F. DAVIS.

METAL FILLING BOARD.

APPLICATION FILED DEC. 15, 1914.

1,167,548.

Patented Jan. 11, 1916.

Fig. 1.

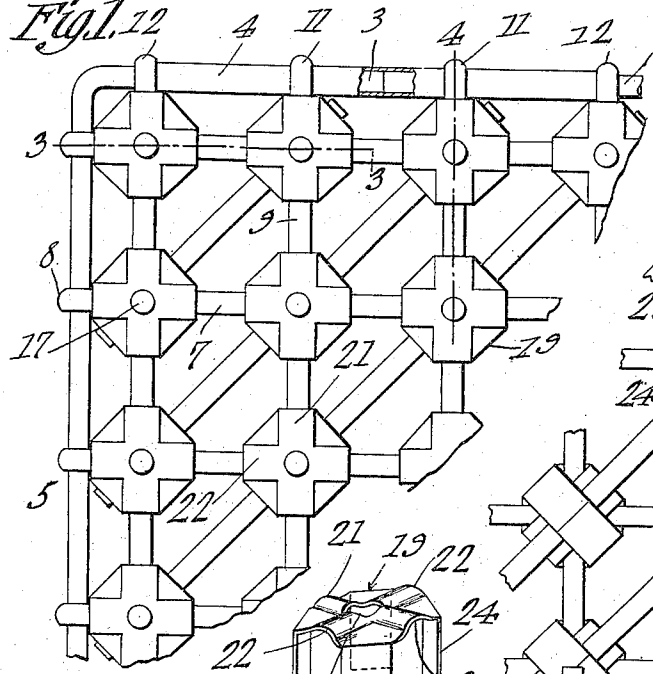


Fig. 2.

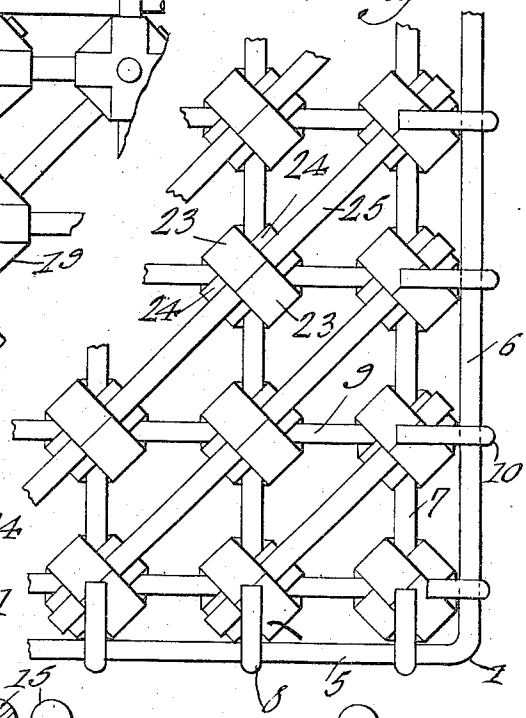


Fig 6

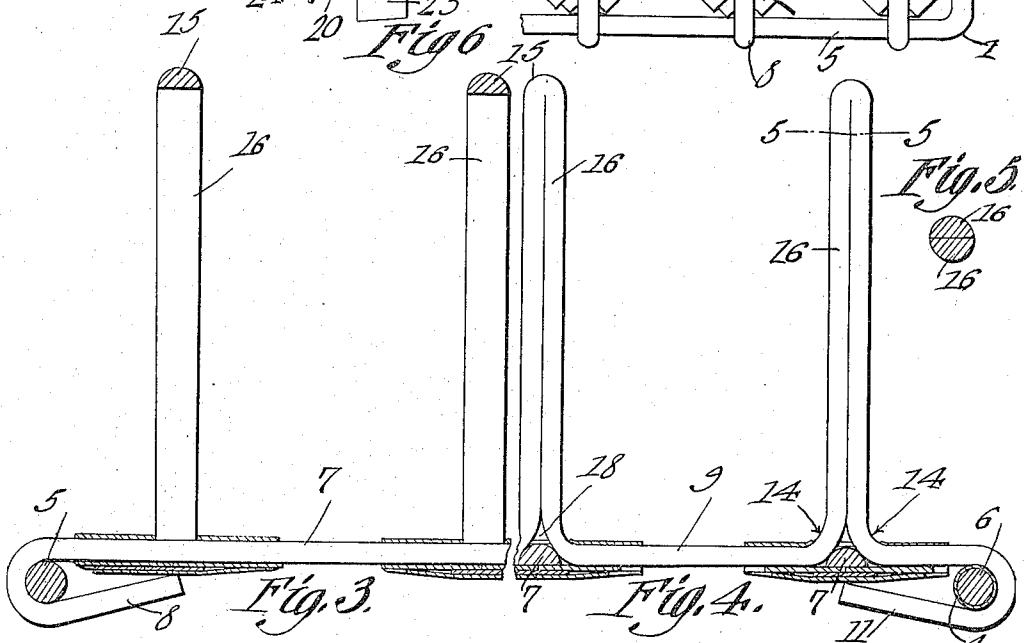


Fig. 5.

Fig. 3.

Fig. 4.

Witnesses

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METAL FILLING-BOARD.

1,167,548. Specification of Letters Patent. Patented Jan. 11, 1916.

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To all whom it may concern:

Be it known that I, FRANK DAVIS, a citizen of the United States, residing at Cambridge, in the county of Middlesex and State of Massachusetts, have invented a new and useful Metal Filling Board, of which the following is a specification.

The device forming the subject matter of of this application is a bobbin rack and one object of the invention is to provide a device of this sort which may be fashioned readily out of common structural materials, the construction being such that the device will possess unusual strength and be well adapted to withstand the severe usage to which structures of this sort are subjected.

Another object of the invention is to improve the construction at the points where the strips cross.

Another object of the invention is to provide novel means for holding together the crossed strips which define openings and for holding upon the said strips, other strips which extend across the openings.

A further object of the invention is to improve the construction of the marginal frame wherewith sundry of the strips are assembled.

It is within the scope of the disclosure to improve generally and to enhance the utility of devices of that type to which the present invention appertains.

With the above and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawings:—Figure 1 shows the invention in fragmental top plan; Fig. 2 is a fragmental bottom plan; Fig. 3 is a section taken approximately on the line 3—3 of Fig. 1, parts being in elevation; Fig. 4 is a section taken approximately on the line 4—4 of Fig. 1, parts appearing in elevation; Fig. 5 is a cross section on the line 5—5 of Fig. 4. Fig. 6 is a perspective of the connecting cap.

The structure herein disclosed is preferably fashioned from metal throughout and embodies a marginal frame 1 ordinarily of rectangular outline and if desired fashioned from a rod of circular cross section, as indicated best in Figs. 3 and 4. The frame 1 is made in one continuous strip and the ends 3 of the frame 1 are inserted into a tubular sleeve 4. For convenience in describing the frame 1, the same may be mentioned as comprising opposed side members 5 and opposed end members 6.

The invention comprises primary cross strips 7 preferably of semi-circular cross section as shown in Fig. 4. The strips 7 extend approximately parallel to the end members 6 of the frame 1 and terminate in hooks 8 which are clenched around the side members 5 of the frame and extend therebeneath. Disposed at right angles to the primary cross strips 7 are secondary cross strips 9 which like the strips 7 are of semi-circular cross section. The secondary cross strips 9 are disposed at right angles to the primary cross strips 7 and terminate in hooks 10 engaged around the end members 6 of the frame 1. Noting the point at which the reference character 11 is applied in Fig. 1 it will be observed that the hooks 11 on one end of certain of the secondary cross strips 9 are clenched around the sleeve 4. As shown at 12, the hooks 10 on others of the secondary cross strips 9 are clenched around the frame 1 at the ends of the sleeve 4. Owing to the constructions indicated at 11 and 12, the sleeve 4 is firmly held in place and cannot slip endwise. As indicated at 14 in Fig. 5, the secondary cross strips 9 are bent upon themselves and are bent again as shown at 15, to form upstanding arms 16 which are in close and intimate contact as shown in Fig. 5, the arms 16 coöperating to form upstanding pins 17 located at the points where the strips 7 and 9 cross. In forming the bends indicated at 14, recesses 18 are fashioned between the arms 16 and close to the lower ends of the arms. Noting Fig. 4 it will be observed that the primary cross strips 7 are lodged in the recesses 18.

The invention includes a cap denoted generally by the numeral 19 and shown in detail in Fig. 6. In the cap 19 is formed an opening 20 through which the pin 17 passes. The cap 19 is upwardly concaved to form recesses 21 and 22. The secondary cross strips 9 fit in the recesses 21 and the primary cross strips 7 fit in the recesses 22 as will be evident from Fig. 1. The cap 19 comprises bendable arms 23 and 24. As shown

in Fig. 2, the arms 24 are clenched downward upon the strips 9 and 7 at their point of crossing. The strips 7 and 9 coöperate to form rectangular openings and across these openings extend diagonal supporting strips 25. The arms 23 are clenched down upon the strips 25 as Fig. 2 will clearly show. As disclosed in Fig. 2, the hooks 8 and 10 are clenched firmly upon certain of the arms 23 which retain the diagonal supporting strips 25. In practice, the bobbins frequently are placed upon the tray or rack upside down. Owing to the presence of the supporting strips 25, the bobbins are prevented from sliding partially through the rack and cutting the thread when, as hereinbefore indicated, the bobbins are placed upon the tray or rack in an inverted position.

In practical operation, the primary cross strips 7 are assembled with the frame 1 by means of the hooks 8. The secondary strips 9 are bent into the required position to form the pins 17 and are superposed upon the strips 7. the latter being received in the recesses 18 and the books 10 of the strips 9 to engage around the frame 1. Prior to this operation, the caps 19 and the strips 25 have been mounted on the cross strips 7 and 9 and therefore, when the cross strips 7 and 9 are finally assembled with the marginal frame 1 as above described, the device will appear in the completed condition shown in the drawings. The entire structure then is coated with galvanizing material. No rivets or solder are employed for connecting the various constituent elements of the device.

Having thus described the invention, what is claimed is:—

1. A bobbin rack comprising a frame; a sleeve into which the ends of the frame are inserted; secondary cross strips connecting opposed portions of the frame, one of the secondary cross strips being clenched upon the sleeve; and primary cross strips disposed at an angle to the secondary cross strips and connecting other opposed portions of the frame; one set of strips being flexed upon themselves to form pins located at the points where the primary and secondary strips cross.

2. A bobbin rack comprising a frame; a sleeve into which the ends of the frame are inserted; secondary cross strips connecting opposed portions of the frame, certain of the secondary cross strips being clenched upon the frame at the ends of the sleeve; and primary cross strips disposed at an angle to the secondary cross strips and connecting other opposed portions of the frame, the cross strips of one set being flexed upon themselves to form pins located at the points where the primary and secondary strips cross.

3. A bobbin rack comprising a frame; a sleeve into which the ends of the frame are inserted; secondary cross strips connecting opposed portions of the frame, one of the secondary cross strips being clenched upon the sleeve, and others of the secondary cross strips being clenched upon the frame at the ends of the sleeve; and primary cross strips disposed at an angle to the secondary cross strips and connecting other opposed portions of the frame; the cross strips of one set being bent upon themselves to form pins located at the point where the primary and secondary strips cross.

4. A bobbin rack embodying crossed strips defining openings, one strip being bent upon itself to form a pin; a cap having an opening receiving the pin, the cap embodying an arm clenched beneath the strips, and an arm which overlies the clenched arm; and a diagonal supporting strip extended across the opening, the supporting strip passing between the arms.

5. A bobbin rack embodying a frame; crossed strips located within the contour of the frame and defining openings, one strip being provided with an upstanding pin; a cap having an opening receiving the pin and comprising arms, one of which arms is clenched beneath the strips at their point of crossing; and a diagonal supporting strip extended across the opening, the other arm being clenched upon the supporting strip, one of the cross strips terminating in a hook engaged around the frame and bearing upon the last specified arm.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

FRANK DAVIS.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents. Washington, D. C."