

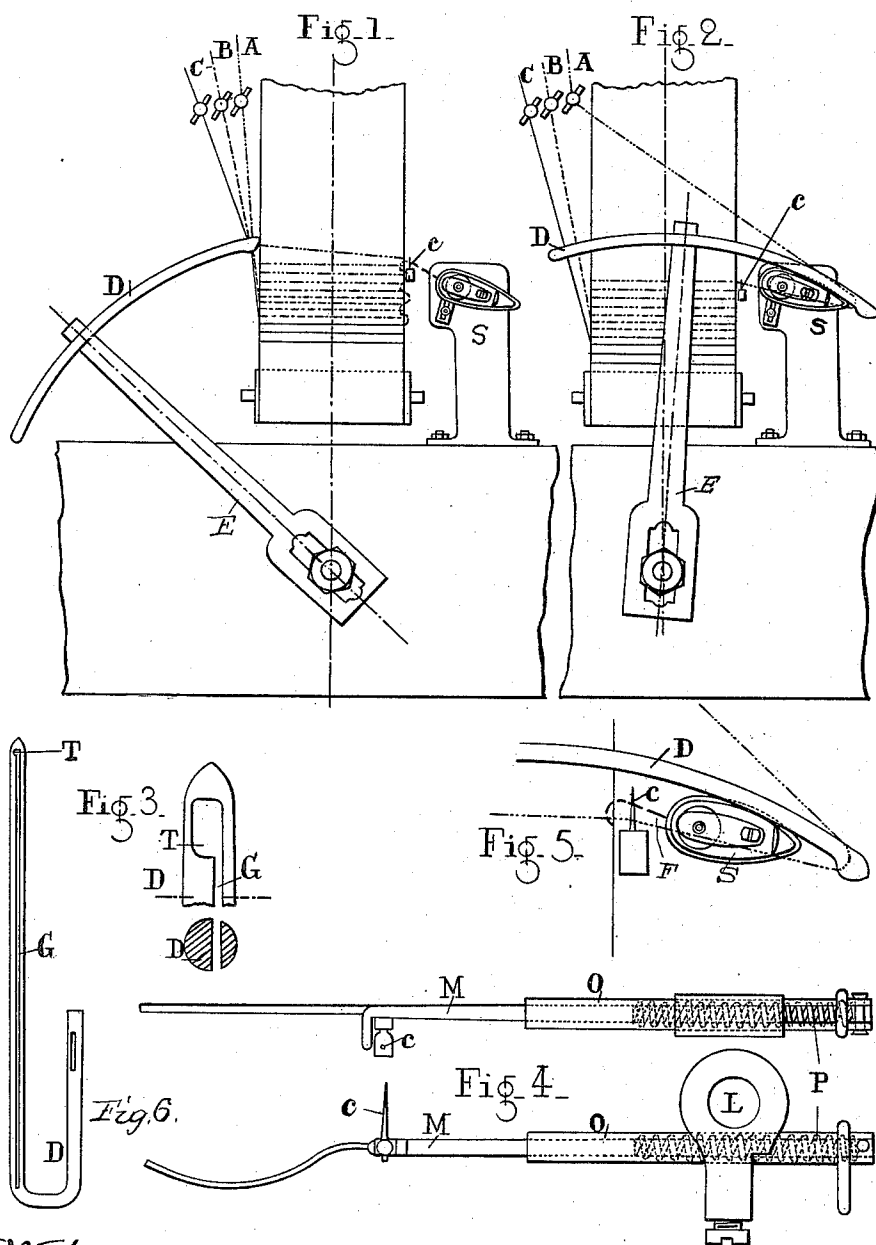
No. 639,018.

Patented Dec. 12, 1899.

C. & G. BRUN.  
NEEDLE LOOM.

(Application filed Dec. 17, 1898.)

(No Model.)



Witnesses:  
Frank S. Ober  
Geo. S. Kennedy.

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# UNITED STATES PATENT OFFICE.

CAMILLE BRUN AND GUSTAVE BRUN, OF ST. ETIENNE, FRANCE.

## NEEDLE-LOOM.

SPECIFICATION forming part of Letters Patent No. 639,018, dated December 12, 1899.

Application filed December 17, 1898. Serial No. 699,535. (No model.)

*To all whom it may concern:*

Be it known that we, CAMILLE BRUN and GUSTAVE BRUN, citizens of the Republic of France, and residents of St. Etienne, in the Department of Loire, France, have invented certain new and useful Improvements in and Connected with Shuttleless Power-Looms, (for which application for patent was filed in Great Britain November 14, 1898, No. 23,918,) of which the following is a specification.

This invention relates to looms, and its object is to enable cloths to be woven in several colors and with figured patterns by means of a single weft carrier or conveyer.

According to these improvements the weft-carrier has engaged with it a plurality of weft-threads. Upon the opening of a shed in the warp the weft-carrier takes through the shed a selected thread to the opposite side where the loop of the weft-thread is engaged by a selvage-thread from a fixed shuttle and held by a rising-and-falling needle until the weft-carrier has returned through the same shed to its starting-point. The weft is then beaten up, the shed recrossed, and the cycle is repeated. It will be seen that there are two shoots of weft in each shed.

This invention will hereinafter be more particularly described with reference to the accompanying drawings, in which—

Figure 1 represents diagrammatically the weft-carrier at the commencement of its stroke. Fig. 2 similarly represents the weft-carrier at the end of its outward stroke. Fig. 3 shows, on an enlarged scale, the end view and a cross-section of the weft-carrier. Fig. 4 represents in plan and elevation, respectively, the needle by which the weft-loop is engaged and held as well as its holder. Fig. 5 illustrates in plan the fixed shuttle and the method of engagement of the shuttle-thread with the weft-loop. Fig. 6 represents a top plan of the weft-carrier.

The curved weft-carrier D is fixed upon an oscillating blade E, through which an oscillatory motion can be given to it by any suitable means. Through the free end there is pierced a hole T, Figs. 3 and 6, with which there communicates a slot G, extending the whole length of the carrier. This slot opens into the hole in such a manner as to leave a

shoulder and so that one side of the hole farther from the shoulder is even with one side of the slot. In the figures three weft-threads A B C are indicated; but as many or as few as may be desired may be employed. All the weft-threads to be used are threaded through the hole T and separately through suitable mails or healds, by means of which they may be lowered and lifted separately, as controlled by pattern mechanism or jacquard cards. If one of the threads be thus lifted, that thread will be carried by the shoulder of the opening T across the fabric, as indicated by Fig. 2, while the remaining weft-threads are passed by the slot G, and thus are unmoved. At the end of the race there is fixed a small auxiliary shuttle S, carrying a selvage-thread F. The loop made by the returning weft interweaves with this thread, as indicated by Fig. 5.

To obtain a very even selvage and to insure that the loop of the weft is not pulled within the fabric by the returning weft-carrier, the needle *c* may be employed. This vertical needle is fixed upon the horizontal rod M, sliding in the tube O, in which it is pressed forward by the spiral spring P, arranged within the tube O. This tube is itself preferably fixed by means of the eye-bracket L to a rod parallel with the breast-beam of the loom and is oscillated at the required moments by a suitable device. Thus as soon as the weft-carrier has arrived at the position indicated by Fig. 2 the said device lifts the needle *c*, so that it enters the weft-loop and remains there until the carrier has returned to the position shown by Fig. 1. The needle is then lowered at the moment when the weft is beaten up. It is then forced back by the slay, and immediately after the lathe has retired it returns to its first position, whence it recommences its movement on the completion of the next outward stroke of the weft-carrier, as hereinbefore described.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

A needle for looms, whereby several different wefts may be woven, said needle for this purpose being provided with a longitudinal

slit and an eye connected therewith, the eye  
being constructed to widen the slit and there-  
by form a shoulder against which the wefts  
will be caught, in combination with weft-con-  
5 trolling mechanism and looping mechanism,  
substantially as described.

Signed at St. Etienne, in the Departement

of Loire and Republic of France, this 22d day  
of November, A. D. 1898.

CAMILLE BRUN.  
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Witnesses:

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