March 18, 1930. W. GENEST 1,751,320

SOUND DEADENING PLATE AND METHOD OF MAKING SAME

Filed March 6, 1926

Fig. 1.

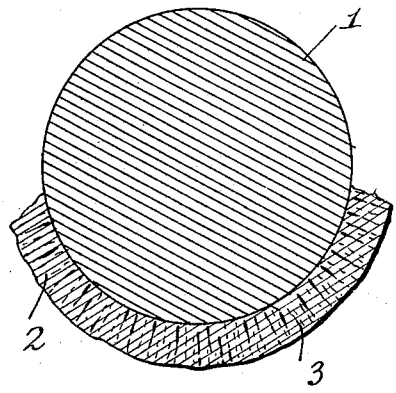


Fig. 2.

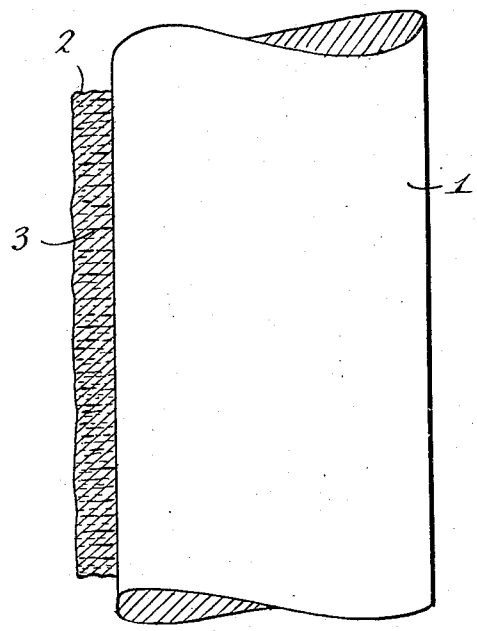


Fig. 3.

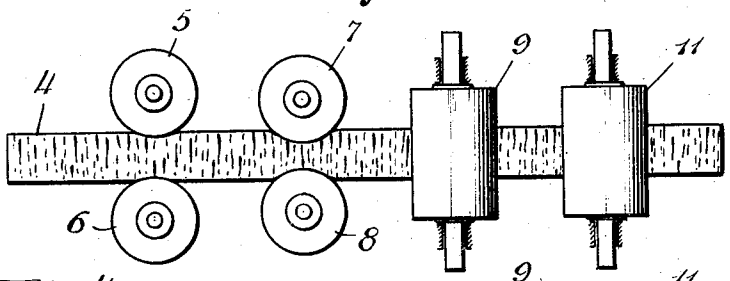
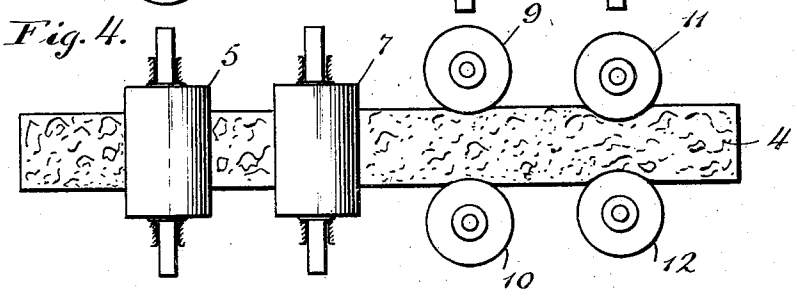


Fig. 4.



INVENTOR
Wernis Genest.
BY Fritz Zuglen
ATTORNEY

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UNITED STATES PATENT OFFICE

WERNER GENEST, OF BERLIN-LICHTERFELDE, GERMANY, ASSIGNOR TO THE KORFUND COMPANY, INC., OF NEW YORK, N. Y., A CORPORATION OF NEW YORK

SOUND-DEADENING PLATE AND METHOD OF MAKING SAME

Application filed March 6, 1926, Serial No. 92,984, and in Germany March 13, 1925.

The subject of the invention is a process employed to regulate the elasticity of plates used under the foundation of machinery of all types for the purpose of preventing or dampening the transmission of noise and vibration. Plates of this kind are made of strips of cork preferably naturally grown cork. This material has a certain elasticity and natural frequency depending upon the grade of the cork. As the ability of the cork plates to isolate against the transmission of noise and vibration depends on the elasticity of the cork in as far as an increase in the elasticity also increases the ability of the cork to isolate, the elasticity of the cork may be increased in accordance with this invention to improve the effect of the cork plates.

In accordance with this invention, the cork strips are subjected to a temporary pressure longitudinally with respect to the direction of the grain of the cork, and laterally with respect to the direction of the grain of the cork preferably before the cork strips have been placed into the cork plates. The rollers can be mounted in such a manner that the axes of the set or sets of rollers which exert pressure longitudinally with respect to the grain of the cork, are at right angles to the axes of the other set or sets of rollers which exert pressure laterally with respect to the direction of the grain of the cork, as will be more fully explained hereinafter. If necessary several sets of rollers in this position can be arranged one behind the other. The rollers of the second and following sets can be placed somewhat closer together than of the first set. It is important that the natural frequency of the isolating material be different from the frequency of the vibration of the machine to be isolated, to avoid harmonic vibrations. If the frequency of the machine's vibrations is the same as the natural frequency of the isolating members which support the machine, then the vibrations of the two will tend to harmonize and those of the isolating member and of the machine will become excessive.

Reference being made to the accompanying diagrammatic drawings,

Figure 1 is a horizontal cross section of a cork tree and Figure 2 is a vertical cross section of a cork tree illustrating the direction of the grain of the cork in the bark of the cork tree.

Figure 3 is a side elevation illustrating a strip of cork passing between sets of rollers used in subjecting the cork to pressure in accordance with the present invention.

Figure 4 is a top plan view of the cork strip and rollers shown in Figure 3.

In Figures 1 and 2, 1 indicates the trunk of the cork tree, 2, the cork bark, and 3, the direction of the grain of the cork which runs at right angles to the trunk of the tree.

In carrying out the present invention, a strip of cork 4 is passed between one or more pairs of opposed rollers 5, 6—7, 8—9, 10—11, 12. The rollers 5, 6 and 7, 8 exert temporary pressure on the cork longitudinally with respect to the direction of the grain of the cork while the rollers 9, 10—11, 12 exert temporary pressure on the cork laterally with respect to the direction of the grain.

The cork strip is first passed between the rollers 5, 6—7, 8, the latter set of rollers being spaced closer than the rollers 5, 6 whereby greater pressure is exerted on the cork strip by the more closely spaced rollers. The cork strip then passes between the rollers 9, 10 and 11, 12, the latter rollers of 11, 12 being likewise spaced closer than the rollers 9, 10, whereby greater lateral pressure is exerted on the cork strip than is exerted by the rollers 9, 10.

While I have shown two sets of rollers exerting pressure longitudinally and laterally on the cork strip with respect to the direction of the grain, it is to be understood that the roller 7, 8 and 11, 12 could be dispensed with or additional sets of rollers could be added without departing from the spirit of my invention.

The rollers 5, 6—7, 8—9, 10—11, 12 may be mounted in adjustable brackets or bearings upon a suitable frame and may be rotated by any well-known form of drive mechanism.

Through the regulation of the pressure of the rollers or the speed with which the cork strips pass through the rollers and of the number of sets of rollers arranged one behind

the other, it is possible to regulate the elasticity of the cork material within wide limits. Through the increased elasticity of the cork strips the ability of the cork plates composed of cork strips to isolate against noise and vibration is greatly increased.

Having thus described the nature of my invention I claim:

1. A sound deadening plate consisting of a number of cork strips each of which is compressed laterally and longitudinally with respect to the direction of the grain of the cork.

2. The method of regulating the elasticity of sound deadening plates which consists in subjecting the respective cork strips thereof to varying lateral and longitudinal pressures with respect to the grain of the cork.

3. The method of manufacturing sound deadening plates wherein a plurality of cork strips are employed to form the plate, which consists in passing each cork strip of the plate between pairs of opposed rolls, the axes of certain of which are disposed at right angles to the others.

4. The method of manufacturing sound deadening plates wherein a plurality of cork strips are employed to form the plate, which consists in applying pressure to each strip both longitudinally and laterally relative to the grain of the cork when said strip is passing between a series of opposed rolls.

In testimony, that I claim the foregoing as my invention I have signed my name.

WERNER GENEST.