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 METHOD AND APPARATUS FOR MOVING PLATE-LIKE
 MATERIAL INTO A STORAGE FRAME
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Fig. 1

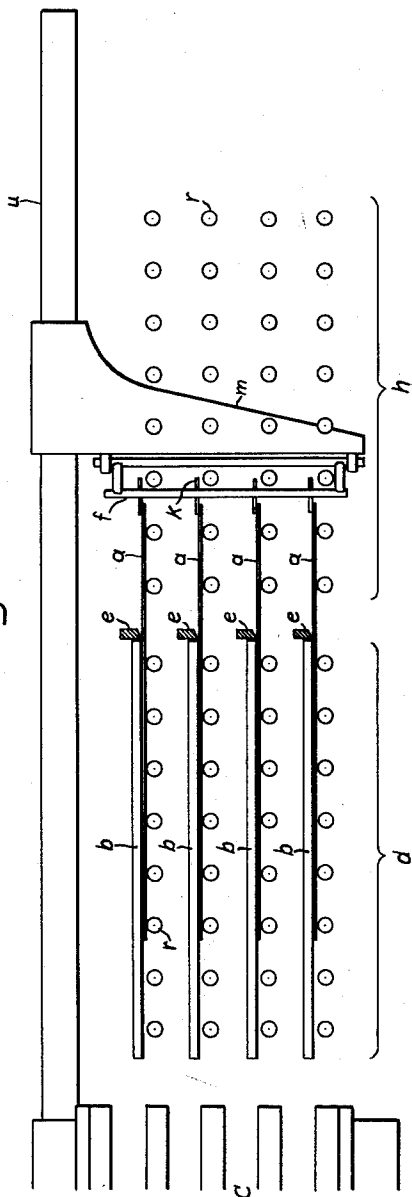
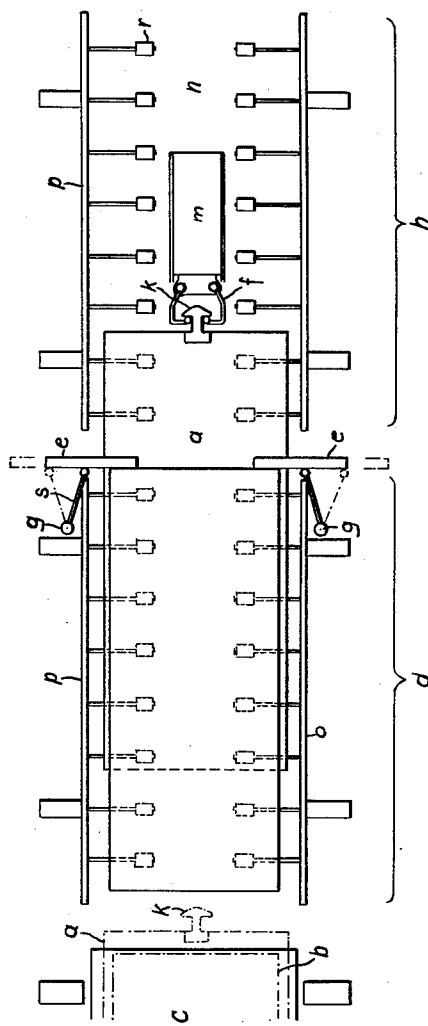


Fig. 2



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METHOD AND APPARATUS FOR MOVING PLATE-LIKE MATERIAL INTO A STORAGE FRAME

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3 Claims. (Cl. 214—16.6)

At the pressing of plates, especially in multi-storied presses, the material to be pressed is fed to and the pressed material discharged from the press stored upon supporting members such as sheet plates and the like. These plates loaded with the pressed material are drawn from the press into a stapling device such as a table or a roll conveyor usually by hand. There the plates of pressed material have to be lifted from the supporting members by hand too. This manner of working is very ineffective and expensive.

The main object of the invention is to simplify and to ease the separating of the material plates from the supporting plates when the latter are discharged from the press.

Another object of the invention is to provide an automatically working apparatus for this separation by saving manual labor.

The method of carrying out the separation according to the invention consists in the following steps. First, the supporting sheet plates loaded with the material pressed into plates are drawn by a suitable pulling means from the press into a storage frame. Then, the sheet plates are drawn into another adjacent storage frame, whereas the material plates are withheld in the first frame by means of movable stoppers arranged at the rear end of this frame.

Advantageously, a horizontally movable crane beam working as the pulling means is slidably arranged on a rail above the storage frames, while its vertically elongated arm runs between the sidewalls of the frames. This arm is provided with suitable clamping members such as movable claws and the like adapted to engage with protruding clamping members such as noses, hooks, eyes and the like arranged at the front side of the sheet plates. The movable stoppers may consist in horizontal bars connected with actuating links swinging around vertical axes arranged on the side walls of the first frame at their rear ends.

When using the method and the apparatus according to the invention in combination with a multi-storied press, each of the storage frames has a plurality of superimposed stories corresponding in number with the press' stories. Furthermore, the clamping members of the crane beam are adapted to engage simultaneously with a plurality of superimposed sheet plates. Besides that, each story of the first storage frame is provided with movable stoppers as illustrated above.

Further details of the invention are illustrated in the accompanying drawing and described in the following:

Fig. 1 shows a side view and

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Fig. 2 a plan view of a preferred embodiment of the invention schematically by way of example.

Sheet plates *a* loaded with plates *b* of pressed material rest in superimposed stories of a multi-storied press *c*. Therefrom, a plurality of superimposed plates *a* is drawn into superimposed stories of a storage frame *d* by means of an arm *m* of a crane beam horizontally movable on a rail *u* situated above the frame *d* and a second adjacent storage frame *h*. At the rear ends of the sidewalls *o* and *p* of the frame *d*, there are horizontal bars *e* actuated by horizontal links *s* swinging around vertical axes *g* arranged on the sidewalls *o* and *p* respectively. When the bars *e* are in their position as shown at Fig. 2, the material plates *b* are withheld within the frame *d* while the now emptied plates *a* are drawn by arm *m* into the adjacent frame *h*. Then, the plates *b* rest on holding rolls *r* of the frame *d* and the plates *a* on similar holding rolls *r* of the frame *h*. When the crane beam is moved along the rail *u*, the arm *m* is moved within the free space or track *n* between the sidewalls of the frames *d* and *h*. On the front side, arm *m* is provided with claw- or pincer-like clamping members *f* adapted to engage with hooks or noses *k* protruding from the front side of the plates *a*.

When the crane beam is pushed against the plates *a* loaded with material plates *b* and resting in the stories of the press *c*, the latter being opened, the clamping members of arm *m* engage automatically with a plurality of corresponding clamping members *k* of superimposed plates *a*. Then the arm *m* is moved through the track *n* between the sidewalls *o* and *p* of the frames *d* and *h*. Thereby, the plates *b* are held by the bars *e* within the first frame *d* and the plates *a* are drawn into the second frame *h*. Then, the mutual engagement of clamping members *f* and *k* is suspended by automatically or manual opening the members *f*. The plates *a* and *b* resting on the holding rolls *r* of frame *d* or *h* respectively may be removed from these frames in a usual manner.

Without departing from the scope of the invention, alterations of the method and the apparatus as described and illustrated above may be made as known by those skilled in the art.

What I claim, is:

1. An apparatus for moving superimposed plate-like material into a multi-storied storage frame comprising a plurality of superimposed supporting plates for the plate-like material, pulling means for moving said supporting plates in a direction coinciding with the planes of said plates, a multiple storied frame for receiving said supporting plates and placed in line with the storage frame for the plate-like material, said storage frame and said frame for the supporting plates affording passage of said pulling means therethrough, said pulling means including clamping means, hooks protruding from said supporting plates and adapted to be engaged by said clamping means, and arresting means connected with the storage frame and adapted to engage the plate-like material resting on said supporting plates while the latter are pulled by said pulling means through the storage frame for arresting the plate-like material in the desired position in the storage frame and affording continued pulling of the supporting plates from underneath the plate-like material into said frame for the supporting plates.

2. An apparatus as defined in claim 1 in which the storage frame for the plate-like material and the frame for

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the supporting plates have a central longitudinal passage and said pulling means are formed by a horizontally movable crane having a vertical arm adapted to move through said passage said clamping means being connected with said vertical arm for pulling the supporting plates through the storage frame. 5

3. An apparatus as defined in claim 1 in which the storage frame for the plate-like material has side walls and in which said arresting means are formed by bars horizontally swingably mounted on said side walls for swinging into and out of the path of the plate-like material resting on said supporting plates. 10

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