Dec. 27, 1955 E. SIEMPELKAMP 2,728,468

DEVICE FOR FEEDING AND DISCHARGING PRESSES

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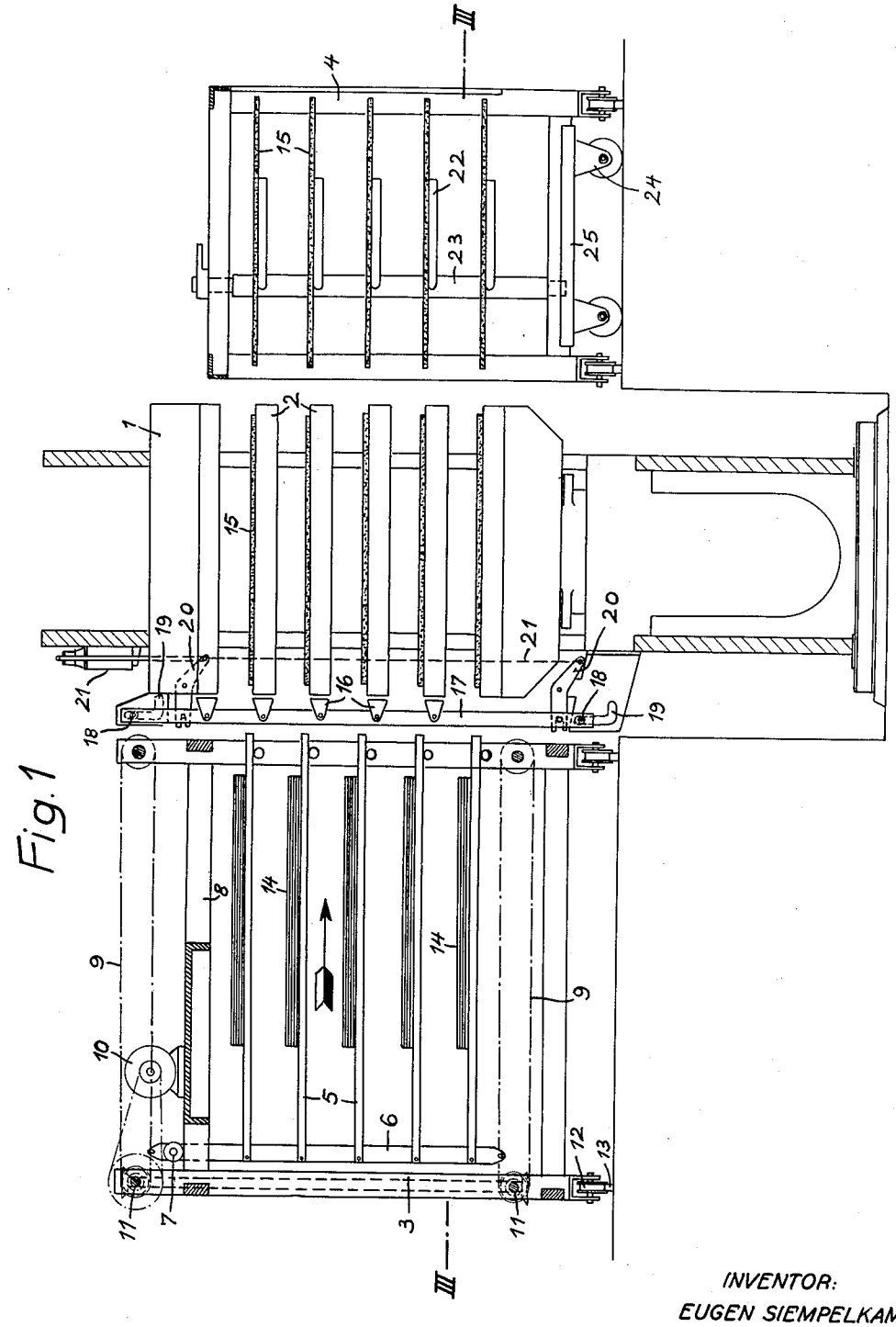


Fig. 1

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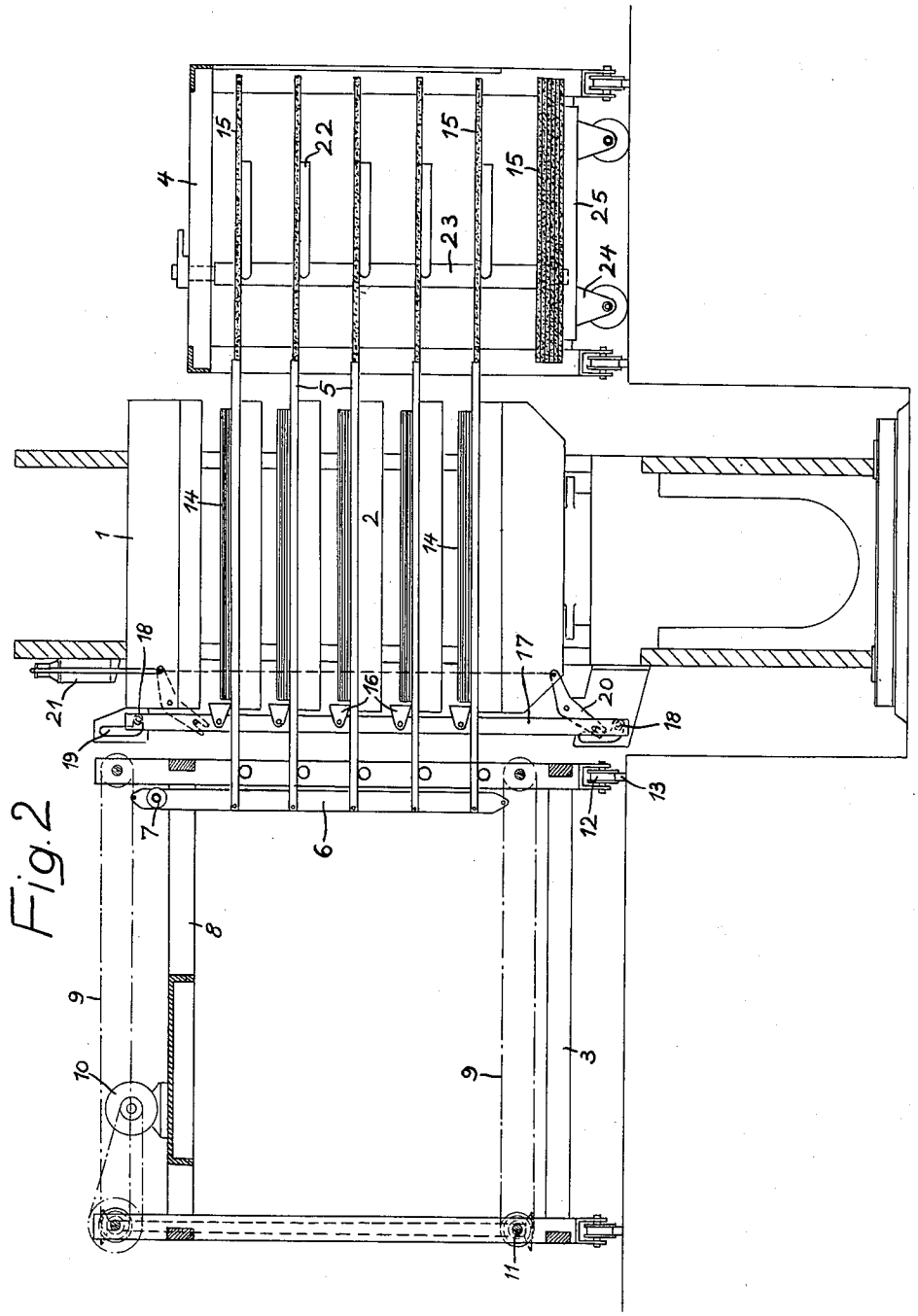


Fig. 2

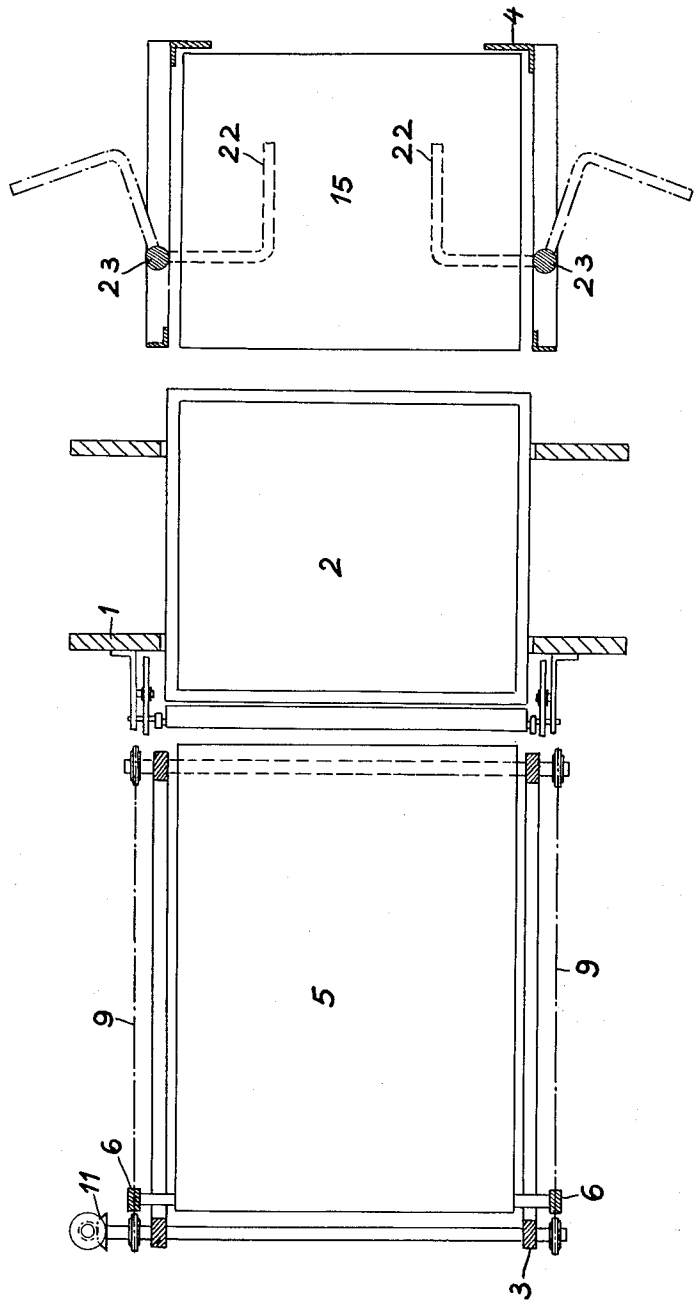
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Fig. 3



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DEVICE FOR FEEDING AND DISCHARGING PRESSES

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Claims priority, application Germany June 15, 1951

1 Claim. (Cl. 214—16.6)

The invention relates to a process and a device for feeding and discharging presses with a series of plate-like pressing members superimposed in stories. It is known to those skilled in the art to charge the material to be pressed into such presses by means of feeding plates corresponding in number with the stories and arranged movably in a frame work on the front side of the press. By sliding the feeding plates, upon which the material to be pressed is stored, into the stories of the press, the plates push the material already pressed and resting on the pressing members out from the press into a discharging device on the rear side of the press. At the withdrawal of the feeding plates the material to be pressed is held back in the press by means of suitable blocking members or the like. The discharging device has usually a series of superimposed holding plates upon which the pressed material is pushed by the feeding plates and from which it may be removed by hand or mechanically. To ease this operation the holding plates are lowered from story to story.

The main object of the invention is to facilitate the feeding and the discharging operations of a press with a series of pressing members superimposed in stories in a simple and effective manner.

The material to be pressed, especially plate-like material is first stored on the feeding plates. Then these plates are moved forwards in a horizontal direction into the stories of the press. On their way they slide over guiding members, preferably guiding slats, arranged on the front side of the pressing members. The guiding slats being movable in a horizontal direction are located in such a position that the base side of their wedge-like cross section abuts with the front side of the pressing members. When the feeding plates are moved forwards into the press, the material pressed in the foregoing operation and resting on the pressing members is pushed out from the press into a discharging device on the opposite, i. e. the rear side of the press, this device being afterwards more clearly described.

Then the guiding slats are lowered onto the surfaces of the feeding plates, their base sides thereby abutting with the front sides of the material to be pressed. Now, at the withdrawal of the feeding plates into their loading position the material to be pressed is held back by the guiding slats. Thereby these slats serve as guiding members for the feeding plates when these plates are moved forward and as blocking means for the material to be pressed when the feeding plates are withdrawn.

Preferably the guiding slats are mounted pivotally at a limited angle on vertical holding bars movable in a vertical and horizontal direction. By this arrangement, the guiding members when lowered rest on the surfaces of the feeding plates even when the pressing members upon which the feeding plates slide are spaced in someway different distances from each other.

The discharging device on the rear side of the press is provided with a series of pairs of superimposed and

horizontally elongated holders for the pressed material pushed out from the press by means of the feeding plates. Each holder of the pairs is rigidly mounted on a vertical shaft arranged at the framework of the discharging device. These shafts rotatable about vertical axes are spaced from each other at a distance greater than the maximum width of the pressed plate-like material. By turning the vertical shafts and with them the holders outwardly about vertical axes the pressed plates resting on the said holders drop on a transporting means and are stored on its platform.

As a preferred embodiment of the invention a press with a series of pressing members superimposed in stories with an appurtenant feeding and discharging device is schematically illustrated in the accompanying drawings of which Figs. 1 to 2 show a side view of the press, the feeding and the discharging device at different stages of their operation and Fig. 3 a horizontal cross section at line III—III of Fig. 1.

A suitable press **1** with a series of pressing members **2** superimposed in stories is provided on its front side with a feeding device **3** and on its rear side with a discharging device **4**. The feeding device contains a series of superimposed feeding plates **5** corresponding in number with the stories of the press. The plates **5** are rigidly held at one end by vertical holding bars **6**, which are mounted on rolls **7** horizontally movable at the framework **8** of the feeding device **3**. Endless belts **9** driven by a motor **10** by means of a gear **11** are connected with the top or bottom ends of the bars **6** respectively. The feeding device **3** is movable in a sideward direction by means of wheels **12** running on rails **13** to and from the loading place (not shown). The plate-like material **14** to be pressed is stored on the plates **5**, when they are in loading position.

Plates **15** pressed in a foregoing operation of the press **1** rest on the pressing members **2**. On the frontside of these members there is arranged a series of superimposed slats **16** of wedge-shaped cross sections. The slats **16** are mounted on vertical bars **17** vertically and horizontally movable in the frame work of the press **1**. For this purpose, the bars **17** have on their top and bottom ends protruding bolts **18** guided in L-shaped recesses **19** of the press and are connected with levers **20** being turnable about horizontal axes by means of a steering member **21**.

When the bars **17** are raised as shown in Fig. 1, the base side of each slat **16** abuts with the front side of an adjacent pressing member **2**, the adjoining upper edges of slat **16** and member **2** being flush. In this position the slats **16** serve as guiding members for the feeding plates **5**, when these are slid into the press by moving bars **6** in the direction of arrow A.

As shown in Fig. 2, the pressed plates **15** are pushed out from the press by feeding plates **5** sliding over the guiding members **16** and the upper sides of the pressing members **2**. Then, the slats **16** are lowered by means of the bars **17** until they rest on the upper sides of plates **5**. Now, the base side of each slat **16** abuts with the front side of an adjacent plate **14**.

When the press is opened, the distances between the pressing members **2** may differ slightly. For equalizing these differences the slats **16** are mounted pivotally at a limited angle on bars **17**.

At last, the feeding plates **5** are withdrawn from the press by moving bars **5** rearwardly, i. e. contrary to the direction of arrow A. The plates **14** to be pressed, held back by the slats **16**, remain in their position and rest after the complete withdrawal of plates **5** on the pressing members **2**. Then the press is closed and the pressing operation started. The plates **15** pushed out from the press into the discharging device **4** rest on pairs of horizontally elon-

gated holders 22. The superimposed pairs of these holders correspond in number with the stories of the press and are flush with the adjacent pressing members 2. The holders 22 are fixed on vertical shafts 23 mounted rotatably around vertical axes at the frame work of the discharging device 4. The distance between the shafts 23 is greater than the maximum width of a plate 15 as shown in Fig. 3.

When the holders 22 are swung into their loading position, the plates 15 are supported by these holders. By swinging the holders outwardly to a transporting means, e. g. a car 24 as shown in Figs. 1 and 2 and are stored on its platform 25. This operation may be carried out independently from the feeding and pressing operations at any suitable time. Thereby, the feeding device, the press and the discharging device may be operated by the same workman. To spare handwork, all movable parts of the described apparatus may be mechanically driven by suitable means, which are preferably automatically operated by electric or mechano-electric steering means.

Having now clearly explained the nature of my invention, it should be understood that its scope is not limited to the embodiments described and illustrated above.

What I claim is:

A loading and unloading apparatus for a multiple platen press having a plurality of vertically spaced and movable pressure plates, said plates occupying predetermined spaced positions when the press is opened to receive work units between said plates, comprising a receiving rack adapted to be positioned near one side of said press and having spaced shelve means adapted to register with said plates when said press is in the open position, a loading rack adapted to be positioned near the opposite side of said press and having a plurality of spaced shelves adapted to register with the work on said plates, means for horizontally reciprocatingly moving said shelves into the press and against the work on said plates for pushing the work onto said shelve means and for withdrawing said shelves from said pressure plates into said loading rack for loading new work units unto said shelves, vertically movable stop means connected with the press and adapted to be positioned against the rear ends of the work units on said shelves when the latter are in the press for holding the new work units in the press upon withdrawal of the shelves, said stop means including a plurality of horizontally positioned bars having a substantially vertical surface adapted to abut against the rear ends of the work units when said stop means are in low position and to face the ends of the pressure plates which are adjacent to said loading rack when said stop means are in high position, said stop means including support means, said bars being mounted on said support means and having a substantially triangular cross section, said vertical surface forming one side of the triangle, and guide means for vertically guiding said support means from a low to a high position and vice versa and for horizontally guiding said support means toward the rear end of the work units when said stop means are in the low position.

References Cited in the file of this patent

UNITED STATES PATENTS

1,951,178	Smitmans	Mar. 13, 1934
2,264,125	Wolf et al.	Nov. 25, 1941
2,593,012	Croston	Apr. 15, 1952
2,609,110	Tesch, Jr.	Sept. 2, 1952

FOREIGN PATENTS

420,394	Great Britain	Nov. 30, 1934
433,778	Great Britain	Aug. 15, 1935