No. 675,206. Patented May 28, 1901.

B. FISCHER.

MACHINE FOR SKIVING LEATHER.

(Application filed June 9, 1900.)

(No Model.) 5 Sheets—Sheet 1.

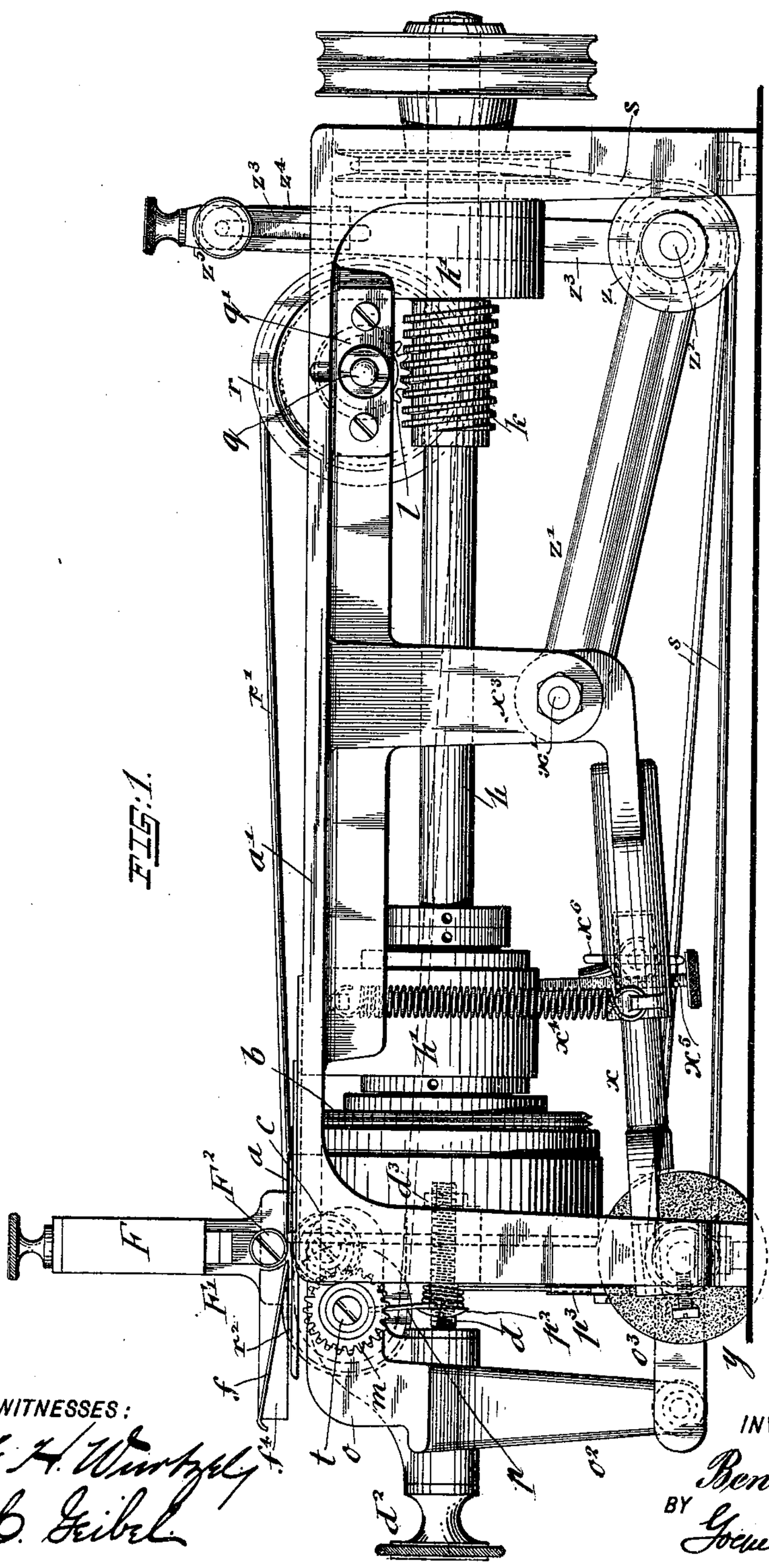

FIG. 1.

WITNESSES:

M. F. Wurtzel

G. C. Gribel

INVENTOR

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ATTORNEYS

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(No Model.) 5 Sheets—Sheet 2.

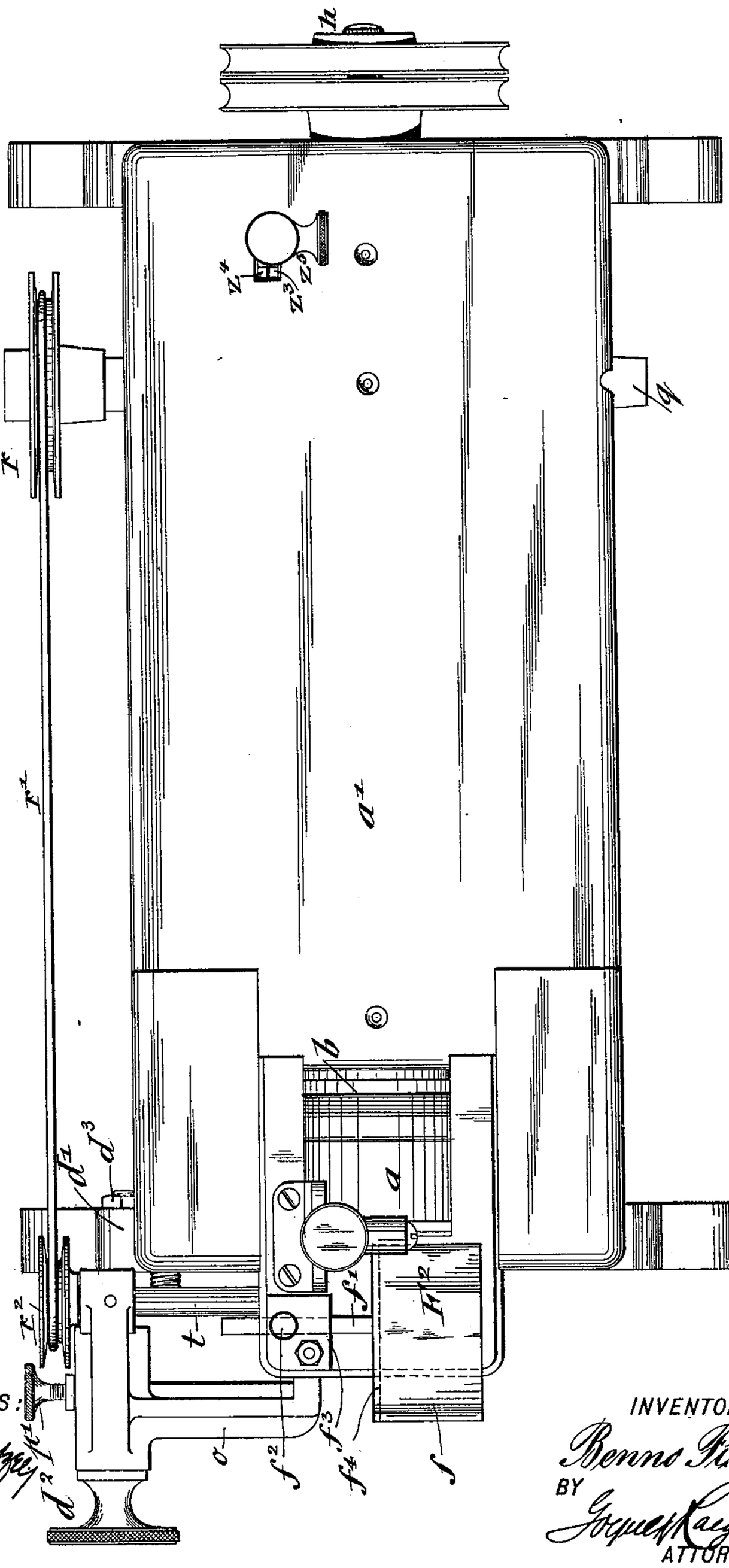

Fig. 2.

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No. 675,206.

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B. FISCHER.

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5 Sheets—Sheet 3.

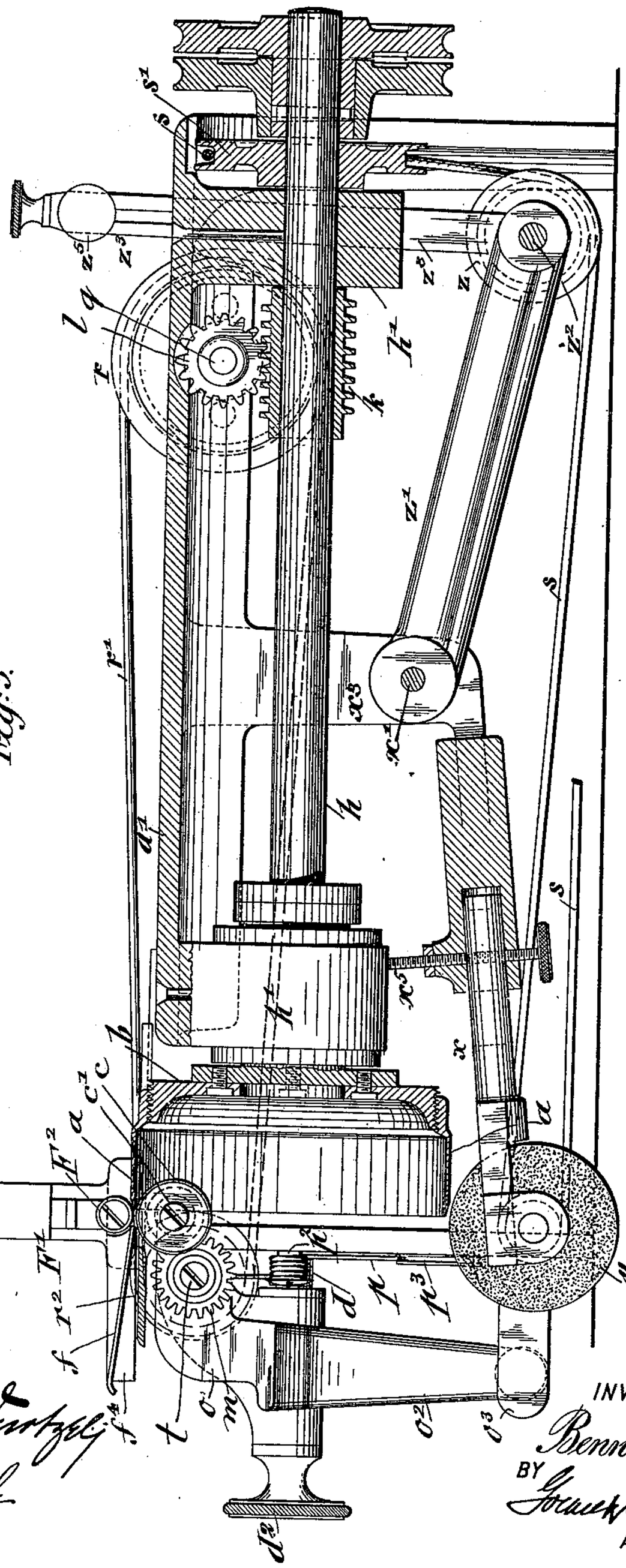

Fig. 3.

WITNESSES:

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MACHINE FOR SKIVING LEATHER.

(Application filed June 9, 1900.)

(No Model.) 5 Sheets—Sheet 4.

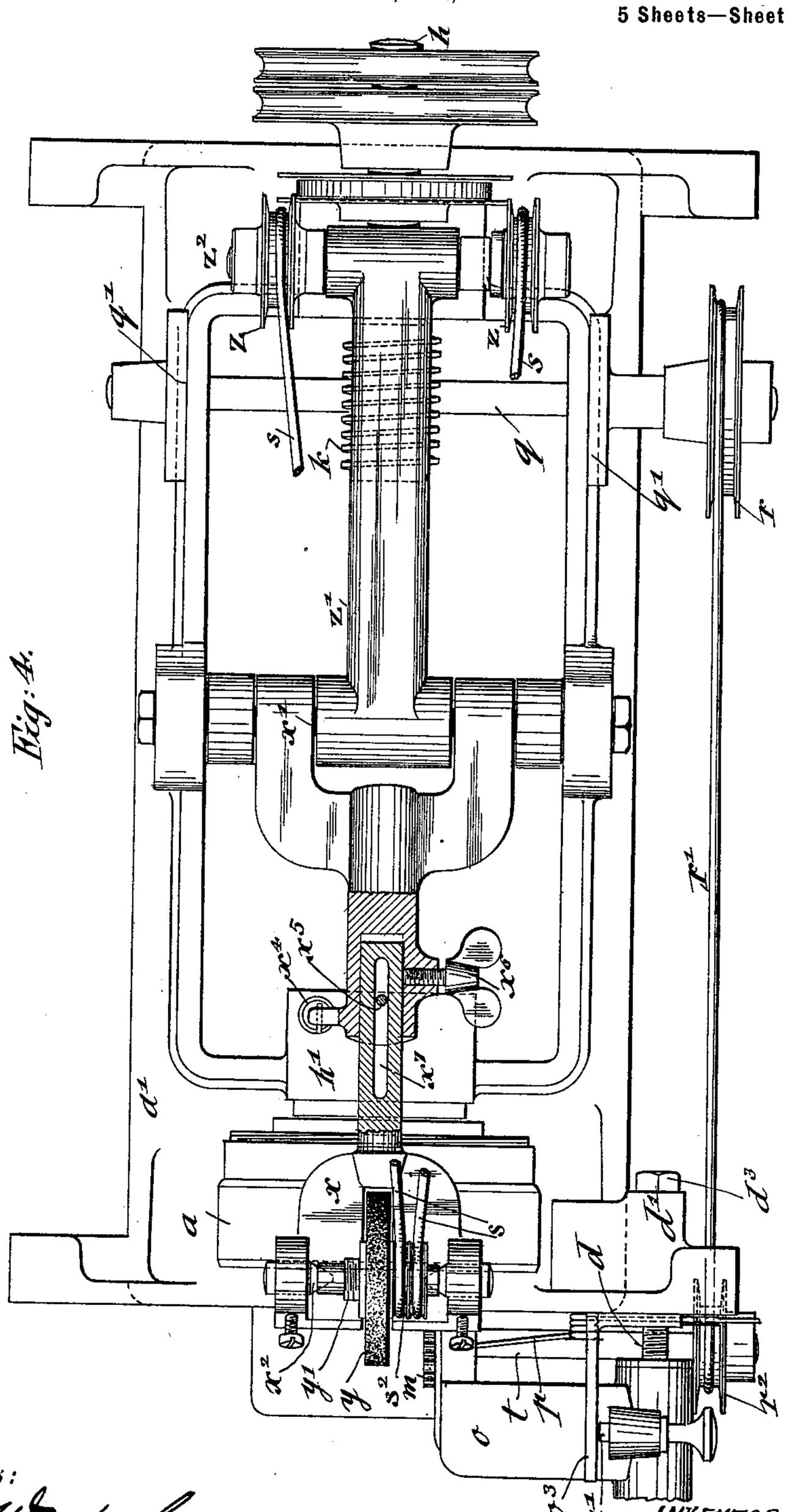

Fig. 4.

WITNESSES:

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INVENTOR

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No. 675,206. Patented May 28, 1901.

B. FISCHER.

MACHINE FOR SKIVING LEATHER.

(Application filed June 9, 1900.)

(No Model.) 5 Sheets—Sheet 5.

Fig. 6.

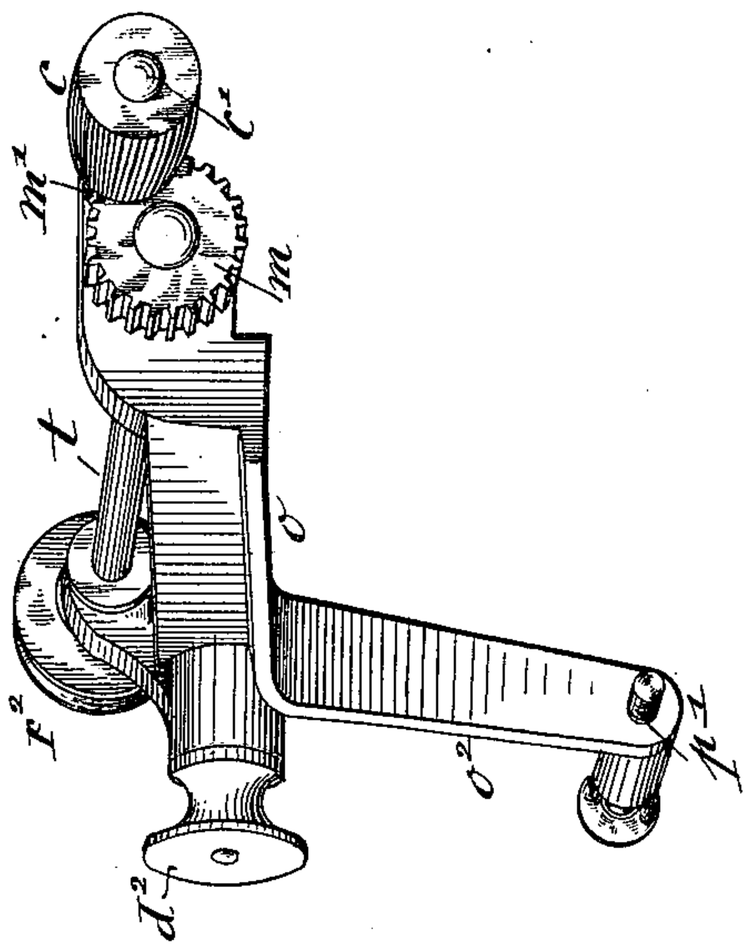
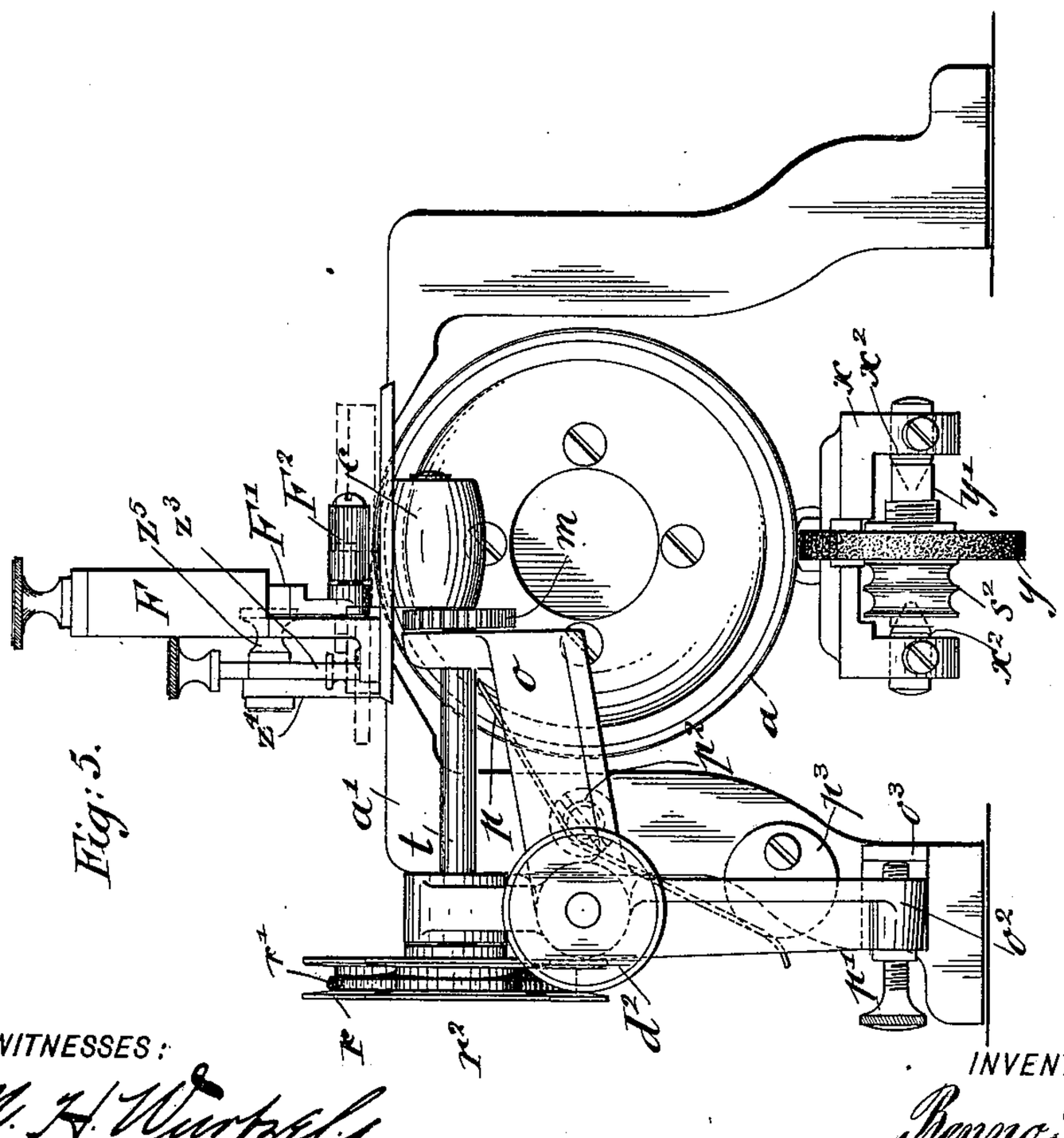


Fig. 5.



WITNESSES:

M. H. Wurtzel

G. C. Seibel

INVENTOR

Benno Fischer

BY Goepel & Wagner

ATTORNEYS

UNITED STATES PATENT OFFICE.

BENNO FISCHER, OF CANNSTADT, GERMANY.

MACHINE FOR SKIVING LEATHER.

SPECIFICATION forming part of Letters Patent No. 675,206, dated May 28, 1901.

Application filed June 9, 1900. Serial No. 19,664. (No model.)

To all whom it may concern:

Be it known that I, BENNO FISCHER, a subject of the King of Würtemberg, residing at Cannstadt, in the Kingdom of Würtemberg and Empire of Germany, have invented certain new and useful Improvements in Machines for Skiving Leather, of which the following is a specification.

This invention relates to certain improvements in a machine for skiving leather for which an application for Letters Patent was filed on September 22, 1899, Serial No. 731,372, the improvement being designed with the view of arranging the mechanism for transmitting motion to the feed-roller sidewise of the cylindrical cutter, so that the leather shavings that are cut off by the cutter are not liable to be taken up by the said motion-transmitting mechanism or gear of the feed-roller, but are dropped without interfering with or clogging the same and in which improvement a grinding device is arranged in connection with the cylindrical cutter, so that the same can be readily sharpened whenever required while the machine is doing its work.

The invention consists of certain features of construction, which will be fully described hereinafter and finally pointed out in the claims.

In the accompanying drawings, Figure 1 represents a side elevation of my improved machine for skiving leather. Fig. 2 is a plan. Fig. 3 is a vertical longitudinal section of the same in the plane of the cutter-shaft. Fig. 4 is a reversed plan, partly sectioned. Fig. 5 is a front elevation showing more clearly the relative position of cutter, feed-roller, and grinding-disk; and Fig. 6 is a detail sectional plan view of the swinging supporting-frame of the feed-roller.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, *a* represents the cylindrical cutter, the hub of which is applied to a shaft *h*, which is journaled in bearings *h'* of a main frame or table *a'*. The shaft *h* has fixed thereto a cup-shaped disk *b*, which forms the hub of the cutter, and is provided with an exteriorly-threaded circumference on which the interiorly-threaded cylindrical cutter *a* is mounted. The shaft *h* receives rotary motion by pulleys and transmission cords, bands, or belts at the rear end of the shaft, as shown in Fig. 1. On the shaft *h* is keyed a worm *k*, which meshes with a worm-gear *l*, keyed to a horizontal shaft *q*, that is arranged transversely to the shaft *h* and is supported in suitable bearings *q'*, fixed on the under side of the table *a'*.

The transverse shaft *q* carries at one end a pulley *r*, which transmits motion by a belt or cord *r'* to a pulley r^2 on a shaft *t*, that is supported in a swinging frame *o*, located at the end of the machine sidewise of the cylindrical cutter *a*, as shown in Figs. 1 and 3. The frame *o* is pivoted to the end of the supporting frame or table *a'* by means of a shaft *d*, extending longitudinally of the machine and which is provided with a screw-threaded inner end, so as to permit it to be adjusted in forward and backward direction in an interiorly-threaded stationary sleeve *d'* of the supporting-table *a'*. The pivot-shaft *d* is provided with a milled knob d^2 at its front end for permitting the adjusting of the shaft by hand and is held in adjusted position in the sleeve *d'* by a screw-nut d^3, applied at its rear end, as shown by Fig. 4. The shaft *d* is arranged parallel with the shaft *h* of the cylindrical cutter *a*, so that the swinging frame *o* projects at right angles to said shaft *h* across the edge of the cutter, as shown clearly in Fig. 5. To the inner end of the shaft *t*, which is journaled in suitable bearings of frame *o* at right angles to shaft *d*, is keyed a gear-wheel *m*, which meshes with a pinion *m'* on the shaft *c'* of a feed-roller *c*. The shaft *c'* is rigidly attached to the swinging frame *o*, so that the feed-roller *c* turns freely thereon. The feed-roller *c* is located below the upper edge of the cylindrical cutter *a* and supported by the frame *o* in proper relative position to the edge of the cutter. Suitably fixed to the table is an upright F, in which is mounted an adjustable stem F', the lower end of which is provided with a journal for a pressure-roller F^2, that is arranged over feed-roller *c* and the cutter *a*. In front of the pressure-roller F^2 is located an inclined guide-plate *f*, which is carried by a lateral shank *f'*, that is fixed by screw f^2 to a socket-piece f^3 on top of the table. At one side of the inclined plate *f* is a gage-flange f^4, against which the edge of the piece of leather being skived abuts.

A spring p on the frame or table a' presses a set-screw p', that is screwed into an arm o^2, projecting down from frame o, against an abutment o^3 on the supporting-frame a', so as to permit the accurate adjustment of the feed-roller c toward the inner side of the knife-edge of the cylindrical cutter a. Said spring p is anchored movably on a stud p^2 on the frame a', one end of said spring bearing in the groove of an adjustable eccentric p^3, mounted on said frame a', and the other end bearing upwardly on the swinging frame o. The forward and backward adjustment of the feed-roller c toward the cutter a is accomplished by the adjustment of the pivot-shaft d, which is for this purpose constructed in the nature of a screw-spindle, as before described and as shown clearly in Fig. 4. By turning the milled knob of the screw-spindle d in opposite directions the frame o is moved inwardly or outwardly away from the edge of the cutter until the feed-roller is in the exact position desired. As the motion-transmitting gear for the feed-roller c is supported on the frame o, it is moved with the frame and is not affected by the longitudinal adjustment thereof. The leather shavings which are cut off from the leather by the cylindrical cutter are dropped without interfering with the motion-transmitting gear of the feed-roller.

The pivot arrangement of the swinging frame o at one side of the cutter has the advantage that a grinding device for the cutter can be arranged below the same, so that the sharpening of the cutter can be accomplished during the working of the machine. This grinding device is necessary for the proper skiving and is kept always in sharp condition without requiring a stoppage of the machine. The grinding device is clearly shown in Figs. 1 to 5, and consists of a grinding-disk or emery-wheel y, which is mounted on a shaft y', journaled in conical bearings x^2 of a lever x, which is pivoted at its rear forked end to a transverse shaft x', supported in stationary hangers x^3 of the table a'. The grinding-wheel is held in relative position to the knife-edge of the cylindrical cutter by means of the set-screws x^5 x^6 and the helical spring x^4, which is attached to a lug on the lever and to the under side of the supporting frame or table a'. Lever x is composed of two members, one telescoping within the other and provided with a longitudinal slot x^7, through which passes the set-screw x^5, which extends upwardly and prevents the relative turning of the members on which the grinding disk or wheel is mounted. The upper end of said set-screw x^5 is caused by spring x^4 to abut against a portion of the under side of the table and to thereby form a limit-pin to limit the position of the grinding-wheel to the side of the knife-edge of the cutter. Screw x^6, before referred to, connects the two members of the lever x and enables the latter to be lengthened or shortened, so as to adjust the grinding-wheel relatively to the knife-edge of the cutter in the corresponding direction of adjustment. To the shaft x' is also pivoted a rearwardly-extending lever z', which is carried by a shaft z^2 of two tension-rollers z for the tightening or loosening of the driving belt or cord s of the grinding-disk y. The tension-rollers z are raised or lowered by a vertical adjustable hanger z^3, which is connected with the shaft z^2 of the tension-rollers, extends through the table, and is secured in position by a clamping-screw on an upright post z^4 on the table by clamping-screw z^5, which passes through a longitudinal slot in said hanger, as shown in Fig. 1. On the shaft h is arranged a driving-pulley s', while on the shaft of the grinding-disk y is also arranged a pulley s^2 for the driving belt or cord s, which passes from the pulley s', over the tension-rollers z, and around the pulley s^2 on the shaft of the grinding-disk, so as to impart rotary motion to the same in the direction of the arrow shown in Fig. 1 and thereby produce the grinding of the cylindrical cutter while the same is rotated. By the lowering of the tension-rollers z by the hanger z^3 the driving cord or belt s is set in proper tension.

The machine is operated as follows: By the rotation of the shaft h the cylindrical cutter a is quickly rotated and at the same time rotary motion transmitted to the feed-roller c by the worm-gear $k\,l$ and the cord-and-pulley transmission $r\,r'\,r^2$. The leather or other fabric to be skived is conducted along under the inclined guide-plate f to the feed-roller c, by which it is moved against the knife-edge of the cylindrical cutter a under the pressure of the pressure-roller F^2, so that the fabric is conducted over the knife-edge of the cylindrical cutter and the table a', while the shaving which is cut off by the cutter is dropped into the same and then conducted into a suitable receptacle. The distance of the feed-roller c relatively to the edge of the cylindrical cutter a is adjusted according to the desired thickness of the skived edge of the leather by adjusting the limit-screw p'. As the cylindrical cutter is gradually worn off the feed-roller c has to be adjusted closer to the same—that is to say, it is adjusted in the direction of the longitudinal axis of the cutter. This is accomplished by the screw-spindle d, the turning of which imparts a shifting motion to the feed-roller-supporting frame o. If the belt or cord s becomes slack, the tension-rollers z are adjusted downwardly, whereby the motion-transmitting cord s is set to tension and the grinding-disk y set in rapid motion, so as to sharpen the edge of the cutter. By means of the spring x^4 and the set-screw x^5 the grinding-disk y is pressed and set against the knife-edge of the cutter, so as to permit the sharpening of the same.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with a table, a rotary

cylindrical cutter, and means for rotating said cutter, of a feed-roller, a guide, said guide and feed-roller being arranged on opposite sides of the cutting edge of the cutter, a swinging frame mounted at the side of the cutter and supporting said feed-roller close to the knife-edge of and within the cutter, said frame and the roller being free to swing toward the axis of the cutter, and means, supported by said frame and located outside the cutter, for transmitting motion to said feed-roller, substantially as set forth.

2. The combination with a table, and a rotary cylindrical cutter, of a feed-roller supported close to the knife-edge of the cutter, a pivoted and spring-actuated frame for supporting the roller, a screw-spindle supporting the swinging frame, located sidewise of the cutter and parallel with the longitudinal axis of the same, and means for transmitting rotary motion to the feed-roller, substantially as set forth.

3. The combination with a table, a cylindrical cutter, and means for imparting rotary motion to said cutter, of a feed-roller, a pivoted and spring-actuated supporting-frame for said roller, means for longitudinally adjusting said supporting-frame, a driven shaft journaled in said frame, motion-transmitting gear-wheels between the shaft and the shaft of the feed-roller, means for adjusting the supporting-frame and thereby the feed-roller relatively to the edge of the cutter, and means for transmitting rotary motion from the cutter-shaft to the shaft supported by the said supporting-frame, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

BENNO FISCHER.

Witnesses:
HERMANN WAGNER,
KONRAD ZEISIG.