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G. CROMPTON & H. WYMAN.

Looms.

No. 156,630. Patented Nov. 10, 1874.

Fig. 1.

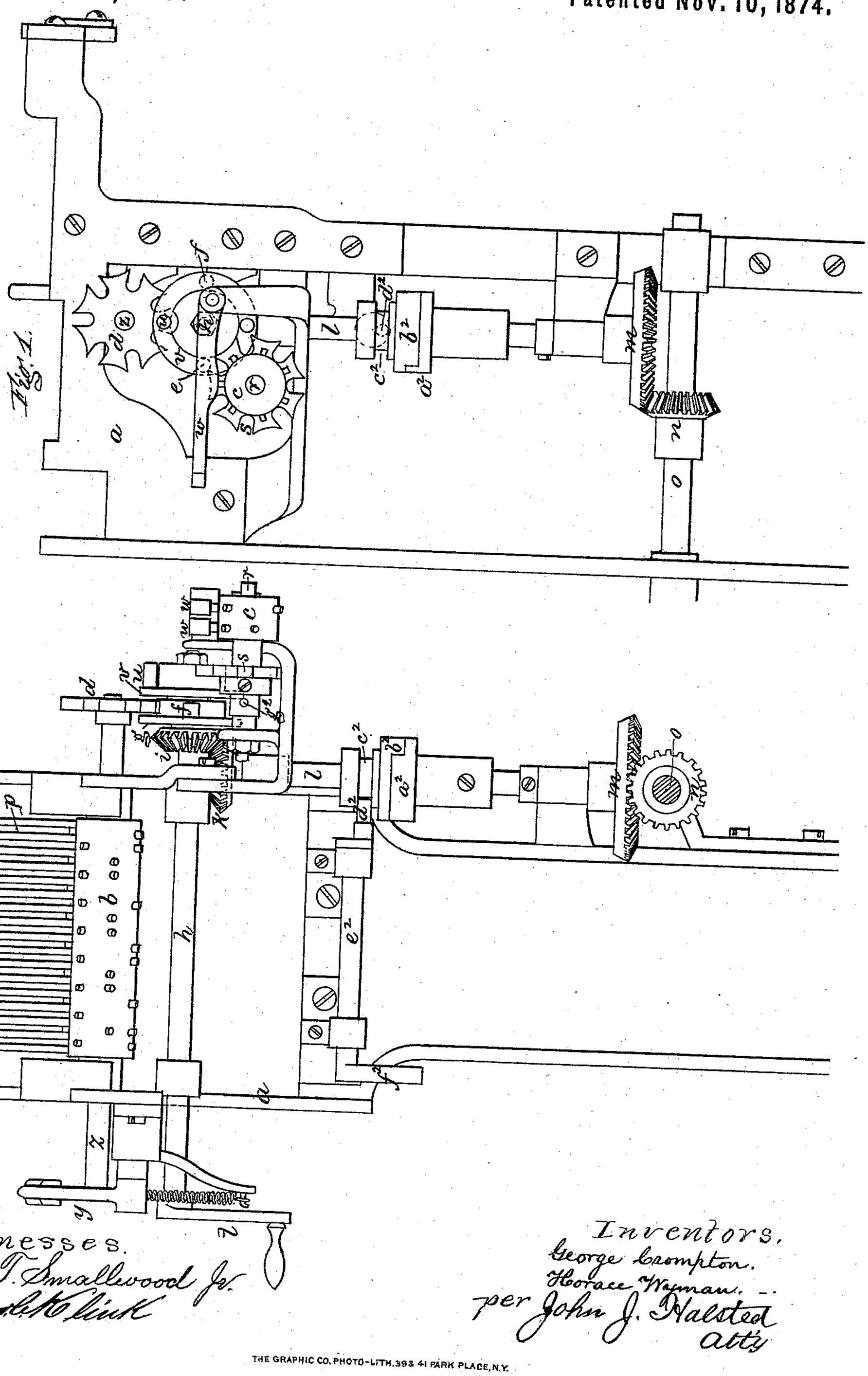

Fig. 2.

Witnesses.
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Fredk. C. Dick

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per John J. Halsted
Atty

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2 Sheets--Sheet 2.

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Looms.

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Fig. 3.

Fig. 4.

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UNITED STATES PATENT OFFICE.

GEORGE CROMPTON AND HORACE WYMAN, OF WORCESTER, MASS.

IMPROVEMENT IN LOOMS.

Specification forming part of Letters Patent No. **156,630**, dated November 10, 1874; application filed August 29, 1874.

To all whom it may concern:

Be it known that we, GEORGE CROMPTON and HORACE WYMAN, both of the city and county of Worcester, in the State of Massachusetts, have invented an Improvement in Looms; and we do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of our invention sufficient to enable those skilled in the art to practice it.

The invention relates to details of construction and arrangement of the drop-box-pattern mechanism and the harness-pattern mechanism of fancy looms, and the novel features of the construction will be sufficiently well understood from the specific description of the mechanism without general description with respect thereto.

The drawing represents that part of the frame-work in which the pattern mechanism is mounted.

Figure 1 is a side elevation of the mechanism. Fig. 2 is an end view of the same. Fig. 3 is a plan of the mechanism. Fig. 4 is a rear view thereof.

a denotes the frame; *b*, the pattern-cylinder for the harnesses, and *c* the pattern-cylinder for the drop-boxes. The shaft of the cylinder *b* is journaled in suitable stationary bearings, and carries at one end a notched wheel, *d*, which is intermittently turned by pins *e f*, extending from a wheel, *g*, on a horizontal shaft, *h*. This shaft *h* carries a bevel-gear, *i*, meshing into and driven by a bevel-gear, *k*, on a vertical shaft, *l*, this latter shaft bearing at its foot a bevel-wheel, *m*, meshing into and driven by a bevel-pinion, *n*, on the main shaft, *o*. The gear-connection is such that the pin-wheel *g* is turned a half-rotation at each complete rotation of the shaft *o*, but, as the pin-wheel has two pins, the pattern-cylinder is actuated at each rotation of the shaft *o*. The jacks or levers, through which the pattern-cylinder designates the harness-levers to be raised or lowered, extend through guide-slots *p*, and normally rest upon or over the pattern-cylinder, being directly raised by the pins of the pattern-cylinder, or the rolls of the pattern-chain, or other indicating mechanism.

The pattern-cylinder *c* for the drop-boxes is shown as mounted upon a stud-pin, *r*, projecting from the frame *a*, this shaft carrying a star or notched wheel, *s*, which is intermittently actuated to turn the cylinder by a pin, *u*, extending from a pin-wheel, *v*, fixed on the shaft *h*, that carries the other pin-wheel *g* to actuate the other pattern-cylinder. The pin *u* turns the pattern-cylinder to change the drop-boxes at one end of the lathe, and therefore operates said cylinder only at every other rotation of the shaft *o*, or only once during the rotation of the shaft *h*, whereas the pin-wheel *g* turns the other pattern-cylinder twice during each rotation, or to form a new shed at each pick.

w w denote two of the drop-box arms, resting upon the pattern-cylinder, and raised at proper times by the pins projecting from the cylinder. A suitable stop-wheel, *x*, is placed at the end of the pattern-cylinder shaft *z* opposite the wheel *d*, a suitable roll at the end of a spring-lever, *y*, slipping into the recesses of the stop-wheel to retain the cylinder in position after each rotative movement thereof.

The vertical shaft *l* is made in two parts, connected by clutch-wheels a^2 b^2, the wheel a^2 being fast on the lower part of the shaft, and the wheel b^2 being splined to the upper part of the shaft, but sliding thereon. The hub of the wheel b^2 has a peripheral groove, c^2, into which a crank-pin, d^2, extends from a shaft, e^2, this shaft having a handle, f^2, by which the shaft and its crank-pin are operated to raise the clutch-wheel b^2 and disconnect the upper part of the shaft *l*, through which both pattern-cylinders are actuated from the lower part of said shaft—that which is operated by the lathe-shaft. When so disconnected the shaft may be turned to operate the pattern mechanisms for inspection or other purpose by a handle, *t*, at the end of the shaft, or the lathe-shaft may be turned back without affecting the shed or the position of the drop-boxes.

The pin-wheel, that actuates the drop-box pattern-cylinder, is shown as carrying two pins, one of which is so short as not to enter the notches of the wheel *s;* but sometimes it is desirable to move the pattern-cylinder *c* at each movement of the other pattern-cylinder, *b*, or at each change of shed, for which purpose the parts are so arranged that both pins may be brought into the plane of the wheel *s* to intermittently and successively operate the cylin-

der *c*. To effect such connection the wheel *s* is shown as adjustable on the shaft *r*, the shaft being made with two notches, into one of which the hub-screw enters to fasten the wheel in position to be actuated by one pin only, and into the other, g^2, of which the screw enters to fasten the wheel in position to be actuated by each pin.

We claim—

1. The combination of the shaft *l*, driven from the shaft *o*, and the shaft *h*, driven by the shaft *l*, and carrying the mechanism for intermittently actuating both the pattern-cylinder connected with the shedding mechanism, and the pattern-cylinder connected with the drop-box mechanism, substantially as described.

2. In combination with the shaft *h*, driven from the shaft *o*, to operate both pattern-cylinders, the mechanism for disconnecting such shafts *h o* to permit the two cylinders to be conjointly operated independently from the shaft *o*, or the shaft *o* to be operated independently from the shaft *h* that drives the pattern mechanism.

3. In combination with the pattern-cylinder *b*, actuated by the two pins *e f* of the wheel *g* and with the pattern-cylinder *c*, the pin-wheel *v*, having two pins, the wheel and pins being made and arranged for the action of one pin alone, or of both pins, substantially as described.

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Witnesses:

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