

(No Model.)

E. W. SAIBERLICH.
KNIFE CYLINDER.

No. 577,069.

Patented Feb. 16, 1897.

Fig. 1.

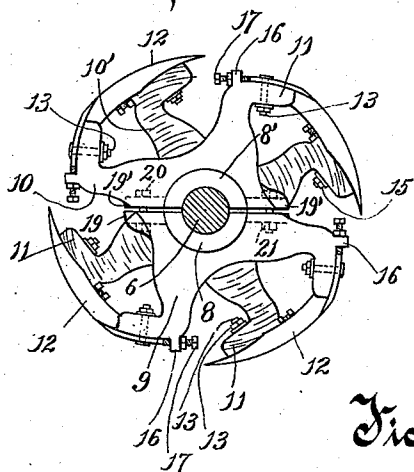


Fig. 2.

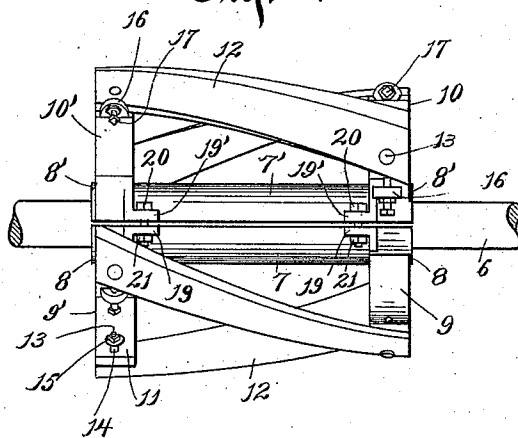


Fig. 3.

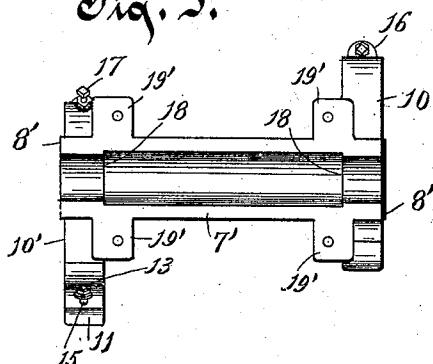
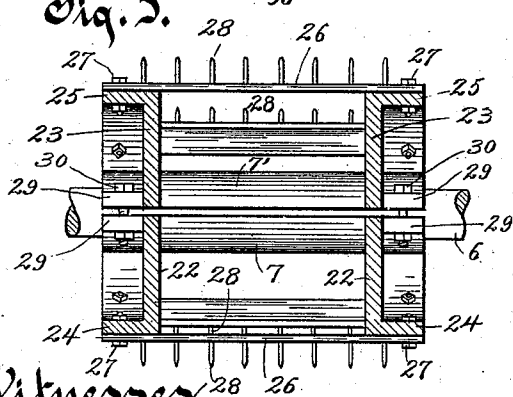


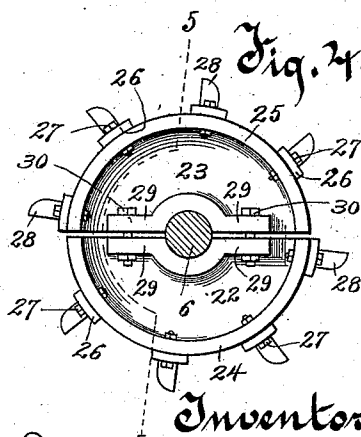
Fig. 5.



Witnesses.

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Fig. 4.



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UNITED STATES PATENT OFFICE.

EDWARD W. SAIBERLICH, OF APPLETON, WISCONSIN.

KNIFE-CYLINDER.

SPECIFICATION forming part of Letters Patent No. 577,069, dated February 16, 1897.

Application filed June 13, 1896. Serial No. 595,438. (No model.)

To all whom it may concern:

Be it known that I, EDWARD W. SAIBERLICH, of Appleton, in the county of Outagamie and State of Wisconsin, have invented a new and useful Improvement in Knife-Cylinders, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

My invention has relation to improvements in knife-cylinders, and is particularly adapted for use in connection with feed-cutters and analogous machines.

The object of the invention is to provide a sectional knife-carrying cylinder which is clamped to the shaft and is held fast thereto, so as to revolve therewith under the ordinary cutting strain to which knives are subjected; but in case any hard or unyielding substance accidentally runs in between the knives the cylinder is adapted to slip on the shaft until the momentum of the fly-wheel gradually decreases, so as to bring said fly-wheel and its shaft to rest.

With the above primary object in view the invention consists of the devices and parts or their equivalents, as hereinafter more fully set forth.

In the accompanying drawings, Figure 1 is an end view of my improved knife-cylinder applied to a shaft. Fig. 2 is a front elevation of Fig. 1. Fig. 3 is a detail view of one of the half-sections of the cylinder. Fig. 4 is an end view of a modified form, and Fig. 5 is a section on the line 5 5 of Fig. 4.

Referring to the drawings, the numeral 6 indicates a shaft of a feed-cutter or similar machine, said shaft being driven by any suitable means and provided with the usual fly-wheel. (Not shown.) The improved knife-cylinder is adapted to be clamped to this shaft, and said cylinder is composed of two similar half-sections, each consisting of a half-circular elongated bearing 7 7', respectively, adjusted together longitudinally about the shaft and provided at opposite ends with the end enlargements 8 8', respectively, from which enlargements a series of legs or projections radiate. The legs on one of the end enlargements of section 7 are indicated by the numeral 9 and the legs of the opposite end piece

by the numeral 9', while the legs of the opposite end enlargements of the other half-section 7' are indicated by the numerals 10 10', respectively.

When the two sections of the cylinder are adjusted to the shaft, as shown in Figs. 1 and 2, it will be noticed that the half-circular bearings form a complete circular bearing about the shaft, while the end pieces of the respective sections fit together and register. The legs 9 9' and 10 10' are preferably not in direct alinement, (see Figs. 1 and 2,) so that when the opposite ends of the knives are connected thereto said knives will present more or less of a spiral shape. Each leg is formed at its outer end with a foot 11, extending at right angles thereto. Upon these feet the ends of the knives 12 are placed, said knives being held thereto by means of bolts 13, which pass through elongated slots 14 in the feet, said bolts being provided upon their ends with nuts 15, by which they may be tightened. At the heel of each foot is provided a projecting lug 16, through which a set-screw 17 passes and engages the back edge of the knife-blade. This screw permits of the proper adjustment of the blade being obtained, such being accomplished merely by loosening the nuts 15 and then turning the set-screws so as to force the blades forwardly or rearwardly, as desired.

The half-bearing of each section is advisably provided with interior shoulders 18 18, against which corresponding shoulders on the shaft (not shown) fit and prevent longitudinal movement of said shaft.

In order to securely clamp the two half-sections on the shaft against movement under ordinary strain, I provide the ends of the respective half-sections with inwardly-extending registering lugs 19 19', respectively, through which screw-bolts 20 20 pass, said bolts provided upon their threaded ends with nuts 21 21. By tightening up these nuts it is obvious that the two sections may be drawn firmly together.

While I have herein shown and described the legs at the opposite ends of the cylinder as disposed out of alinement, so as to bring the blades on a spiral, yet I do not wish to be

understood as restricting myself thereto, inasmuch as, if preferred, said legs may be arranged directly opposite each other longitudinally, so that the blades will be disposed in a straight line.

The two sections when clamped to the shaft in the manner described will be held thereto with sufficient firmness to withstand the ordinary strain resulting from the cutting of the feed. If, however, any particularly hard substance, such as metal, should get in between the knives, the cylinder will simply slip around on the shaft until the momentum of the fly-wheel ceases.

Another advantage possessed by my construction resides in the fact that the two ends of the cylinder are connected by the elongated half-bearings 7 7', whereby the cylinder-knives are retained in a fixed position. In structures wherein separate cylinder-heads are provided, keyed or otherwise secured to the shaft, in the event of one head becoming loose all support for that end of the knives is lost. Furthermore, it will be seen that my improved knife-cylinder is very readily removed from the shaft and affixed thereto. Its adaptability for ready removal permits a cylinder-head with a different arrangement of knives to be readily substituted.

In Figs. 4 and 5 I show a modified form of the cylinder-head, wherein the half-bearing 7 is provided with the solid end pieces 22 22 and the half-section 7' with similar registering solid end pieces 23 23. These end pieces are provided, respectively, with the outwardly-extending partly-circular registering flanges 24 24 and 25 25. Transverse bars 26 extend across from one flange to the other and are secured thereto by means of bolts 27. These cross-pieces are provided with projecting knives or shredding-fingers 28. In order to clamp the cylinder illustrated in Figs. 4 and 5 to the shaft 6, the end pieces are provided with the projecting registering lugs 29

29, through which the securing-bolts 30 are passed.

What I claim as my invention is—

1. In a knife-cylinder, the combination, with a shaft, of two registering elongated partly-circular bearings, having projections radiating from the registering ends thereof, blades connecting said projections, and means for clamping the half-sections to the shaft, whereby said sections revolve with the shaft under ordinary strain, but slip on said shaft under abnormal strain.

2. In a knife-cylinder, the combination, with a shaft, of two registering elongated partly-circular bearings having projections radiating from the registering ends thereof, said projections provided at their outer ends with feet having elongated slots therethrough, said feet provided at their heels with lugs, blades connecting the feet of opposite projections, bolts passing through said blades and through the elongated slots of the feet, nuts on the threaded ends of said bolts, set-screws passing through the lugs and bearing against the back edges of the blade, and means for clamping the half-sections to the shaft, whereby said sections revolve with the shaft under ordinary strain, but slip on said shaft under abnormal strain.

3. In a knife-cylinder, the combination, with a shaft, of two registering elongated partly-circular bearings provided with registering end enlargements, projections radiating from said end enlargements, registering lugs also extending from the respective end enlargements, clamping-bolts passing through said lugs, and blades connecting the projections.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD W. SAIBERLICH.

Witnesses:

T. H. RYAN,

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