

(No Model.)

2 Sheets—Sheet 1.

J. C. POTTS.  
LOOM SCROLL.

No. 307,409.

Patented Oct. 28, 1884.

FIG. 2

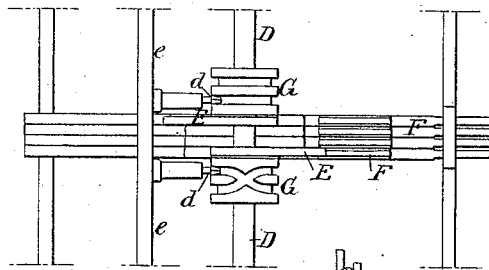
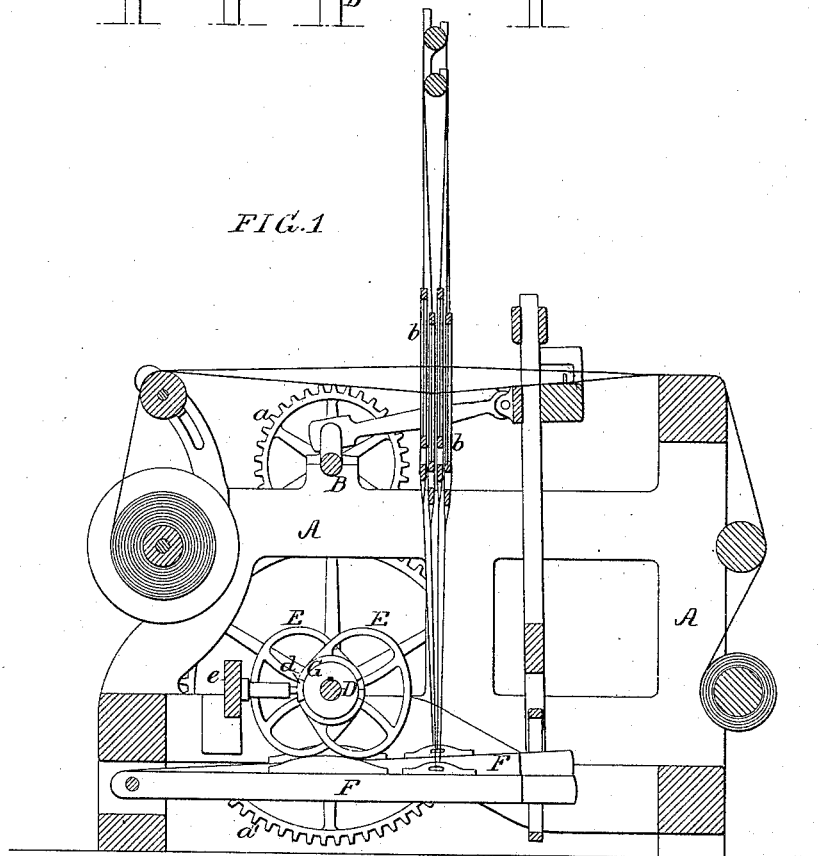


FIG. 1



WITNESSES:

John C. Parker  
James F. Tobin

INVENTOR:

Joseph C. Potts  
by his Attorneys  
Hudson & Sons

(No Model.)

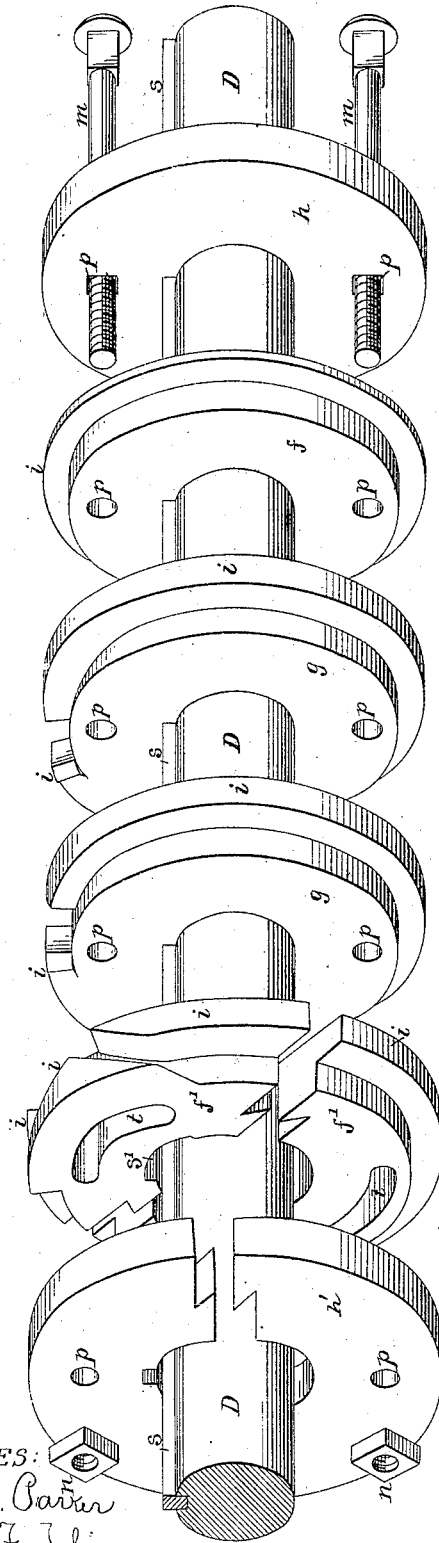
2 Sheets—Sheet 2.

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FIG. 5.



WITNESSES:

John C. Carter  
James F. Johns

FIG. 4.

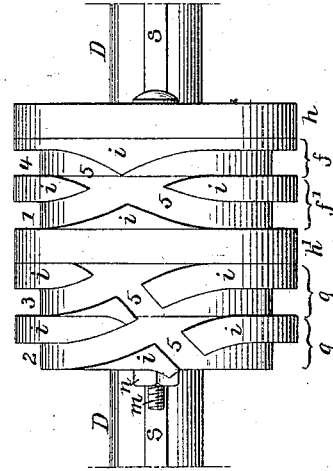
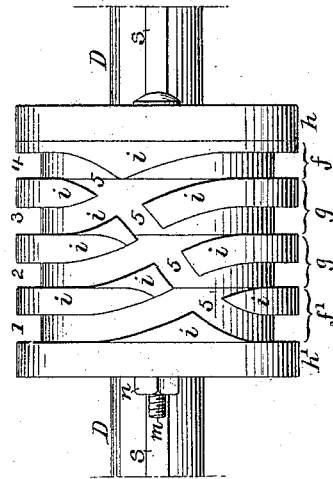


FIG. 3.



INVENTOR:

Joseph C. Potts  
by his Attorneys  
Hobson & Son

# UNITED STATES PATENT OFFICE.

JOSEPH C. POTTS, OF BERWYN, PENNSYLVANIA, ASSIGNOR TO HIMSELF  
AND JOSEPH H. COATES, OF SAME PLACE.

## LOOM-SCROLL.

SPECIFICATION forming part of Letters Patent No. 307,409, dated October 28, 1884.

Application filed December 14, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH C. POTTS, a citizen of the United States, residing in Berwyn, Chester county, Pennsylvania, have invented certain Improvements in Loom-Scrolls, of which the following is a specification.

The object of my invention is to construct a loom-scroll which can be readily changed to vary the shift of the same by simply rearranging the parts of the scroll on the shaft; and this object I attain in the manner hereinafter set forth, reference being had to the accompanying drawings, in which—

Figure 1, Sheet 1, is a longitudinal section of a loom, showing the parts to which my invention relates; Fig. 2, a plan view of the cams, scrolls, and treadles of the loom; Figs. 3 and 4, Sheet 2, views of my improved scroll, and Fig. 5 a perspective view of the parts of the scroll detached from each other. Part of the cam-shaft of the loom is also shown in Figs. 2, 3, 4, and 5.

In Fig. 1, A represents one of the frames of the loom; B, the crank-shaft; D, the cam-shaft geared thereto by spur-wheels *a a'*; and E, cams acting on shoes on the treadles F, which are connected as usual to the suspended heddles *b*. Each cam E is secured to a scroll, G, which is keyed to the cam-shaft D and engages with a pivoted shoe, *d*, on the fixed bar *e* of the loom, as shown in Fig. 2. This is the ordinary arrangement, the scrolls shown being ordinary two-shift scrolls cast in one piece, these views being shown simply to illustrate the manner in which the scrolls are used. As the cam-shaft rotates each cam is laterally shifted, owing to the engagement of the shoe *d* with the scroll-groove, the cam acting first on the outside treadle and then on the one adjacent to it. In some looms a greater number of treadles are used than shown in Fig. 2, and it is desirable to vary the shift of the scrolls, so that each cam may act upon two, three, four, or more of the treadles. To accomplish this the scrolls have been halved longitudinally, so that they could be readily applied to or removed from the shaft, a different scroll being used for each shift; but the main objection to this plan is that a number of extra half scrolls or shells must be kept

on hand in order to render the full capacity of the loom available. Moreover, the scrolls or shells which are not in use are liable to be mislaid, so that when wanted they are not at hand, and much time is lost in changing the loom. I overcome this objection by making a scroll of a series of rings which are furnished with ribs of such a character that when the rings are fitted together in the proper relation to each other a scroll-groove will be formed.

In the drawings I have shown a scroll comprising four rings, *f f'* and *g g*, and two end disks, *h h'*, this scroll being capable of adjustment so as to form either a two-shift, a three-shift, or a four-shift scroll. Thus, as shown in Fig. 3, the rings are adjusted to form a four-shift scroll, the rings *g g* being clamped between the end rings, *f f'*, and the ribs *i* of all of the rings, serving to form the four communicating grooves 1 2 3 4 and the cross-groove 5. It will be observed that each ring does not carry a complete scroll-rib, the tail of each rib—that is to say, the portion forming one boundary of the groove 5—being formed on the ring adjacent to that which carries the main portion of the rib.

As shown in Fig. 4, the parts are adjusted to form a two-shift scroll, the end rings, *f f'*, being brought together, and the rings *g g* placed outside of the disk *h'*, and if it is desired to form a three-shift scroll one of the rings *g* will be clamped between the end rings, *f f'*, the other ring, *g*, being left outside of the disk *h'*. All of the rings and disks have key-seats for the reception of a key, *s*, on the shaft D, and the rings *g* and one of the end rings, *f*, are free to slide on the shaft D, but cannot be removed therefrom, the other end ring, *f'*, however, being made in halves, so that it can be removed from the shaft to permit the sliding of the rings *g* thereon, and then reapplied to the shaft after the said rings *g* have been properly adjusted. The halves of the ring *f'* are connected by a dovetailed joint, to prevent separation of the same when the rings are bolted together. The end disk, *h'*, is also halved, so as to be adjustable with the ring *f'* and form a proper backing therefor, or the end disks, *h h'*, may, if desired, form part of

the end rings,  $f f'$ . The rings and disks are held together by bolts  $m$  and nuts  $n$ , the bolts being adapted to openings  $p$  in the disks  $h h'$  and rings  $f$  and  $g$ , and to segmental slots  $t$  in the halves of the ring  $f'$ , so that while they aid the key  $s$  of the shaft in keeping said rings  $f$  and  $g$  in place circumferentially thereon they do not interfere with the circumferential adjustment of the ring  $f'$ , necessitated by the different combinations in which it is used. The key-seat  $s'$  of the ring  $f'$  is also enlarged in order to permit said adjustment.

It will be observed that all of the rings of the scroll are held together by the bolts  $m$  whether the change-rings  $g$  are in use or not, so that the loss of any of the parts of the scroll is unlikely, and the changing of the scroll from one shift to another can be effected in a very short time, no more parts being used than are necessary to obtain the full capacity of the loom.

If desired, the outer rings,  $f f'$ , may be complete rings, and the intermediate or change-rings,  $g$ , may be halved; but the construction shown is preferred. As many change-rings may be used, however, as the desired extreme shift of the scroll may suggest.

I claim as my invention—

1. A loom-scroll comprising outer rings,  $f f'$ , and one or more intermediate or change rings,  $g$ , said rings having ribs  $i$ , adapted to form the scroll-slot, and means for securing the rings together, as set forth.

2. The combination of the rings  $f, f'$ , and  $g$ , having ribs adapted to form a scroll-slot, as described, with the clamping-bolts  $m$  and nuts  $n$ , as specified.

3. The combination of the shaft  $D$ , the end ring,  $f$ , and intermediate ring or rings,  $g$ , with the end ring,  $f'$ , made in halves, and with means for securing the rings together, as set forth.

4. The combination of the shaft  $D$  and its key  $s$ , the rings  $f$  and  $g$ , having key-seats and openings  $p$ , the end ring,  $f'$ , having elongated key-seat  $s'$  and segmental slots  $t$ , and the clamping-bolts  $m$  and nuts  $n$ , as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOS. C. POTTS.

Witnesses:

JOHN E. PARKER,  
HARRY SMITH.