H. ZIMMERMAN.

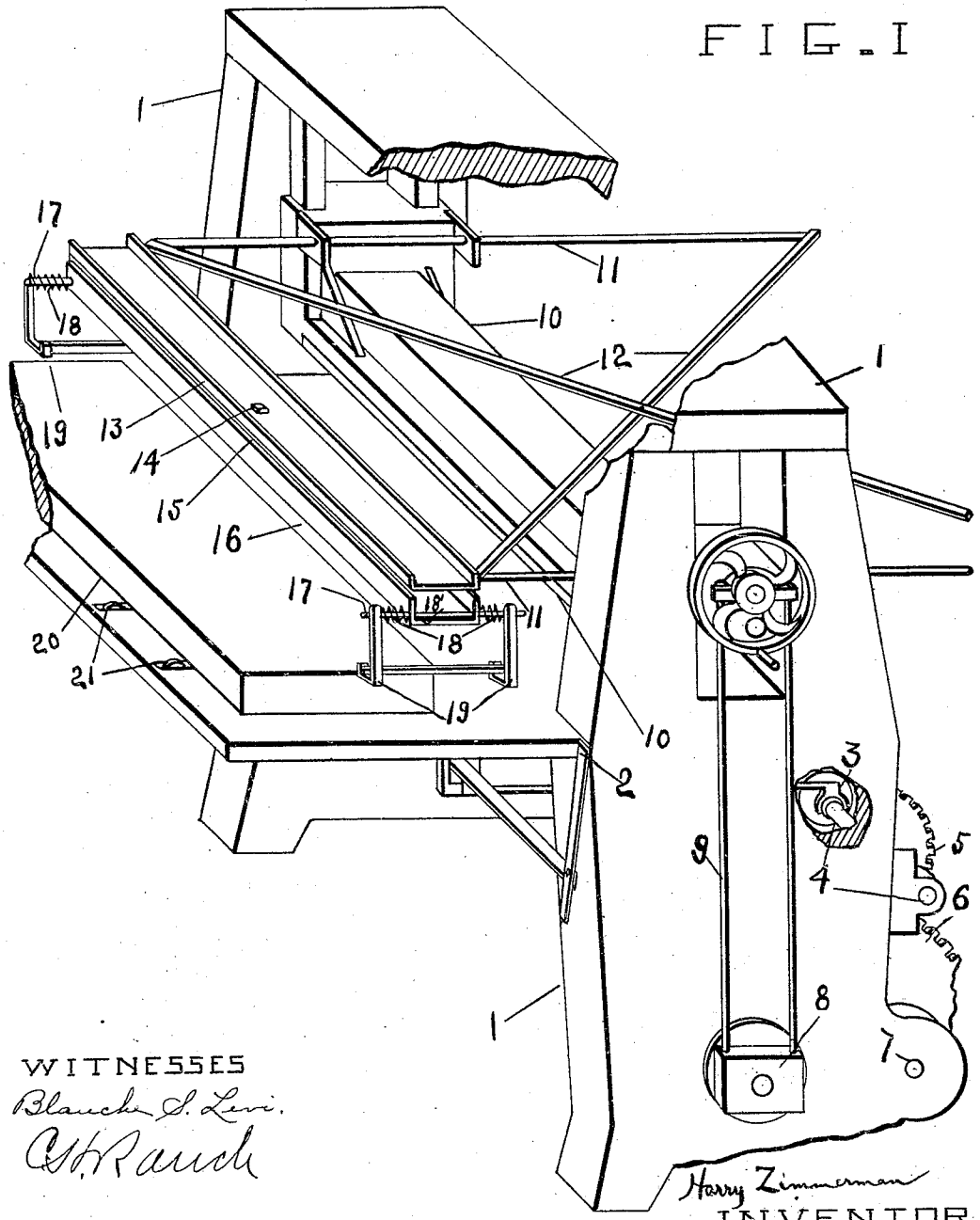
DIE CARRIER.

APPLICATION FILED APR. 15, 1909.

955,245. **Patented Apr. 19, 1910.**

2 SHEETS—SHEET 1.

FIG. I



WITNESSES

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2 SHEETS—SHEET 2.

FIG. 2

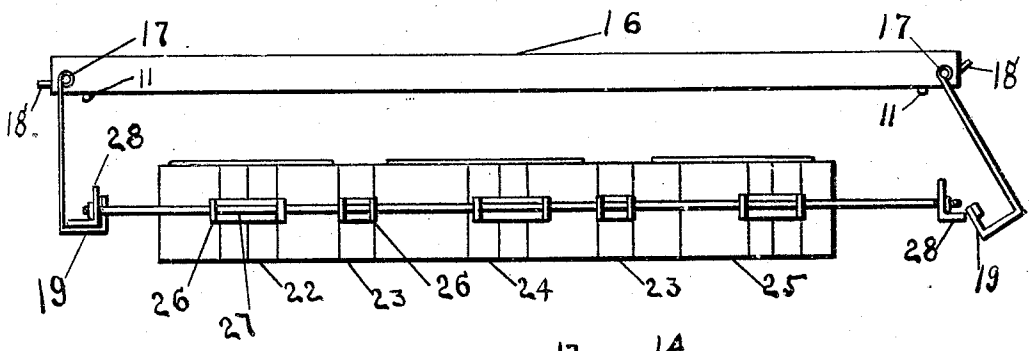


FIG. 3

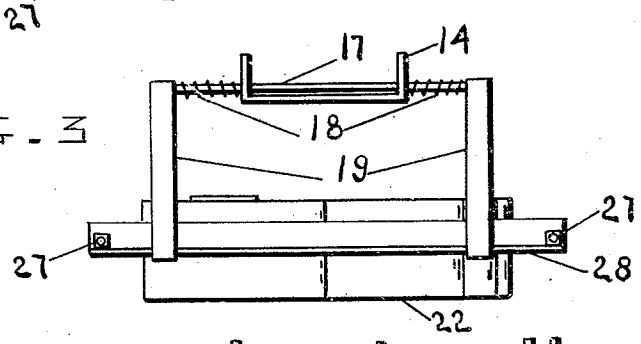
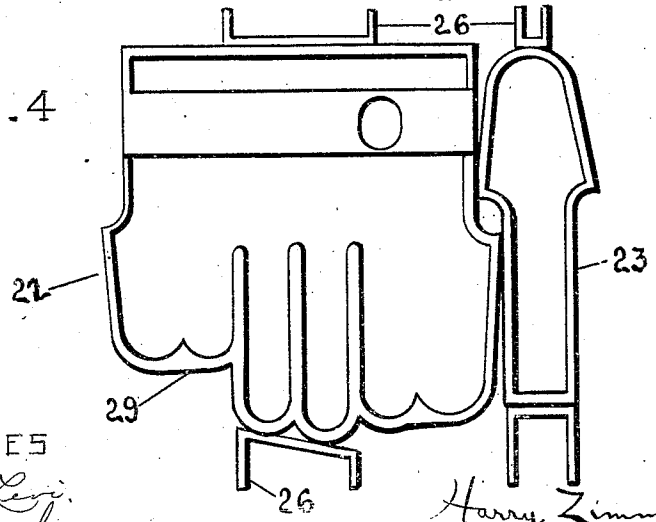


FIG. 4



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UNITED STATES PATENT OFFICE.

HARRY ZIMMERMAN, OF FREMONT, OHIO.

DIE-CARRIER.

955,245. Specification of Letters Patent. Patented Apr. 19, 1910.

Application filed April 15, 1909. Serial No. 490,189.

To all whom it may concern:

Be it known that I, HARRY ZIMMERMAN, a citizen of the United States, residing at Fremont, Sandusky county, Ohio, have invented a new and useful Die-Carrier, of which the following is a specification.

This invention relates to mechanism for conveniently disposing and adjustably handling an implement or group of implements in the course of the performance of work.

This invention has utility when adapted to a press having dies arranged on the material to be cut and then movable under the plunger of the press, the scheme providing not only convenient means for placing the dies in the desired location on the material, but for removing the dies afterward. In the grouping of dies in multiple fabric cutting, the dies with their guiding frame are of such proportions as to be unwieldy and awkward to handle, making manual setting and removing slow and arduous.

Referring to the drawings: Figure 1 is a perspective view with parts broken away showing an embodiment of the invention adapted to a press; Fig. 2 is a front view in elevation of the holding device showing how the die frame is mounted therein; Fig. 3 is an end elevation of the showing in Fig. 2; and Fig. 4 is a plan view of a couple of dies.

Mounted on the press frame 1 is the hand lever 2 connected by link and rock shaft to operate the clutch 3 to drive shaft 4, and through gears 5 and 6, actuate shaft 7 connected to crank 8, which through rods 9 lifts or lowers the plunger 10 of the press.

Slidably mounted in brackets carried by the plunger 10, are the rods 11 braced by the diagonal bars 12. The forward ends of the rods 11 are connected by the rigid stiffening member 13 which has bolt 14 extending through swivel plate 15 to turnably mount the holding member 16 carrying at each end thereof rods 17 surrounded by springs 18, limited by stops 18′ to normally maintain the suspension hooks 19 in a downward position.

Mounted on the frame 1 of the press is the die block 20 which is slidable on rollers 21, thus being readily movable back and forth to position under the plunger 10 of the press.

A plurality of variously formed dies 22, 23, 24, 25, are held by some engaging means, as brackets 26 to be independently movable or slidable on the rods 27 of the die frame which has the transverse end strips 28, which may be conveniently lifted or moved into or out of engagement with hooks 19 of the carrier.

The dies as so grouped together, mount up in weight, and being of diverse forms, for maximum economy in cutting there may frequently be considerable saving say with the dies as lined at the top of Fig. 4 at the forward side of the press for one cut, and for the next cut shorter portions 29 of the dies will permit of closer cutting by swinging the die frame around so that extended portions of the dies will fall at the places of the former shorter portions cut.

The carrier herein disclosed, from the rods 11 carried on the plunger to the hooks 19 to engage the die frame, permits of ease and accuracy in handling dies up to large groupings which would be prohibitive for one man to work with.

After a cut, the platform 20 is pulled forward, the press operated to lower the carrier so that the frame holding device 19 may be swung under the strips 28. A little lifting of the plunger, by again starting the press, permits getting the dies far enough from the platform or die block 20 so that stock cut may be removed therefrom. A further lifting of the plunger, carries the die frame still farther from the platform or die block 20, while a push will cause the carrier to travel backward and give the operator ample room to remove cuttings and arrange the material for the next operation. The carrier is then lowered and die frame pulled forward to the desired position just above the material, and the carrier lowered to permit swinging of hooks 19 free, or the frame may be lifted out from the hooks 19 one end at a time. So disposed against the material on the platform, the dies are ready for movement under the plunger for cutting. If the die frame is to be turned between each cutting, this will be done when the frame is pulled out and before lowering down upon the material.

The portion of the work requiring skilled labor, is the setting of the die on the material. With the mechanism herein disclosed, ordinary or unskilled labor, may with ease bring the dies into position just off the material, and the skilled operator may quickly and with ease complete the disposal of the dies, as to sliding together on

the frame and setting down on the material. The remaining operations of putting in the press, cutting, bringing out, removing cuttings and dies, as well as bringing up of additional material and locating dies for succeeding cuts may be performed by the unskilled labor, thereby enabling the skilled cutter to attend to several machines and with considerable ease. The flexibility of the grouping of the dies, due to the slidable mountings of the dies on the frame, lends value to the mechanism as herein disclosed, in providing leeway for die movement laterally of the machine to place properly transversely of the material.

It is to be noted that while in Fig. 1 the holding frame member 16 has a swivel connection with the slidable portion of the carrier, for constructions in which mere taking of the die frame out of the way is all that is desired, the mounting of member 16 may be directly on rods 11 as shown in Fig. 2.

Brackets 26 are spaced from the lower or cutting edges of the dies such distance that the rods 27 will not interfere with the material being cut.

What is claimed and it is desired to secure by Letters Patent is:

1. The combination with a press of a platform movable under the press, a die carrier operable to move a die toward and from the uncut material on the platform when the platform is out from under the press, and means for operating the die carrier.

2. A press having a plunger and a die carrier independent of the plunger and mounted to be actuated by the press to facilitate disposing of a die upon the material to be cut by a subsequent action of the plunger.

3. A press having a plunger and a die carrier mounted on the plunger to facilitate disposing of a die for a separate action of the plunger.

4. A press having a plunger and a die carrier slidably mounted on the plunger to facilitate disposing of a die for the separate plunger action.

5. A press having a plunger and a relatively movable die carrier mounted on the plunger to facilitate disposing of dies for plunger action.

6. A press having a plunger and a die carrier having a swivel die frame engaging device said device movable laterally relatively to the plunger.

7. A press having a plunger and a relatively reciprocable die carrier movable laterally of the plunger having a pivoted die frame holding device.

8. The combination with a die frame of a carrier therefor provided with a pair of pivoted arms swingable to engage the die frame.

9. The combination with a die frame of a carrier therefor provided with a pair of yieldably thrown arms movable to engage the die frame.

10. The combination with a die frame of a reciprocable carrier having frame holding means, said means being movably connected in the carrier to permit turning of the frame.

11. A die carrier comprising a lifting portion and a die frame engaging portion movably connected to the lifting portion.

12. The combination with a press having a plunger and a platform movable from under the plunger, of a die carrier movable to dispose a die upon the platform when the platform is out from under the plunger.

In testimony whereof I hereunto set my hand in the presence of two witnesses.

HARRY ZIMMERMAN.

Witnesses:
MATIE BISNETT,
KATHERINE DICK.