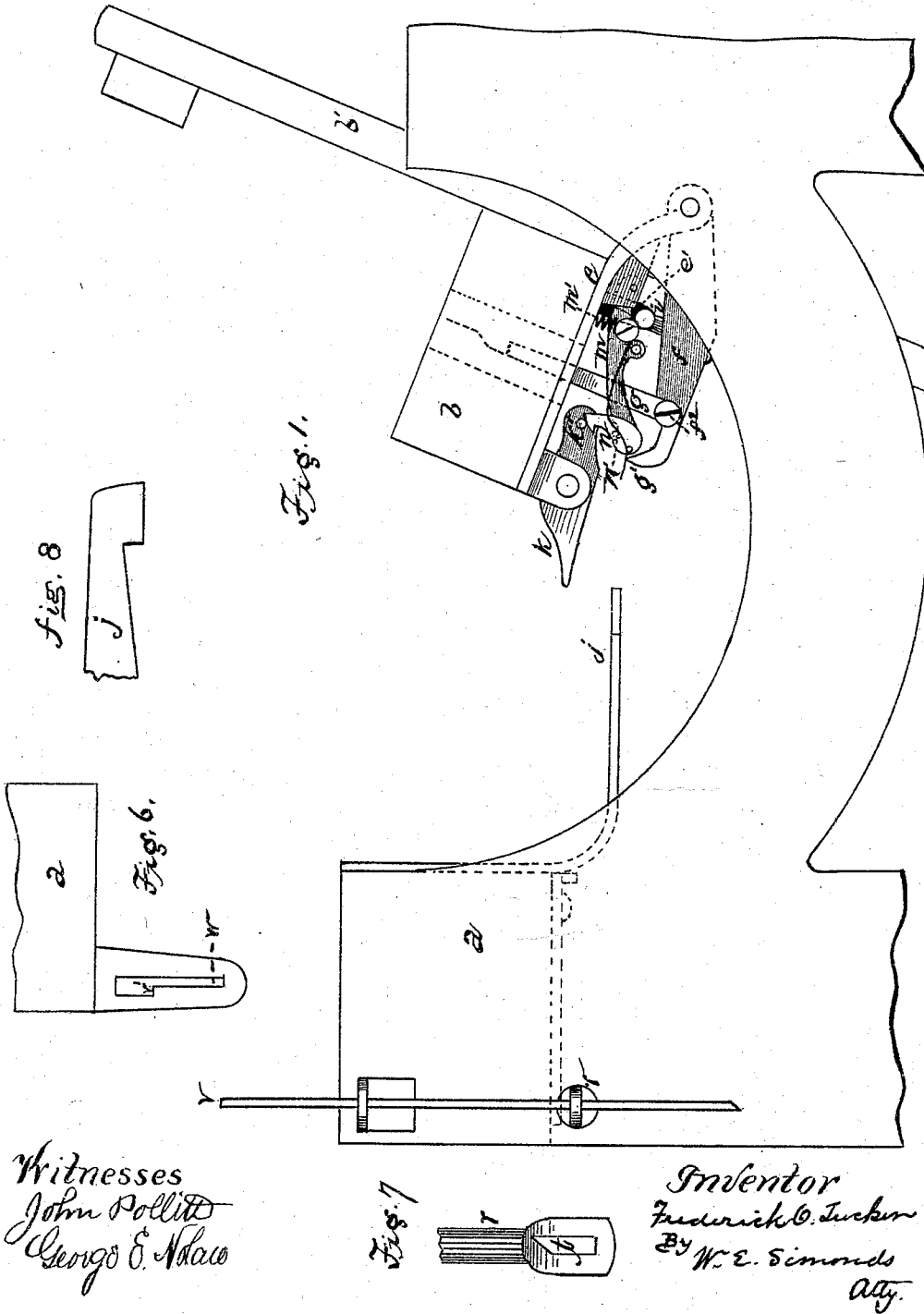


F. O. TUCKER.
STOP MOTIONS FOR LOOMS.

No. 182,618.

Patented Sept. 26, 1876.



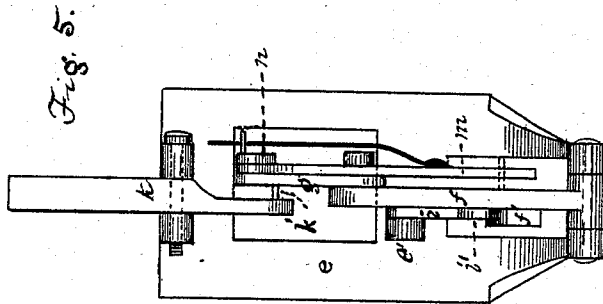
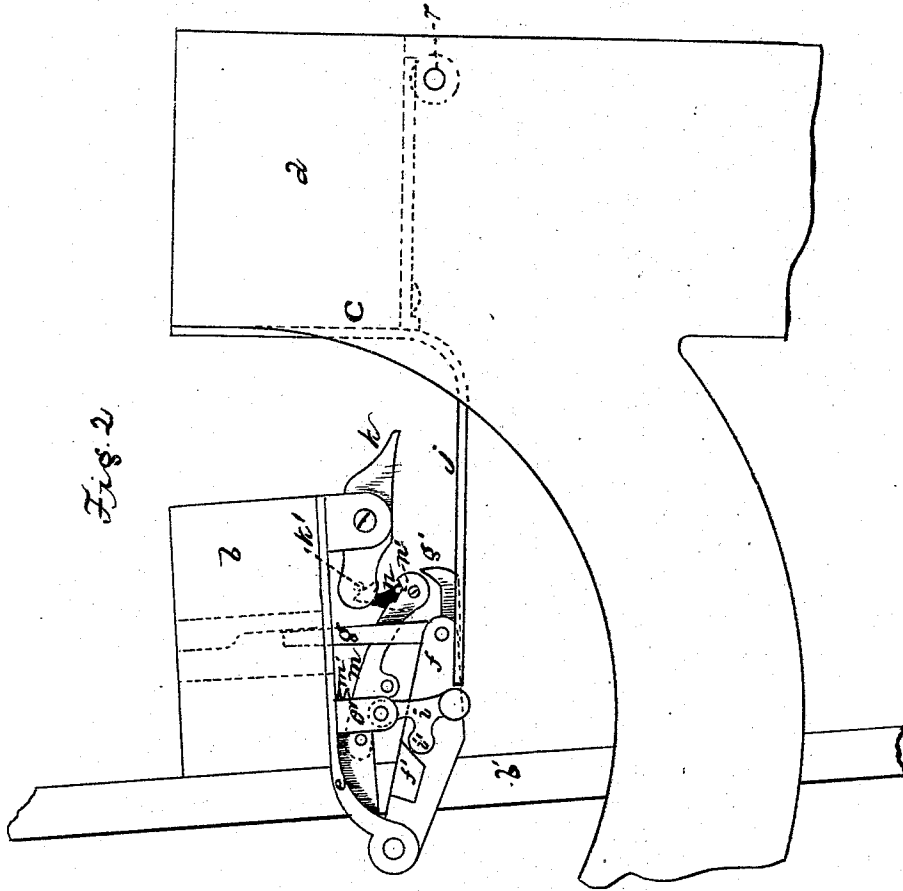
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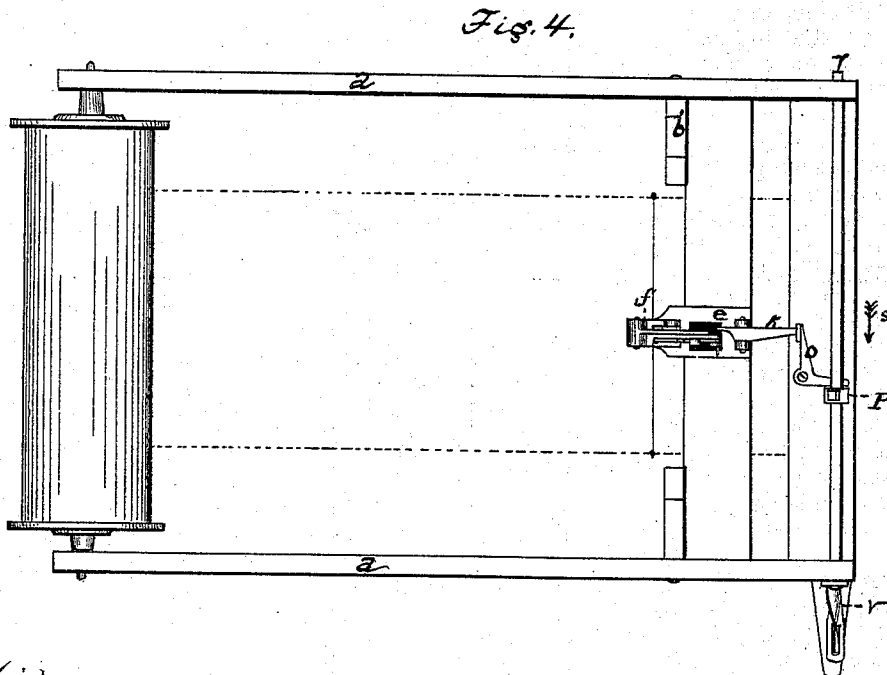
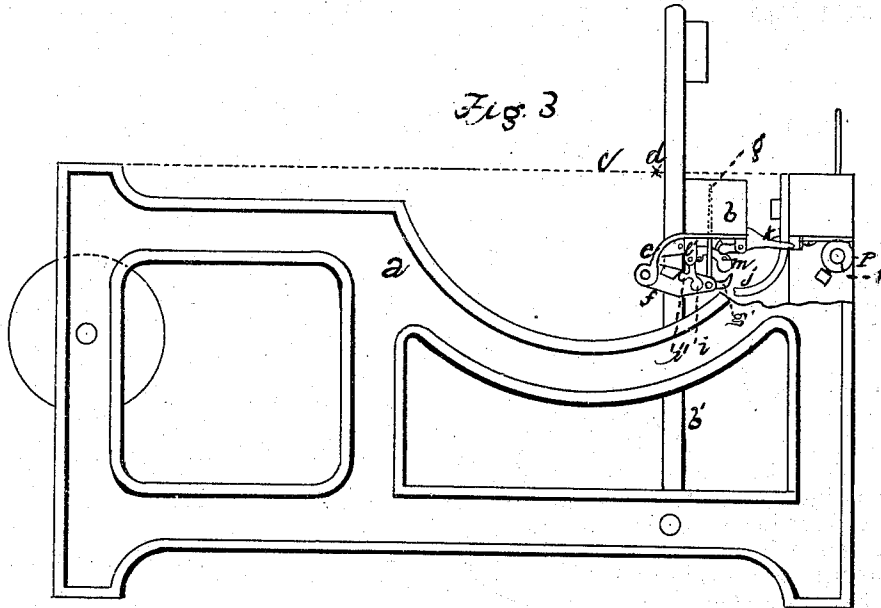
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UNITED STATES PATENT OFFICE

FREDERICK O. TUCKER, OF HARTFORD, CONNECTICUT.

IMPROVEMENT IN STOP-MOTIONS FOR LOOMS.

Specification forming part of Letters Patent No. 182,618, dated September 26, 1876; application filed April 20, 1875.

To all whom it may concern:

Be it known that I, FREDERICK O. TUCKER, of Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements Pertaining to Stop-Motions for Looms, of which the following is a specification, reference being had to the accompanying drawings, where—

Figure 1 is a right-hand-side view of part of a loom bearing my improvements. The lathe is shown at the rearward extreme of its throw. Fig. 2 is a side view of most of the same parts from the left side, when the lathe has started forward, and the stop mechanism is about to mount the stationary cam. Fig. 3 is a left-side view of the loom and stop mechanism, on a diminished scale, when the lathe is near the forward end of its play, the filling-thread being broken, and the dagger is about to operate the shipping mechanism and stop the loom. Fig. 4 is a bottom view of the loom-frame and stop mechanism, when the lathe is in the same adjustment as in Fig. 3. Fig. 5 is a bottom view of the stop mechanism in the same adjustment as in Fig. 2, and on the same scale. Fig. 6 is a detail top view of an arm projecting from the right side of the loom-frame, containing a mortise in which plays the shipping-lever. Fig. 7 is a detail top view of the end of the rod which trips the shipping-lever. Fig. 8 is a detail top view of stationary cam.

The invention is designed for attachment to a loom, to stop it when the filling-thread is broken.

The letter *a* denotes the loom-frame; *b'*, the lathe-sword, pivoted to the frame at its lower end; *c*, the line of the warp, and *d* the particular thread of filling upon which the loom is supposed to be operating. *b* is the lathe, to which the greater part of my improved mechanism is attached; *e*, a metal plate, attached to bottom of lathe *b*, turning downward at the rear, and having pivoted therein the lever *f*, to which is pivoted, near the front end, the feeler *g*, the lower end of which forms the hook *g'*, and the upper end extends up through a mortise in the beam *b*. This upper end, at every forward movement of the lathe, is thrown up behind the filling-thread, and strikes it if it is unbroken and in its proper place. The lever *f* and feeler *g* have an up-and-down move-

ment with every forward throw of the lathe given, as follows: From the lower end of the arm *e'*, which is practically a part of the plate *e*, depends and is pivoted the dog *i*, rearward from which projects the finger *i'*. When the lathe swings forward, the lower end of the dog *i* strikes, and then rides the cam *j* on the end of arm *e*, fixed upon the breast-beam, which raises the finger *i'*, which, thus rising, strikes against the under side of the lug *f'*, which is upon the side of the lever *f*, and raises the lever *f*; and with it the feeler *g*. When the dog *i* falls off the front end of the cam *j*, the lever *f* and feeler *g* fall down again by their own weight.

To the front end of the plate *e* is pivoted the dagger *k*, the front end of which overbalances the rear end, so that, not otherwise acted on, the front end will cant downward. To the plate *e* is pivoted the lever *m*, pressed downward to position shown in Fig. 2 by spring *m'*. To the front end of this lever is pivoted the catch-pawl *n*, which operates in connection with the pin *k'* on the side of the rear end of the dagger *k*, and itself is provided with the pin *n'* on its side. When the lever *f* rises, the pin *f²* on the side of lever *f* strikes the under side of the lever *m*, and raises it and the catch-pawl *n*, which allows the rear and lighter end of the dagger *k* to rise, and if it does not rise the base of the catch-pawl *n* strikes the pin *k'* and causes it to rise. This position of the parts is not shown in drawings. Now, as the lathe continues to move forward, if the filling-thread *d* is in its proper place in front of the feeler *g*, the feeler will strike the filling-thread, and, being thereby held stationary, or nearly so, while its lower end moves forward, it will be canted backward, and the hook *g'*, bearing rearward on the pin *n'*, will cant the catch-pawl *n* backward, so that when the dog *i* drops off the front end of the cam *j* the catch-pawl *n* drops free of the pin *k'*, and so leaves the dagger *k* with its front end canted downward, the several parts just named being in relatively the same positions when the lathe is in the rear thereof, where it is shown in Fig. 1, the change of positions of the parts being effected by contact with the cam *j*; but if the filling-thread *d* be broken, or not in place, then the feeler *g*

will not be canted backward as the lathe swings forward, and when the dog *i* drops off the front end of the cam *j*, the catch-pawl *n*, in falling, catches upon the pin *k'* and lifts the front end of the dagger *k* to the position shown in Figs. 3 and 4. In either case, when the lathe swings backward the dog *i* rides the stationary cam without affecting the adjacent parts.

I have shown that when the lathe swings forward, with the filling-thread *d* in proper place, the front end of the dagger *k* is canted downward, and when the lathe swings forward, with the filling-thread *d* broken, or out of place, the front end of the dagger *k* is raised to position shown in Figs. 3 and 4. When the front end of the dagger *k* is canted downward, it will not strike the bell-crank lever *o*; but when the filling-thread is broken, or out of place, and the front end of the dagger *k* is thereby raised to position shown in Figs. 3 and 4, the front end of the dagger *k* will strike upon one end of the bell-crank lever *o*, and it will, acting on the collar *P*, which is fast on the rod *r*, move the rod in the direction indicated by the arrow *s*, which action, by means of a cam-slot, *t*, in the flattened end of the rod *r*, through which runs the shipper-lever *v*, moves

the top of the shipper-lever a trifle rearward, just enough to disengage it from the shoulder *v'*, when this lever, being a spring-lever, flies to the opposite end of the mortise *w*, and by common mechanism (not shown) ships the driving-belt off the driving-pulley of the loom and stops the loom.

I claim as my invention—

1. In combination with the stopping mechanism and lathe of a loom, the vibratory piece *m*, the pawl-hook *n*, spring *m'*, and dagger *k*, provided with pin *k'*, all substantially as described.

2. In combination with the stopping mechanism and lathe of a loom, the dagger *k*, pawl-hook *n*, adapted to be controlled by the weft-feeler, and vibratory piece *m*, all substantially as described.

3. In combination with the stopping mechanism of a loom, the hook-pawl *n*, the pivoted arm *m*, dagger *k*, lever *f*, and the feeler *g*, having hook *g'*, all carried by the lathe, and operating together, substantially as described.

F. O. TUCKER.

Witnesses:

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