

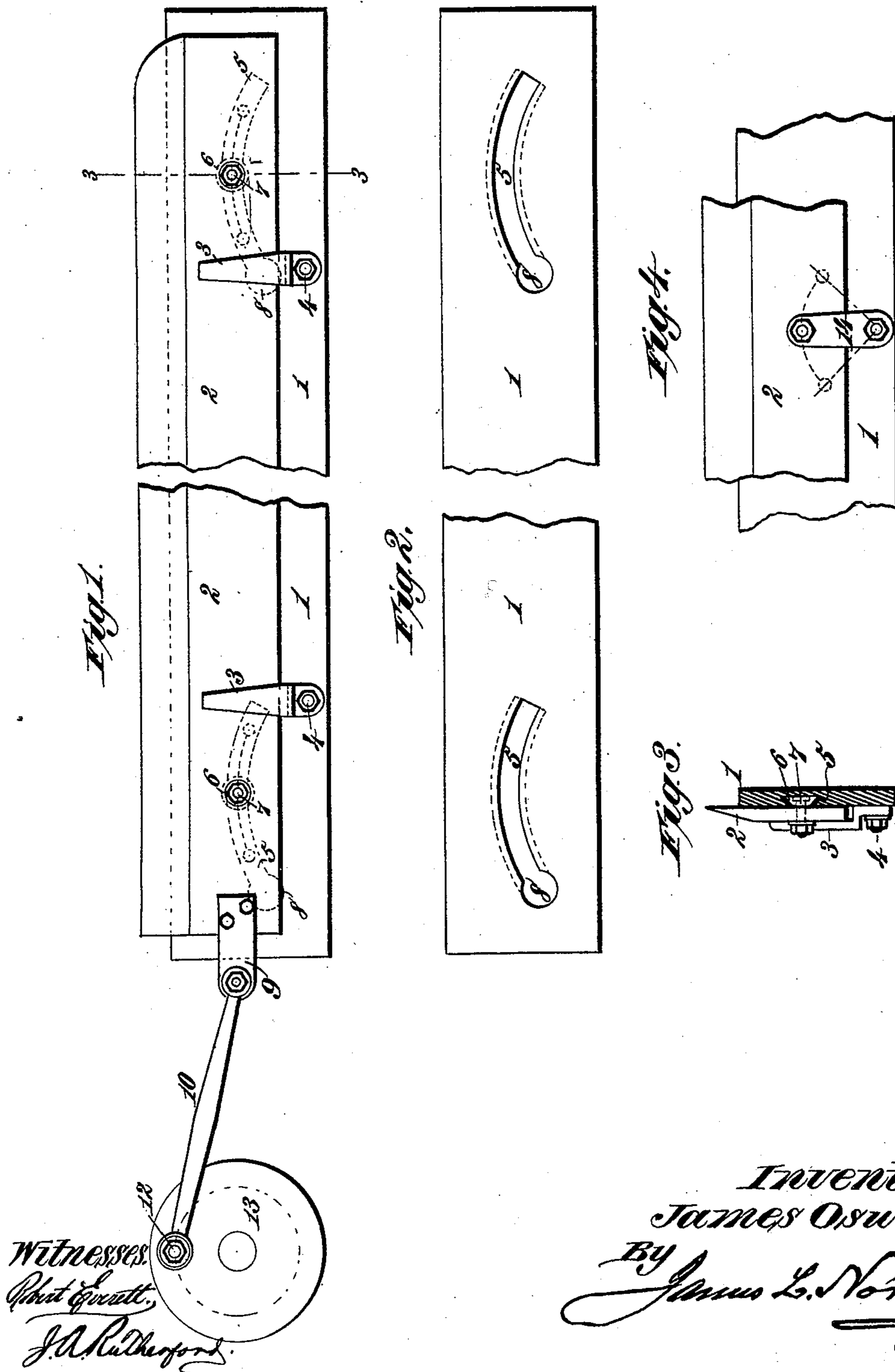
(No Model.)

J. OSWALD.

PILE CUTTING APPARATUS FOR DOUBLE PILE FABRIC LOOMS.

No. 405,114.

Patented June 11, 1889.



# UNITED STATES PATENT OFFICE.

JAMES OSWALD, OF HARPURHEY, NEAR MANCHESTER, COUNTY OF LANCASTER, ENGLAND.

## PILE-CUTTING APPARATUS FOR DOUBLE-PILE-FABRIC LOOMS.

SPECIFICATION forming part of Letters Patent No. 405,114, dated June 11, 1889.

Application filed June 18, 1888. Serial No. 277,487. (No model.) Patented in England May 19, 1887, No. 7,301, and in Germany January 6, 1888, No. 44,569.

*To all whom it may concern:*

Be it known that I, JAMES OSWALD, a subject of the Queen of Great Britain, residing at Harpurhey, near Manchester, in the county of Lancaster, England, have invented certain new and useful Improvements in Pile-Cutting Apparatus for Double-Pile-Fabric Looms, (for which I have obtained a patent in Great Britain, No. 7,301, dated May 19, 1887, and in Germany, No. 44,569, dated January 6, 1888,) of which the following is a specification.

My invention relates to that class of looms in which double piled fabrics are woven and then cut apart, and the purpose thereof is to provide a novel cutting mechanism for cutting the pile in the process of manufacture of plushes, imitation sealskin, and other similar fabrics. It is my purpose to render the action of the loom more steady and easier than heretofore and to enable the knife to cut the pile exactly in the center and to render the knife operative in both the directions of reciprocation.

The invention consists to this end in the novel features of construction and new combination of parts hereinafter fully set forth, and definitely pointed out in the claims which follow this specification.

Referring to the accompanying drawings, Figure 1 is a plan view of the cutting-blade and its actuating devices. Fig. 2 is a similar view of the knife plate or support. Fig. 3 is a transverse section on the line 3 3 of Fig. 1. Fig. 4 is a partial plan view showing a modified construction.

In the said drawings, the reference-numeral 1 denotes the knife plate or support extending across the loom from side to side and forming a platform having rigid bearings. Upon this plate is mounted the knife 2, consisting of a flat blade nearly co-extensive in length with its support 1, upon which it is held by the brackets 3, connected to the plate by screws 4, and separated from each other by such an interval as to give the proper support and guidance to the knife.

In the knife-support 1, at suitable points, are formed the curved channels or slots 5, cut in the surface of said support, but not through

the same. These slots are dovetailed in cross-section, as shown in Fig. 3, to receive similarly-formed friction-rolls 6, mounted upon studs 7, which pass through the knife-blade, enlarged openings 8 being formed at one end of the curved slots 5 to admit the friction-rolls.

Upon one end of the knife-blade is mounted a bracket 9, to which is connected a pitman 10, driven by a wrist-pin 12 on a gear or pulley 13, the throw of said wrist-pin being such as to vibrate the knife in the line of the curved slots, but not sufficient to bring the friction-roll 6 at each reciprocation to the enlarged openings 8 at the ends of the slots. I may substitute for the curved slots 5 and the friction-rolls 6 a pair of arms 14, pivotally mounted at one end upon the knife plate or support 1 and connected at the other end to the knife-blade, as in Fig. 4.

By the construction set forth the knife will have a curvilinear reciprocating movement in the direction of its length, said movement corresponding to the curve of the slots 5 or to the arc described by the arms 14. The knife is mounted in front of the double fabric as it comes from the loom and extends horizontally across the latter and beyond each side or selvage of the fabric produced in the loom.

By mounting the knife in front of the double fabric as it comes from the loom, so that the knife extends horizontally across the latter, as mentioned, I am enabled by the scythe-like cutting action to cut the pile entirely across exactly at the central line between the fabrics.

My invention secures a degree of certainty in action, with complete immunity from breakage, which has not been hitherto attainable, and enables the loom to be driven at an accelerated speed; and my improvements are applicable to any form of looms for weaving piled fabrics, whether the same are of the pattern now in use or of any improved construction hereinafter to be introduced.

Having thus described my invention, what I claim is—

1. The combination of a rigid support extending from side to side of the loom and hav-

ing curved dovetailed slots formed in its face, with an enlarged opening at one end of each of said slots, a flat straight-edged knife reciprocating on the rigid support and provided  
5 on its back face with studs, on which are journaled friction-rolls that engage the curved slots in the support, brackets for holding the knife to its support, and means for reciprocating the knife, substantially as described.  
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2. The combination, with a rigid supporting-plate having curved dovetailed slots cut in but not through its face and having an enlarged opening at one end of each of said slots, of a

knife having friction-rolls journaled on studs 15 projecting from the back face of said knife and running in said slots, brackets mounted on the supporting-plate and holding the knife closely against the same, a pitman for reciprocating said knife in the direction of its 20 length, and a crank for operating the pitman, substantially as described.

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

JAMES OSWALD.

Witnesses:

JOHN G. WILSON,  
WALTER GUNN.