AHRC TOWARDS A NATIONAL COLLECTION

The Congruence Engine: Digital Tools for New Collections-Based Industrial Histories

PRESENTATION TO LUSTRE CONFERENCE

TIM BOON

27 June 2024

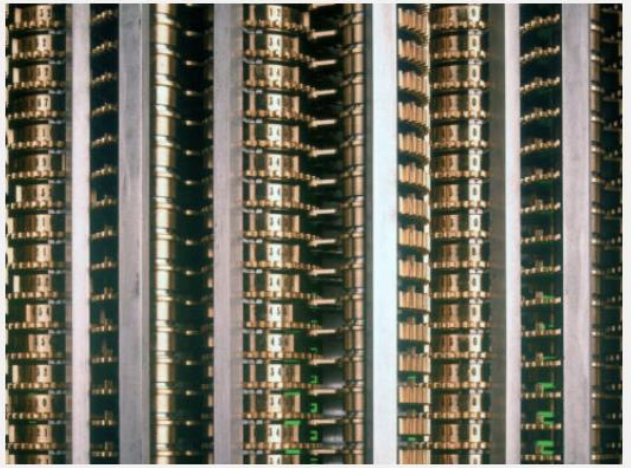
TOWARDS A NATIONAL COLLECTION

UKRI Arts and Humanities Research Council

SCIENCE MUSEUM GROUP

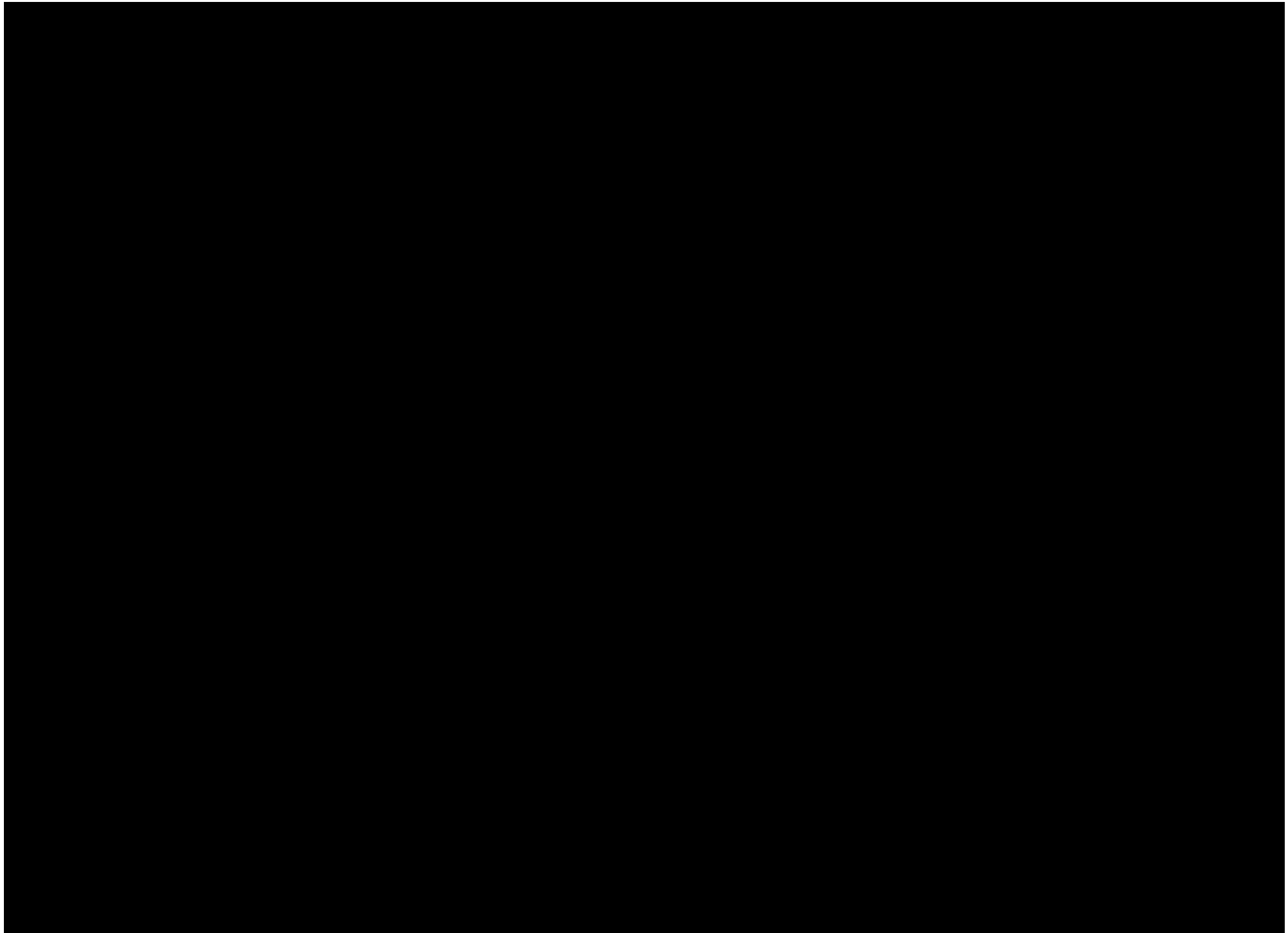
KEY PROJECT DATA

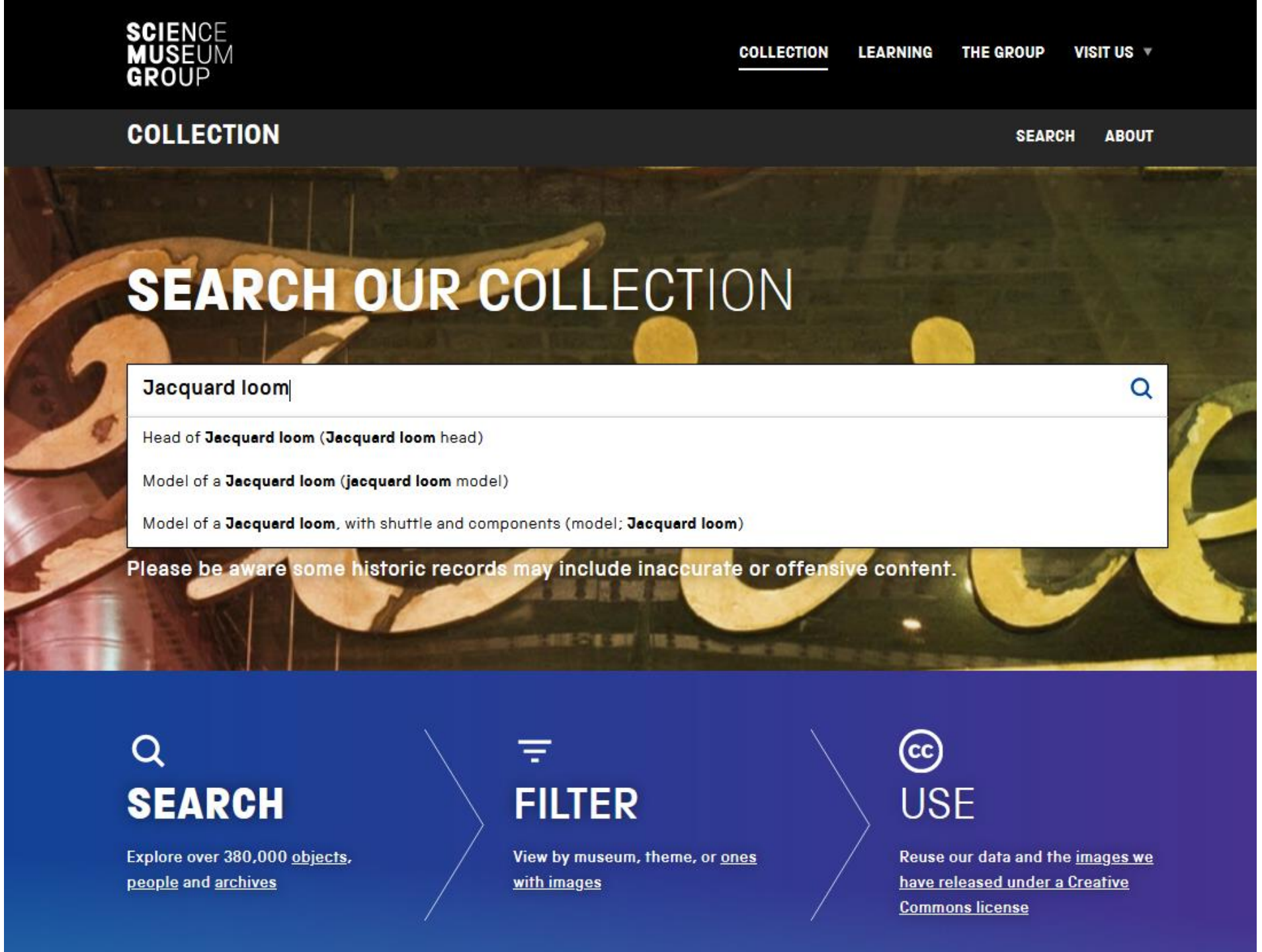
- £2.9M three-year research project, the biggest ever for the Group. 1 of 5 Discovery Projects.
- Hits priorities of SMG and AHRC / UKRI ‘Towards a National Collection’ funding.
- Is exploring what it will be like when it is possible to work across the UK’s collections, rather than silo-by-silo
- Is on territory of industrial history and collections, especially: textiles, energy and communications.
- 13 Co-investigators and 15 partners / participating organisations including 4 universities, National Museums, Local Museums, BFI, BBC History, Historic England



THE CONGRUENCE ENGINE: DIGITAL TOOLS FOR NEW COLLECTIONS-BASED INDUSTRIAL HISTORIES

The Congruence Engine is a three-year research project starting in November 2021 that will use the latest digital techniques to connect industrial history collections held in different locations.




SCIENCE MUSEUM GROUP
COLLECTION
LEARNING
THE GROUP
VISIT US
COLLECTION
SEARCH
ABOUT
SEARCH OUR COLLECTION
Jacquard loom
Head of Jacquard loom (Jacquard loom head)
Model of a Jacquard loom (jacquard loom model)
Model of a Jacquard loom, with shuttle and components (model; Jacquard loom)
Please be aware some historic records may include inaccurate or offensive content.
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Explore over 380,000 objects, people and archives
FILTER
View by museum, theme, or ones with images
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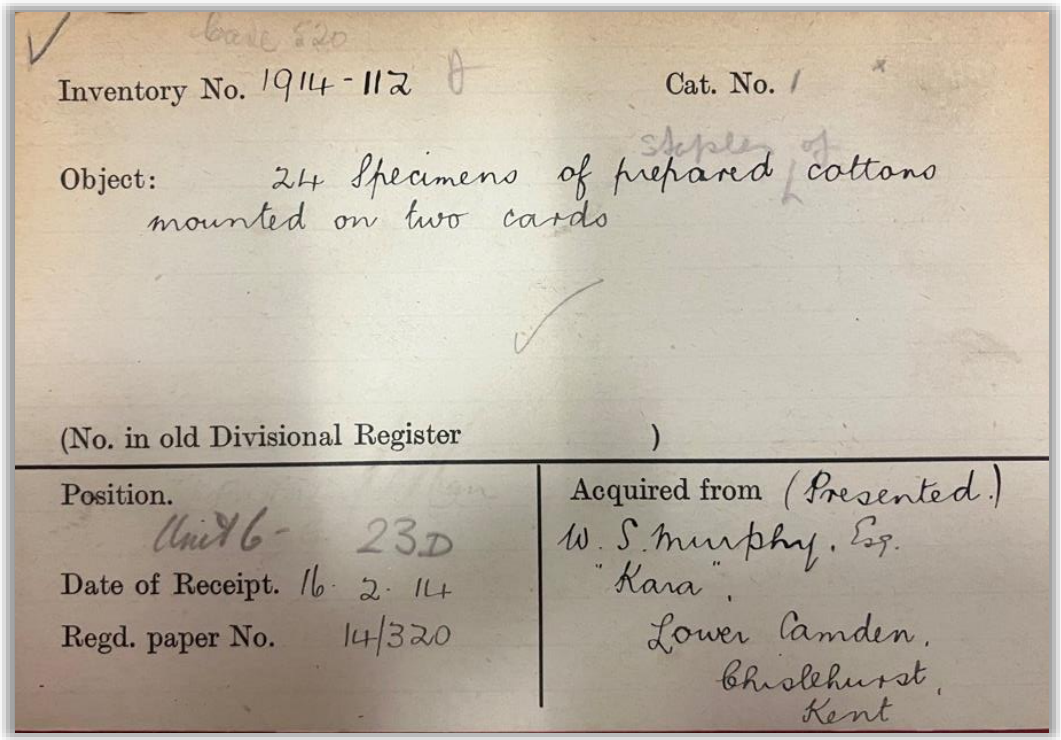
FORMS 100



Inventory No. 1914-112 Cat. No. 1

Object: 24 Specimens of prepared cottons mounted on two cards

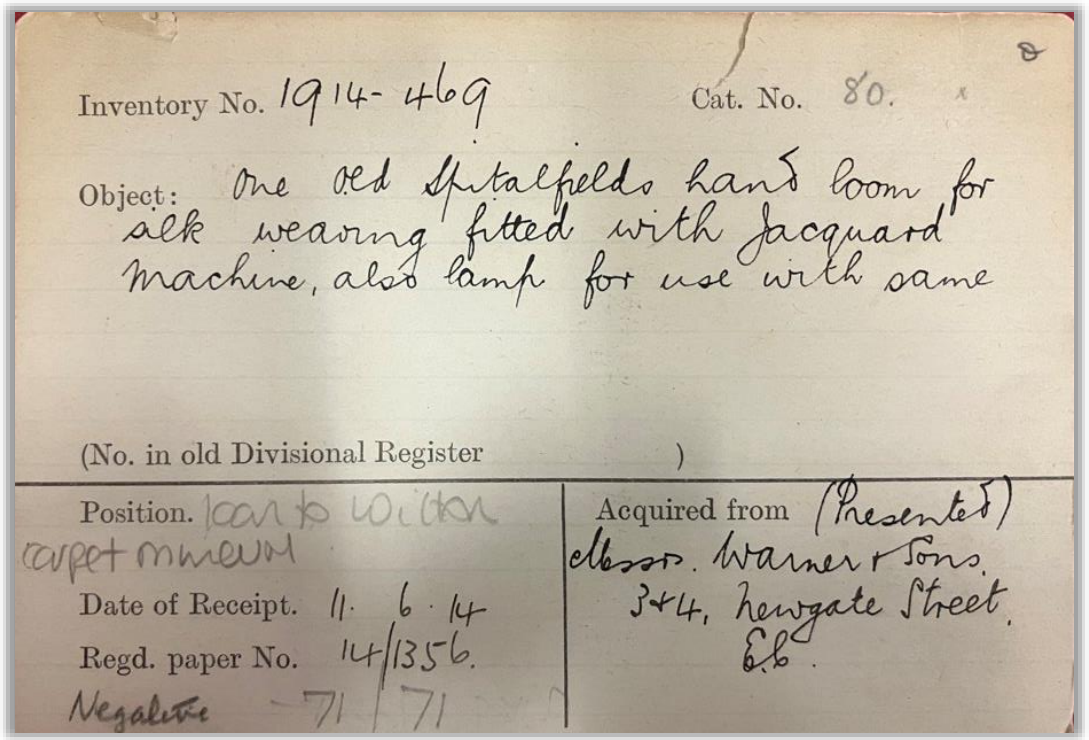
(No. in old Divisional Register)

Position. Unit 6 - 23D

Date of Receipt. 16 · 2 · 14

Regd. paper No. 14/320

Acquired from (Presented.)
W. S. Murphy, Esq.
"Kara",
Lower Camden,
Chislehurst,
Kent



Inventory No. 1914-469 Cat. No. 80.

Object: One old Spitalfields hand loom for silk weaving fitted with Jacquard machine, also lamp for use with same

(No. in old Divisional Register)

Position. Loan to Victoria & Albert Museum

Date of Receipt. 11 · 6 · 14

Regd. paper No. 14/1356.

Negative 71/71

Acquired from (Presented)
Messrs. Warner & Sons.
3 & 4, Newgate Street,
E.C.

Cotton Staples

MADE: 1900-1914 in unknown place

Science Museum Group Collection
© The Board of Trustees of the Science Museum

Use this image

Twenty four specimens of prepared staples of cottons, mounted on card within two wooden and glass cases.

DETAILS

CATEGORY:	Textiles Machinery
OBJECT NUMBER:	1914-112
MATERIALS:	cardboard, complete, cotton (fibre), glass and wood (unidentified)
MEASUREMENTS:	individual: 270 mm x 230 mm x 20 mm,
TYPE:	sample
TAXONOMY:	
CREDIT:	Gift of Mr. W.S. Murphy

CITE THIS PAGE

Science Museum Group. Cotton Staples. :

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BOARD OF EDUCATION

CATALOGUE OF THE COLLECTIONS IN THE SCIENCE MUSEUM SOUTH KENSINGTON

DESCRIPTIVE AND HISTORICAL NOTES AND ILLUSTRATIONS

TEXTILE MACHINERY

1921

PUBLISHED BY HIS MAJESTY'S STATIONERY OFFICE, LONDON

TO BE PURCHASED THROUGH ANY BOOKSELLER OR DIRECTLY FROM H.M STATIONERY OFFICE AT THE FOLLOWING ADDRESSES: IMPERIAL HOUSE, KINGSWAY, LONDON, W.C. 2, AND 28 ABINGDON STREET, LONDON, S.W. 1; 37 PETER STREET, MANCHESTER; 1 ST. ANDREW'S CRESCENT, CARDIFF; 23 FORTH STREET, EDINBURGH; OR FROM E. PONSONBY, LTD., 116 GRAFTON STREET, DUBLIN.

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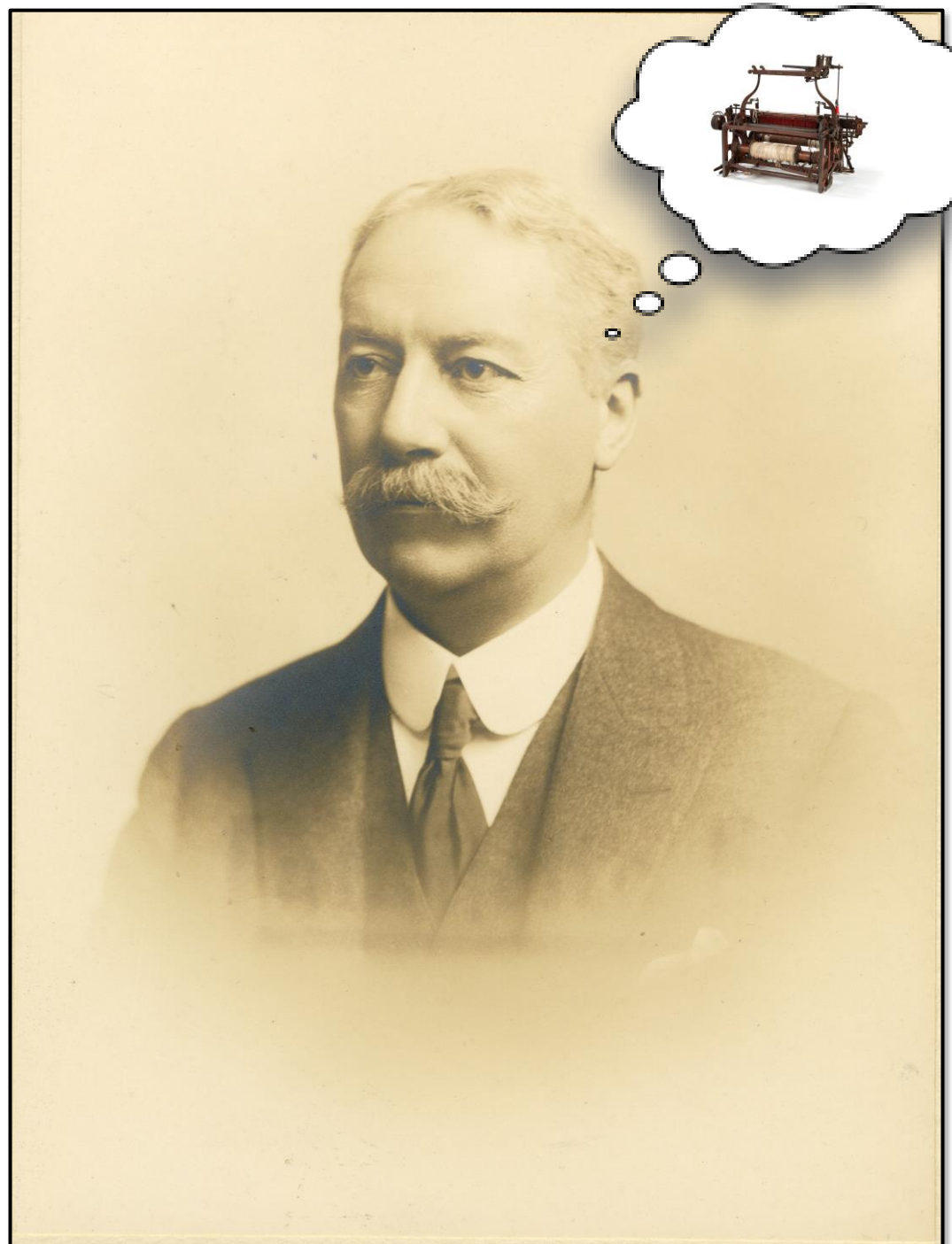

1. SPECIMENS OF COTTON. Presented by W. S. Murphy, Esq., 1914.

The cotton plant (natural order *Malvacea*, genus *Gossypium*) is widely distributed throughout the world between latitudes 40 degs. N. and 30 degs. S. It requires for its best development, as for its finest spinning, a moist and warm atmosphere. The fibre when matured becomes flattened, and has a helical twist amounting to as many turns as 180 to the inch. This is of great importance in the operations of spinning. The finer the fibre the more it is twisted, and the finer the yarn that can be spun from it.

The length of the fibre is called the staple, and in the case of the best cotton of all, that grown in South Carolina and known as Sea Island cotton, the staple sometimes reaches 2 in. The commercial value of a cotton is determined by its length, fineness, strength, pliability, smoothness, uniformity, colour, and cleanliness. Some varieties of cotton are best suited for spinning into twist or warp yarn—these have a hard strong fibre; weft yarns require a softer and more pliable fibre.

These specimens are representative of the different varieties of cotton grown throughout the world. Sea Island cotton has a staple 1·8 in., diam. 0·0006 in., will spin into yarn up to 400's counts (*i.e.*, 400 hanks of yarn to the pound) and is suitable either for warp or weft. American cotton (Uplands, Texas, Memphis, etc.) is white, soft, pliable, fairly strong. Length 0·9 in. to 1·1 in., diam. ·00076 in. The Uplands sub-variety is especially good for weft. West Indian cotton has a helical twist more perfectly developed than any other variety, but it is short in staple and rather harsh and dry, diam. 0·00077 in. It is only used for coarse yarns up to 40's. The supply from this source is rather small. Egyptian cotton has a staple 1·3 in., diam. 0·00071 in., will spin up to 150's counts and can be used either for warp or weft. Brazilian cotton (Pernams, Ceara, etc.) is rather harsh and dry but fairly strong. Staple 1·1 in. to 1·3 in., diam. 0·00077 in. It will spin up to 60's and is better suited for warp than for weft. Peruvian is of two principal kinds, the smooth is soft and flexible and easily spun; the rough is harsh and wiry and mixes well with wool. Staple 1·28 in., diam. 0·00077. It will mix up to 70's; the rough is suitable for warp and the smooth for weft. Indian cotton (Broach, Dharwar, Oomrawattee, Tinnivelly, etc.) is fairly strong but varies considerably in the different provinces, in some of which the heat is too great for a good development of the plant. The staple varies from 0·4 in. to 1 in., diam. 0·00083 in. Useful only for coarse yarns up to 36's and chiefly for warp. West African cotton is small in quantity and harsh, but of good colour. Staple 1 in., diam. 0·00083 in. It will spin warps up to 40's counts.

Inv. 1914–112.

Cotton Staples

MADE: 1900-1914 in unknown place

Science Museum Group Collection
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Use this image

Twenty four specimens of prepared staples of cottons, mounted on card within two wooden and glass cases.

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Using our data

COLLECTIONS ONLINE DATA

Old Spitalfields hand loom with jacquard mechanism.

Spitalfields hand loom for silk weaving fitted with jacquard machine, made by Guillotte. The Jacquard loom, developed by the Frenchman Joseph Marie Jacquard (1752-1834) in 1804, enabled a loom to weave patterned cloth. This is a hand loom, the Jacquard being hand-operated to select the healds to be raised or lowered once the operator presses the treadle to form the thread. The loom to which the Jacquard mechanism is attached is circa 1840.

By 1860 Daniel Walters & Sons had 150 Jacquard machines and employed 300 hands. Messrs Warner and Sons took over in 1894, retaining William Folliott as manager until his retirement in 1914. William Folliott had owned a harness making business which he sold in 1860. The loom was given to the Museum by Warner and Sons in 1914 when the firm was at the height of its activity at New Mills at Braintree in Essex.

49. MODEL OF PORTION OF A "LISTER" WOOL-COMBING MACHINE. Contributed by J. Wilson, Esq., 1860.

This shows the arrangement, patented by Messrs. Lister and Donisthorpe in 1850, for holding or nipping the ends of woollen fibres while combing.

Before arriving at this part of the combing machine the wool has been fed in on a travelling apron, passed between fluted rollers and through a box of screw gills. The gills are combs that travel from end to end of a box, and draw out the fibres and straighten them by the action of their teeth. The nipping arrangement then takes hold of some of the fibres and carries them over till they are taken up by a revolving brush and transferred to combs on the edge of a large circular plate. By these combs the long fibres are taken hold of as the plate moves round, and further on the noils, or short fibres, are taken out.

The model shows a fluted cylinder with two blades, each of which is made to project as it comes to the endless band. To assist in taking hold of the fibres a guide plate, fixed to the end of an arm centred below, is moved slightly beneath the band by an eccentric from the main driving axis, but this is not shown in the model. M. 733A.

50. MODEL OF WOOL-COMBING MACHINE. Contributed by J. Wilson, Esq., 1866.

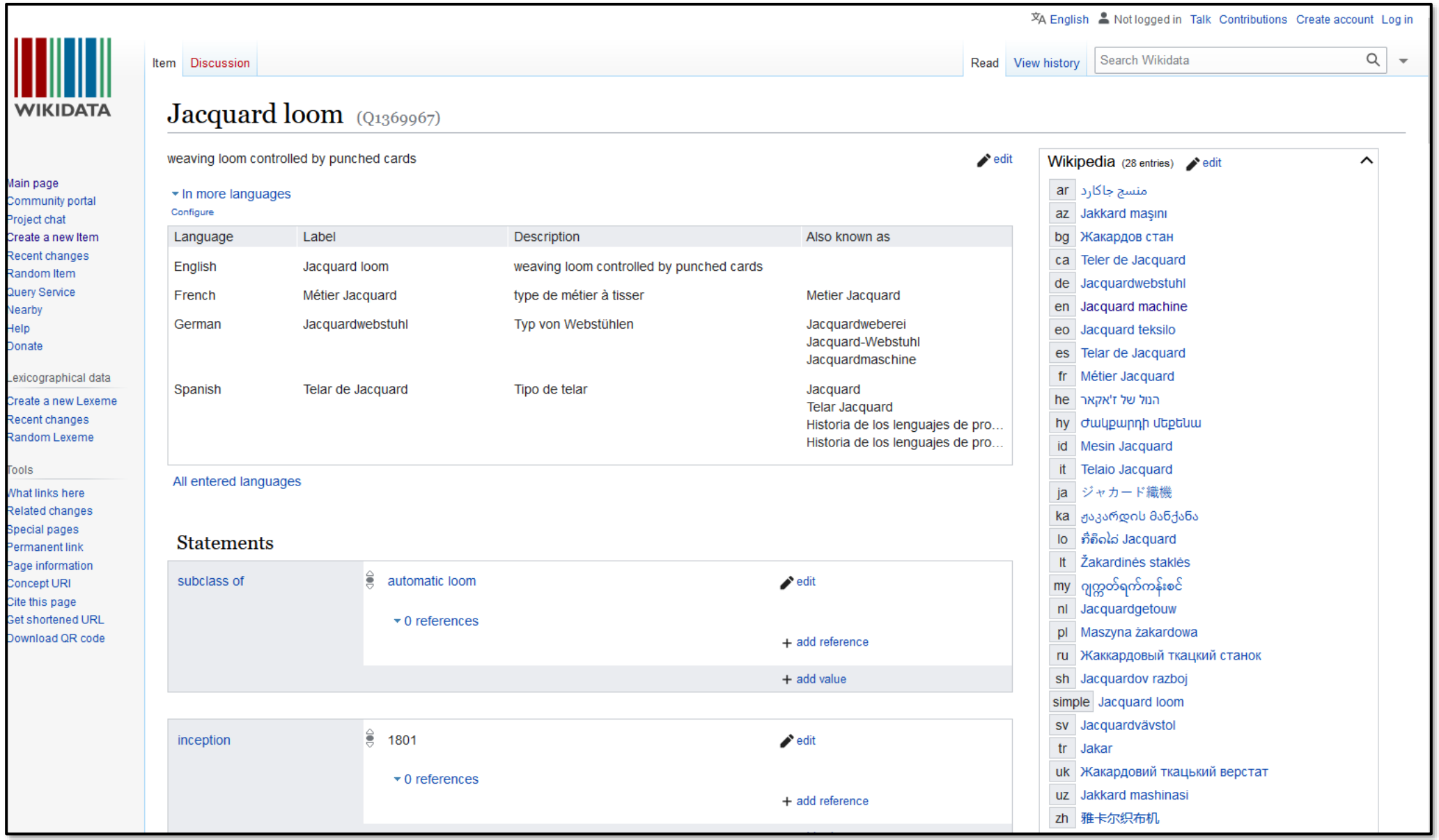
This represents the combing machine patented in 1859 by Mr. C. Whipple, of Providence, U.S.A.

The lap of wool is fed in at one end of the machine on an endless apron of leather. It then passes through a box of screw gills placed over a chest heated by steam, the heat softening the wool and assisting the action of the gills or combs. At the end of the gills there is an upper vertically-sliding blade and a lower fixed one, which act together as nippers. When a certain length of lap has been fed on, the upper blade is moved downward and holds the ends of the fibres. The small combing cylinder, which is mounted on swinging brackets, is then moved up from below; it turns and combs out the short fibres and then is moved down again. The combs of the screw gills and the screen combs in front of the nipper blades now move up and pass their teeth through the lap of wool. The movable blade is then raised and a second pair of nippers slide towards the first pair, take hold of the ends of long fibres, and then, moving back, they lay the fibres on the travelling sheet, which is covered with teeth. The combed wool is thus passed to the delivery rollers and out through a guiding funnel.

The short fibres, called noils, are collected from the revolving comb, when in its lowest position, by a revolving brush which in turn is cleared by a cylinder set with long teeth. From this the short fibres are removed by a comb which delivers them in the form of a lap or sheet. The nippers and teeth are also cleaned by brushes. M. 1015.

CONTENTS.

(The objects in the various Sections are arranged chronologically.)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Not logged in
Talk
Contributions
Create account
Log in
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Item
Discussion
Read
View history
Search Wikidata
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weaving loom controlled by punched cards
edit
In more languages
Configure
Language
Label
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Also known as
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French
Métier Jacquard
type de métier à tisser
Metier Jacquard
German
Jacquardwebstuhl
Typ von Webstühlen
Jacquardweberei
Jacquard-Webstuhl
Jacquardmaschine
Spanish
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All entered languages
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bg Жакардов стан
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de Jacquardwebstuhl
en Jacquard machine
eo Jacquard teksilo
es Telar de Jacquard
fr Métier Jacquard
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it Telaio Jacquard
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my ဂျက္ကတ်ရက်ကန်းစင်
nl Jacquardgetouw
pl Maszyna żakardowa
ru Жаккардовый ткацкий станок
sh Jacquardov razboj
simple Jacquard loom
sv Jacquardvävstol
tr Jakar
uk Жакардовий ткацький верстат
uz Jakkard mashinasi
zh 雅卡尔织布机
Main page
Community portal
Project chat
Create a new Item
Recent changes
Random Item
Query Service
Nearby
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Donate
Lexicographical data
Create a new Lexeme
Recent changes
Random Lexeme
Tools
What links here
Related changes
Special pages
Permanent link
Page information
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CONCLUSIONS

PROJECT PAGE & BLOG

THE CONGRUENCE ENGINE: DIGITAL TOOLS FOR NEW COLLECTIONS-BASED INDUSTRIAL HISTORIES

CONTEXT

The Congruence Engine is a three-year research project starting in November 2021 that will use the latest digital techniques to connect industrial history collections held in different locations. It is one of five 'Discovery Projects' funded by the Arts and Humanities Research Council under the 'Towards a National Collection' funding stream.

AIM

We will create the prototype of a digital toolbox for everyone fascinated by our industrial past to connect an unprecedented range of items from the nation's collection to tell the stories about our history that they want to tell; we will ask: What was it like then? How does our past bear on our present and future?

Until now, historians and curators have become used to a world where it has only been possible to work with a small selection of the sources – museum objects, archive documents, pictures, films, maps, or publications, for example – potentially relevant to the history they want to explore. We hope to overcome this major constraint on the histories that can be created and shared with the

All SMG projects

ABOUT THIS PROJECT

PROJECT STATUS
Current

PROJECT START
November 2021

PROJECT TYPE
Digital, Research

MUSEUM
Groupwide

ENQUIRIES

Please email Tim Boon

SCIENCE MUSEUM GROUP

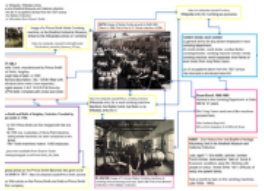
HOME ABOUT OONGRUENOE ENGINE PROJEOT

CONGRUENCE ENGINE BLOG

BY DANIEL WILSON
FEBRUARY 6, 2023

DIRECTORY ENQUIRIES: MACHINE LEARNING TO UNLOCK RADICAL HISTORICAL CONTEXT, PART ONE

The Congruence Engine is aiming to create new collections-based industrial histories. Collection objects offer a compelling starting point for industrial histories; however, the best and most interesting such histories extend outwards, beyond the walls of the museum into the world beyond. This is where digital tools can be used to draw new connections and link museum objects to the broader material realm of past societies. Historians often talk about context as what we add to situate people, things or events [...]



BY ARRAN REES
JANUARY 11, 2023

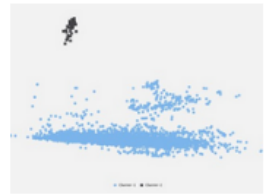
OCCUPATIONS, MACHINES, PEOPLE: THE CONNECTIVE TISSUE THAT HELPS CONNECT COLLECTIONS

For four weeks during June and July last year, a group of researchers in the Congruence Engine began a set of mini-investigations that had been formed during a co-production workshop held at the University of Leeds. We've mentioned some of the inquiries that we did and some of our findings in our blog on the reflection workshop that we held at the end of the four-week research sprint. This blog is an attempt to dig down a bit deeper into [...]

BY A GUEST AUTHOR
OOTOBER 27, 2022

GIVING VOICE TO HIDDEN CONNECTIONS: INSIGHTS FROM THE ORAL HISTORY INVESTIGATION

Written by Stefania Zardini Lacedelli, Paul Craddock, Simon Popple, Tim Smith PART I One of the key areas of investigation that emerged from the workshop in Leeds on 20-21 June was the opportunity to explore the connective power of oral history, by focusing on the hidden stories of mill workers. This direction emerged as part of a wider reflection on the need to bring human stories to the objects and places related to textile industry, so reinfusing Saltaire and Lister [...]



BY JON AGAR
OOTOBER 18, 2022

TRYING OUT GALE DIGITAL SCHOLAR LAB

For the communications strand of the Congruence Engine we are still in the exploratory phase. With this in mind I wondered what some of the digital humanities packages purchased by university libraries could offer, not least because an exploration of their capabilities would serve as a measure of what Congruence Engine aims to exceed. What is already available provides a baseline against which we can judge what Congruence Engine will do. A leading digital history package is Gale Digital Scholar [...]