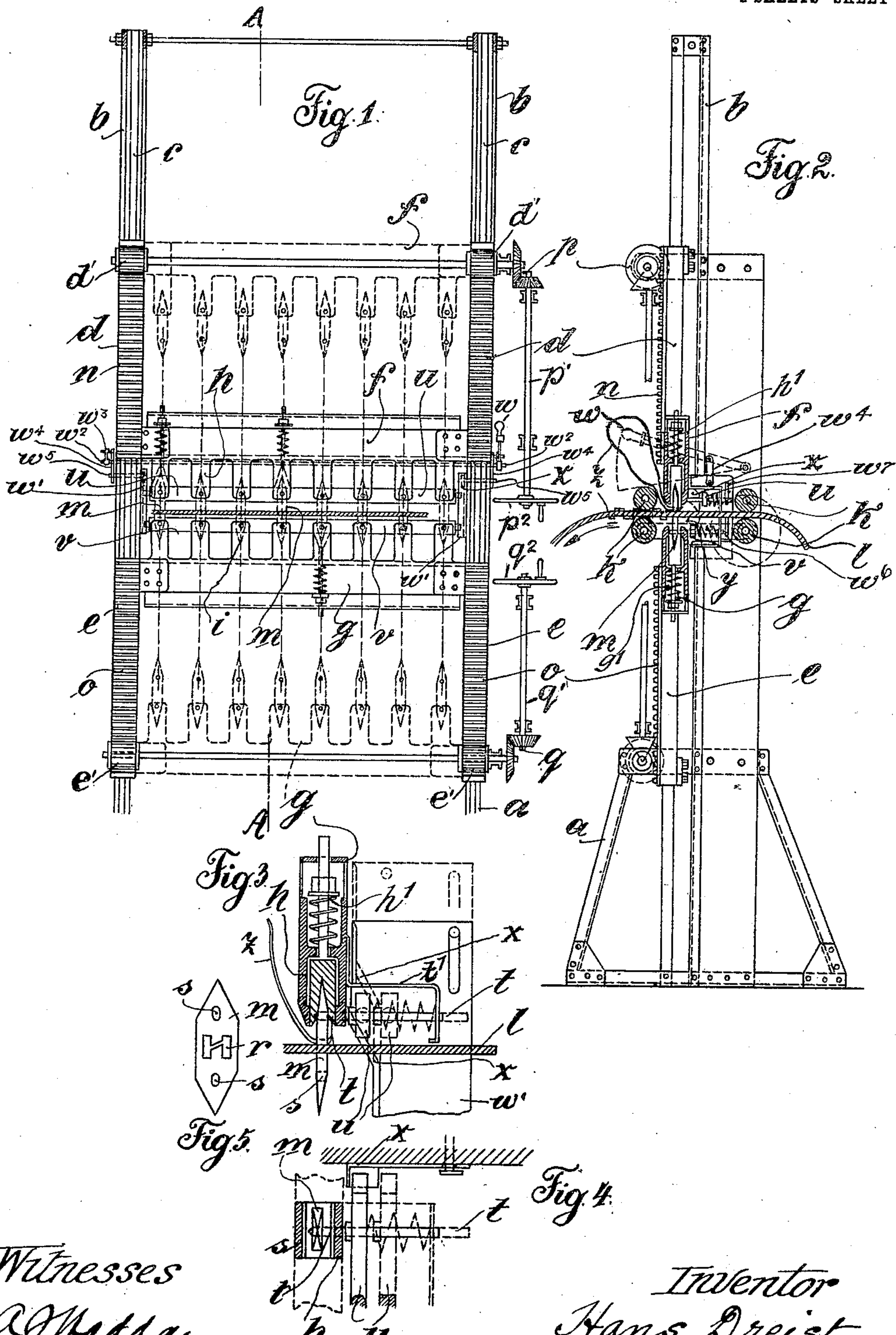


H. DREIST.
SEWING MACHINE.
APPLICATION FILED JAN. 29, 1906.

935,145.

Patented Sept. 28, 1909.
2 SHEETS—SHEET 1.



Witnesses

A. M. H. H. H.

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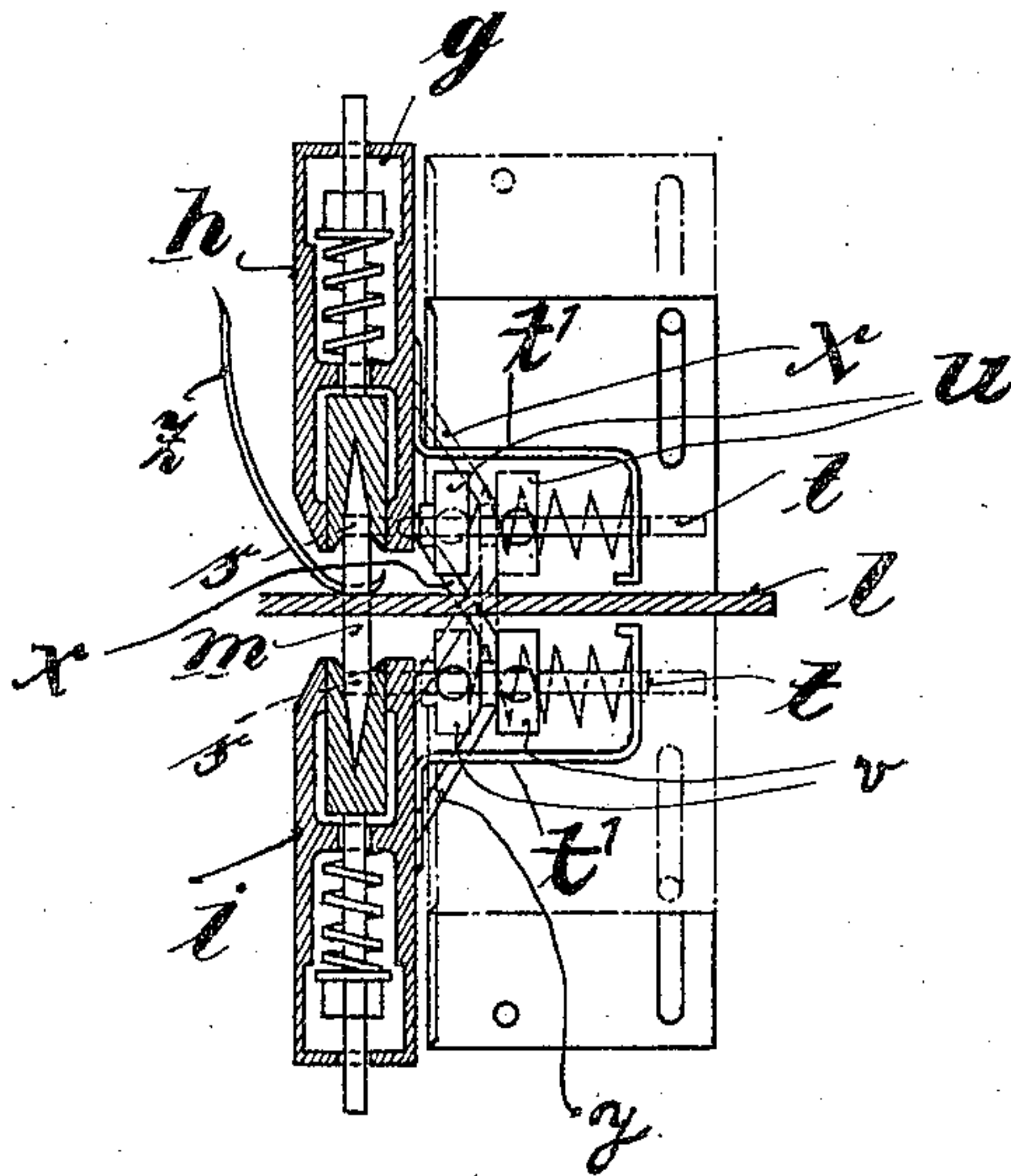
by his Attorney R. H. H. H.

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Fig. 6.



Witnesses

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HANS DREIST, OF Breslau, GERMANY.

SEWING-MACHINE.

935,145.

Specification of Letters Patent.

Patented Sept. 28, 1909.

Application filed January 29, 1906. Serial No. 298,456.

To all whom it may concern:

Be it known that I, HANS DREIST, a subject of the German Emperor, residing at Breslau, in Germany, have invented certain new and useful Improvements in Sewing-Machines, of which the following is a specification.

The present invention relates to an improved machine for sewing leather or the like, more particularly for sewing leathern driving-belts.

The machine is illustrated in the annexed drawing in which—

Figure 1 is a front-view and Fig. 2 a vertical section on the line A—A of Fig. 1. Figs. 3, 4, 5 and 6 illustrate details.

The machine comprises two standards or pillars *b* fixed to a base or pedestal *a* each of the said pillars having a vertical groove or slide-way *c* for two slide-blocks *d* and *e* situated one above the other. The lower ends of the blocks *d* and the upper ends of the blocks *e* are connected with each other by cross-bars *f* and *g* respectively, the latter being provided with vertical tubular projections *h* and *i* serving as holders for needles *m* which are pointed at both ends and fit into suitable blocks arranged in the said holders.

The belt *l* is adapted to be conducted between the holders by means of rollers *k*. The two guides *c* for the blocks *d* and *e* are of such length that when the block *d* is in its lowest position and the block *e* in its highest position the needles *m* are engaged by adjacent holders *h* and *i*.

For reciprocating the cross-bars *f* and *g* racks *n* and *o* fixed to the bars *d* and *e* are provided which racks can be moved upward and downward by means of pinions *d*¹ *e*¹ operated by bevel-gear *p* *q* from shafts *p*¹ *q*¹ carrying hand wheels *p*² *q*² within easy reach of the attendant. At the center of each needle a recess *r* is provided and above and below the latter there are eyes *s*. The recesses *r* serve for fastening to the needles the leathern "thread" *z* by means of which the belt or the like is to be sewn, the said "thread" being preferably provided with pointed ends. The eyes *s* serve for fixing the needles alternately to the holders *h* and *i* during the sewing operation.

The position of rest of the holders *i* is indicated in the drawing by solid lines, the holders *h* being then in the position indicated by dotted lines both the cross-bars

being, therefore in their highest positions. The needles are, in this position, engaged by the holders *h*, in which they are secured by means of rods *t* fixed to a horizontally movable spring actuated bar *u* and adapted to enter lateral apertures provided in the holders. A similar spring-actuated bar *v*, with rods fixed thereto, is provided for engaging the needles when the latter enter the holders *i*. The rods *t* also serve the purpose of supporting the spring actuated bars *u* and *v*, said rods in turn being slidably supported at one end by brackets *t*¹ connected to the holders *h* and *i* and at the other end by the holders themselves.

When the belt to be sewn is inserted between the rollers *k*, and the holders *h* with the needles therein are moved from their upper to their lower position the needles perforate the belt and enter the holders *i*.

In order to draw the "thread" connected with the needles downward through the belt the needles must be disengaged from the holders *h* and secured at the same time to the holders *i*. This is effected by means of a pair of slides *w*¹ adapted to be moved vertically along the pillars *b* by means of a lever *w* and each provided with two converging surfaces *x* and *y* against which the bars *u* and *v* are pressed by means of their springs, so that when the slides provided with the said surfaces are moved upward or downward one of the said bars is moved toward the holders and the other is moved backward. The said converging surfaces *x* and *y* are preferably formed by cutting out a V-shaped portion from the slides *w*¹ and then bending the edges of the V-shaped portion inwardly at right angles to the surface of the slide, as clearly shown at *x* in Fig. 4. The slides *w*¹ are guided by pins *w*⁶ and slots *w*⁷. The hand lever *w* is fixed on a shaft *w*² carrying at the opposite end an arm *w*³. Links *w*⁴ *w*⁴ connect the lever *w* and arm *w*³ to pins *w*⁵ *w*⁵ extending from the slides *w*¹ *w*¹ respectively.

With the parts in the position indicated in Figs. 3 and 4 by solid lines the needles have perforated the belt but are still secured to the upper holders and not yet fixed to the lower holders. When, however, the inclined surface *x* is moved into the position indicated in Fig. 3 by dotted lines the bar *u* is so moved that the rods *t* fixed thereto are withdrawn from the holders *h*, that is to say from the upper eyes of the needles. At

the same time the surface *y* allows the bar *v* to be moved in the opposite direction by spring pressure, so that the rods *t* fixed thereto enter the holders *i* and engage the lower eyes of the needles. The cross-bar *g* is thereupon moved downward so that the "thread *z*" is drawn through the belt. The latter is then moved forward through a distance corresponding to the length of one stitch, and the sewing action is repeated by moving the parts in the opposite direction, that is to say cross-bar *g* is moved upward so that the upper points of the needles perforate the belt and enter the holders *h* in which they are automatically engaged while being disengaged from the holders *i*. In order to prevent breaking of the leathern "threads", which are usually not of perfectly uniform length, the needle-holders are supported by springs *g*¹ *h*¹ as shown in Figs. 2 and 3.

It may be mentioned that the needles *m* can also be used for sewing leathern driving belts and the like by hand.

What I claim as my invention and desire to secure by Letters Patent of the United States is:—

1. In a sewing machine the combination of two cross bars each carrying a plurality of needle receiving sockets between which bars the material is fed, double pointed needles adapted to be carried by said sockets, and means whereby the said needles are caused to be secured in and released from each series of sockets alternately for the purpose set forth.

2. In a sewing machine the combination of a frame, two cross bars each carrying a plurality of needle receiving sockets mounted therein between which bars the material is fed, means for imparting vertical movement to said bars double pointed needles adapted to be carried by said sockets and each provided with two perforations, and spring

actuated rods adapted to be engaged in and released from said perforations to secure the needles in the sockets of the one or other bar alternately for the purpose set forth.

3. In a machine for sewing leather the combination of a frame, a pair of bars mounted therein between which the material is fed, means for imparting vertical movement to said bars, a plurality of needle holders carried by each of said bars, double pointed needles adapted to be carried by said holders said needles having a perforation adjacent each end, spring actuated rods adapted to engage the perforations in the needles and means comprising a hand operated slide with inclined faces for operating said rods whereby the needles are secured in and released from the holders of each of the bars alternately for the purpose set forth.

4. In a sewing machine the combination of a frame, a pair of bars mounted therein between which the material is fed, racks for imparting vertical movement to said bars, pinions engaging said racks, hand wheels, shafts and beveled gear for the separate operation of said pinions perforated needle holders carried by said bars, double pointed needles adapted to be carried by said holders and having a perforation adjacent each end, rods adapted to engage the perforations in the needles and needle holders to lock the needles in the latter, spring actuated bars adapted to act on said rods, and a slide having inclined surfaces acting on said bars whereby the needles are secured in and released from the holders of each of the needle bars alternately for the purpose set forth.

In witness whereof I have signed this specification in the presence of two witnesses.

HANS DREIST.

Witnesses:

CARL SCHAND,
OTTO NICKEL.