No. 751,165. PATENTED FEB. 2, 1904.

D. GESSNER.

STRICKLE FOR CARD CLOTHING.

APPLICATION FILED JULY 15, 1902.

NO MODEL. 3 SHEETS—SHEET 1.

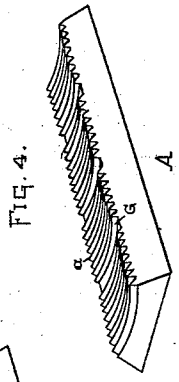


Fig. 4.

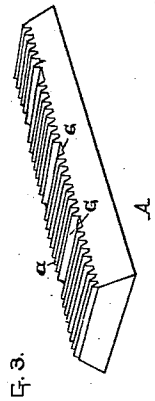


Fig. 3.

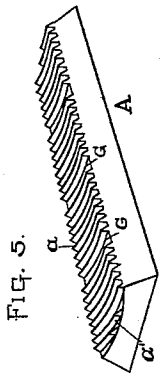


Fig. 5.

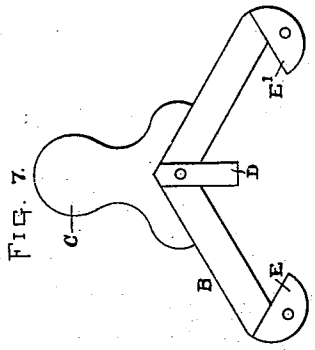


Fig. 7.

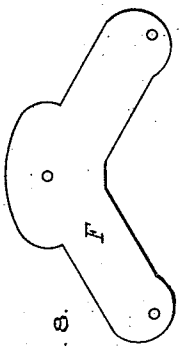


Fig. 8.

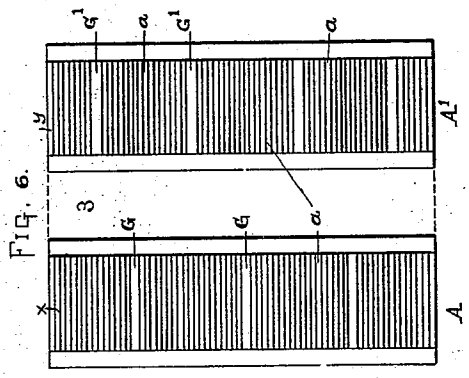


Fig. 6.

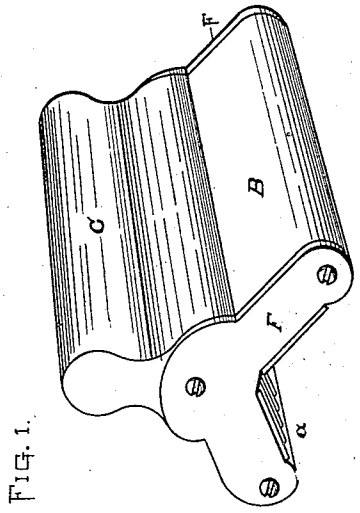


Fig. 1.

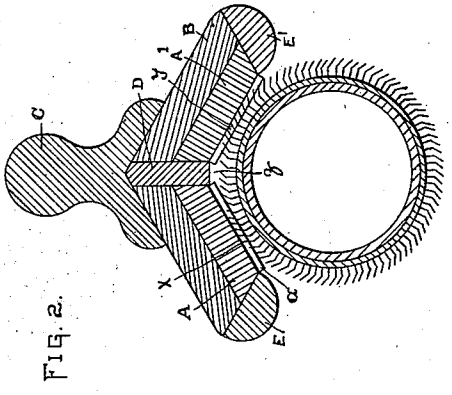


Fig. 2.

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NO MODEL. 3 SHEETS—SHEET 2.

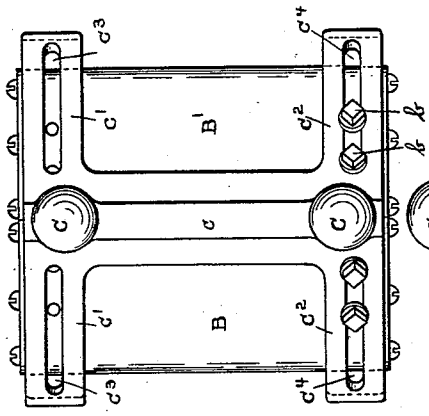


FIG. 10

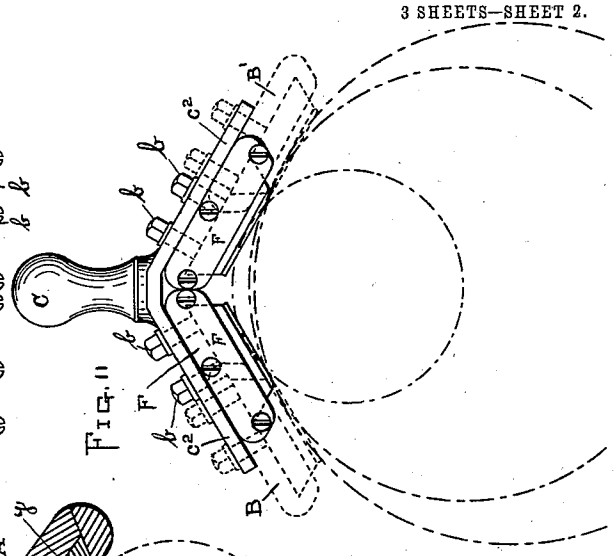


FIG. 11

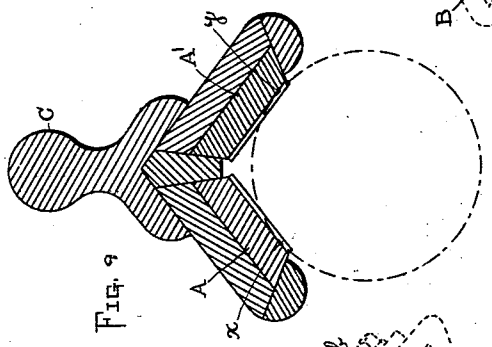


FIG. 9

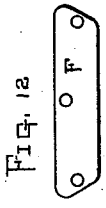


FIG. 12

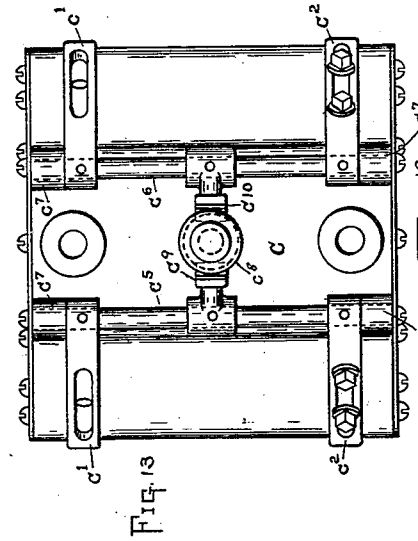


FIG. 13

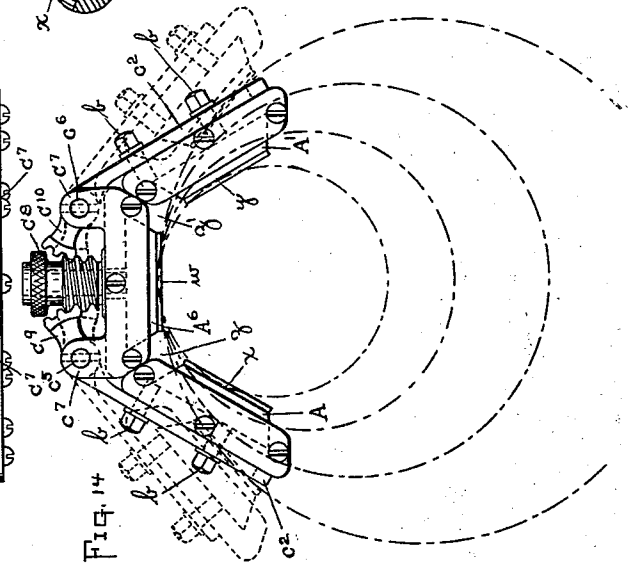


FIG. 14

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STRICKLE FOR CARD CLOTHING.

APPLICATION FILED JULY 15, 1902.

NO MODEL. 3 SHEETS—SHEET 3.

FIG. 19

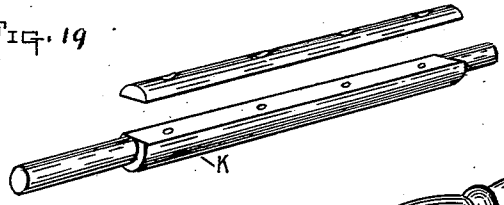
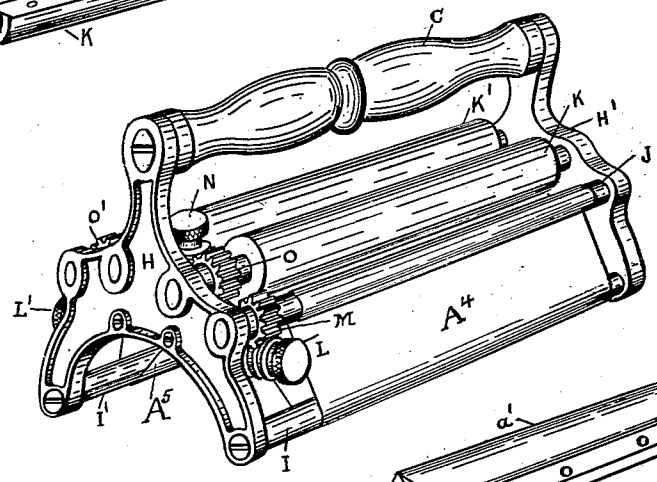


FIG. 18



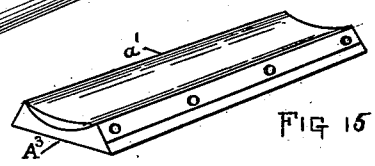


FIG 15

FIG. 16

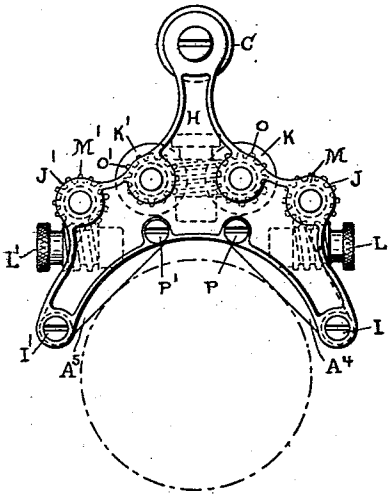
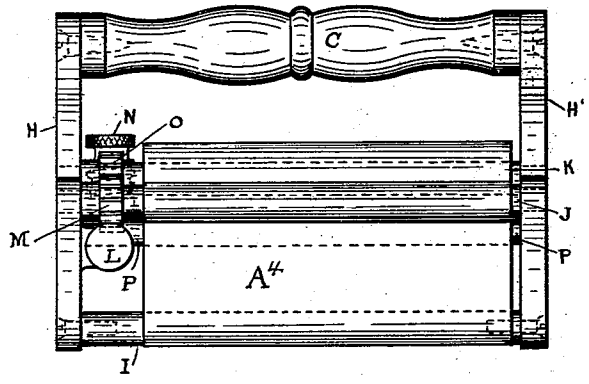


FIG. 17



Witnesses.
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Adolph Zuchs.

Inventor.
David Gessner
by Gifford & Bull
Attorneys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 751,165. Patented February 2, 1904.

UNITED STATES PATENT OFFICE.

DAVID GESSNER, OF WORCESTER, MASSACHUSETTS.

STRICKLE FOR CARD-CLOTHING.

SPECIFICATION forming part of Letters Patent No. 751,165, dated February 2, 1904.

Application filed July 15, 1902. Serial No. 115,643. (No model.)

To all whom it may concern:

Be it known that I, DAVID GESSNER, a citizen of the United States, residing in Worcester, county of Worcester, and State of Massachusetts, have invented a new and useful Improvement in Strickles for Card-Clothing, of which the following is a specification.

Heretofore for sharpening and truing up the points of card-clothing such as is used in carding or napping machines strickles have been employed consisting of an emery-composed surface so constructed as to be capable of only a single area of contact with the cylinder of napping or carding points. In the use of such strickles it has been exceedingly difficult, if not impossible, to maintain the strickle in such positions as to secure regularity in the grinding operation.

The object of my invention is to construct a strickle which will overcome these difficulties.

One part of the invention consists in the novel form of the strickle circumferentially of the cylinder to be treated.

Another feature consists of its novel form longitudinally of the cylinder to be treated.

Other features will be pointed out in the following specification and claims.

In the accompanying drawings, forming part of this application, I have shown, to a scale of about one-half size, constructions embodying my invention in the forms in which I prefer to use it.

Figure 1 is a perspective view of the completed strickle. Fig. 2 is a cross-section of the same and of a napping-roll being ground thereby. Figs. 3, 4, and 5 show in perspective views forms of grinding-blocks. Fig. 6 shows the grinding-surfaces of two blocks disposed in the relative position occupied when in use. Fig. 7 is an end elevation of the frame with the blocks and securing end plates removed. Fig. 8 is the end plate detached. Figs. 9 to 19 are modifications.

I will first describe the constructions shown in Figs. 1 to 8. The emery or other abrasive material is preferably formed into two blocks A A′, as shown in different forms in Figs. 3, 4, and 5. The abrading-surface of each block is composed of a series of transverse ridges *a*, spaced to correspond with the spacing on the teeth in the card. The general outline of this surface may be a plane, as in Figs. 1, 2, and 3, or concaved, as in Figs. 4 and 5. The ridges *a* may extend straight across the block and at right angles to the axis of the cylinder, as in Figs. 3, 4, and 6, or spirally at a pitch corresponding with the winding of the card-clothing, as shown in Fig. 5. A plurality of these blocks is employed in the construction of the strickle, two blocks A A′ being shown in Figs. 1, 2, and 6. The blocks are placed at an angle with each other, as shown in Figs. 1 and 2, so that they substantially straddle the cylindrical surface to be ground and present thereto two areas of grinding contact *x* and *y*, separated from each other by an interval *z*. As the teeth or points of the card pass from the grinding area *y* to the grinding area *x* the pressure of the strickle-surface on the teeth or points diminishes at the interval *z*, and preferably to such an extent as to be entirely relieved at that interval by the leaving of a space at that interval between the blocks A and A′, as shown in Figs. 1 and 2. However, I do not desire to limit myself to the presence of this space between the blocks A and A′, since certain of the benefits of my invention may be obtained by relieving the grinding pressure on the points at the interval *z* to a less extent than loss of contact. In other words, the pressure of the strickle is borne by the two areas *x* and *y* of grinding-surface separated by an interval *z* of substantially less grinding-surface, such interval of less grinding-surface being preferably accomplished by a space between the blocks A and A′, at which space the grinding pressure is not merely relieved, but the points are out of contact with either of the grinding-blocks. This non-grinding interval *z* affords an opportunity for the points of the card after being subjected to the grinding area *y* to readjust themselves before being subjected to the grinding area *x*. For example, the ridges *a* of the strickle-blocks are spaced apart, so as to correspond with the distance between the rows of card-wires on the cylinder to be ground; but it will happen through the bending of certain of the wires by the napping or carding operation or for

some other reason that certain of the wires will get between the wrong pair of ridges of the grinding area *y*. The interval of non-grinding area *z* will enable those wires to right themselves before entering between the ridges of the grinding area *x*, so that they will have an opportunity to enter between the ridges of the grinding area *x*, between which they belong when in proper position. I prefer to omit ridges *a* occasionally on both of the blocks—as, for example, at the points lettered G and G'. These spaces on one block occupy a staggered position with respect to the spaces on the other block. By having these spaces sufficiently near together—say an inch or so apart—they serve to compensate for any slight differences which may exist between the spacing of the ridges *a* and the spacing of the wire rows on the cylinder being ground by permitting such a plurality of wires to be clustered within the spaces G and G' as may be necessary to compensate for such difference. By having these spaces in staggered position on the two plates the wires which are thus clustered together under the action of one grinding area are different from those which are clustered together for the other grinding area and greater uniformity of result is accomplished.

The holder for the blocks A and A' (shown in Figs. 1, 2, 7, and 8) may be described as follows: B is a wooden housing provided with a wooden handle C. E E' are wooden bars, and D is a wooden rib or separator. The bars E and E' and the rib D are disposed at such an angle as to form dovetailed openings, into which the blocks A and A' can be slid longitudinally. As soon as the blocks are in place they are secured by the end plates F. The bars E project downward sufficiently to act as supports when the strickle is placed upon the bench or other flat surface, so that in whatever position the strickle may be laid down by the attendant the blocks A and A' will always be protected from damage by being held out of contact with the support.

The modification shown in Fig. 9 differs from the forms shown in Figs. 1 and 2 in that the angle at which the blocks A A' are held is so related to the size of the cylinder being ground that the grinding areas *x* and *y* are located near the edges of the blocks. The advantages of this construction are that after the grinding has proceeded until the blocks are worn near one edge by either transposing the two blocks or reversing each of them end for end the grinding areas can be transferred to a position near the opposite edges of the blocks. This enables one set of blocks to do double duty.

The modification shown in Figs. 10 and 11 enables the same strickle to be employed for grinding cylinders of different diameters. A casing composed of the longitudinal piece *c* and the end bridge-pieces c' c^2 is interposed between the handles C and the housings B and and B', which hold the blocks A A'. Each housing is secured at opposite ends to the bridge-pieces c' c^2 by the bolts *b*, adapted for adjustment in the slots c^3 c^4 of the bridge-pieces. The blocks A and A', and consequently the grinding areas, may be adjusted to and from each other by sliding the housings B and B' inward or outward upon the bridge-pieces of the casing. Two of such positions of adjustment are indicated, respectively, by the full and dotted lines of Fig. 11. By this adjustment the same strickle may be adopted for grinding cylinders of different diameters, as indicated in Fig. 11, or for grinding a cylinder of the same diameter the position of the grinding areas or areas of contact of the cylinder with the blocks may be shifted from one edge of the blocks to the other.

In Fig. 12 is shown in detail one of the end plates F, by which the blocks are held in the housings of Fig. 11.

The modification of Figs. 13 and 14 provides another means of adjustment for accomplishing similar results. In this modification the bridge-pieces c' and c^2 instead of being connected rigidly with the longitudinal member *c*, as in Figs. 10 and 11, are pivotally connected therewith by being fixed to the shafts c^5 and c^6, journaled in the lugs c^7 on the longitudinal casing member C. The bridge-pieces c' c^2 on opposite sides are thus susceptible of adjustment at different angles with respect to each other, so as to hold the housings B B' and blocks A A' at varying angles, as indicated by the full and broken lines in Fig. 14. A convenient means for effecting this adjustment consists of the thumb-worm c^8, turning in a suitable socket in the case member C and coöperating on opposite sides with the worm-wheel sectors c^9 and c^{10}, fixed, respectively, on the shafts c^5 and c^6.

In the construction shown in Figs. 13 and 14 the plurality of grinding areas consists of three grinding areas, two of which are composed of the blocks A and A', already referred to, and the third of which is composed of a similar block A^6, carried in a housing formed on the under side of the casing member C. In this construction the grinding areas are *x*, *y*, and *w* and the non-grinding areas *z* and *z'*.

The modifications shown in Figs. 15 to 19, inclusive, are designed to enable emery or other abrasive cloth to be employed instead of the emery blocks A A'. This may be accomplished in a simple manner by the substitution for the blocks A and A' of two constructions, each as shown in Fig. 15, in which the block A^3, of wood or other suitable material, corresponds in form with the block A' or A^2, excepting that its forward surface is concave. Across this concavity is stretched a piece of emery or other suitable abrasive cloth *a'*, the edges of which are secured to the opposite edges of the block A^3.

In the modified form shown in Figs. 16 to 19 for the employment of emery or other abrasive cloth there are two end plates H H′, carrying between them the handle C, the two rods I I′, the winding-rolls J J′, and the winding-rolls K K′. Upon the end frame H are mounted the thumb-worms L L′ for turning the rolls J J′, respectively, through the worm-wheels M and M′. Upon the end frame H is also mounted the thumb-worm N, which operates both the rolls K K′ through the worm-wheels O and O′. P and P′ are stationary guide-rods. One end of the emery-cloth A^4 is secured to the roll K, Fig. 19, whence it extends around the rods P and I to the roll J, to which its other end is secured. One end of the emery-cloth A^5 is secured to the roll K′, whence it extends around the rods P′ and I′ to the roll J′, to which its other end is secured. By the movement of the thumb-worms L, L′, and N, the two pieces of emery-cloth A^4 and A^5 may be brought to any required tension and may be moved endwise, so as to change the surface of the cloth between the rods P and I and P′ and I′, which constitute the grinding areas.

It will be observed that one feature of all forms of construction above described consists of the combination of a plurality of grinding areas, as *x* and *y*, separated by a relatively less grinding area *z*, or as *w*, *x*, and *y*, separated by relatively less grinding areas *z* and *z′*, or it may be expressed by saying that all of the forms present a plurality of pressure areas separated by a less pressure area. It is preferable that in the areas intermediate the grinding areas the grinding should be so much less as to be reduced to nothing or, in other words, that the pressure should be so much less as to break contact. All of the constructions are shown in the drawings in this preferable form, because in all of them there is a space between the grinding areas where the contact with the cylinder being ground is entirely broken; but except in the particular claims where it is so stated I do not wish to be understood as limiting myself to this entire breaking of contact so long as the grinding or pressure is less between than it is at the grinding areas.

Since the blocks A A′ will doubtless be manufactured and sold as separate articles of manufacture and since as such they embody a portion of my invention, I will now proceed to describe more particularly their construction as they have been devised and used by me.

The composition which I have employed is a vulcanizable rubber compound filled with ground emery molded into the form of the block and vulcanized. The block is preferably integrally formed throughout of this material. Behind the face or grinding areas of the block it is so formed as to be adapted for attachment to the strickle-holder. For this purpose the body of the block preferably widens beyond the width of the face, so as to be adapted to form an interlocking engagement with the strickle-holder as well as to facilitate the handling of the block in manufacture and transportation to avoid injury to the grinding-surface. The particular form of interlocking engagement presented by the blocks shown herein is the dovetailed form; but other forms of engagement or attachment may be substituted therefor.

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

1. A strickle adapted to straddle a card-clothed cylinder and to be moved longitudinally along the same; said strickle containing, in combination, a plurality of grinding areas separated circumferentially by a less grinding area.

2. A strickle adapted to straddle a card-clothed cylinder and to be moved longitudinally along the same; said strickle containing, in combination, a plurality of ribbed grinding areas separated circumferentially by a ribless area.

3. A strickle for cylindrical surfaces containing a series of ridges *a* interrupted by a series of spaces G.

4. A strickle for cylindrical surfaces containing, in combination, a plurality of grinding areas separated circumferentially by a less grinding area; each grinding area containing a series of ridges *a* interrupted by a series of spaces G and said spaces G in one grinding area being in staggered position relatively to the spaces G in the other grinding area.

5. A strickle adapted to straddle a card-clothed cylinder and to be moved longitudinally along the same; said strickle containing, in combination, a plurality of grinding areas separated circumferentially by a less grinding area and means whereby said grinding areas may be adjusted relatively to each other.

6. A strickle adapted to straddle a card-clothed cylinder and to be moved longitudinally along the same; said strickle containing, in combination, the two blocks A and A′ and a holder with which they are detachably connected whereby the position of said blocks may be changed to shift the position of the grinding areas thereon.

7. As an article of manufacture, a strickle-block consisting of a ribbed face and a body provided with means of attachment to a strickle-holder.

8. As an article of manufacture, a strickle-block containing a face of ribs interrupted by occasional spaces and a body provided with means of attachment to the strickle-holder.

9. As an article of manufacture, a strickle-block containing a ribbed face and a body adapted for attachment to the strickle-block and the material of which is integral with that of the face.

10. As an article of manufacture, a strickle-block containing a ribbed face and a body widened beyond the width of the face.

11. A strickle adapted to straddle a card-clothed cylinder and to move longitudinally along the same; said strickle containing, in combination, a plurality of grinding areas separated circumferentially by a less grinding area and a pivotal connection between said grinding areas.

12. A strickle adapted to straddle a card-clothed cylinder and to move longitudinally along the same; said strickle containing, in combination, a plurality of grinding areas separated circumferentially by a less grinding area and a pivotal connection between said grinding areas and means whereby the same may be adjusted relatively to each other.

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ADOLPH T. FUCHS.