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Patented Aug. 28, 1900.

A. M. ACKLIN & W. J. PATTERSON.

ENDLESS CONVEYER.

(Application filed Nov. 23, 1899.)

(No Model.)

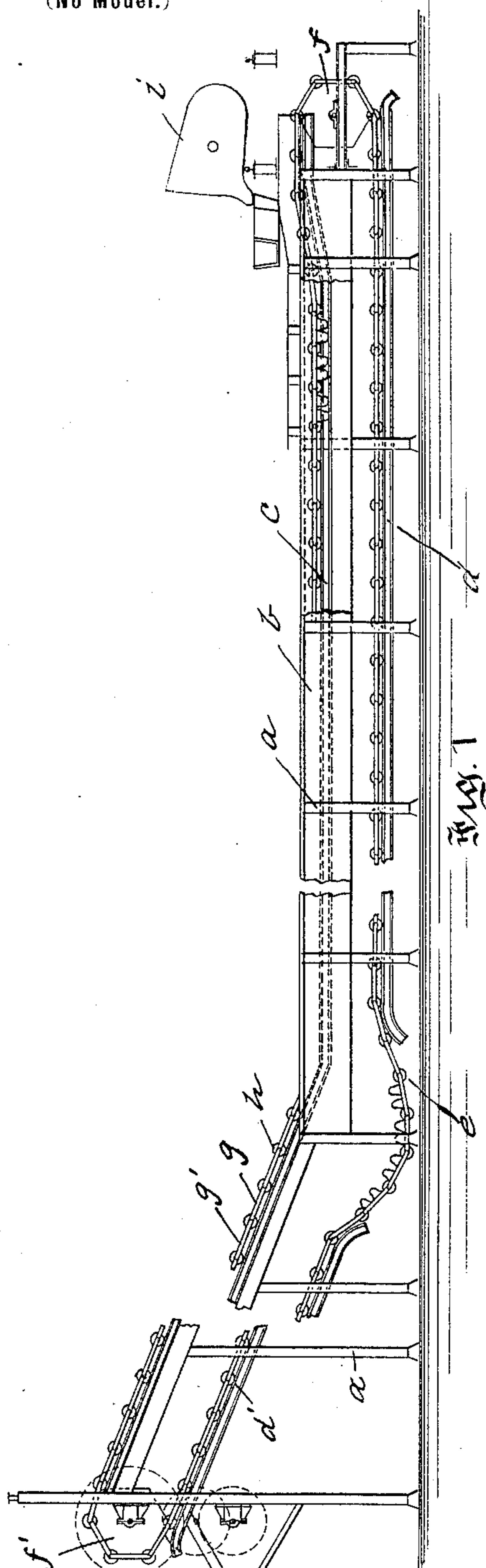


Fig. 1

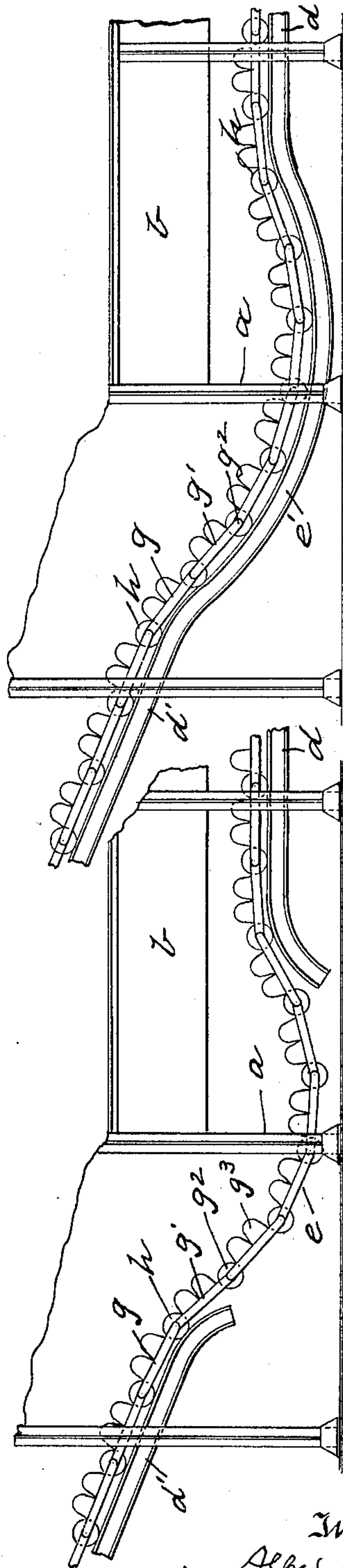


Fig. 2

Fig. 3

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ALFRED M. ACKLIN AND WILLIAM J. PATTERSON, OF PITTSBURG,
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ENDLESS CONVEYER.

SPECIFICATION forming part of Letters Patent No. 657,048, dated August 28, 1900.

Application filed November 23, 1899. Serial No. 738,018. (No model.)

To all whom it may concern:

Be it known that we, ALFRED M. ACKLIN and WILLIAM J. PATTERSON, residents of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Endless Conveyers; and we do hereby declare the following to be a full, clear, and exact description thereof.

Our invention relates to mechanism embodying endless conveyer-chains and supporting and guiding tracks therefor; and it has for its object to provide a simple and efficient means for taking up the slack in such conveyer-chains. With this end in view we have invented the means shown in the accompanying drawings, in which—

Figure 1 is a side elevation, partially broken away, of a metal-casting apparatus embodying our invention. Fig. 2 is a detail view of a portion of the apparatus, on a larger scale; and Fig. 3 is a detail view similar to Fig. 2, but showing a modified construction.

Reference being now had to the details of construction shown in the drawings, the framework *a*, which extends over a materially-greater distance than could be conveniently shown in the drawings, as is indicated by the breaking away of parts, is of a substantially-uniform height for a considerable portion of its length and beyond such portion increases in height by a gradual inclination to the extreme end. The horizontal portion of the framework is provided with a tank *b*, intended to contain a body of cooling liquid—such, for example, as water—and is provided with a track *c*, portions of which may be located at different levels, if desired, in the manner and for the purpose set forth in the patent to A. M. Acklin, No. 583,424, dated May 25, 1897. The outgoing track *c* is extended some distance beyond the end of the tank, the extension being inclined, as is indicated in the drawings. A return track having an inclined portion *d'* and a substantially-horizontal portion *d* is located below the outgoing track *c*, a gap *e* being left between the portions *d* and *d'* for a purpose to be hereinafter stated.

Mounted in suitable bearings at the charging end of the apparatus is a sprocket-wheel *f*, and at the discharging end is located a simi-

lar sprocket-wheel *f'*. An endless mold-supporting chain *g* extends over and around the sprocket-wheels *f* and *f'*, this chain being composed of links *g'*, connected by rods *g''*, the ends of which constitute axles for supporting wheels *h*, so located and arranged as to engage with the tracks *c*, *d*, and *d'*. The molds *g'''* are attached to and supported by the links *g'*. The sprocket-wheel *f'* may be positively driven by any suitable source of power and the wheel *f* be utilized merely as a carrier for its end of the chain *g*.

In Fig. 3 of the drawings we have shown a modification in which the return track *d d'* is provided with a depressed portion *e'* in lieu of the gap *e*. (Shown in Figs. 1 and 2.) The depression *e'* is to all intents and purposes a gap, and the function is the same as if the depressed portion were actually removed. The term "gap" as hereinafter employed in the specification and claims is intended to cover and include both forms of construction above specified.

Metal is supplied to the molds from a ladle or from any other suitable source or receptacle, and the charged molds are moved successively through the cooling liquid in the tank *b*, up the incline beyond the tank, at the end of which they are inverted, and thus unloaded, and thence along the track *d'*, over the gap *e* or the gap *e'*, as the case may be, and along the track *d* to the charging end of the apparatus.

The chain will be made of such length that its maximum degree of contraction will not cause an undue tensile strain upon the chain-links. On the other hand, buckling of the chain when it is elongated by reason of subjection to high temperatures is prevented by the gap or depression in the return track, since the chain may sag at this point sufficiently to take up whatever slack it may have.

The wide range of temperature to which the endless chains of metal-casting apparatus are subjected imposes conditions that cannot be satisfactorily met by the chain-adjusting means heretofore employed. We have found by practical and exhaustive tests, however, that the means constituting our present invention fully meets the requirements and is eminently satisfactory.

We desire it to be understood that our invention is not limited to use in connection with metal-casting mechanism or to details of construction beyond what are specified in the claims.

We claim as our invention—

1. The combination with sprocket-wheels and a frame having bearings therefor at or near its ends, of a chain passing around said sprocket-wheels and provided with wheels or rollers and upper and lower tracks for said wheels or rollers, the latter of which tracks has a gap to permit expansion and contraction of the chain, said chain being free to move into and out of said gap as it expands and contracts.

2. The combination with an endless chain provided with receptacles and bearing-rollers, of means for driving said chain, an uninterrupted outgoing track for said rollers and a return track therefor having a gap for permitting expansion and contraction of the chain, said chain being free to move into and out of said gap as it expands and contracts.

3. The combination with a chain and driving-wheels therefor, of wheels or rollers on said chain, upper and lower supporting and guide tracks for said wheels or rollers, the

lower track having means for permitting expansion and contraction of the chain.

4. In conveying mechanism, the combination with a suitable frame, of an endless chain provided with receptacles and supporting-wheels, and outgoing and return tracks for said wheels, the latter having a gap to permit expansion and contraction of the chain, said chain being free to move into and out of said gap as it expands and contracts.

5. In conveying mechanism, the combination with an endless chain provided with receptacles and with wheels or rollers, of means for driving said chain and upper and lower tracks for said wheels or rollers, each of which comprises an approximately-horizontal portion and an inclined portion and one of which is provided with means for permitting expansion and contraction of the chain.

In testimony whereof we, the said ALFRED M. ACKLIN and WILLIAM J. PATTERSON, have hereunto set our hands.

ALFRED M. ACKLIN.
WILLIAM J. PATTERSON.

Witnesses:

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