

(No Model.)

T. E. MANN.  
PRINTING PRESS.

No. 355,407.

Patented Jan. 4, 1887.

Fig. 1.

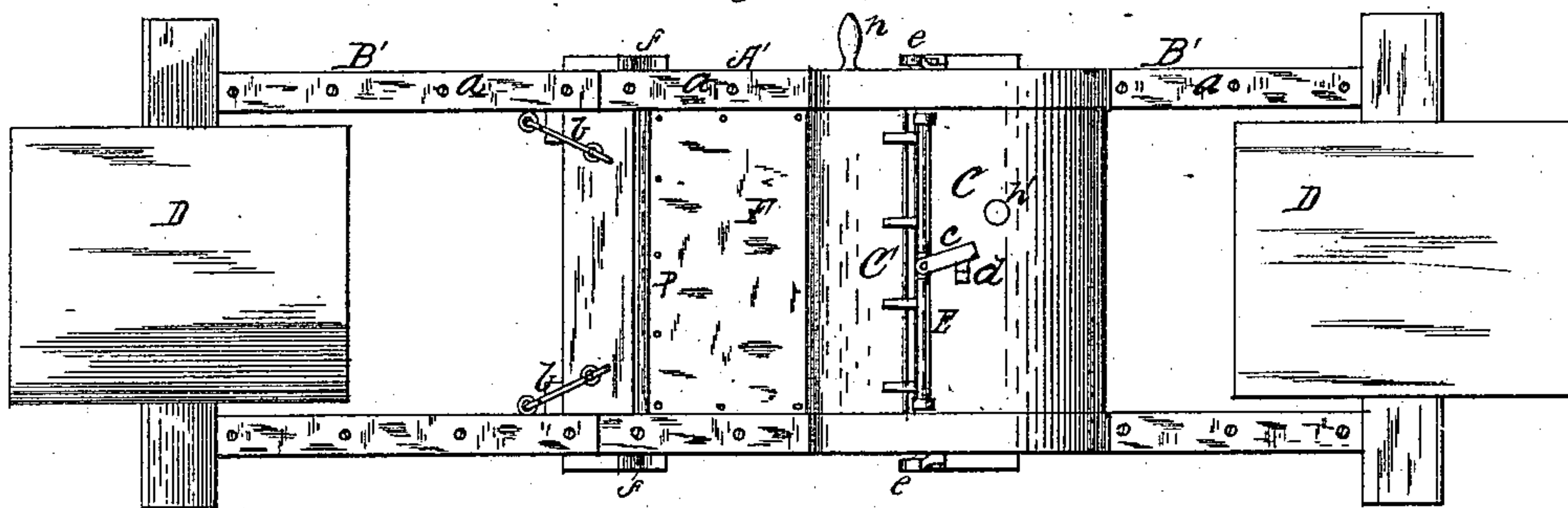


Fig. 2.

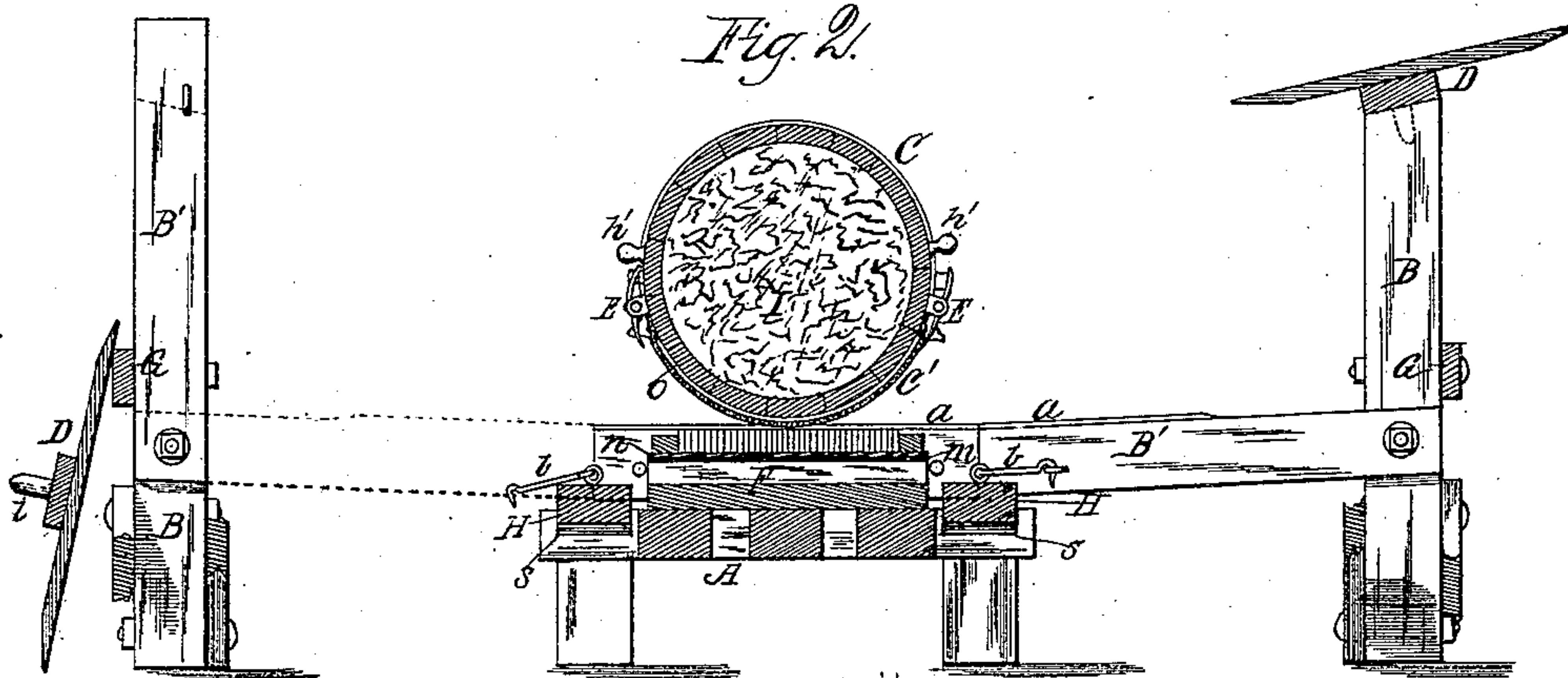


Fig. 3.

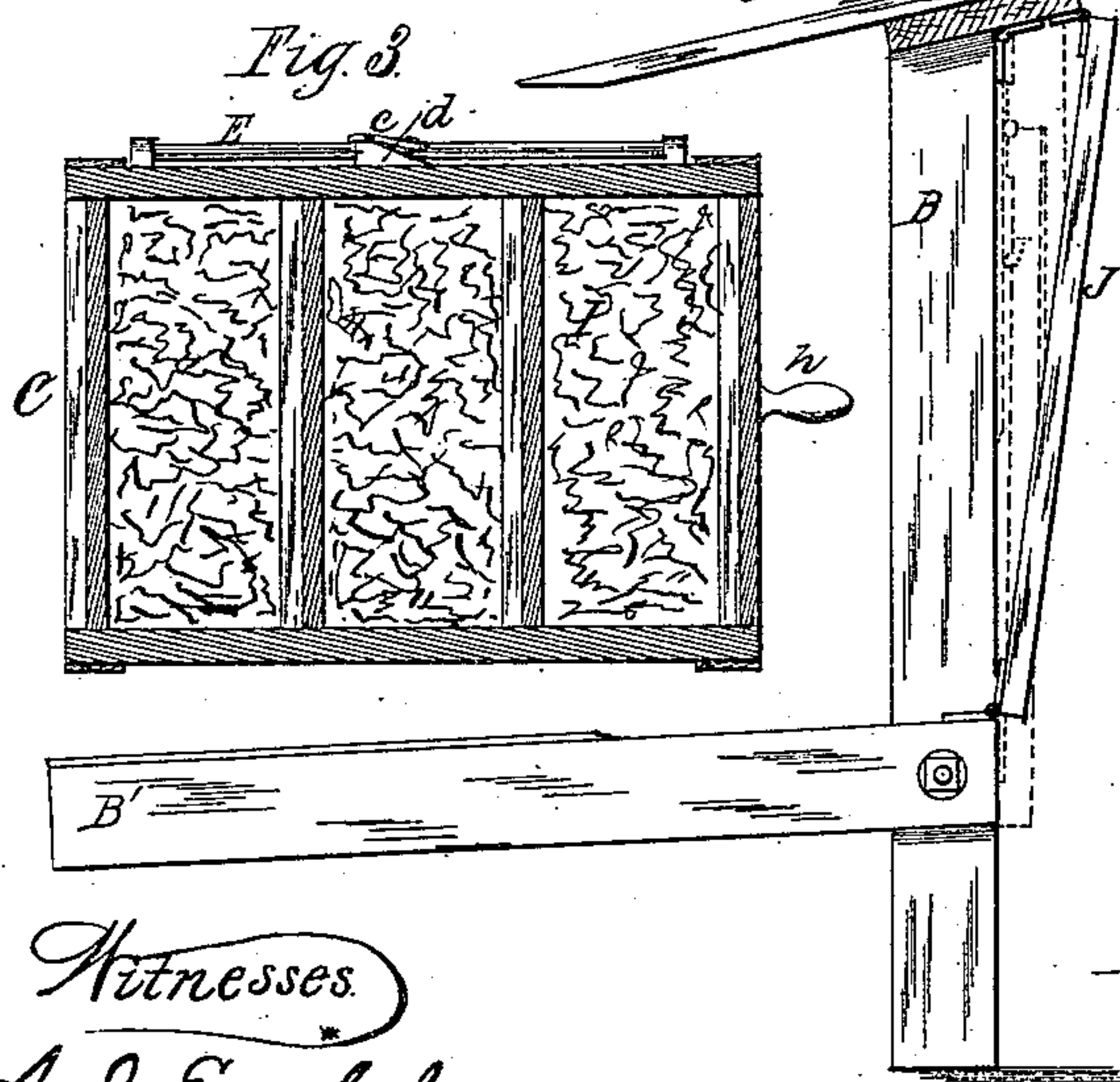
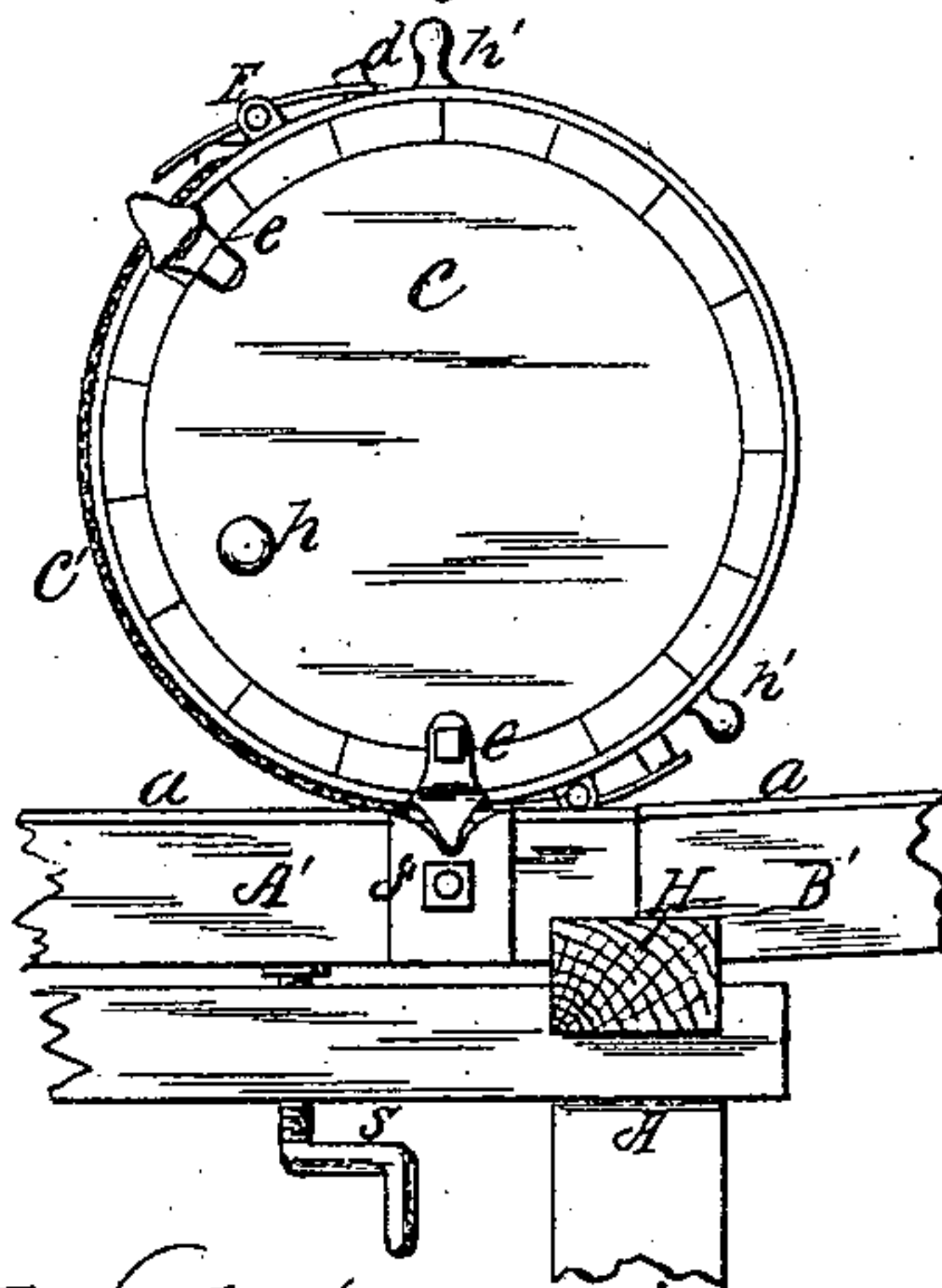


Fig. 4.



Witnesses

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# UNITED STATES PATENT OFFICE.

THOMAS E. MANN, OF GLADBROOK, IOWA.

## PRINTING-PRESS.

SPECIFICATION forming part of Letters Patent No. 355,407, dated January 4, 1887.

Application filed July 28, 1885. Serial No. 172,859. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS E. MANN, a citizen of the United States, residing at Gladbrook, in the county of Tama and State of Iowa, have invented certain new and useful Improvements in Printing-Presses, of which the following is a specification.

The object of my invention is to so improve the construction of hand printing-presses as to render them simpler and cheaper in manufacture, easier of operation, and more economical of space than ordinary presses.

The invention consists in the peculiar arrangement and construction of parts and adaptation thereof, as will be hereinafter fully set forth and described.

In the accompanying drawings, forming a part of this specification, Figure 1 represents a plan view of the invention; Fig. 2, a longitudinal section of the same; Fig. 3, a longitudinal section of the cylinder; Fig. 4, a sectional side elevation showing the means for adjusting the cylinder with respect to the bed vertically and longitudinally, and Fig. 5 a modification in the manner of attaching the paper-table to the frame.

Similar letters of reference indicate corresponding parts.

For the sake of cheapness and simplicity I prefer to use wood in the manufacture of my press wherever the same can be made available. It is also lighter than iron, and permits the removal of portions of the press when not in use, which is a peculiar feature of my invention. The lumber should, of course, be thoroughly seasoned, and hard wood is naturally preferred, though in practice I use good dry pine with satisfactory results.

The frame consists, essentially, of three parts—a central portion, A, and two end sections, B, which support the paper-table, and, when connected with the central part, complete the track or bed. The middle part, which may be called the “bed-frame,” is a nearly square frame-work built solidly of wood, so as to support the heavy weight imposed upon it. Two terminal transverse beams, H H, having suitable gains in the upper side near the ends, retain the track-beams A' A' and one end of the removable track-beams B' B'. The whole track is adjusted vertically by raising and low-

ering these cross-beams H H by means of shims s s, or equivalent device. As but slight vertical movement is ever required, the middle tracks alone may be adjusted to secure the proper pressure of the cylinder upon the form, as indicated in Fig. 4.

The bed F rests upon transverse beams of the frame, as shown. It is composed chiefly of wood, and is preferably made of several thicknesses thereof fastened cross-grained together. Its upper surface is covered with metal. As this part of the press is exposed to more or less wetting, it is desirable that the surface should be of some metal not injuriously affected thereby, and I therefore prefer zinc for that purpose. One thickness of heavy sheet-zinc may be sufficient; but in practice I use a backing of sheet-iron, m, as indicated in Fig. 2.

The bed is held in position laterally by the rails A' A' and longitudinally by the transverse rods p p, or equivalent means. As the vertical adjustment is made by the movement of the tracks instead of the bed, it is obvious that the latter may be fastened permanently to the frame, if desired; but whether attached to the bed-beams or simply resting thereupon it is evident that the bed is much more solid and firm than if it, instead of the track, were movable.

The terminal parts of the frame consist of uprights B, which support the paper-table D at the top. To these uprights are pivoted rails B' B', which, when hooked to the middle frame, as shown in Figs. 1 and 2, complete the track for the cylinder C. These end rails should be inclined somewhat, as shown, to give the cylinder a momentum sufficient to carry it over the bed. All the rails are faced with iron to afford a smooth and permanent bearing-surface for the cylinder. A slight recess in the top of the rails affords a resting-place for the cylinder at the end of its movement each way. The jog may be made by letting the iron end at this point, or making a suitable depression therein. To economize space the end portion may be folded up when not in use, as shown in Fig. 2, and set away. The uprights are connected by suitable cross-pieces, one of which, G, may serve as a rack for the papers as delivered from the cylinder. A simple device for at-



taching the paper-table to the frame is shown in Fig. 2. The cross-bar of the table is provided with dowels *i i*, which are adapted to enter corresponding holes in the top of the

5 uprights.

A modified form of device is shown in Fig. 5, which admits of the entire end of the frame being folded together without disconnecting the table. The cross-bar of the table is hinged to the upright, and by means of a connecting-rod, *J*, hinged to both the table and the end of the rail the necessary movements are made, as will be evident by a reference to said figure, the dotted lines therein showing the position

15 of the parts when folded.

The cylinder *C* is composed of wooden staves secured to wooden heads or disks, and bound at each end with an iron tire corresponding with the tracks upon which they run. To give the greatest strength and prevent irregular shrinkage, the disks are made of two or more pieces of wood fastened together cross-grained. When only two pieces of wood are used in each disk, they are preferably put together, not at right angles, but at an angle of from fifty to eighty degrees, so that the distance from the middle of one board to the middle of the corresponding end of the other board (considered with respect to the grain of the wood) constitutes about one-third of the periphery. In putting the cylinder together the disks should be set so that the part thereof containing the most of the end of the wood shall be on the same side of the cylinder, and on one of these sides, for obvious reasons, should be placed the tympan *C*. The cylinder is of course turned perfectly true. To give it the requisite weight it may be filled with any suitable heavy substance. In practice I use old scrap-iron, it being cheap and always accessible, and well adapted for the purpose. To prevent the pieces of iron from rattling in the cylinder, I pour in liquid cement, which hardens and binds the contents in a solid mass. I thus have a cylinder with all the essential qualities of an iron cylinder, but at a very much less cost.

The tympan *C* is made by tacking to one side of the cylinder a piece of heavy tin, *o*, and over this the usual facing of paper or felt.

The gripper *E* is of the simplest nature, and requires little description. Its fingers are held out from the cylinder by springs, and it is made to grip by the movement of a pivoted lever, *c*, on the opposite side up an inclined lug, *d*, as will be readily understood by referring to the drawings.

The cylinder is propelled by means of a handle, *h*, at the end, and a secondary handle, *h'*, on the periphery and near the gripper, so that with the same movement required in seizing this handle the operator engages and disengages the gripper.

The cylinder is guided in its movement on the track by lateral lugs *e e* meshing in the

notched guide-plates *f f*. These plates are attached to the frame each side of the bed, and the lugs to the cylinder, or vice versa, in a corresponding relation to the tympan. The notch in the lug is made leading and the lug somewhat pointed, so as to readily enter said notch. It will be evident that even though the cylinder should be thrown somewhat out of position at the start it will right itself just before it reaches that part of its course where the impression is made. As the cylinder for an ordinary press weighs about eight hundred pounds, there is comparatively little liability of its getting out of place when once adjusted, and the cheap and simple device described has been found to answer perfectly the purpose for which cogs or other more or less complicated and expensive apparatus are usually employed.

From the foregoing description it will be seen that the press is very simple in its construction, and, as compared with the ordinary hand-press, is easy of operation. In the matter of speed it has been found to be superior to the various lever presses in common use. By reason of its simplicity of structure and the general use of wood instead of iron it may be made much more cheaply than any other press of equal capacity known to me. It is designed to meet the wants of those requiring an inexpensive but effective press, to whom the economy which it affords in the space it occupies, except when in use, its portability, and the ease with which it may be repaired, are, with those already mentioned, important and valuable considerations.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A printing-press having a central frame adapted to support the bed and removable frames adapted to support the paper-table and, when connected with the central frame, form a part of the track upon which the cylinder runs, substantially as and for the purpose set forth.

2. In a printing-press, the combination of frame *A*, bed *F*, track *A' A'*, and track-supporting cross-beams *H H*, with means for adjusting them vertically, substantially as and for the purpose set forth.

3. In combination with the bed-frame *A*, the end frame, *B*, having the paper-table removably attached thereto, and the tracks *B' B'* pivoted thereto, whereby the frame may be folded together, substantially as shown and described.

4. The described cylinder for printing-presses, composed of staves secured to circular heads or disks bound at each end with an iron band and filled with scrap-iron and cement, as and for the purpose set forth.

5. In a cylinder for a printing-press, the combination of a wooden cylinder filled with scrap-iron and cement and a tympan com-



posed of a layer of sheet-tin attached to the cylinder and an outer layer of paper or felt, as and for the purpose set forth.

5 6. The combination of the cylinder C, having the lateral handle *h* and the radial handles *h'*, and the gripper E, having the laterally-movable lever *c*, engaging with the inclined lug *d* and arranged with respect to the radial handles, substantially as shown, where-

by the gripper may be set or released with the same movement of the hand required in reaching for the handles.

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS E. MANN.

Witnesses:

GEORGE SCHOEL,  
J. R. ARNOLD.