

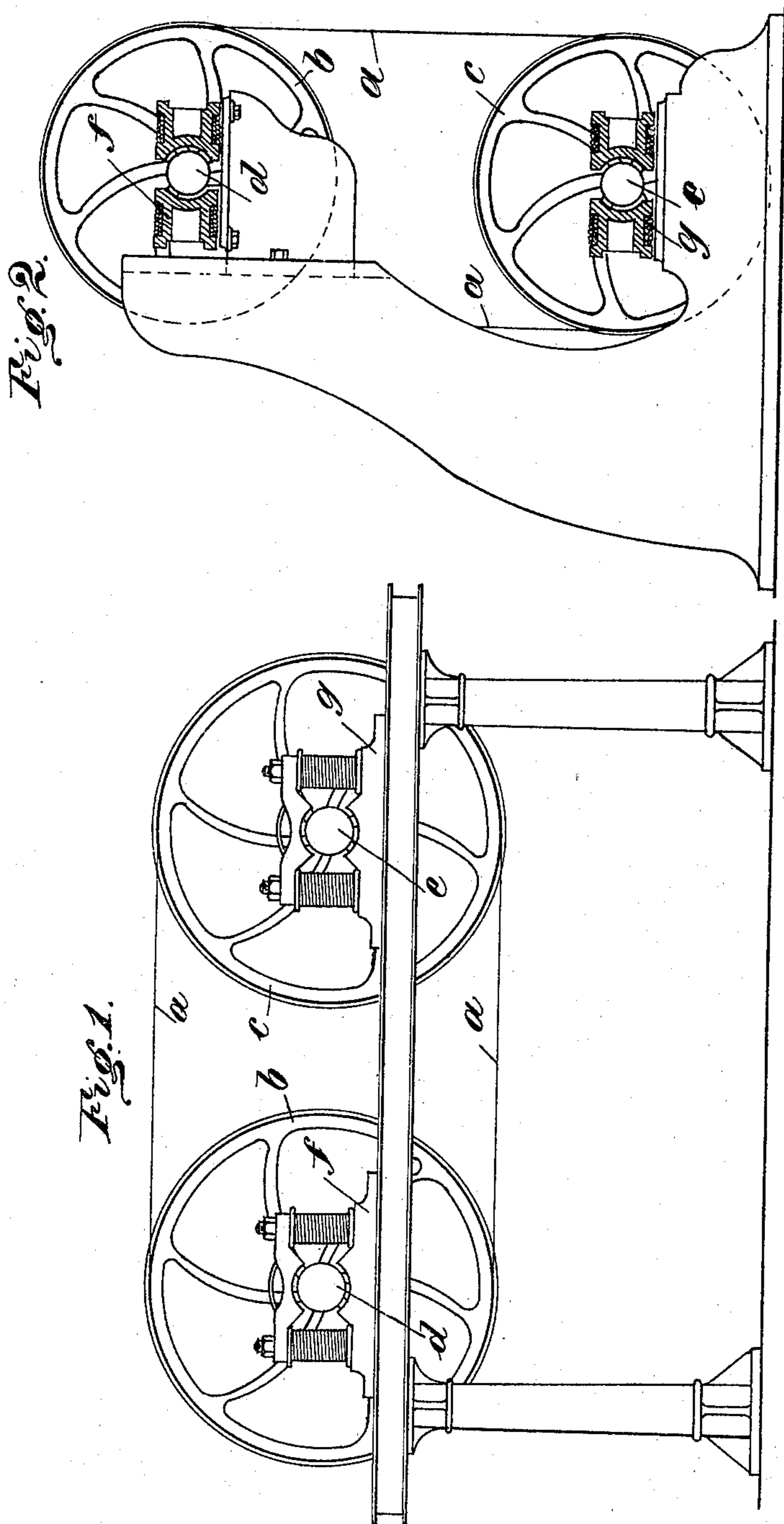
No. 639,402.

Patented Dec. 19, 1899.

T. KIRSCHNER.
RIBBON OR BAND SAWING APPARATUS.

(Application filed Aug. 14, 1899.)

(No Model.)



Witnesses:

Anton Kloetzer
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UNITED STATES PATENT OFFICE.

THEODOR KIRSCHNER, OF LUDWIGSBURG, GERMANY.

RIBBON OR BAND SAWING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 639,402, dated December 19, 1899.

Application filed August 14, 1899. Serial No. 727,167. (No model.)

To all whom it may concern:

Be it known that I, THEODOR KIRSCHNER, architect, residing at Ludwigsburg, in the Kingdom of Württemberg, Germany, have invented new and useful Improvements in Ribbon or Band Sawing Apparatus, (for which I applied for a patent in Germany on January 14, 1899, No. K 17,546 I/38^a,) of which the following is a specification.

My invention relates to improvements in ribbon or band sawing apparatus.

The object of my invention is to provide means for obviating the breakage of the ribbon or band saw-blade, which is of common occurrence in the machines hitherto known and which is a serious disadvantage in their operation, such breakage being caused principally by the strain on the saw-blade when the latter is driven at a high speed or when the driving commences suddenly. In such old constructions it has been usual to drive one of the saw-pulleys in a positive manner and then allow the saw-blade to drive the other pulley.

My invention consists in driving each saw-pulley by a separate or individual driving mechanism, whereby all danger of breakage of the saw-blade from sudden starting or from driving at a high speed is avoided.

Furthermore, my invention consists in driving each saw-pulley by a separate electric motor. By this means not only is the operating mechanism simplified, but I also attain the further advantage that the speed of driving may be readily adjusted as may be desired, and dangers of sudden changes in the speed are avoided, because the electric motors will tend to resist such sudden changes in speed to a certain extent sufficient to protect the saw.

In the accompanying drawings, Figure 1 is a side view of a machine in which the ribbon saw-blade runs horizontally over the pulleys. Fig. 2 is a similar view of a machine in which the ribbon saw-blade runs vertically over the pulleys.

Like letters refer to similar parts in both constructions.

a is the ribbon saw-blade, and *b* and *c* are the two pulleys, which are fixed on their shafts. On each shaft is fixed an armature *d* and *e* of an electromotor, respectively, the

corresponding field-magnets *f* and *g* of which motors are fixed in suitable manner on the frame of the machine. When now the electric current of these motors is closed, each electromotor drives its pulley *b* and *c*, respectively, so that the ribbon saw-blade is acted upon by both pulleys. In this manner each half of the ribbon saw-blade is driven by an independent power, and any additional tension of the blade is avoided, such as is experienced in the machines in which only one pulley is driven by engine-power, while the other one is driven by the ribbon saw-blade.

I am aware that there are ribbon-saw machines in existence in which both pulleys are driven by belts; but in such machines it is impossible to attain an equal velocity of both pulleys, and special means become necessary for preventing the ribbon-blade from slipping and from falling off. With my invention I avoid these difficulties and attain the advantage that the shafts carrying the pulleys can be displaced very easily when it becomes necessary to stretch the ribbon-saw or to set one shaft at an angle with the other one. The electromotors employed according to my invention can act on their pulleys either direct or by means of any gearing, and it is preferred to arrange the motors so that they may be adjusted together with their pulleys.

Now what I claim, and desire to secure by Letters Patent, is the following:

1. In a ribbon or band sawing apparatus the combination, with two saw-pulleys, and a ribbon or band saw-blade driven by the said pulleys, of two separate electromotors each arranged to drive one of the saw-pulleys.

2. In a ribbon or band sawing apparatus the combination with two adjustable saw-pulleys, and a ribbon or band saw-blade driven by the pulleys, of two independent electric motors, each arranged to drive its respective saw-pulley and adjustable therewith.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

THEODOR KIRSCHNER.

Witnesses:

WILHELM WENDER,
JULIUS KNORPP.