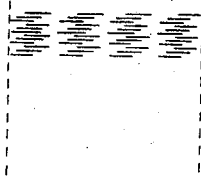


*Turner, Shore & Halliwell.*  
*Card Clothing.*  
*N<sup>o</sup> 54,270. Patented Apr. 24, 1866.*

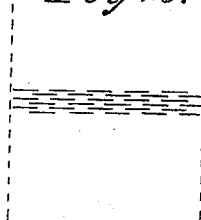
*Fig: 1.*



*Fig: 2.*



*Fig: 3.*



*Witnesses.*  
*William H. Clark.*  
*John E. Earl.*

*Inventor.*  
*Turner Shore & Halliwell*  
*By their attys*  
*John E. Earl.*

# UNITED STATES PATENT OFFICE.

WILLIAM TURNER, SAMUEL SHORE, AND WILLIAM HALLIWELL, OF ROCHDALE, ENGLAND.

## IMPROVEMENT IN CARDS FOR CARDING-MACHINES.

Specification forming part of Letters Patent No. 54,270, dated April 24, 1866.

### *To all whom it may concern:*

Be it known that we, WILLIAM TURNER and SAMUEL SHORE, of Tunnicliffe Mill, near Rochdale, in the county of Lancaster, England, and WILLIAM HALLIWELL, of Rochdale aforesaid, have invented new and useful Improvements in Cards used in Carding-Engines and other Similar Machinery; and we do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, which said drawings constitute part of this specification, and represent, in—

Figure 1, a cross-section of a strip, showing four teeth, represented in black, the leather in red; Fig. 2, a view of the back of a strip, the teeth set as in "clearer" card or "stapler" card; and in Fig. 3, a like view, the teeth set as in "fancy" card.

This invention relates to the teeth of the cards; and it consists in making the teeth of different lengths, instead of one uniform length, as hitherto adopted. At present the wire is bent so as to enable the two prongs to project the same distance from the leather or band; but we bend the wires so as to make one leg or prong longer than the other, and when the wires are passed through the leather or band the teeth or pins are of different lengths, as seen in Fig. 1, and thus we form cards which, being of uneven surfaces, card, comb, and open fibrous materials much more efficiently than the ordinary cards. This system of having one prong longer than the other is applicable to stapler-cards as well as tooth-cards, and in

any case it dispenses with the grinding of the teeth and prevents to a great extent the formation and collection of waste.

When the teeth are set as seen in Fig. 2 (stapler or clearer) the points will appear in rows of three—that is, three long points, then three short points, and so on, alternating by threes; but if set as in Fig. 3, (fancy,) the points will appear in single rows—that is, a row of long points, then a row of short ones, and so on, alternating; or they may be set in other ways, the result being obtained by making one point of the tooth shorter than the other.

We do not broadly claim an irregular or uneven surface upon the face of the card, as this is not new, such being found in the English patent of Daniels, specification No. 5,504, and dated December 8, 1827.

We claim—

In tooth and stapler cards used in carding-machines, the system of making the prongs or legs of each staple or tooth of different lengths.

In witness whereof we, the said WILLIAM TURNER, SAMUEL SHORE, and WILLIAM HALLIWELL, have hereunto set our hands the 7th day of December, in the year of our Lord 1865.

WM. TURNER.  
SAMUEL SHORE.  
WILLIAM HALLIWELL.

Witnesses:

EDWARD JOSEPH HUGHES,  
JOHN BLOODWORTH,  
*Patent Agents, 20 Cross Street, Manchester.*