No. 687,793. Patented Dec. 3, 1901.

C. THOMPSON.

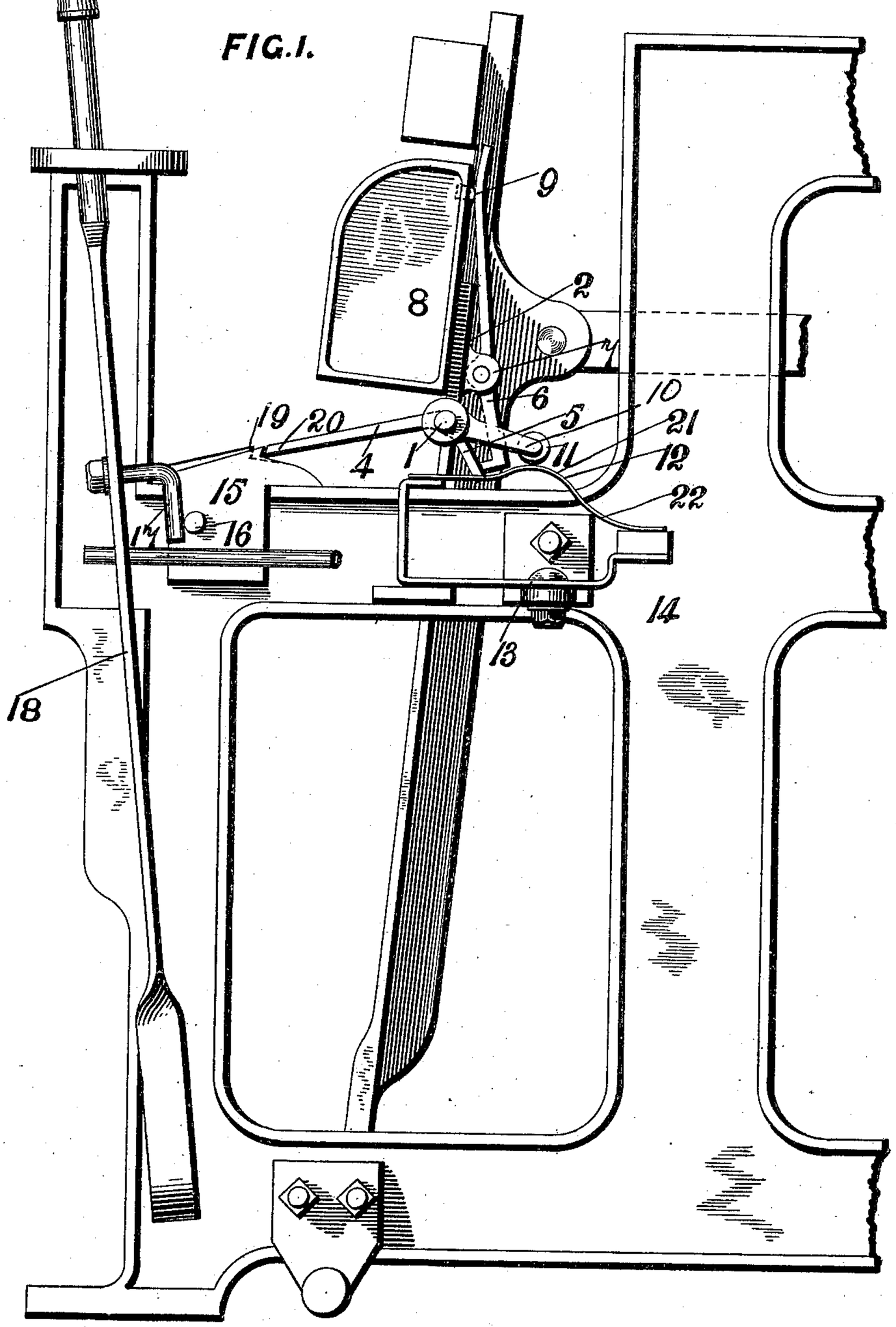
STOP MOTION FOR LOOMS.

(Application filed Apr. 2, 1901.)

(No Model.)

2 Sheets—Sheet 1.

FIG. 1.



WITNESSES.

J. R. Howard

Gervase Appleyard.

INVENTOR.

Charles Thompson

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FIG. 2.

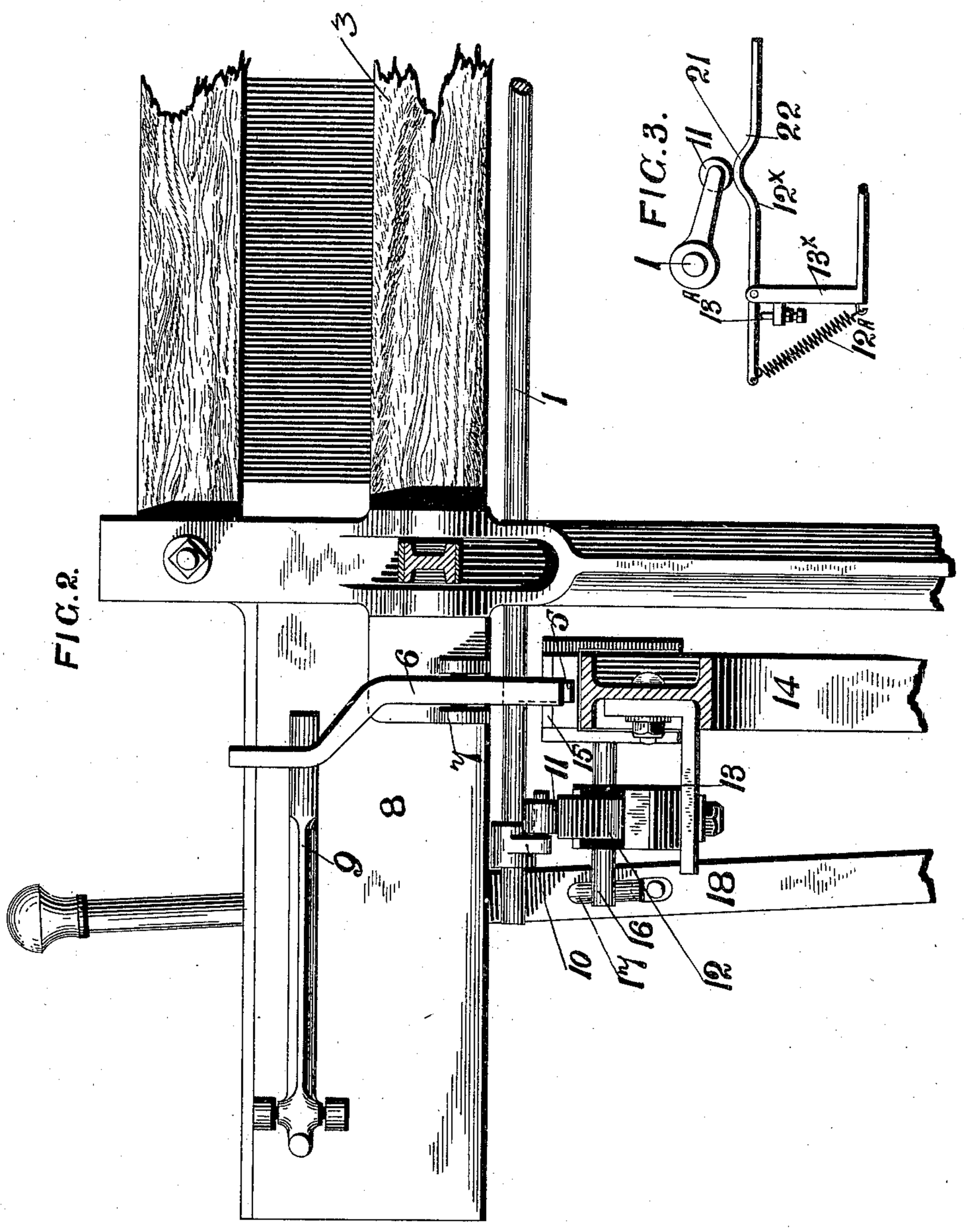

FIG. 3.

WITNESSES.

J. B. Howard.

Gervase Appleyard.

INVENTOR.

Charles Thompson

UNITED STATES PATENT OFFICE.

CHARLES THOMPSON, OF ELDWICK, NEAR BRADFORD, ENGLAND.

STOP-MOTION FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 687,793, dated December 3, 1901.

Application filed April 2, 1901. Serial No. 54,062. (No model.)

To all whom it may concern:

Be it known that I, CHARLES THOMPSON, a subject of His Majesty the King of Great Britain, residing at Moorland View, Eldwick, near Bradford, in the county of York, England, have invented a certain new and useful Improvement in Stop-Motions for Looms for Weaving, of which the following is a specification.

This invention relates to improvements in stop-motions as applied to looms for weaving for the purpose of arresting the motion of the loom and preventing the "beat-up" of the slay in the event of the shuttle failing to enter the shuttle-box and in this way obviating damage to the "shed" or warps.

The invention is hereinafter fully described, reference being made to the accompanying drawings, in which—

Figure 1 is an end elevation of part of a loom, showing the application of the improved stop-motion thereto. Fig. 2 is a back view in elevation of the improved stop-motion. Fig. 3 is a view of a modified form of cam-spring.

According to this invention at 1 is the ordinary stop-rod of the loom, said stop-rod 1 being mounted in bearings 2, fixed to the rear side of the slay 3. On the stop-rod 1 is mounted a finger 4, having a tailpiece 5, against which the short or lower arm of a lever 6 rests. The lever 6 is pivoted in the bracket 7, fixed to the back of the shuttle-box 8, and the upper end of this lever 6 rests against the ordinary swell 9 of the shuttle-box 8. A second short finger 10 is fixed to the stop-rod 1, and the outer end of this finger is provided with a bowl or runner 11, which rests on a curved spring 12, supported on the bracket 13, mounted on the frame of the loom.

At 15 is a movable catch or slide on which is a pin 16, bearing against the projection 17 on the ordinary spring stop-handle 18, and at 19 is the ordinary fixed "frog" or stop-piece. The movable catch or slide 15 may be at one end of the loom and the frog or stop-piece 19 at the opposite end, or both may be at the same end. If at opposite ends, then it will be necessary to have two fingers, such as 4, one at each end of the stop-rod 1.

When the loom is in motion, the slay 3 or going part moves to and fro and the bowl or runner 11 travels along the curved spring or cam lever 12, and when the shuttle enters the box 8 the swell 9 is forced outward thereby, as ordinary, and pressing on the upper end of the lever 6 the lower end of the latter presses against the tailpiece 5 of the finger 4, a partial turn is imparted to the stop-rod 1, the finger 10 and runner 11 compress the spring or lever 12, and the end 20 of the finger 4 is raised above and clear of the stops 15 and 19, and the beat-up of the slay is then completed. In the event of the shuttle stopping in the shed or failing to "box" properly the swell 9 is not operated upon. Consequently the lever 6 does not press upon the tail 5 of the finger 4; but as the slay moves forward toward the beat-up the runner 11 passes over the curved portion 21 of the lever or spring 12. Consequently the runner 11 and finger 10 are raised thereby and a partial turn is given the stop-rod 1, and the end 20 of the finger 4 is lowered and brought into line with the movable stop 15, which it strikes and moves slightly with it, and this movement causes the pin 16 to press upon the projection 17 on the spring stop-handle 18, and the latter is thereby sprung out of its holding-notch, and the driving-strap of the loom is transferred from the fast to the loose driving-pulley in the usual manner. In order to at once stop the loom when the strap is transferred to the loose pulley and to prevent the beat-up of the slay being completed, the fixed stop or frog 19 is employed, as usual, and the end 20 of the finger 4 comes into contact with it immediately after "knocking off" the loom, and further movement of the slay is at once arrested. The spring or lever 12 in addition to insuring the end of the finger 4 being brought lineable with the stops 15 and 19 when the shuttle fails to box also acts as a spring for the swell 9 of the shuttle-box 8 as the spring acts through the agency of the runner and finger 10, stop-rod 1, tailpiece 5, and lever 6 on the swell 9, and the pressure of said spring being exerted on the swell 9 the momentum of the shuttle as it enters the box is gradually reduced thereby. At the same time in order to allow of the shuttle being "picked" or expelled from its box without resistance of the spring or lever 12 the latter

is curved and the runner 11 is over the depression 22 at the time the shuttle is expelled. Consequently the spring is inoperative and its pressure on the swell removed for the time being. When the spring stop-handle is moved to restart the loom, the projection 17 thereon acting on the pin 16 causes the movable slide 15 to assume its normal position.

In Fig. 3 I show a modification in which the spring 12 of the first form is replaced by a lever $12^{\times}$, pivoted to a bracket $13^{\times}$, mounted on the frame and held under tension by a spring 12^{a}, arranged as shown. A set-screw 13^{A} limits the movement of the lever under the pull of its spring.

What I claim is—

In combination, the swell, the stop-rod 1, fingers 4, 5, and 10 on said rod, a lever 6 engaging the finger 5 and arranged to be operated by the swell, a movable stop to be operated by the finger 4, and a spring part for operating the finger 10, substantially as described.

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

CHARLES THOMPSON.

Witnesses:

J. B. HOWARD,

GERVASE APPLEYARD.