

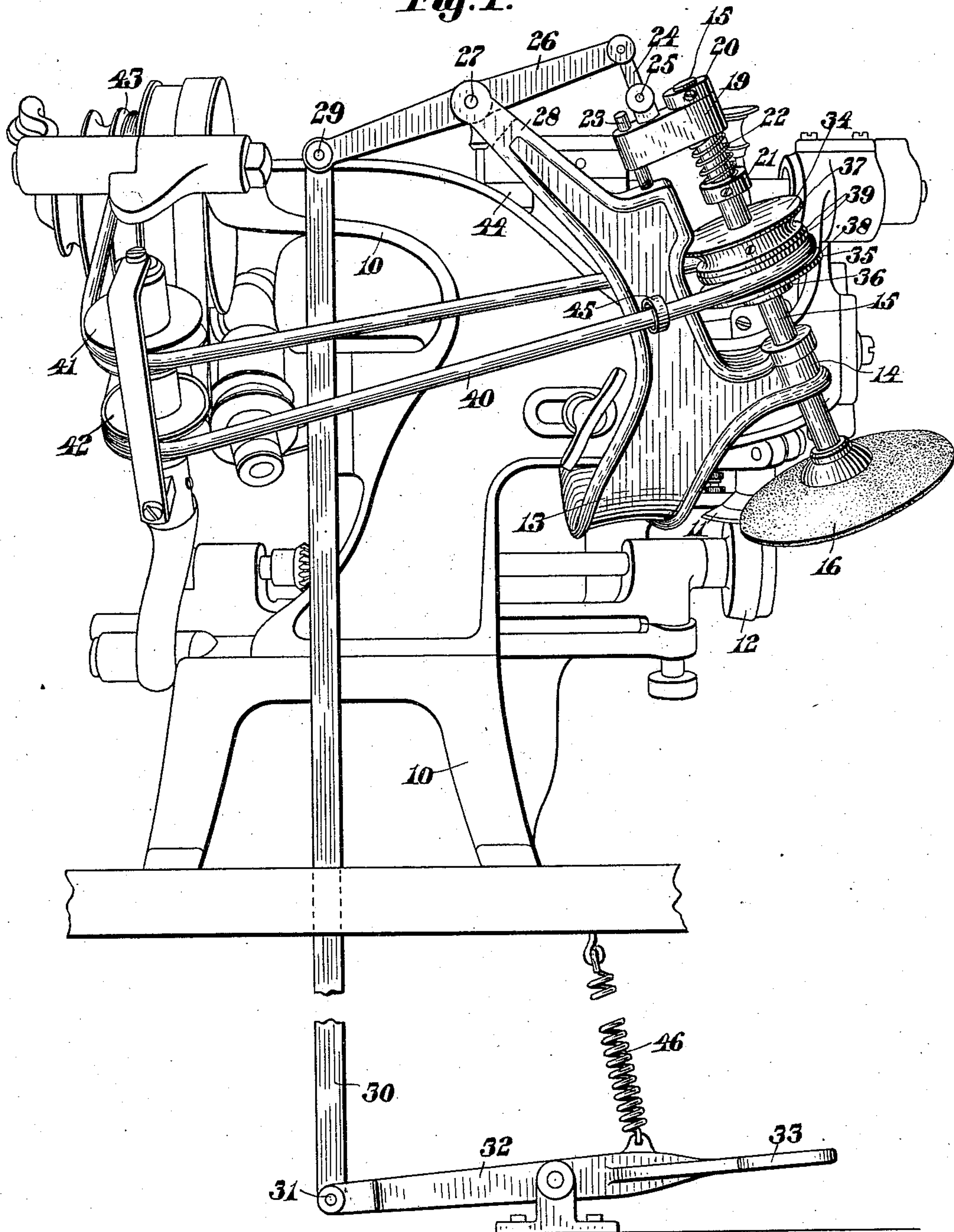
G. A. HENDERSON.
ATTACHMENT FOR SKIVING MACHINES.
APPLICATION FILED MAY 26, 1908.

928,755.

Patented July 20, 1909.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses:

Howard Hanson
Nathan C. Lombard

Inventor:

George A. Henderson,
by Walter C. Lombard,
Atty.

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2 SHEETS—SHEET 2.

Fig. 2.

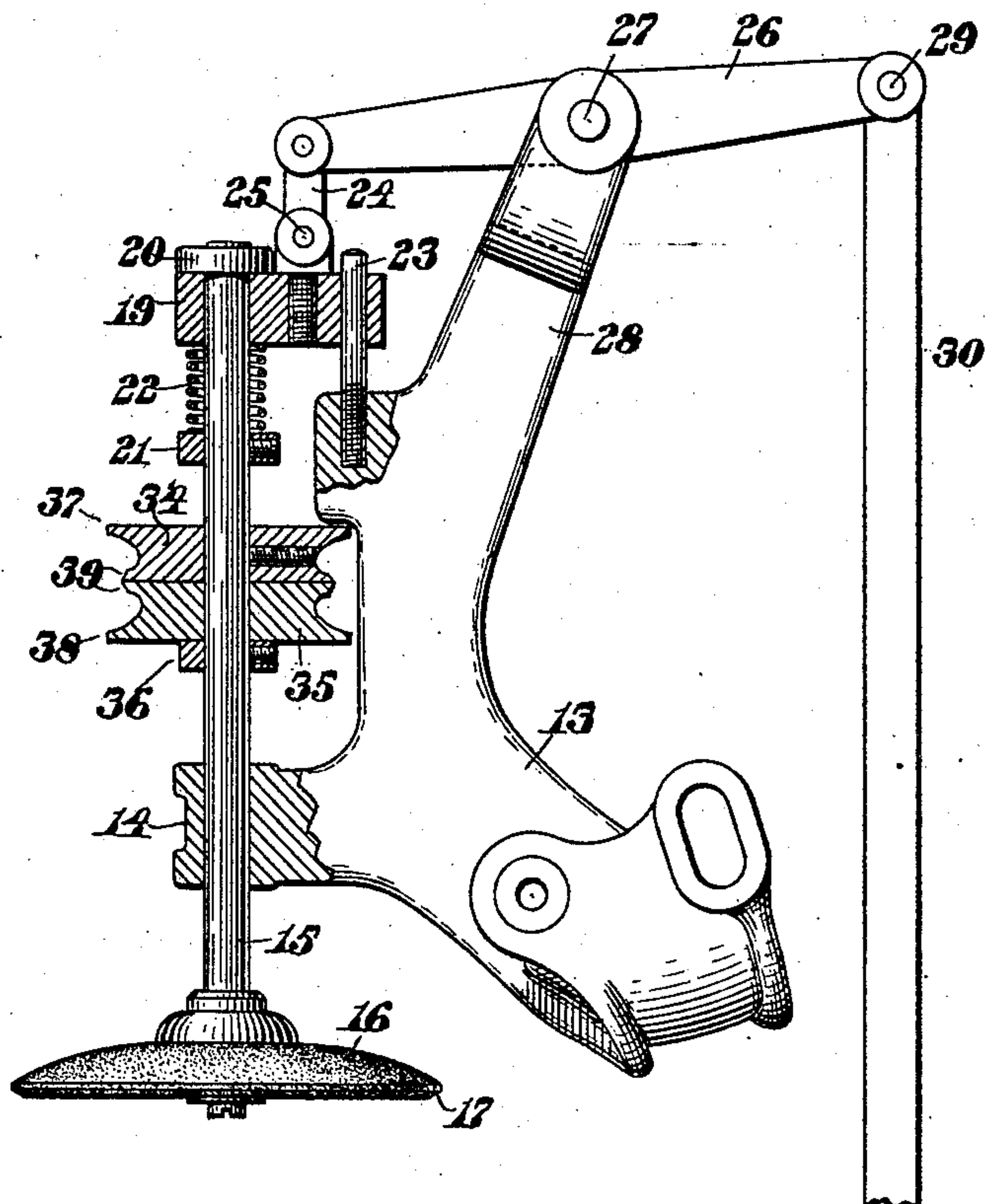
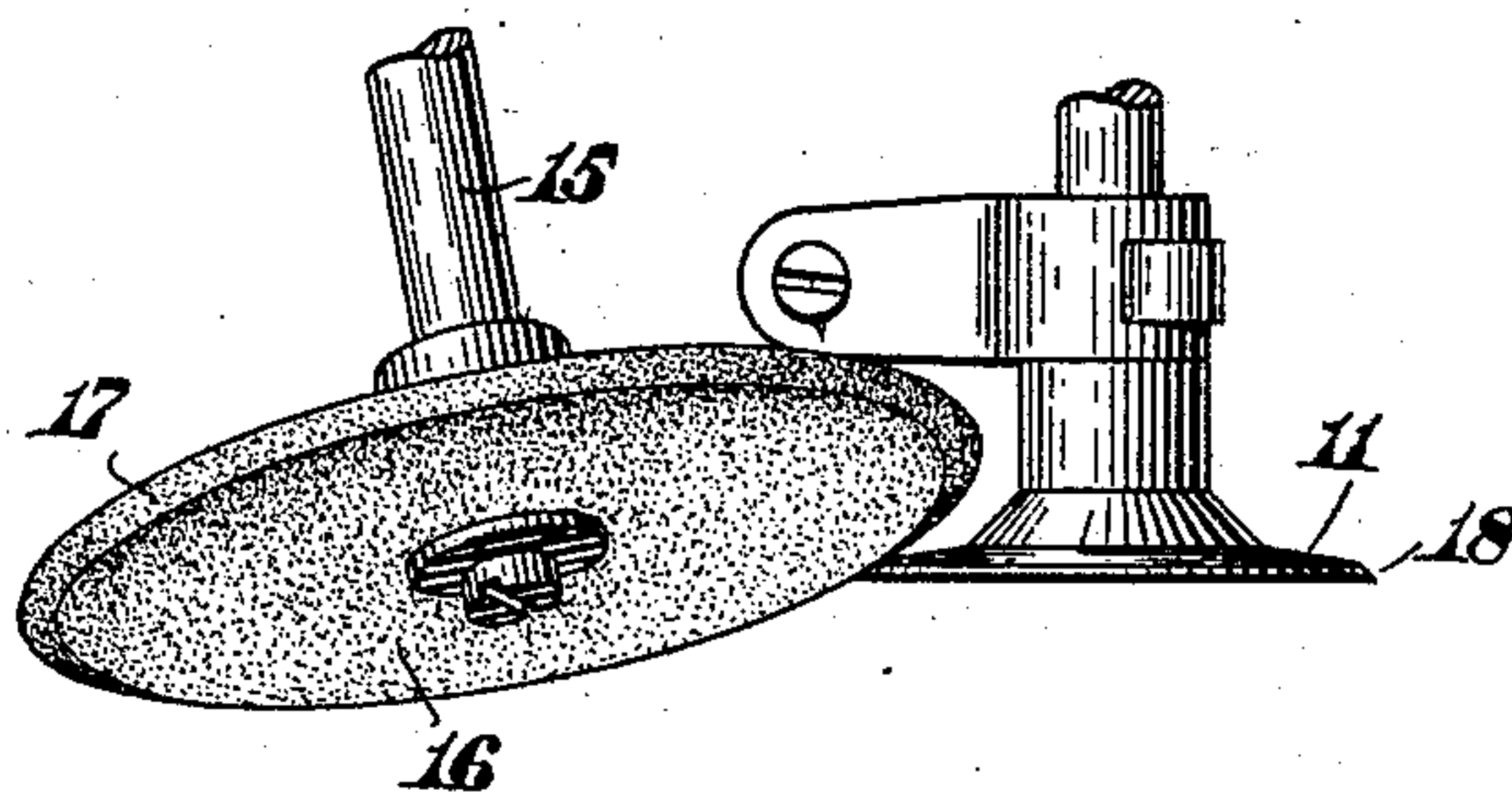


Fig. 3.



Witnesses:

Howard Hanson
Nathan C. Lombard

Inventor:

George A. Henderson,
by Walter E. Lombard,
Atty.

UNITED STATES PATENT OFFICE.

GEORGE A. HENDERSON, OF MARBLEHEAD, MASSACHUSETTS.

ATTACHMENT FOR SKIVING-MACHINES.

No. 928,755.

Specification of Letters Patent.

Patented July 20, 1909.

Application filed May 26, 1908. Serial No. 435,138.

To all whom it may concern:

Be it known that I, GEORGE A. HENDERSON, a citizen of the United States of America, and a resident of Marblehead, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Attachments for Skiving-Machines, of which the following is a specification.

10 This invention relates to skiving machines and particularly to attachments therefor adapted to sharpen the rotary knife.

15 It has for its object the production of a device which is operable by means of a treadle to move a sharpening device, such as a disk of emery, into contact with the rotary knife and to automatically impart a rotary movement to said disk during the operation of the moving mechanism.

20 The invention consists in certain novel features of construction and arrangement of parts which will be readily understood by reference to the description of the drawings and to the claims hereinafter given.

25 Of the drawings: Figure 1 represents a perspective view of the rear side of a skiving machine showing the improved knife sharpening device applied thereto. Fig. 2 represents a sectional detail of the attachment for supporting the revoluble emery disk and moving it endwise, and Fig. 3 represents a detail showing the emery disk in perspective operating upon the revoluble skiving knife.

30 Similar characters designate like parts throughout the drawings.

35 In the drawings, 10 represents the framework of a skiving machine of well-known construction said machine being provided with a rotary cutting knife 11 beneath which revolves the usual feed roll 12. The edge of the knife 11 when in use is constantly becoming dull and requires frequent sharpening in order to secure suitable results. Heretofore in order to sharpen the knife much delay has
45 been encountered by the various adjustments made necessary in order to bring the sharpening devices into contact with the revoluble cutting blade or knife 11. To overcome this objection and to provide an attachment adapted to sharpen the knife 11
50 effectually and without loss of time is the object of the present invention. In order to secure this result a bracket 13 is secured to the frame 10 of the skiving machine, this
55 bracket being provided with a bearing 14 in which is mounted a revoluble shaft 15 to the

lower end of which is secured the usual emery wheel or disk 16 provided with the bevel edge 17 adapted to contact with the beveled edge 18 of the cutting blade or knife 11 to sharpen the latter when it has become dulled. 60 The upper end of the revoluble shaft 15 passes through a block 19 and has secured to its outer end a collar 20 which is adapted to prevent said shaft from being displaced from said block. Surrounding the shaft 15 and
65 interposed between said block 19 and a collar 21 secured to said shaft is a yielding member such as a spiral spring 22. A suitable fixed projection 23 secured to the upper end of the bracket 13 passes through a hole in the block 19 and serves as a guide therefor as it is reciprocated by means of mechanism provided for this purpose. The mechanism for imparting this reciprocating movement to the
70 block 19 consists of a link 24 pivoted at one end at 25 to said block while the opposite end is pivoted to a lever 26, fulcrumed at 27 upon an arm 28 forming part of the bracket 13. The lever 26 has pivotally connected thereto
75 at 29 the link 30, the lower end of which is pivotally connected at 31 to a treadle 32 provided with the usual foot pad 33.

It is obvious from an inspection of the drawings that the depression of the pad 33 by the foot of the operator will cause the block 19 to be depressed and move downwardly upon its guide 23, this downward movement of the block 19 carrying with it the revoluble shaft 15 and the emery wheel 16 into contact with the beveled face 18 of the cutting knife 11. The tension of the spring 22 is sufficient to normally retain the collar 20 in contact with the upper face of the block 19 but should too much pressure be brought to bear upon
85 said block so that the emery wheel 16 is pressed too hard against the cutting knife 11 the spring 22 will yield to compression, allowing the shaft 15 to move slightly upwardly in its bearing 14 and the collar 20 to move slightly away from the upper face of the block 19, the spring 22 acting upon the collar 21 on said shaft to retain the emery wheel in contact with the knife with sufficient tension to properly sharpen the knife
90 without injury thereto.

Secured to the shaft 15 is a fixed pulley 34 and just beneath it with the upper face thereof in contact with the lower face of the pulley 34 is a loose pulley 35 which is retained in
100 near contact with the fixed pulley 34 by means of the collar 36 secured to said shaft

15. The upper flange 37 of the pulley 34 and the lower flange 38 of the pulley 35 are of the same diameter and of greater diameter than the adjacent flanges 39 of said pulleys which flanges are beveled as indicated in the drawings so that a round belt such as the belt 40, shown in Fig. 1, may pass readily from the groove of one pulley to the groove of the other during the endwise movement of the shaft 15 caused by an operation of the treadle 33. The belt 40 passes around the usual pulleys 41 and 42 to be found upon skiving machines of this class and derives its motion from the revoluble pulley 43 upon the driving shaft 44. This belt 40 passes through an eye 45 secured to the bracket 13 which eye prevents the belt 40 from being moved downwardly when the shaft 15 is moved downwardly to bring the emery wheel into contact with the rotary knife 11. As a consequence of this retention of the belt in the same relative position while the shaft 15 with the pulleys 34 and 35 thereon are being moved downwardly relative to the location of the eye 45, the belt 40 is caused to ride over the beveled edges 39 of the pulleys 34 and 35 so that it is carried into the groove of the upper or fixed pulley and a rotary movement is immediately imparted to the shaft 15 and emery wheel 16. When the operator considers the knife 11 to have been operated upon sufficiently to have received a knife edge he removes his foot from the pad 33 and the spring 46 will return the various parts to their normal position and in doing so cause the belt 45 to again be moved over the beveled flanges 39 into the groove of the loose pulley 35, thereby causing a cessation of the rotary movement of the shaft 15 and the disk 16.

This provides a very simple means of sharpening the rotary knife without the necessity of the operator making any adjustment or removing his hands from the work upon which he is operating. As a consequence the great loss of time usually consumed by the operator making the various adjustments necessary to bring the emery wheel into contact with the rotary knife is entirely dispensed with, the whole operation of sharpening being almost instantly done by a slight pressure of the operator's foot, the rotary movement of the emery wheel being imparted automatically at about the time it comes into contact with the rotary knife which it is intended to sharpen and in like manner this rotary movement is stopped automatically as soon as the emery wheel passes from contact with the knife.

It is believed that the operation and many advantages of the invention will be fully understood without further description.

Having thus described my invention, I claim:

1. The combination with the revoluble

bevel-edged disk knife of a skiving machine; of a member adapted to sharpen said knife by being moved into contact with the beveled edge thereof; a shaft therefor; a pulley thereon for rotating said shaft; a driving belt therefor; a collar secured to said shaft; a reciprocating member through which the end of said shaft extends; means preventing the rotation of said member about the axis of said shaft; a system of levers for moving said reciprocating member; a shoulder on said shaft to limit the end movement of said shaft; a spring surrounding said shaft and interposed between said collar and reciprocating member; and means for throwing the belt on and off of said driving pulley during the end movement of said shaft.

2. The combination with the revoluble bevel-edged disk knife of a skiving machine; of a member adapted to sharpen said knife; a shaft therefor; means for rotating said shaft; mechanism for moving said shaft endwise to bring said sharpening member into contact with the beveled edge of said knife including a reciprocating member through which the end of said shaft extends; means for preventing the rotation of said member; a shoulder on said shaft to limit the movement of said shaft; a collar secured to said shaft; a spring surrounding said shaft and interposed between said collar and reciprocating mechanism; treadle mechanism for imparting movement to said reciprocating member; and means operable by the end movement of said shaft for causing said shaft-rotating mechanism to operate.

3. The combination with the revoluble bevel-edged disk knife of a skiving machine; of a member adapted to sharpen said knife; a shaft therefor; means for rotating said shaft; mechanism for moving said shaft endwise to bring said sharpening member into contact with said knife including a non-revoluble reciprocating member through which the end of said shaft extends; a shoulder on said shaft to limit the movement of said shaft; a collar secured to said shaft; a spring surrounding said shaft and interposed between said collar and reciprocating mechanism; treadle mechanism for imparting movement to said reciprocating member; a pulley fixedly secured to said shaft; a loose pulley also mounted on said shaft; a driving belt normally on said loose pulley; and means for transferring said belt to said fixed pulley during the end movement of said shaft toward said revoluble knife.

4. The combination with the revoluble bevel-edged disk knife of a skiving machine; of a revoluble member adapted to sharpen said knife; a shaft therefor; means for imparting to said shaft an endwise movement to bring said revoluble member into contact with the beveled edge of said knife; a fixed pulley secured to said shaft having a beveled

lower flange; a loose pulley mounted on said shaft adjacent to said fixed pulley and having a beveled upper flange; a driving belt normally on said loose pulley; and means for automatically transferring said belt from one pulley to the other during the endwise movement of said shaft.

5. The combination with the revoluble disk cutting knife of a skiving machine; of a bracket carrying two alined bearings and an arm; a revoluble shaft in said alined bearings; a grinding member thereon; a reciprocating block mounted on said bracket and provided with an opening through which said shaft extends; two collars on said shaft, one on each side of said reciprocating member; a spring interposed between said member and the collar nearest the grinding member; a lever pivoted in said arm; a connector between one end of said lever and said reciprocating member; and treadle mechanism connected to the opposite end of said lever.

6. The combination with the revoluble disk cutting knife of a skiving machine; of a bracket carrying two alined bearings and an arm; a revoluble shaft in said alined bearings; a grinding member thereon; a reciprocating block mounted on said bracket and provided with an opening through which said shaft extends; means on said bracket preventing the rotation of said reciprocating

block; two collars on said shaft, one on each side of said reciprocating member; a spring interposed between said member and the collar nearest the grinding member; a lever pivoted in said arm; a connector between one end of said lever and said reciprocating member; and treadle mechanism connected to the opposite end of said lever.

7. The combination with the revoluble disk cutting knife of a skiving machine; of a bracket carrying two alined bearings and an arm; a revoluble shaft in said alined bearings; a grinding member thereon; a pin parallel to said shaft fixedly secured in said bracket; a reciprocating block mounted on said bracket and provided with two parallel openings through which said shaft and pin extend; two collars on said shaft, one on each side of said reciprocating member; a spring interposed between said member and the collar nearest the grinding member; a lever pivoted in said arm; a connector between one end of said lever and said reciprocating member; and treadle mechanism connected to the opposite end of said lever.

Signed by me at 7 Water st., Boston, Mass., this 23d day of May, 1908.

GEORGE A. HENDERSON.

Witnesses:

WALTER E. LOMBARD,
NATHAN C. LOMBARD.