

No. 729,340.

PATENTED MAY 26, 1903.

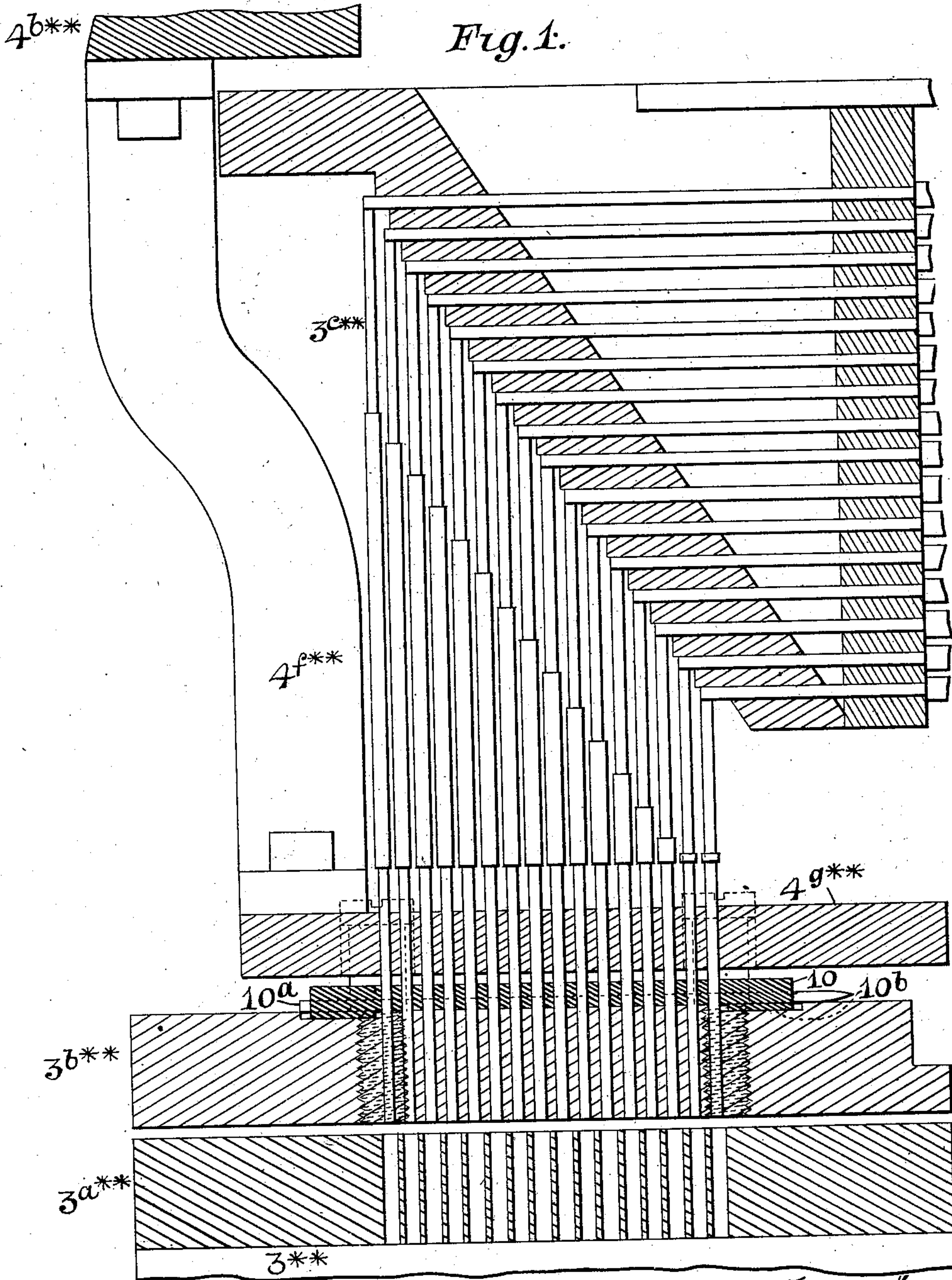
T. HILL & P. PEARSON.

APPARATUS APPLICABLE TO JACQUARD CARD PUNCHING MACHINES.

APPLICATION FILED JAN. 12, 1903.

2 SHEETS—SHEET 1.

NO MODEL.



Witnesses:

*J. B. Gough*  
*W. H. Cook*

Inventors:

*Thomas Hill*  
*Peter Pearson*

No. 729,340.

PATENTED MAY 26, 1903.

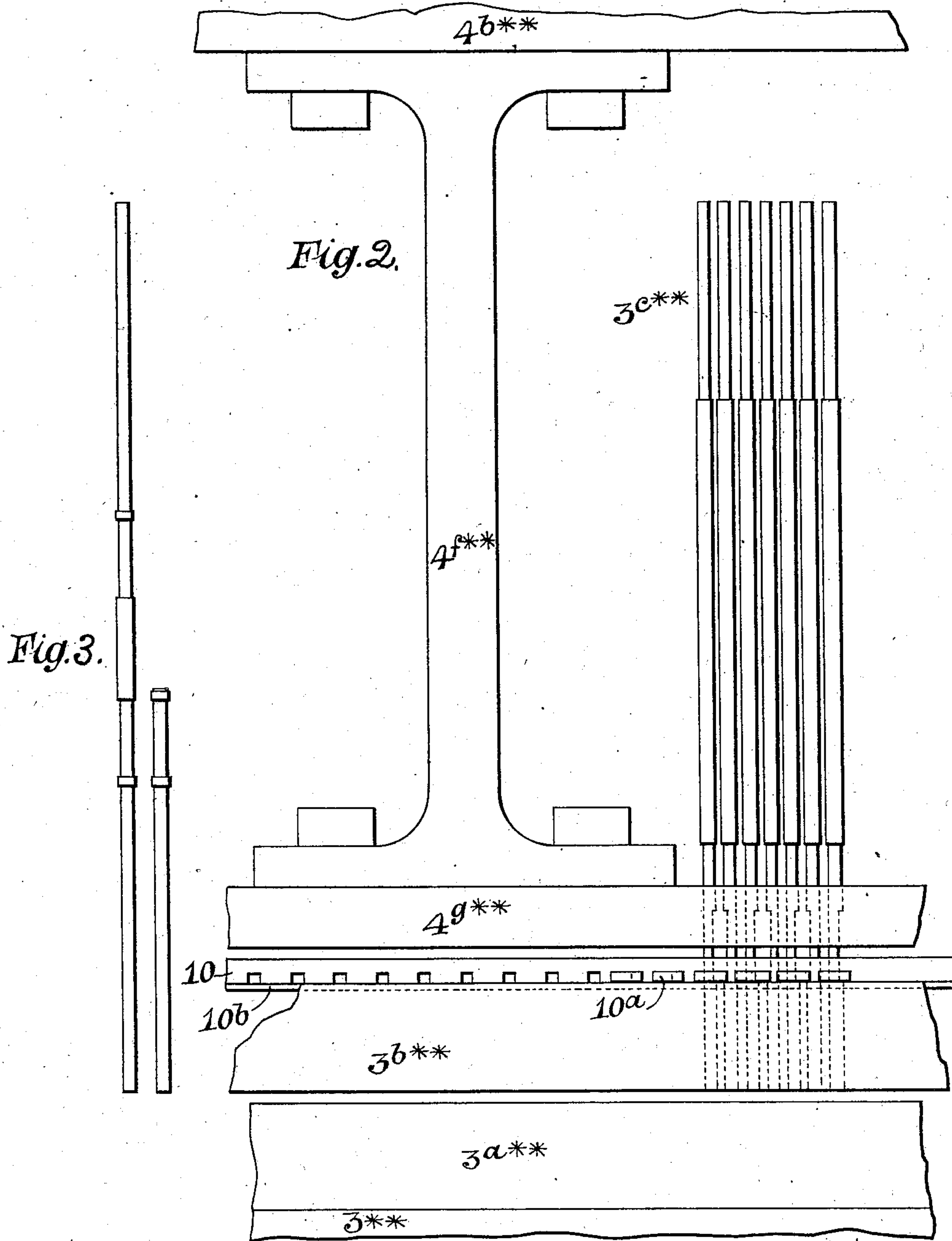
T. HILL & P. PEARSON.

APPARATUS APPLICABLE TO JACQUARD CARD PUNCHING MACHINES.

APPLICATION FILED JAN. 12, 1903.

NO MODEL.

2 SHEETS—SHEET 2.



Witnesses:

J. H. Gough  
Jas. H. Cook

Inventors.

Thomas Hill  
Peter Pearson



# UNITED STATES PATENT OFFICE.

THOMAS HILL AND PETER PEARSON, OF NOTTINGHAM, ENGLAND.

APPARATUS APPLICABLE TO JACQUARD-CARD-PUNCHING MACHINES.

SPECIFICATION forming part of Letters Patent No. 729,340, dated May 26, 1903.

Application filed January 12, 1903. Serial No. 138,730. (No model.)

*To all whom it may concern:*

Be it known that we, THOMAS HILL, gentleman, residing at 5 Newcastle Drive, The Park, and PETER PEARSON, jacquard-card puncher, residing at 32 Sneinton Hollows, Nottingham, England, subjects of the King of Great Britain, have invented certain new and useful Improved Apparatus Applicable to Jacquard-Card-Punching Machines, of which the following is a specification, reference being had to the accompanying drawings.

Figure 1 shows a sectional view of portion of a jacquard-card-punching machine sufficient to illustrate our invention, with our improved apparatus applied thereto. Fig. 2 shows an edge view of some of the punches we employ and a cotter-pin plate and cotters. Fig. 3 shows an edge view of other punches.

Our improved apparatus when employed in jacquard-card-punching machines, such as is described and shown at Figs. 13, 14, and 16 in the specification of an American patent granted to Frank Wilkinson, lace manufacturer, a subject of the Queen of Great Britain, and a resident of Beeston, Nottingham, England, No. 507,954, dated October 31, 1893, consists of a horizontal cotter-pin plate 10, placed above the two vertical perforated punch-plates 3<sup>a\*\*</sup> 3<sup>b\*\*</sup>, carried by the rising-and-falling bed 3<sup>\*\*</sup>, operated by eccentrics carried by a revolving shaft held by a bearing at each side of the machine. The cotter-pin plate is perforated vertically to receive a series of punches 3<sup>\*\*</sup> and slotted on the under side to receive the cotter-pins 10<sup>a</sup>, which are held up to their work by a thin plate 10<sup>b</sup> at each end. Above the cotter-pin plate is the usual fixed bed 4<sup>s\*\*</sup>, carried by the brackets 4<sup>f</sup>, secured to the under side of the vertical piece 4<sup>f\*\*</sup>. The whole of the punches are flattened on one side a portion of their length that passes through the cotter-pin plate. Such flat portion slides upon the cotter-pins, which are square and rest upon the bottom shoulder of the flat side of the punches, which are arranged in pairs, as shown in Fig. 2<sup>b\*\*</sup>. The cotter-pin plate is held by four studs, one at each corner, projecting from the upper punch-plate. The heads of the studs insure the cotter-pin plate falling with the punch-plates.

Instead of making the punches flat on one side, each punch for the same length as the flat side before named is reduced in thickness to form two collars, as shown at Fig. 3, between which the cotter-pins slide, thus always insuring the punches being brought down to the lowest point at each motion of the press. Some of the punches are reduced in two places to allow them being turned when worn end for end.

The cotter-pin plate with its cotters may be placed above the fixed plate 4<sup>s\*\*</sup>, the flats on the punches and the collars being raised to correspond. The cards to be punched between the plates 3<sup>a\*\*</sup> 3<sup>b\*\*</sup> each time the plates are at their lowest position, the bottom of the punches then being just above the lower side of the upper punch-plate 3<sup>b\*\*</sup>, thus leaving a clear passage between the plates for the cards to be punched. The cards are fed to the machine by the apparatus shown in side view at Fig. 17 in the former specification, No. 507,954, October 31, 1893.

What we claim, and desire to secure by Letters Patent of the United States, is—

1. In a jacquard-card-punching machine, punches suitably supported, a cotter-pin plate, cotter-pins carried thereby and adapted to engage with said punches.

2. The construction and employment in jacquard-card-punching machines, of punches flattened a portion of their length, on one or both sides, to engage with cotter-pins, substantially as described for the purpose specified.

3. The construction and employment in jacquard-card-punching machines, of punches reduced in diameter a portion of their length, to engage with cotter-pins, substantially as described for the purpose specified.

In testimony whereof we have hereunto set our hands, in presence of two subscribing witnesses, this 30th day of December, 1902.

THOMAS HILL.  
PETER PEARSON.

Witnesses:

J. H. GOUGH,  
THOS. W. COOK.