W. S. AMIDON.

INTERLOCKING ENDLESS CHAIN CORRUGATING MECHANISM.

APPLICATION FILED SEPT. 11, 1916.

1,293,295. Patented Feb. 4, 1919.

Fig. 2.

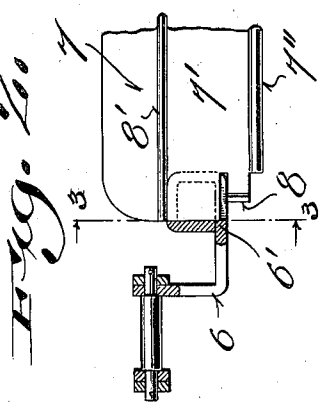


Fig. 3.

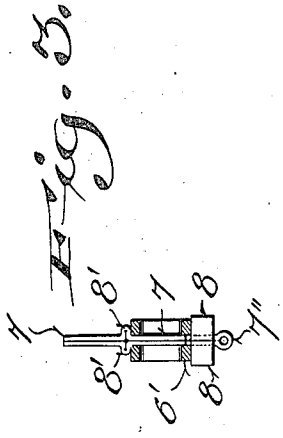
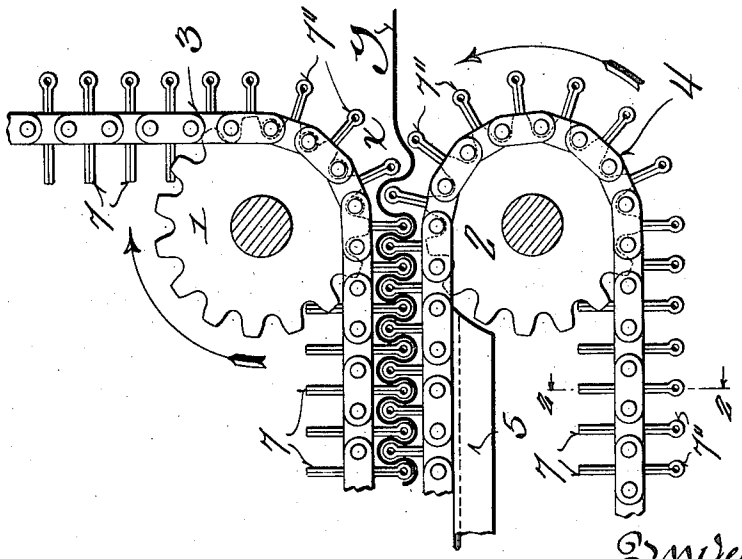


Fig. 1.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM S. AMIDON, OF MILWAUKEE, WISCONSIN.

INTERLOCKING-ENDLESS-CHAIN CORRUGATING MECHANISM.

1,293,295. Specification of Letters Patent. Patented Feb. 4, 1919.

Application filed September 11, 1916. Serial No. 119,427.

To all whom it may concern:

Be it known that I, WILLIAM S. AMIDON, a citizen of the United States, and resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Interlocking-Endless-Chain Corrugating Mechanism; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention has for its object to provide a simple, durable and effective means for forming corrugated sheets especially from fiber board or the like. With this in view the invention contemplates the employment of synchronously driven interlocking endless chains having companion parallel stretches forming mold throats, one set of the sustaining sheaves of the chains being adapted to form a feed mouth to the throat whereby the sheets of material are progressively formed into the desired corrugations.

I am aware of the fact that various types of chains have been employed for corrugating paper board or the like, such, for instance, as is disclosed in the patent to G. Thiebaut, No. 990080, issued April 18, 1911. Chains of this general type having abrupt projections thereon are impractical for the use to which I especially desire to apply my structure, that is in the corrugation of wood veneer of the ordinary standard type. This veneer is extremely delicate to handle in forming corrugations due to its peculiar nature and the essential feature therefore in my invention is to provide the endless chains with spurs of a peculiar nature whereby the board is not subjected to a breaking strain when subjected to a corrugating operation. In order to effect the desired results the chains are provided with interlocking spurs or strips, the neck portions of which spurs terminate with enlarged curved heads. The heads of the spurs of companion parallel stretches of the chains are thus interlockingly meshed to form the desired corrugation and as the chain stretches slowly travel from the feed end to the discharge end the corrugation which has been effected is held in the desired shape by the spurs a sufficient time to permit the corrugations to firmly set.

With the above objects in view the invention consists in certain peculiarities of construction as hereinafter set forth with reference to the accompanying drawings and subsequently claimed.

In the drawings—

Figure 1 represents a fragmentary sectional elevation of a portion of a corrugating machine embodying the features of my invention;

Fig. 2, a detailed cross-section through a portion of one of the chains illustrating in detail the construction of one of the molding spurs, and Fig. 3, a detailed cross-section through the same, the sections being indicated respectively by lines 2—2 and 3—3 of Figs. 1 and 2.

Referring by characters to the drawings, 1 represents an upper toothed sheave and 2 a lower toothed sheave, each of the same being mounted upon a suitable shaft, it being understood that these shafts carry the sheaves in companion pairs suitably spaced apart. An endless companion pair of chains 3 of any standard type, embodying a series of links, are mounted upon the upper set of sheaves and a corresponding pair of chains 4 are mounted upon the lower set of sheaves 2, said lower chain being suitably supported upon a track 5.

As shown in the exemplification of my invention, with especial reference to Figs. 2 and 3, each chain link is provided with a foot 6 terminating in a socket 6′. The companion sets of the foot sockets are adapted to receive the ends of metallic strips 7, which strips constitute spurs. These spurs are held in place by oppositely extended wing portions 8 that engage the under side of the sockets 6′ and longitudinal ribs 8′ that are formed in the body of the strips 7, the said ribs being arranged to engage the upper faces of the sockets. Thus the spurs are rigidly fastened to the chain links and owing to the rib formation mentioned, rigidity is added to them with respect to their length. The spurs are formed with flat neck portions 7′ which terminate in curved enlarged heads 7″ as shown, it being manifest that in practice the spurs are formed from sheet metal folded upon itself to add rigidity to the structure, while at the same time the weight of the chains, by this construction, is reduced to a minimum.

The portion of the corrugating machine shown in Fig. 1 is what might be termed the feed end or mouth of the machine and it is understood that the discharge end is simi-

larly arranged, the only variation between the support of the upper and lower sets of chains being that the upper set is trained upon four rollers, not shown, while the lower set is trained upon two only.

Referring to the mouth end of the machine, as indicated by x, the sheet y, of material to be corrugated, is fed therein by any suitable means and as the spurs travel about the sheaves, they assume a radial position with respect to their axes. Hence when they first operate upon the material, said material receives only a gradual draw and as the spurs assume their parallel interlocking position the corrugation is completed and held in this completed state until such time as the material becomes firmly set. Attention is directed to the fact that the rounded heads and elongated necks of the spurs in parallel interlocking positions form oppositely disposed corrugations which are to some extent in alternating keyhole formation and the rounded or curved heads fix the material absolutely in its proper corrugated form without liability of breakage. It is also manifest that, although the parallel working stretches of the chains effect an interlocking engagement with the spurs, said spurs will open up as they revolve over the discharge end sheaves to free themselves from such interlocked positions and the material will be thus discharged from the throat.

I claim:

1. A pair of synchronously driven endless chains for the purpose specified having parallel stretches forming mold throats and comprising a series of links provided with rigid spurs extending therefrom having neck portions extending from the links and terminating with enlarged heads, the companion sets of spur heads being adapted to lie in different parallel planes within the interstices formed by the necks, whereby the intermeshed spurs are interlocked during their travel upon the working stretch of said chains to form the material into a series of corrugations of key hole slot formation, and a supporting track for the lower of said chains substantially as described.

2. In a machine of the type described, the combination with upper and lower pairs of sprocket sheaves, of endless chains trained thereabout, brackets carried by and extending inwardly from the chains and provided with sockets, and spur strips having their end portions secured in companion pairs of sockets.

3. In a machine of the type described, the combination with upper and lower pairs of sprocket sheaves, of endless chains trained thereabout, brackets carried by and extending inwardly from the chains and provided with socket slots at their ends, spur strips each formed of a sheet of metal bent longitudinally upon itself and having its end portions engaged in said socket slots, longitudinal reinforcing ribs bent from the sides of the plate and engaging the brackets to limit movement of the plate therein in one direction, and spurs bent laterally from the plate and engaging opposite portions of the bracket.

4. In a machine of the type described, the combination with drums, of endless chains traveling thereon and comprising a series of pivotally connected links, brackets carried by said links, and spurs carried by said brackets, said spurs each being formed by folding upon itself a metallic sheet.

5. In a machine of the type described, the combination with drums, of endless chains traveling thereon and comprising a series of pivotally connected links, brackets carried by said links, spurs carried by said brackets, each spur being formed by folding upon itself a metallic sheet, an enlargement formed of the bend of each spur, and reinforcing ribs intermediate the ends of said spurs.

6. In a machine of the type described, the combination with drums, of endless chains traveling thereon and comprising a series of pivotally connected links, brackets carried by said links, spurs carried by said brackets, each spur being formed by folding upon itself a metallic sheet, an enlargement formed of the bend of each spur, and reinforcing ribs intermediate the ends of said spurs, said reinforcing ribs being formed by folding the sides of the spurs upon themselves.

In testimony that I claim the foregoing I have hereunto set my hand at Milwaukee, in the county of Milwaukee and State of Wisconsin.

WILLIAM S. AMIDON.