No. 652,280. Patented June 26, 1900.

G. LESKE.

MACHINE FOR CORRUGATING PAPER.

(Application filed May 19, 1899.)

(No Model.)

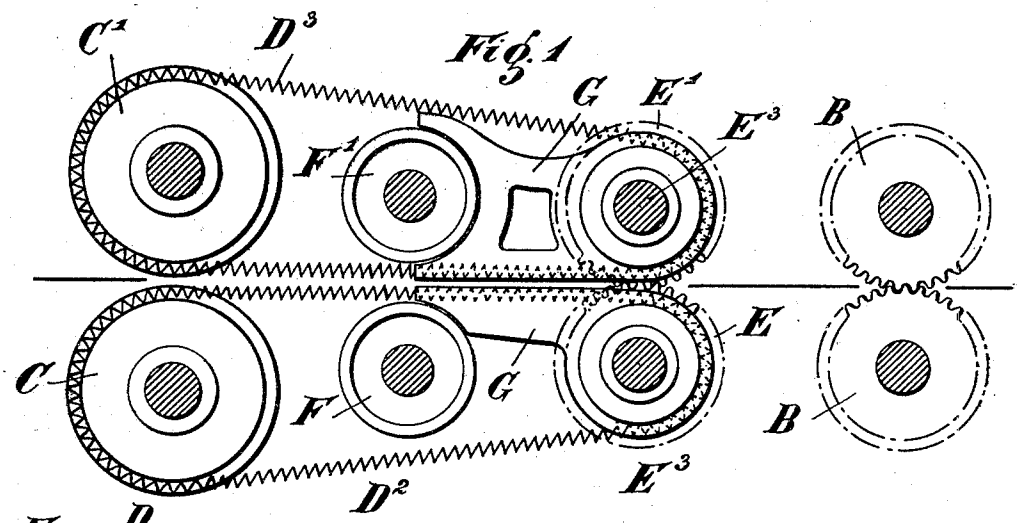


Fig. 1

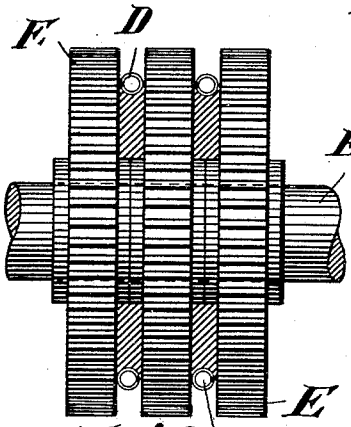


Fig. 3

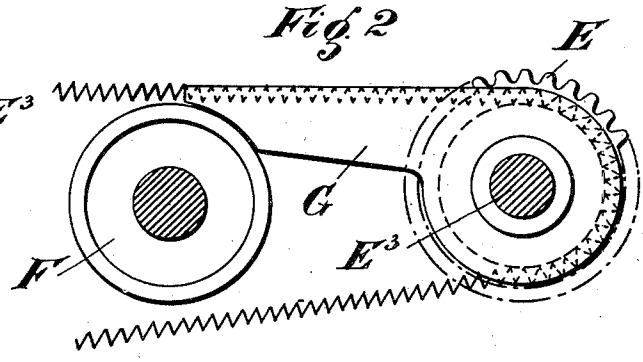


Fig. 2

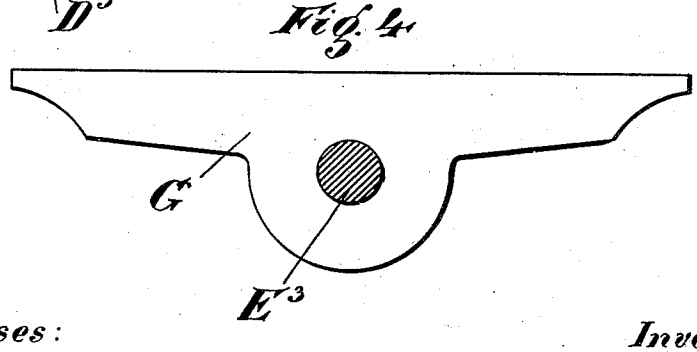


Fig. 4

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UNITED STATES PATENT OFFICE.

GUSTAV LESKE, OF BERLIN, GERMANY.

MACHINE FOR CORRUGATING PAPER.

SPECIFICATION forming part of Letters Patent No. 652,280, dated June 26, 1900.

Application filed May 19, 1899. Serial No. 717,413. (No model.)

To all whom it may concern:

Be it known that I, GUSTAV LESKE, manufacturer, a subject of the King of Prussia, German Emperor, residing at No. 70 Blumenstrasse, Berlin, in the Kingdom of Prussia, German Empire, have invented certain new and useful Improvements in Machinery for Corrugating Paper, of which the following is a specification.

This invention relates to machinery for effecting the corrugating of paper for the production of packing material therefrom such as is now commonly used; and my improvements in such machinery relate to certain combinations and arrangements of parts as are described hereinafter.

In order to make my invention more clear, I refer to the accompanying drawings, in which similar letters denote similar parts throughout the several views, and in which—

Figure 1 is a longitudinal vertical cross-section of the machine. Fig. 2 shows some parts of Fig. 1 drawn on a larger scale. Fig. 3 is an end elevation of the machine, partly in section. Fig. 4 is a detail which will duly be referred to hereinafter.

There are in my improved machine four pairs of rollers—*i. e.*, the pairs B B, E E′, F F′, and C C′—through which the paper is passed from the right to the left in being turned from the flat sheets into the corrugated paper to be produced. The paper is corrugated transversely of the web or sheet. The rollers E E′ and C C′, the former of which are corrugating-rollers, as are also the rollers B B, are composed of separate pieces which are placed side by side upon axles and are connected with each other so as to form rollers with circumferential grooves. The other rollers B B and F F′ consist each of one piece and have no such grooves, and of these rollers the last-mentioned ones, F F′, have not even the longitudinal ribs and grooves of the rollers B B, but are perfectly smooth. The grooves of the roller E are connected with those of the roller C by endless helixes D^2, and the grooves of the roller E′ are connected with those of the roller C′ by endless helixes D^3. The windings of the two sets of helixes are pretty much drawn asunder, as represented in Figs. 1 and 2, and the adjacent parts of the helixes serve for transporting the corrugated paper from the rollers E E′ to the rollers C C′ as well as for maintaining the proper relative position of the corrugations, or, in other words, the proper width and height or configuration of the same. To prevent the respective parts of the spirals D^3 from being bent downward and to prevent the adjacent parts of the spirals D^2 from being bent upward, I have provided stationary stays G, that are located upon the shafts E^3 of the rollers E E′ or between the cog-wheel-like parts of which the rollers E E′ are composed.

In the form of construction shown in Figs. 1 and 2 the stays extend from the corrugating-roller E to the roller F and from the corrugating-roller E′ to the smooth roller F′; but instead of letting the stays extend only in the direction to the rear of the machine I may let them extend also in the direction to the front of the machine—*i. e.*, to the rollers B, which in such a case are provided with grooves for the reception of the respective ends of said stays. I have represented such a stay in Fig. 4, and the object of this form of construction of the stays is to form a kind of grate or bridge for leading or guiding the paper from the corrugating-rollers B to the corrugating-rollers E E′, between which the second pressure is effected. When the paper has been acted upon first by the corrugating-rollers B B and then by the corrugating-rollers E E′, it is subjected to a third pressure between the rollers F F′ by the mediation of the respective parts of the helixes D^2 D^3 and to a direct fourth and final pressure between the rollers C C′, whence the paper comes forth in the corrugated state desired.

The various rollers before described are of course located in a suitable frame and in suitable bearings, and said frame may be provided with means for adjusting said bearings or the rollers and for leading the flat sheets of paper to the first pair of corrugating-rollers B B and for leading the corrugated paper away from the rollers C C′. These means may be formed by a kind of grate of suitable position, and there may finally be cog-wheels inserted between the various rollers, so as to transmit the rotary movement of one roller to the other ones.

Having now described the nature of my invention, what I desire to secure by Letters Patent of the United States is—

In a machine for corrugating paper, the combination with two pairs of corrugating-rollers, of endless helixes supported and moved by said rollers and arranged so as to transport the paper from one pair of rollers to the other, of a third pair of rollers, located between said other two pairs and extending through the spaces between the pairs of helixes belonging to one and the same set, stationary stays extending from the first pair of rollers to said third or medium pair and being held in proper working position by this pair of rollers, substantially as described.

In witness whereof I have hereunto signed my name, this 5th day of May, 1899, in the presence of two subscribing witnesses.

GUSTAV LESKE.

Witnesses:
WOLDEMAR HAUPT,
HENRY HASPER.