

No. 811,597.

PATENTED FEB. 6, 1906.

F. VOLAND, L. DIEDERICHS & J. B. MONNET.

LOOM.

APPLICATION FILED JUNE 9, 1905.

2 SHEETS—SHEET 2.

FIG-4

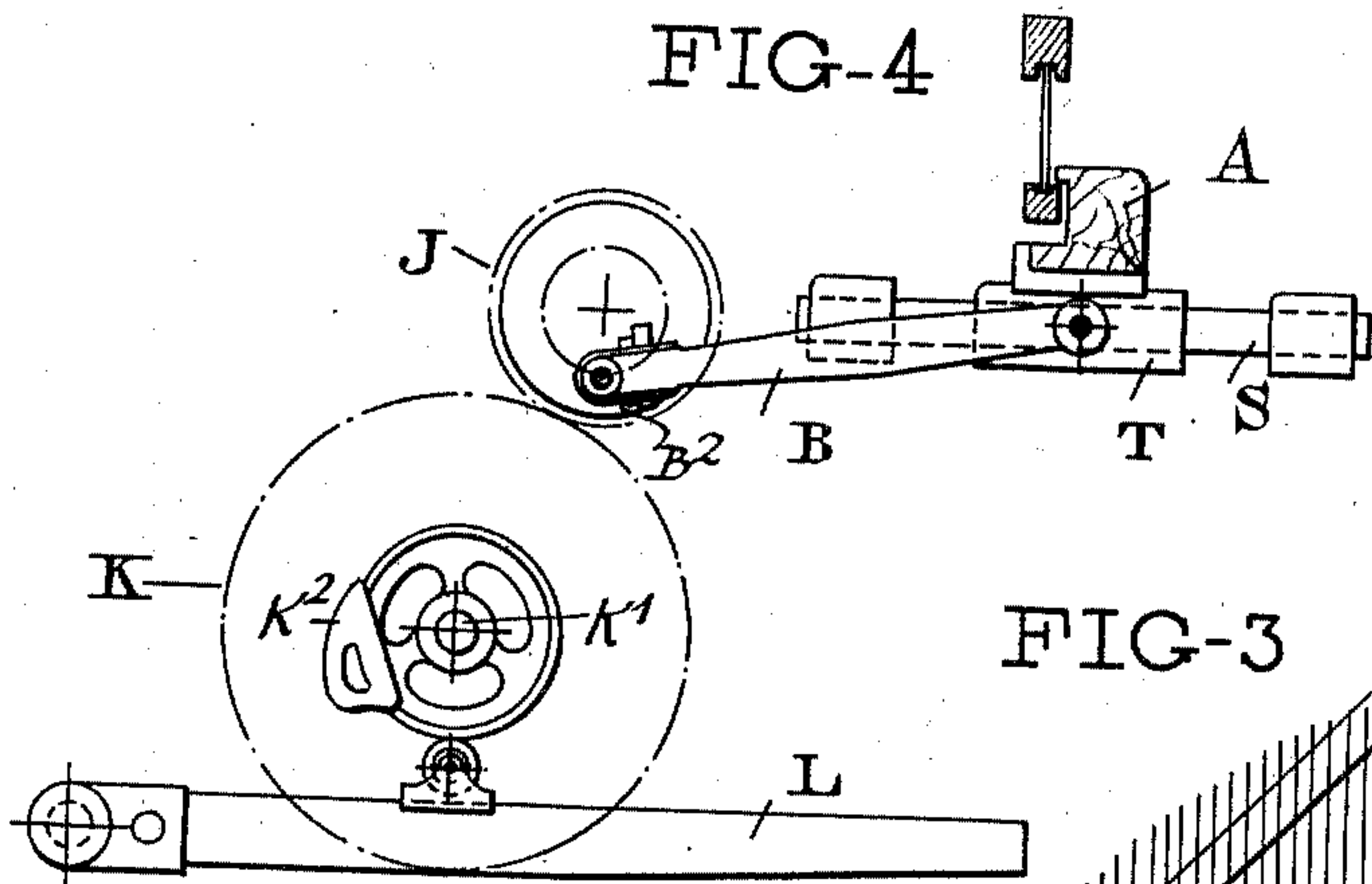
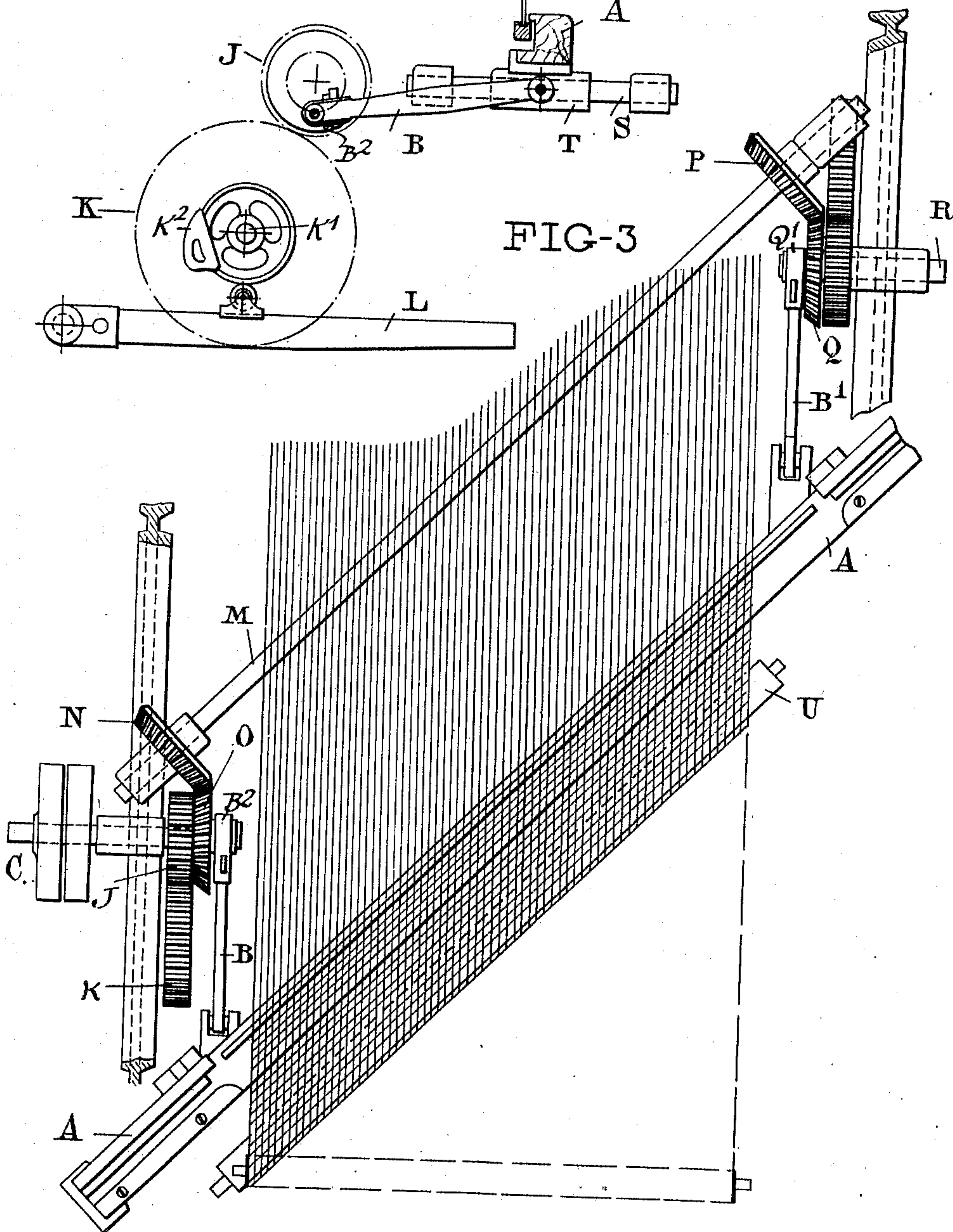


FIG-3



Witnesses

Jean Germain  
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2 SHEETS—SHEET 1.

FIG-1

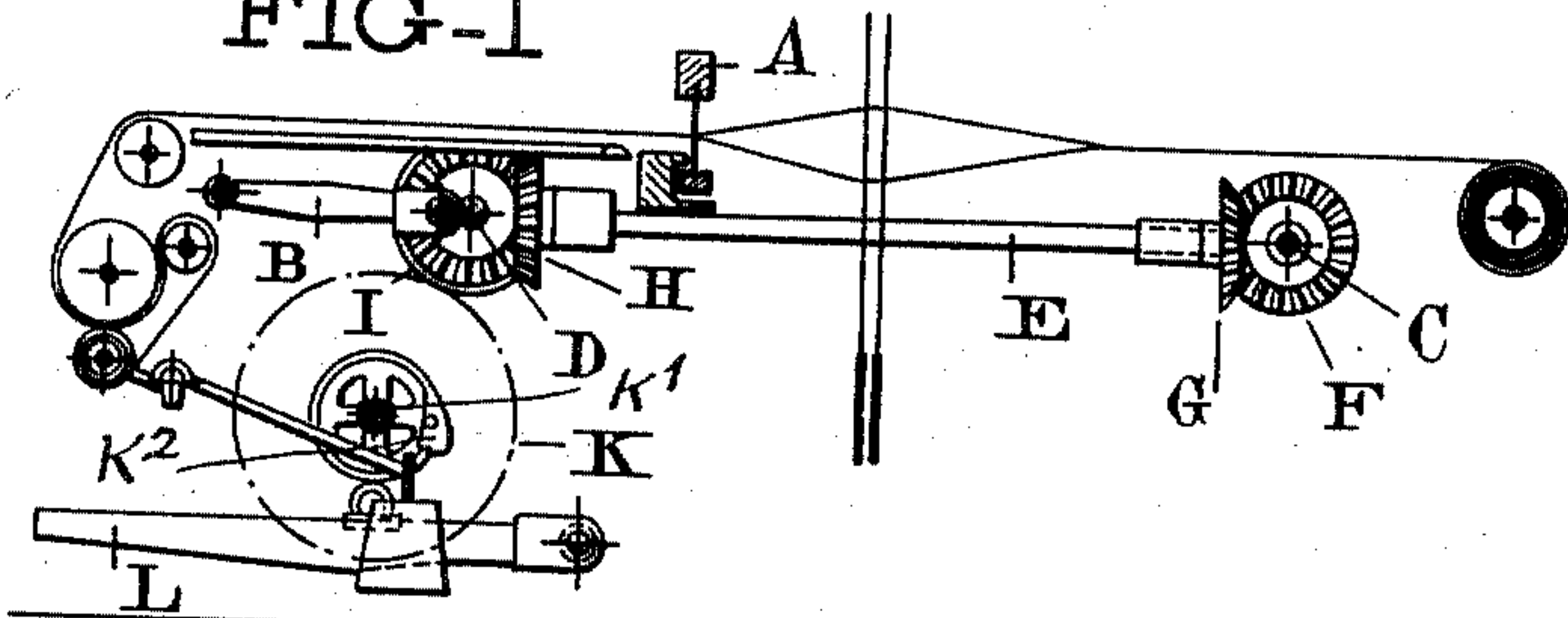


FIG-2

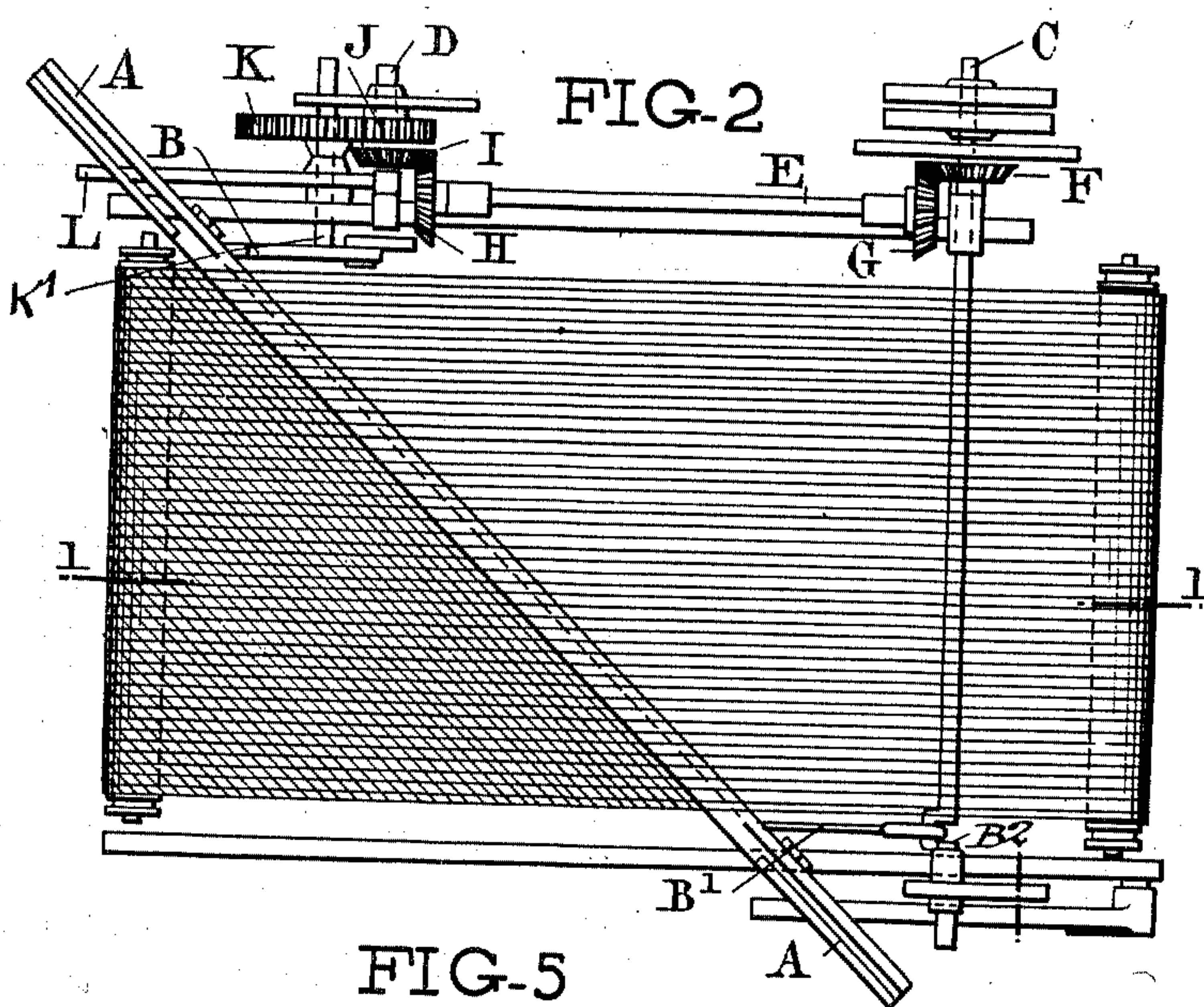
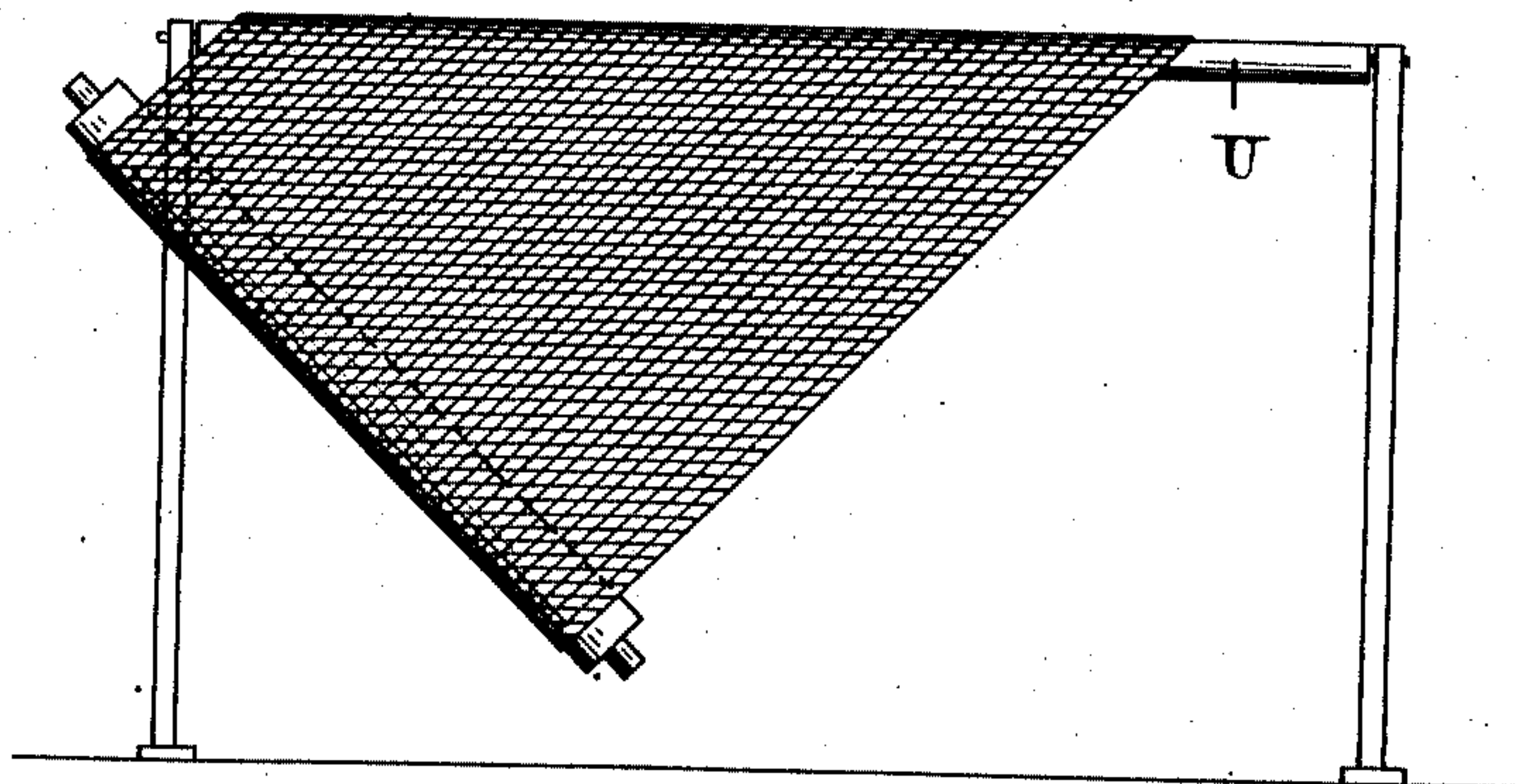


FIG-5



Witnesses

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# UNITED STATES PATENT OFFICE.

FRANCISQUE VOLAND, OF VILLEURBANNE, LOUIS DIEDERICH, OF JALLIEU, AND JEAN BAPTISTE MONNET, OF BOURGOIN, FRANCE.

## LOOM.

No. 811,597.

Specification of Letters Patent.

Patented Feb. 6, 1906.

Application filed June 9, 1905. Serial No. 264,424.

*To all whom it may concern:*

Be it known that we, FRANCISQUE VOLAND, residing at Villeurbanne, Rhone, LOUIS DIEDERICH, residing at Jallieu, Isère, and JEAN BAPTISTE MONNET, residing at Bourgoin, Isère, France, citizens of the French Republic, have invented certain new and useful Improvements in Weaving-Looms, of which the following is a specification.

This invention relates to a weaving-loom for producing fabrics with the texture inclined at any angle—that is to say, the warp and weft of which do not make a relative right angle.

The improvements consist chiefly in inclining the batten with regard to the warp and causing it to move in such a manner that the teeth of the reed are always moved in a direction parallel to that of the warp. The mechanical means for producing this result may be considerably varied; but two suitable forms are shown diagrammatically in the accompanying drawings, wherein—

Figure 1 is a side elevation, and Fig. 2 a plan, of one form of construction. Fig. 3 is a plan view of a second form. Fig. 4 is a sectional side view of part of the mechanism shown in Fig. 3, and Fig. 5 is a detail view relating to the warp and cloth beams.

In the construction shown in Figs. 1 and 2 the reciprocating movements of the batten A are imparted thereto by the connecting-rods B B', operated from the driving-shaft C; but since said connecting-rods must be of equal length for producing regular movements of the batten one of said rods B is driven indirectly from the shaft C, the rotation of the latter being transmitted to an intermediate shaft D, from which the rod is driven by means of the shaft E and two pairs of bevel-pinions F G and H I, respectively. The shaft with a toothed wheel K, mounted on a shaft K', to which is keyed the cam K', adapted to operate the lever L, which operates the pickers. The second connecting-rod B' is driven direct from the shaft C by means of the crank B<sup>2</sup>.

For preventing floating of the fabric to the front of the loom it is preferable to arrange below the fabric a plate for supporting same.

In the second construction (shown in Figs. 3 and 4) the driving of one of the connecting-

rods B is effected directly from the driving-shaft C and the other connecting-rod B' is driven by means of an intermediate shaft M, driven by two bevel-pinions N and O, the latter of which is keyed on the driving-shaft C and the former on said shaft M. The shaft M transmits its movement by means of two other bevel-pinions P and Q to a shaft R. Pinion Q carries a crank-pin Q' in connection with the connecting-rod B'. The rod B is driven by a crank-pin B<sup>2</sup>, attached to the pinion O.

The rods B B' being of equal effective length, the batten A is displaced in a direction parallel to that of the warp. This displacement takes place along the guides S, Fig. 4, arranged on each side of the loom, and the batten is preferably mounted on guide-blocks T, engaging said guides.

For reducing obstruction the warp and cloth beams are preferably arranged below the loom, as in the manner shown in Fig. 5. It is sufficient to simply arrange an intermediate roller U parallel to the batten and serving as a guide for the threads. It is immaterial whether the quadrangle shown in dotted lines in Fig. 3 be in a horizontal plane or in one more or less inclined.

It will be understood that the improvements in inclined looms, as described above, can be used with any kind of warping or winding devices or with any form of batten according to the nature of the fabrics to be woven and of the threads or yarns forming said fabrics. The loom is also adapted to the weaving of metal fabrics and the like.

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

1. In a loom for weaving fabrics of inclined texture the combination of a batten inclined to the direction of the warp and means for reciprocating said batten in a direction parallel to that of the warp-threads comprising a driving-shaft, rods of equal length connected to the batten and means whereby one of said rods is driven directly and the other indirectly from said driving-shaft substantially as described.

2. In a loom for weaving fabrics of inclined texture the combination of a batten inclined to the direction of the warp and means for reciprocating said batten in a direction paral-



lel to that of the warp-threads comprising a driving-shaft, rods of equal length connected to the batten, crank mechanism adapted to drive one of said rods directly from the shaft, and bevel gear and crank mechanism intermediate the shaft and the other rod for driving the latter indirectly from said shaft substantially as described.

In witness whereof we have signed this specification in the presence of two witnesses. 10

FRANCISQUE VOLAND.

LOUIS DIÉDERICHS.

JEAN BAPTISTE MONNET.

Witnesses:

JEAN GERMAIN,

GUILLAUME PISCHE.