

UNITED STATES PATENT OFFICE.

HENRY P. WIRZ, OF PATERSON, NEW JERSEY, ASSIGNOR TO SCHAUM AND UHLINGER, OF PHILADELPHIA, PENNSYLVANIA, A FIRM.

SPLIT-SHED MECHANISM FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 774,225, dated November 8, 1904.

Application filed June 18, 1904. Serial No. 213,059. (No model.)

To all whom it may concern:

Be it known that I, HENRY P. WIRZ, a citizen of the United States, residing at 696 River street, Paterson, county of Passaic, State of New Jersey, have invented certain new and useful Improvements in Split-Shed Mechanism for Looms, of which the following is a specification.

My invention relates to shedding mechanism for looms, and particularly to improved means for producing what is termed the "split-shed" effect in the operation of the harness. This consists in causing the passing of the warp-threads consecutively instead of simultaneously, and has heretofore been effected by employing a series of cams set one ahead of another so as to operate the harness-operating levers in succession, as desired.

My improvements are illustrated in the accompanying drawings as applied to the double-lift open-shed mechanism fully shown in Patent No. 403,565, granted May 21, 1889, to W. P. Uhlinger, and are particularly described in connection therewith and the novel features specifically pointed out in the claims.

Figure 1 is a diagrammatic view indicating the position of the several parts of the said mechanism when the griff-engaging hooks are fully retracted and the harness lowered, the hooks and engaging griff, however, being also indicated in projected position by dotted lines. Fig. 2 is a fragmentary plan view indicating the hooks and engaging griff both in the retracted and projected positions of Fig. 1.

The harness-operating levers 2, pivoted upon the fixed rod 3 of the frame, are each formed with a series of notches 4 in the outer portion thereof, to which the several harness-operating cords 5 are connected at required distances from the fulcrum-rod 3. In the preferred double-lift mechanism indicated these levers 2 are operated through the medium of rocking levers 6, connected to the levers 2 by middle links 7 and to griff-engaging hooks 8 by end links 9, the latter being guided, as usual, in fixed bars 10, against which their shouldered forward ends 11 stop when the hooks 8 are in their normal retracted position

with the connected harness lowered. The griffs or knives 12 are carried by suitably-guided griff-frames, to which reverse reciprocating movements are imparted as usual, and the engagement or disengagement of the hooks 8 with the reciprocated griffs is determined by the hook-lifting needles 13, as indicated by the pattern carried upon the card-cylinders 13^a, all as more fully illustrated and described in the patent previously referred to, in connection with which my present improvements may be readily applied, as will now be pointed out.

In order to secure the split-shed effect, it is required, in the first place, that the warp-threads shall be made to pass each other consecutively instead of simultaneously, so that the crowding which ordinarily results in forming the shed may be prevented, and, in the second place, that the ultimate lift of the threads shall be approximately equal. These results I attain in the preferred construction shown by forming the hooks 8 of different lengths, so that when retracted by the falling of the harness-frames until stopped by contact of the link-heads 11 with the fixed guide-bars 10 the outer ends 15 of the hooks will not be parallel with the edge of the griff, but will extend to different distances beyond the latter, so that the griff in its succeeding forward movement will engage the hooks indicated by the pattern-controlled needles 13 not simultaneously, but in desired succession, with the result that the connected warps are similarly moved in succession, so that the passings thereof will be at slightly-different times. The connection of the harness-operating cords 5 to the notched levers 2 is varied to correspond with the lengths of the respective hooks, so as to change the leverage, and thus hasten the lift of the last-passed warps sufficiently to effect the approximately equal lift of all the indicated threads.

What I claim is—

1. A split-shed mechanism for looms comprising a series of harness-operating levers, a reciprocating griff-frame, pattern-controlled needles, and a series of hooks engaged by said needles and operatively connected to said le-

vers substantially as described, the griff-engaging ends of said hooks when in retracted positions being at different distances from the retracted griff edge whereby the forward movement of the latter operates the indicated levers consecutively.

2. A split-shed mechanism for looms comprising a series of harness-operating levers, a reciprocating griff-frame, pattern-controlled needles, and a series of hooks engaged by said needles and operatively connected to said levers substantially as described, the griff-engaging ends of said hooks when in retracted position being at different distances from the retracted griff edge and the harness connec-

tions to said levers being correspondingly varied.

3. The combination with the harness-operating levers, and the rocking levers connected thereto and carrying suitably-guided links, of hooks of different lengths connected to said links, and reciprocating griffs and pattern-controlled needles for said hooks substantially as set forth.

In testimony whereof I affix my signature in the presence of two witnesses.

HENRY P. WIRZ.

Witnesses:

RUNO GROSSKWITH,
WALTER WINTERS.