April 19, 1927. 1,625,527

A. DEMNITZ

PNEUMATIC SOLE LAYING MACHINE

Filed March 13, 1924

Fig. 1.

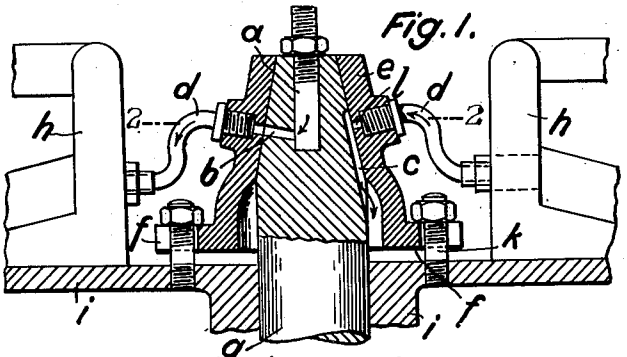


Fig. 4.

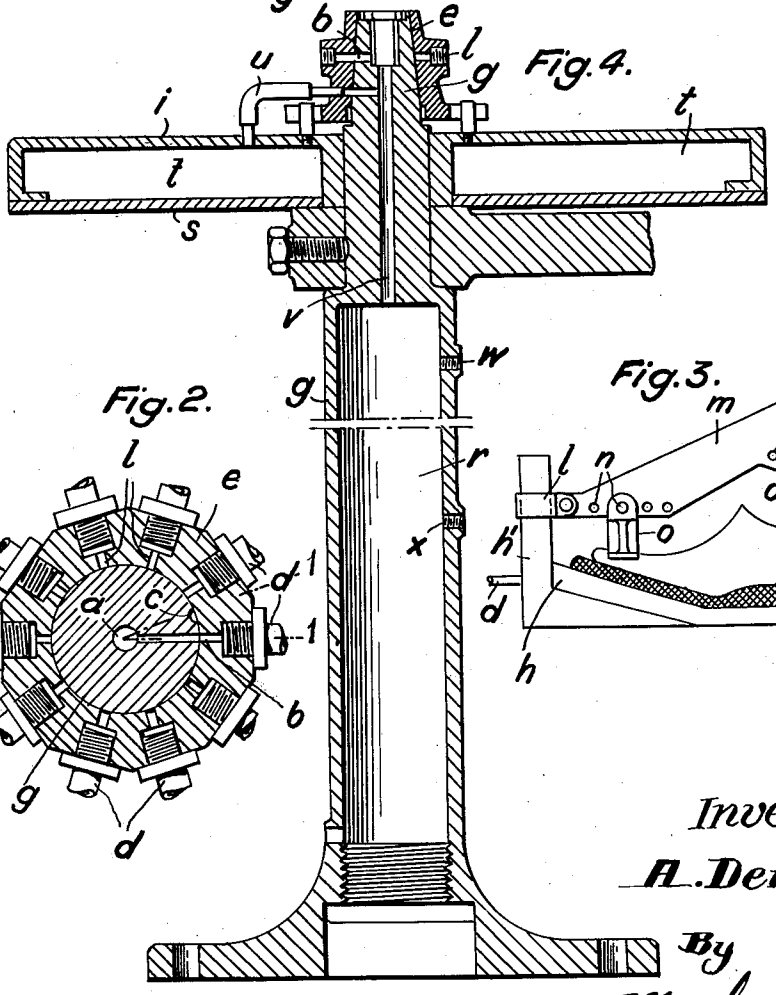


Fig. 2.

Fig. 3.

Inventor:

A. Demnitz

By

Marks & Clerk

Attys.

Patented Apr. 19, 1927. 1,625,527

UNITED STATES PATENT OFFICE.

ALBERT DEMNITZ, OF DRESDEN, GERMANY.

PNEUMATIC SOLE-LAYING MACHINE.

Application filed March 13, 1924, Serial No. 699,103, and in Germany March 19, 1923.

In the manufacture of foot-gear, sole laying has hitherto been ordinarily carried out by means of individual presses, which are operated either by mechanical pressure means, such as threaded spindles or the like, or by compressed air. Such individual presses obviously have the great disadvantage that they take up too much space and in addition to this are not well suited for the mass production of foot gear. In order to facilitate the mass production of foot-gear having soles which are fastened to the uppers solely by means of adhesive substances, revolving presses have been proposed, which are either operated by compressed air or by mechanical pressure members such as threaded spindles or the like.

The present invention relates to revolving presses which are operated by compressed air and has for its primary object to improve the general design of a press of this kind.

A pressing device has previously been proposed by me in German Patent No. 363,795 having the feature that a rotatable table supporting the pressing devices is adapted to revolve about a fixed shaft provided with air admission and escape passages and is fixed to a casing mounted on the said shaft and having a number of air passages corresponding to the number of pressing devices on the table and that each of the said pressing devices on the table is provided with a lever for holding the shoe to be treated. According to the present invention the lever is adapted to be fixed in position by a stirrup.

In the accompanying drawing several constructional examples of the invention are shown,

Fig. 1 being a partial section on line 1—1 of Fig. 2,

Fig. 2 a section on line 2—2 of Fig. 1,

Fig. 3 a view of the clamping device for the shoe to be treated, one of which is provided on each of the pressing devices, and

Fig. 4 a longitudinal section through a modified construction of the machine, the separate presses on the table being omitted.

According to Fig. 1, a table i acting as a support for a plurality of radially arranged pressing devices h is mounted rotatably on the fixed vertical shaft g. The feet f of a casing e, which surrounds the upper end of the shaft g, are fixed by means of bolts k to the table i. In the top of the shaft g a passage a is provided, which is adapted to be connected to a suitable source of compressed air not shown in the drawing. From the passage a a passage b extends to the outer surface of the shaft g. A passage c communicating with the atmosphere is also provided in the part of the outer surface of the shaft g lying within the casing e. In the casing e a number of passages l corresponding to the number of pressing devices h on the table i are provided and each passage l communicates by means of a pipe d with one of the pressing devices h. As is seen from Fig. 3 a clamp l is clamped on an upwardly extending arm h' of each pressing device h, to which clamp a lever m is pivoted. The side of the lever m facing the table is provided with holes n and n', in which clamping pieces o and o' are adjustably fixed. The unsupported end of the lever m is provided with notches m' and a stirrup q is pivoted by means of a bolt p to each pressing device, which stirrup is adapted to engage with the notches m' of the lever m.

The distance between the passages b and c in the shaft g is smaller than the distance between the ports of the passages l of the casing e facing the shaft g (Fig. 2).

Below the table i means are provided, which are not shown in the drawing, for fixing the table in any required position. The shaft g can either be vertical or horizontal, in which latter case the table is a wheel-like member, the spokes of which form the pressing devices.

The table i may be made in one piece with the casing e.

According to the constructional form of the machine shown in Fig. 4 the pressure air is supplied to the shaft or support y from the under part thereof. For this purpose a hollow space r is provided in the fixed shaft or in the support g, which communicates through a passage v, preferably provided with a pressure reducing valve, with the casing e for the separate presses on the table i, which are not shown in Fig. 4. The rotatable table i itself is in this constructional form hermetically closed at the bottom by means of a plate s, resulting in a further hollow space t. The two hollow spaces r and t are used as air reservoirs, so that separate air reservoirs in the pipe between the source of compressed air and the press are not required. For this purpose the annular space t is always in communication with the passage v in the shaft g through a

pipe *u*, which may have any suitable position. Instead of the table *i* being closed below by a separate plate, the plate *s* may be made in one piece with the table *i*. A connecting boss *w* is provided on the hollow shaft *g* for leading in the compressed air, while a further boss *x* is provided for fixing a pressure gauge. The passage *v* is sealed at the top by a suitable stopper.

The pneumatic press described above operates in the following manner:—

As soon as one of the passages *l* in the casing *e* is brought into communication with the passage *c* in the shaft *g*, on the table *i* and with it the casing *e* rotating about the shaft *g*, the corresponding pressing device *h* will be in communication with the outer air. The stirrup *q* is thereupon turned about the bolt *p*, whereby the lever *m* with the clamping pieces *o*, *o'* can be raised. The shoe to be treated is then laid in the pressing device *h* and the lever *m* is turned downwards so that the clamping pieces *o*, *o'* come in contact with the shoe and hold the latter in position, as soon as the stirrup *q* again engages with one of the notches *m'* in the lever *m*. The table *i* is thereupon turned and as soon as the passage *l* above referred to is in communication with the passage *b* in the shaft *g* compressed air will flow through the passages *a*, *b* and the pipe *d* into the pressing device *h* and will act on the sole to be stuck on to the clamped shoe. As the table *i* is turned further the passage *l* finally comes opposite the passage *c* again, so that the compressed air can escape into the atmosphere, whereupon the lever *m* can be released and the treated shoe be taken out of the pressing device *h* and another shoe be put in its place.

The operation just referred to is repeated for each pressing device, so that the workman need not change his position and has no further work to do than to take the finished shoes out of the pressing devices, to place fresh shoes into the same and to turn the table.

What I claim is:—

1. A pneumatic sole-laying machine, which comprises a rotatably mounted table, a plurality of pressing devices arranged radially on said table, a clamping lever having a free end for each of said pressing devices, a plurality of notches provided at the free end of said clamping lever, and a stirrup which is rockingly mounted and capable of co-operating with said notches for engaging and adjusting said clamping lever in operative position.

2. A pneumatic sole-laying machine, comprising a plurality of pressing devices, supporting means for supporting said pressing devices in radial direction of the machine, and clamping means for each of said pressure devices, said clamping means comprising a lever having a free end provided with a plurality of notches at the free end thereof and a rockingly mounted stirrup adapted to engage said notches for adjusting said lever in operative position.

In testimony whereof I have signed my name to this specification.

ALBERT DEMNITZ.