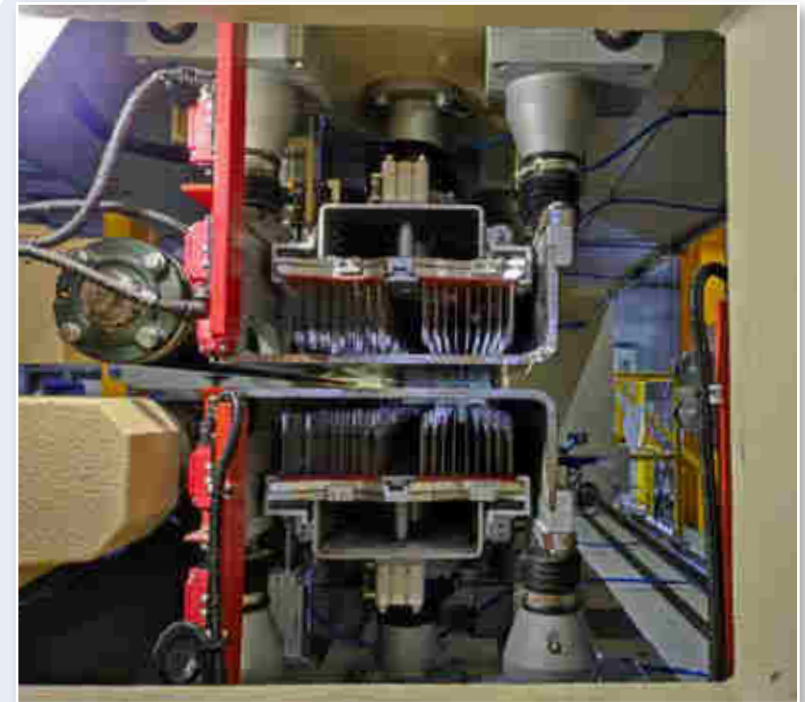


Elliptical needling

GAMMA is the new generation of elliptical movement of needle beam. This technology may be added on our range of needle looms to make all of them more innovative and efficient. It could be adapted for all types of needle looms strokes.

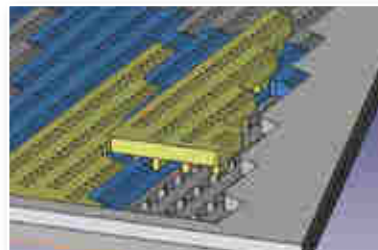
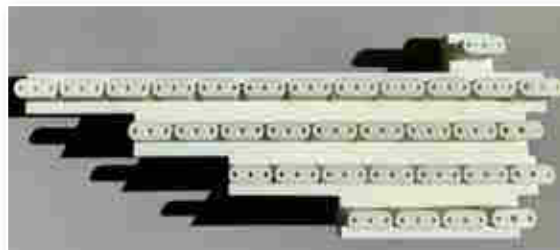
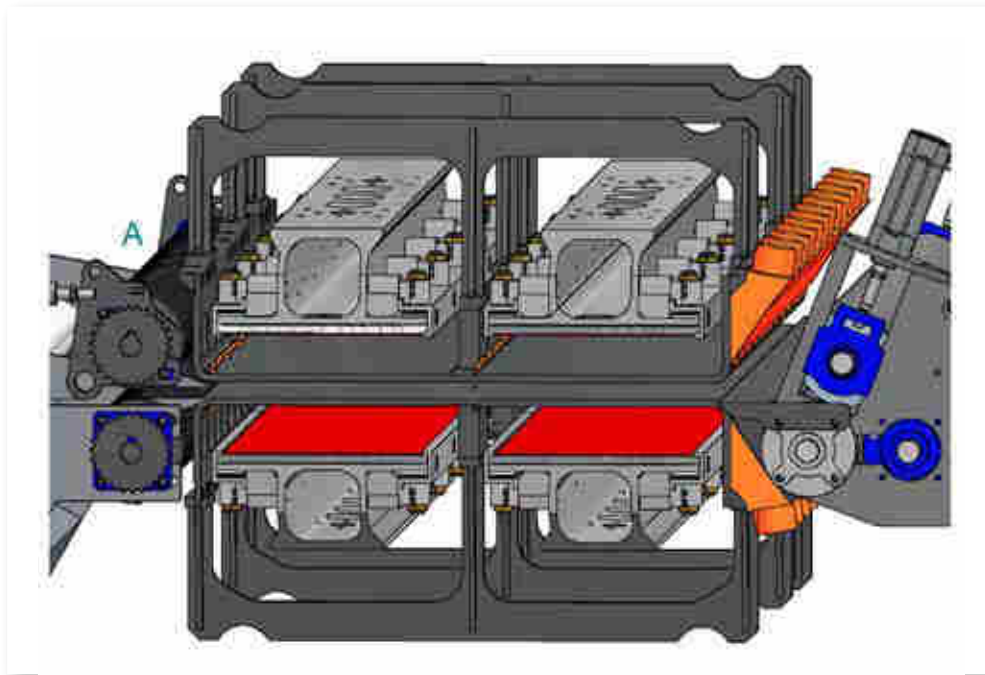
The advantage of this engineering development are:

- Reduce the risk of breaking needles
- Give the machine a faster entrance/exit speed
 - Produces better finished material
- Reduce to zero the advance/stroke



Accessori per agugliatrici

Needle looms accessories



Mosaico
Mosaic



La maggior parte delle nostre agugliatrici possono essere equipaggiate con sistemi di aspirazione, soffiaggio, rimozione meccanica

Most of our looms can be equipped with suction, blowing devices, mechanical removal of dust

Ramatex è in grado di fornire accessori per le agugliatrici per rendere ancora più semplice e performante la produzione.
Ramatex is able to supply a lot of accessories for needle looms to have simpler and more performing experience of production.

Fine linea

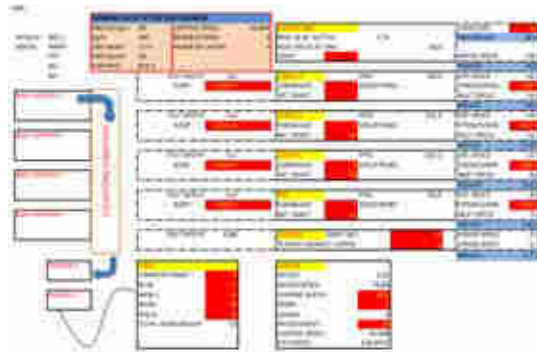
End of lines



Personalizziamo i nostri fine linea a seconda delle esigenze dei nostri clienti.
We customize our end-line in relation to our customers needs.

Simulazione PGM + Accessori

Calcolo linee - *Lines calculation*



Con le nostre tabelle di produzione possiamo simulare con un'ottima approssimazione l'efficienza teorica di ogni macchina della linea.

With our calculation of productions we can simulate with a excellent approximation of the theoretical efficiency for each machine.

Simulazione Aghi - *Needle pattern simulation*

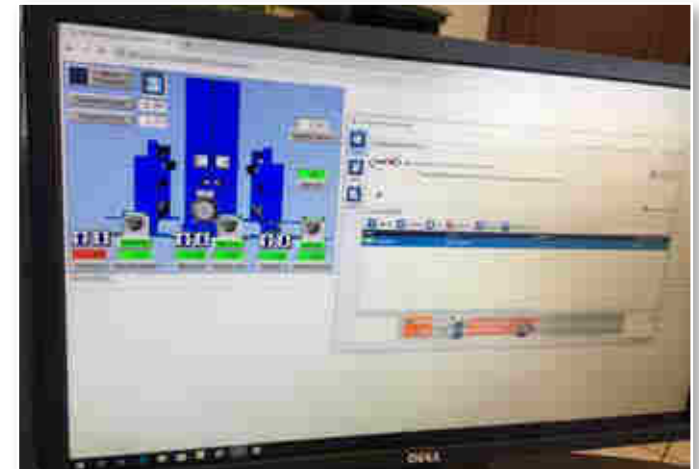


Il sistema per le simulazioni dei patterns di agugliatura usato da RAMATEX, il cui primo esemplare risale al '96 ha subito innumerevoli sviluppi oggi è anche disponibile online.

The simulation system of needle patterns used from RAMATEX was created in 1996 for the first time, since that it has got a lot of development.

PGM Simulation + Tools

Teleassistenza - *Remote Support*



Ormai da tempo RAMATEX ha attivato il servizio di monitoraggio remoto e di aggiornamento del proprio software. Dai nostri uffici direttamente sulla macchina del cliente ovunque esso si trovi, con requisito minimo ad alta velocità di collegamento internet.

For a long time RAMATEX has activated the monitoring remote service. From our office directly on the costumer's machine everywhere it is, with a minimum request to high speed internet.



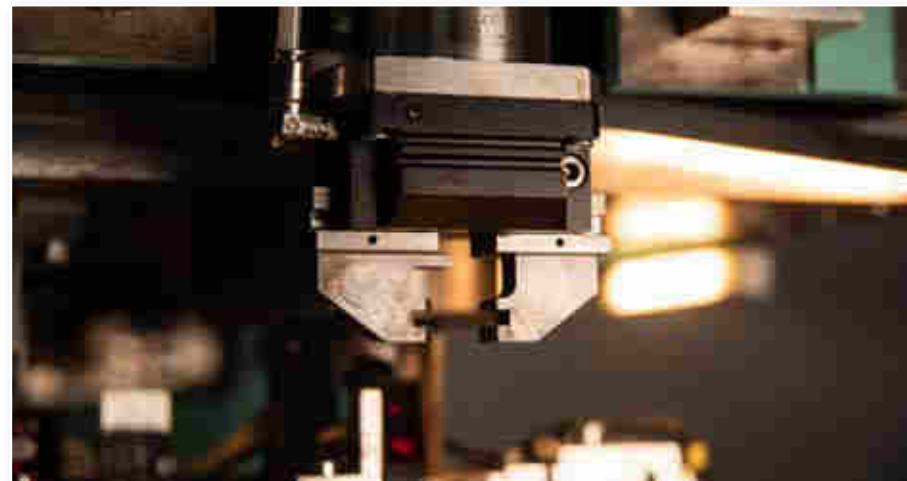
La manutenzione delle tue tavole porta aghi non è mai stata così semplice!

NeedlyMat™ è una **macchina cambia aghi automatica** che ha lo scopo di supportare con procedure avanzate, basate su intelligenza artificiale e autoapprendimento, il processo di manutenzione delle tavole porta aghi per macchine agugliatrici, **individuando gli aghi danneggiati o piegati e sostituendoli in totale autonomia**.

NeedlyMat™ consente di gestire:

- la **manutenzione programmata** delle tavole porta aghi, sulla base delle ore/lavoro,
- la **manutenzione ordinaria** da usura,
- la **sostituzione totale degli aghi**.

Consente di **razionalizzare l'impiego di risorse umane** normalmente dedicate alla manutenzione manuale delle tavole porta aghi, migliorando le condizioni di lavoro degli operatori e rendendo più sicuro l'intero processo.



The maintenance of your needle boards has never been easier!

NeedlyMat™ is an **automatic needle changing machine** that aims to support the maintenance process of needle holder tables for needle punching machines with advanced procedures, based on artificial intelligence and self-learning, **identifying damaged or bent needles and replacing them in total autonomy**.

NeedlyMat™ allows you to manage:

- the **scheduled maintenance** of the needle holder tables, based on hours / work,
- the **ordinary maintenance** from wear,
- **total replacement of needles**.

NeedlyMat™ allows to **rationalize the use of human resources** normally dedicated to the manual maintenance of the needle holder tables, improving the working conditions of the operators and making the whole process safer.



NeedlyMat 2.0 già sul mercato
NeedlyMat 2.0 already on market

NEEDLYMAT™

RAMATEX
ITALIA





1998 ——— **25 YEARS** ——— 2023

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Phone +39 348 3554006 - E-mail: info@ramatexitalia.it