No. 751,927. PATENTED FEB. 9, 1904.

G. W. KUENNETH.

JACQUARD MECHANISM FOR LOOMS.

APPLICATION FILED MAY 6, 1903.

NO MODEL. 3 SHEETS—SHEET 1.

Fig. 1.

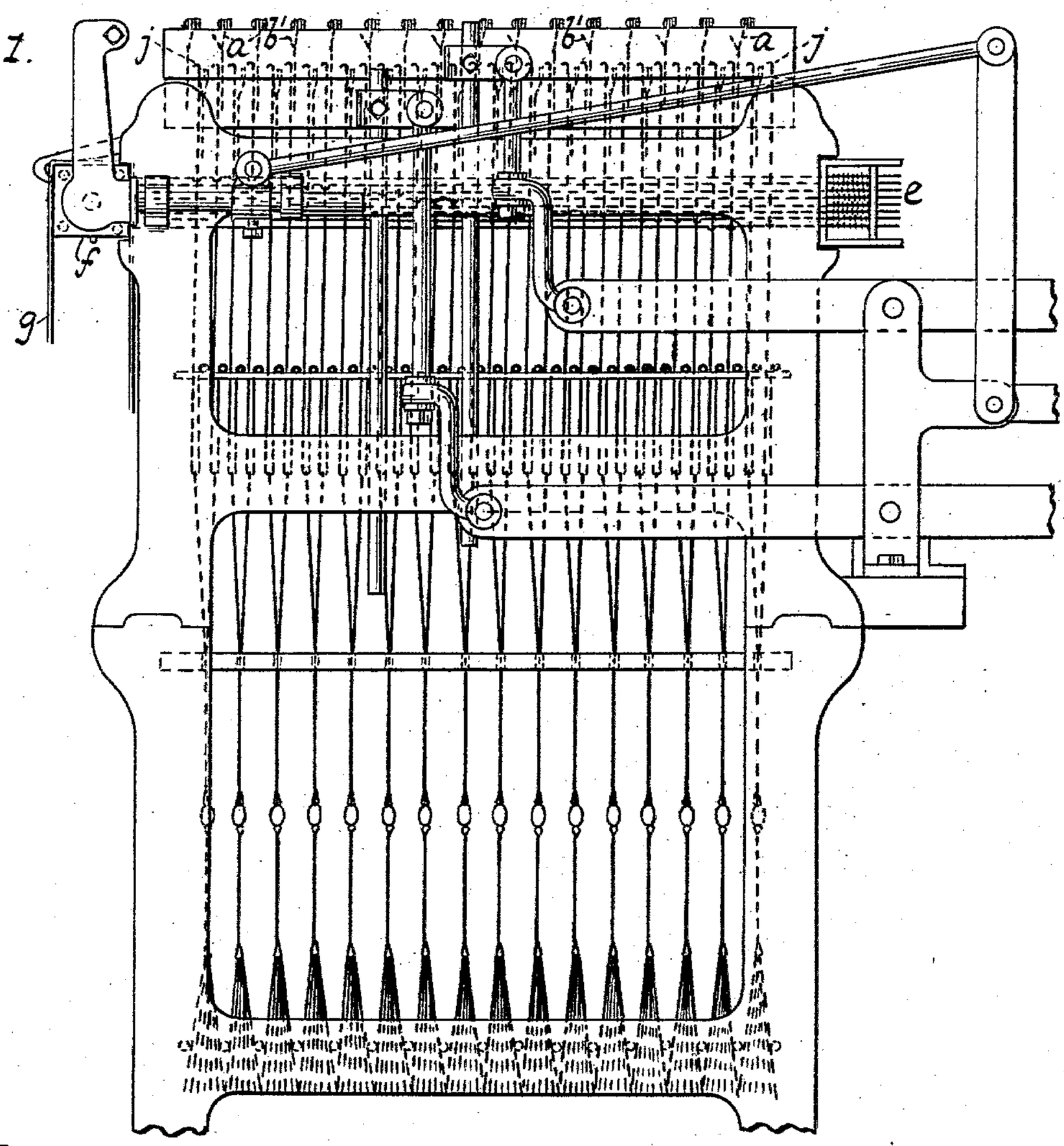


Fig. 4.

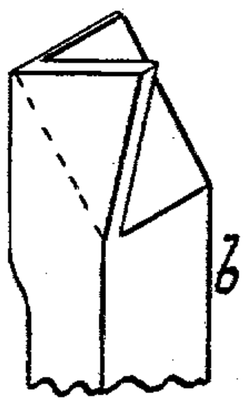


Fig. 2.

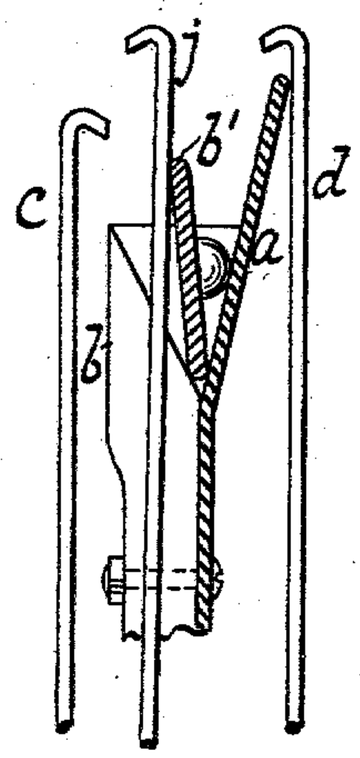


Fig. 3.

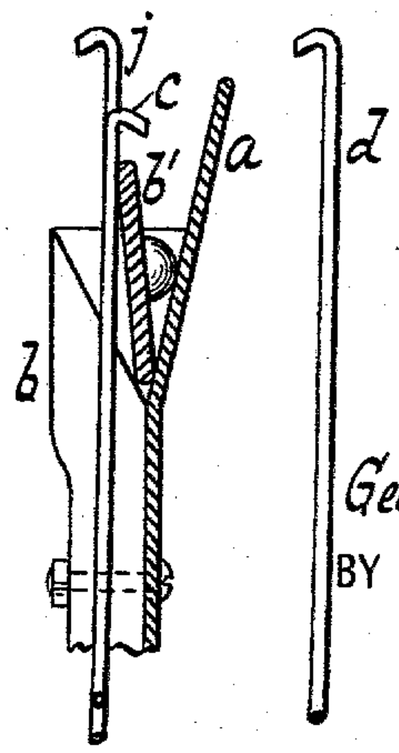
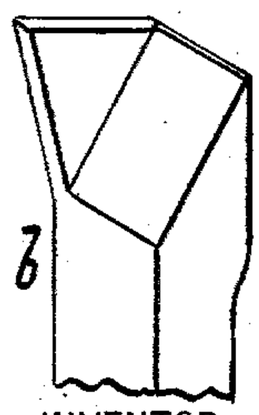


Fig. 5.



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NO MODEL. 3 SHEETS—SHEET 2.

Fig. 6.

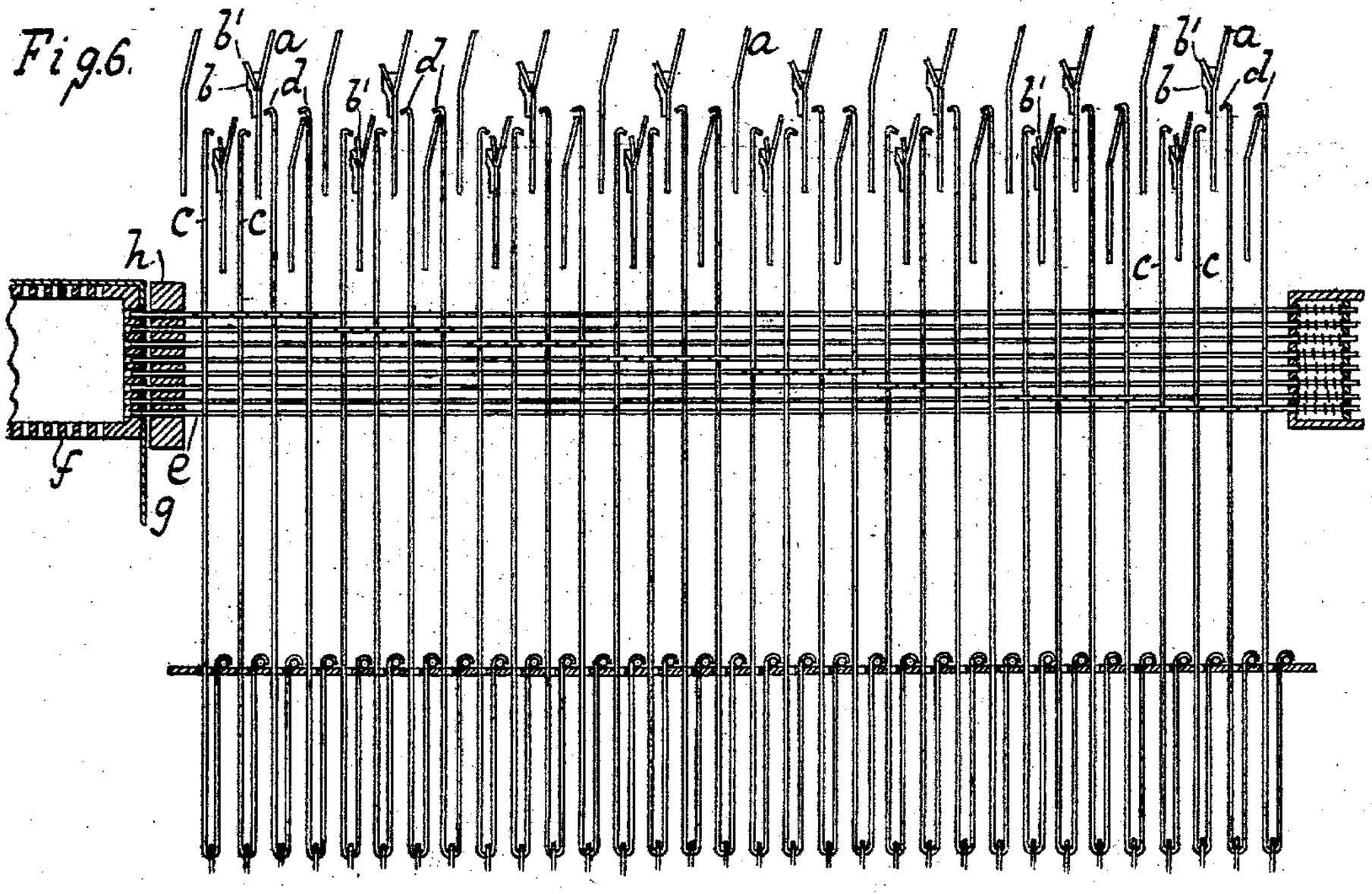


Fig. 7.

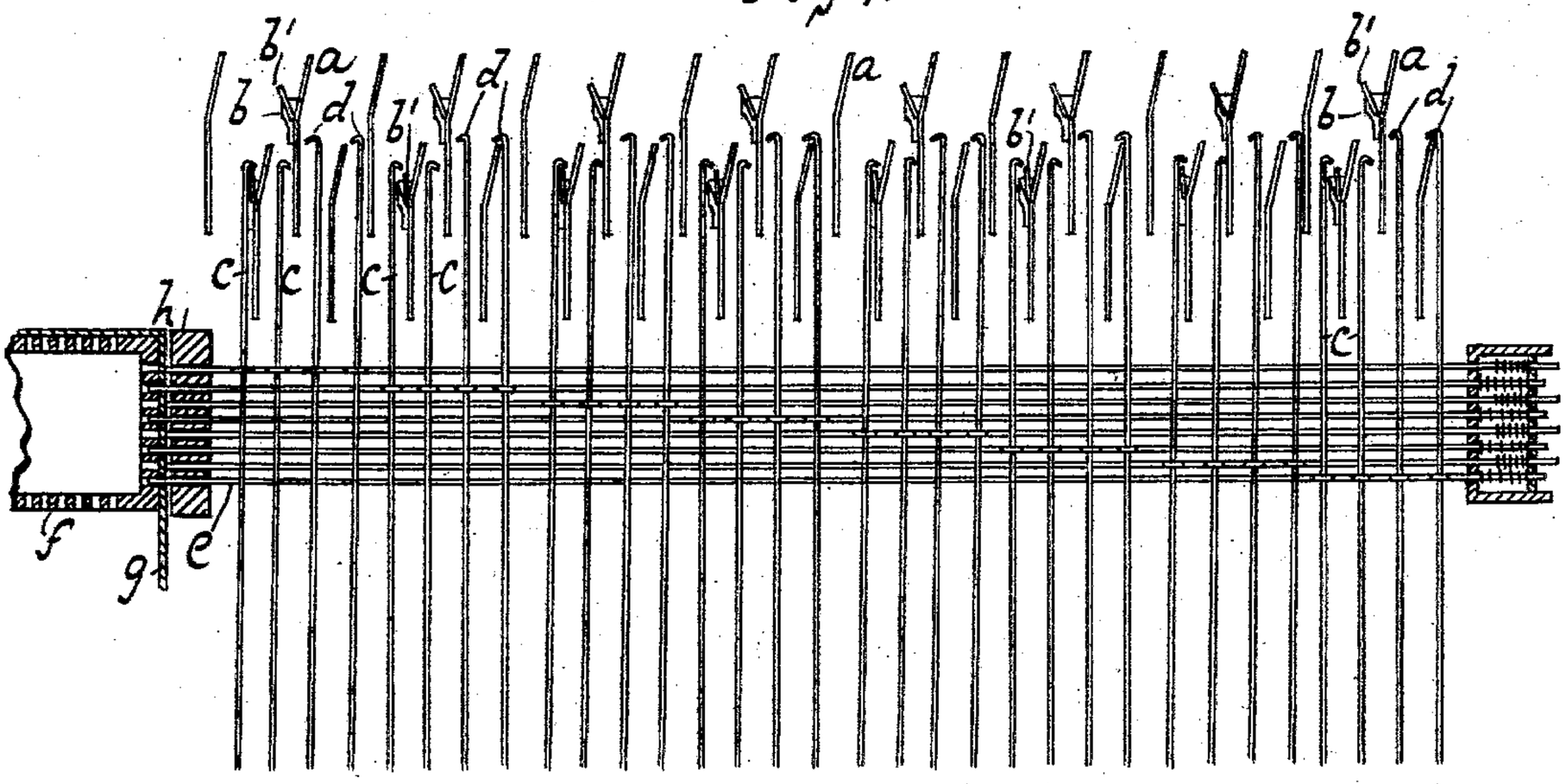
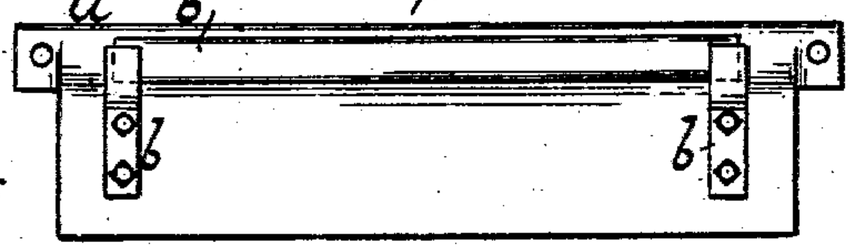


Fig. 8.



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NO MODEL. 3 SHEETS—SHEET 3.

Fig. 9.

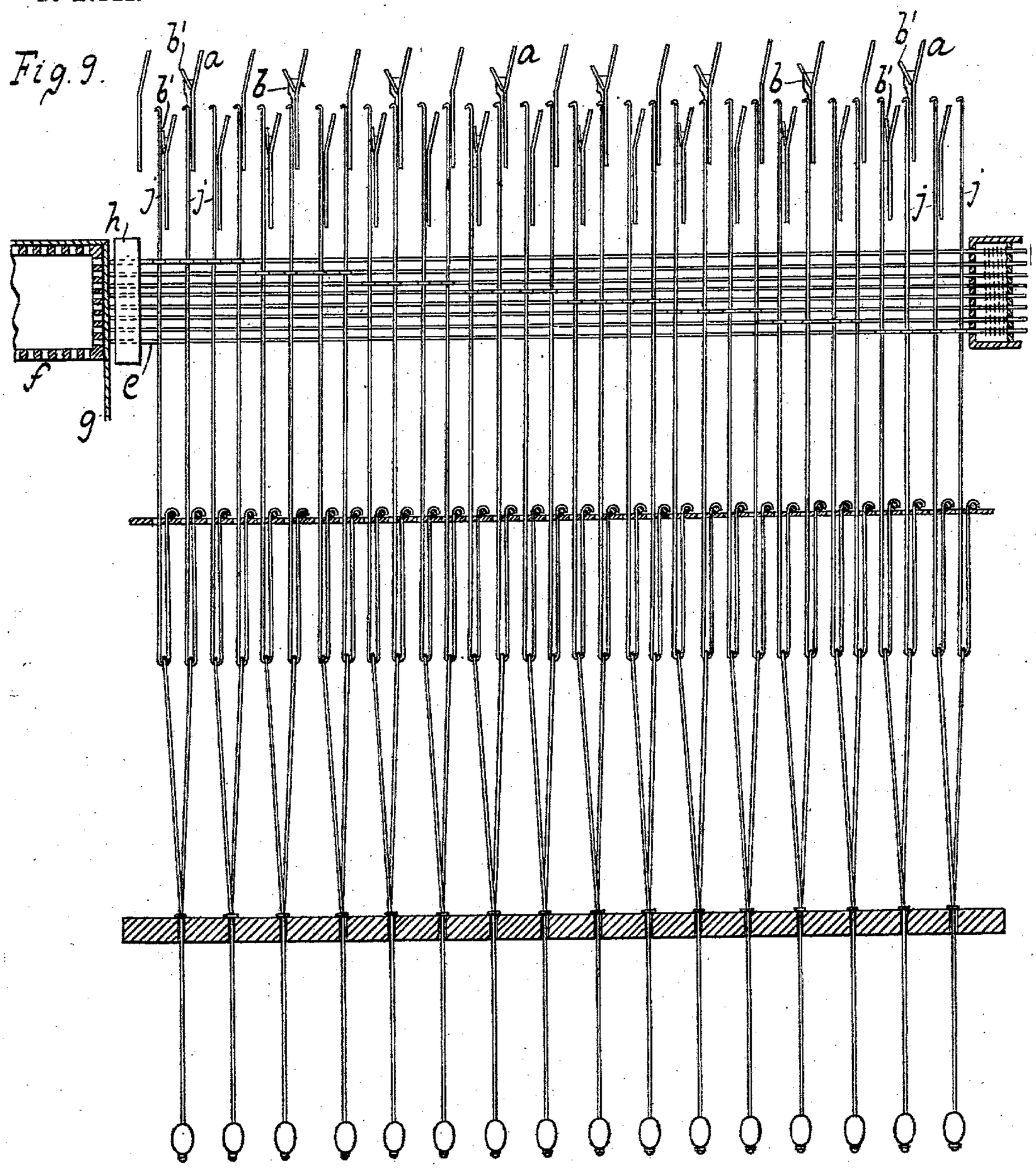
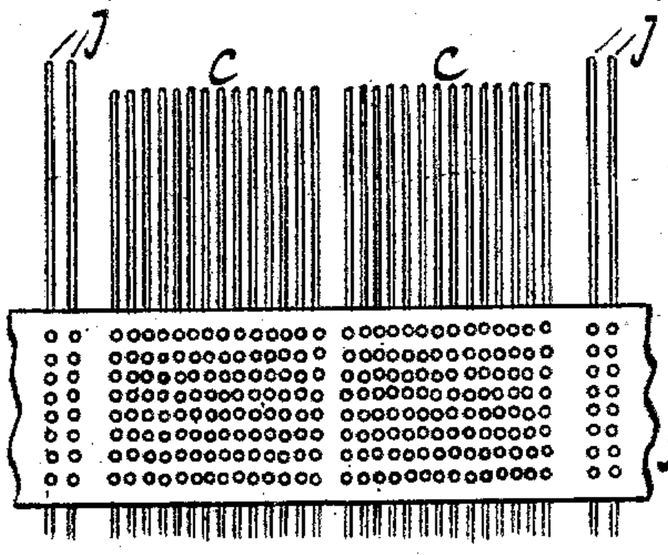


Fig. 10.



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No. 751,927. Patented February 9, 1904

UNITED STATES PATENT OFFICE.

GEORGE W. KUENNETH, OF NEW YORK, N. Y.

JACQUARD MECHANISM FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 751,927, dated February 9, 1904.

Application filed May 6, 1903. Serial No. 155,894. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. KUENNETH, a citizen of the United States, residing in Bronx borough, New York city, in the county and State of New York, have invented new and useful Improvements in Jacquard Mechanism for Looms, of which the following is a specification.

This invention relates to mechanism applicable to double-lift single-cylinder machines and can be practically employed for weaves known as "end-and-end" or "two-face" fabrics. By means of this mechanism two leashes or heddles are controlled by one needle.

This invention is set forth in the following specification and claims and illustrated in the annexed drawings, in which—

Figure 1 is a side elevation of a loom embodying this invention. Fig. 2 is a section of a knife and loose blade with a regular hook in position to engage or be lifted. Fig. 3 shows a reverse hook in position to be lifted. Figs. 4 and 5 show castings or brackets to seat or support a loose blade in the griff. Fig. 6 shows a sectional view of the pattern-cylinder with needles and hooks. Fig. 7 shows a view like Fig. 6, but with some of the needles pushed or shifted by the card. Fig. 8 shows the loose blade in the griff or knife. Fig. 9 shows one of the outer rows of hooks. Fig. 10 shows a front view of the pattern-cylinder and hooks.

In certain existing types of machines as known there is a needle for every leash or heddle. By having two heddles controlled by one needle one-half the needles heretofore required can be dispensed with. In this manner the pattern-card can be reduced one-half, and labor, material, and the design can also be reduced, as in the case of two-face fabrics, one end or thread is up while the other thread is down. In stating, however, that the invention is applicable to a double-lift machine it should be noted that this system is applicable also to a single-lift or rise and fall machine, as will appear from the description of this invention.

In the drawings the letter *a* indicates the griff mechanism or knives as used on single-cylinder double-lift machines. Attached to such knife is a casting or bracket *b*, and a loose blade or knife is shown at *b'*.

At *c* is shown what may be called a "reverse hook" and at *d* a regular jacquard-hook. A needle is shown at *e*, a four-eyed needle for controlling two pairs of hooks which lift two leashes in the harness being shown.

The cylinder *f* is provided for the pattern-card *g* to act in conjunction with the needles guided by the board *h*.

It is seen that a needle controls two heddles or leashes. By having a needle control two heddles or hooks *c* and *d* the pattern can be reduced, and as these hooks are reverse hooks or face in opposite directions, one of the hooks *c* or *d* is always engaged by the griff or knife. If the needle enters a hole in the pattern-card, the hook *c* is clear and hook *d* in position to be engaged by the griff. If the needle is moved by the cylinder or a full part of the card, the hook *d* is in clearing position or free from the griff as the latter moves or rises and the hook *c* is in position to be engaged or lifted.

Of course in speaking of one hook pair *c* and *d* with its needle it is understood that the description of one explains the action of all such hooks and needles and that as is the case in looms a series or plurality of pairs of hooks and needles are employed. The blade *b'* is dropped or placed loosely in or on the casting *b*. Such blade is free to be lifted out or removed, in which case the hooks *c* would be out of use for the time being, but hooks *d* would still be in operation. The machine could then be operated with only one set, *d*, of hooks in action.

The casting *b* or rather its blade *b'* and the blade *a* form an oppositely-facing or bifurcated knife for the reverse hooks *d* and *c*.

The hook *c* representing one face of a fabric and hook *d* the opposite face of such fabric, it is manifest that with both sets of hooks in action a two-face fabric is produced.

In addition to hooks *c* and *d* are shown the outer rows of hooks *j*, Fig. 10, which are the ordinary hooks now in use on all jacquard mechanism and which are shown retained in

this construction and which can serve several purposes. For example, this outside row of hooks *j* can be used to press back the loose blade *b'* to prevent hooks *c* being raised when the hooks *d* should be raised.

The loose blade *b'*, it may be noted, prevents wear or rubbing of the hooks *c* and the needle against one another, as the swinging blade enables its hook to remain practically in vertical position when rising and falling through the eye of the needle.

As to other parts of the loom, such as the harness and the mechanism for operating the griff and the pattern-cylinder, no description is deemed necessary, as the levers of actuating mechanism employed can be the same as in all jacquard mechanism.

What I claim as new, and desire to secure by Letters Patent, is—

1. A jacquard mechanism comprising a needle, consecutive or adjacent hooks controlled by said needle, and succeeding leashes connected to said hooks, each leash having its hooks facing in the same direction.

2. A jacquard mechanism comprising a needle, consecutive or adjacent hook pairs controlled by said needle, and adjacent leashes, each hook pair being connected to one leash and free from the other leashes.

3. A jacquard mechanism comprising a needle, two pairs of alternately-acting hooks controlled by such needle, a griff comprising a fixed blade for one set of hooks and a loose blade made to face in the opposite or reverse direction from the fixed blade for the other set of hooks.

4. A jacquard mechanism comprising an oppositely-facing or bifurcated knife, and hooks independent or separate from one another and adapted to engage said oppositely-facing knife.

5. A jacquard mechanism comprising an oppositely-facing or bifurcated knife provided with a fixed and a loose blade.

6. A jacquard mechanism comprising reverse hooks and a knife having a loose removable blade for one set of hooks and a fixed blade for the other set.

7. A jacquard mechanism comprising a griff with a loose blade or knife adapted to swing to prevent wear of the hook and needle, a fixed blade, hooks adapted to be engaged by the fixed blade, and a second set of hooks separate from the first-named hooks and adapted to be engaged by the loose blade.

8. A jacquard mechanism comprising a griff mechanism with a loose blade or knife, a four-eyed needle and two pairs of oppositely-facing hooks adapted to be alternately actuated by the griff mechanism, one pair of said hooks adapted to be engaged by the loose blade.

9. A jacquard mechanism or loom comprising a needle, two alternately-acting heddles or leashes controlled by such needle, a griff comprising a fixed blade for one set of heddles, and a loose removable blade for the other set of heddles, so that on the removal of said loose blade one set of heddles becomes inactive while leaving the other set to continue in action.

10. A jacquard mechanism or loom comprising a needle, reverse hooks engaged by the needle, a griff or knife for one set of hooks, and a loose blade carried by the knife and made to engage the reverse hooks, said blade being removable and replaceable to bring one set of hooks out of and into action while leaving the other set of hooks to be actuated by its knife.

11. A jacquard mechanism or loom comprising a needle, hooks engaged by the needle, and a griff for the hooks comprising a fast and a loose blade.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

GEORGE W. KUENNETH.

Witnesses:
W. C. HAUFF,
CHAS. E. P. VENSGEN.