G. W. WEBER.

SHEET METAL SPOOL.

APPLICATION FILED AUG. 25, 1911.

1,104,458. Patented July 21, 1914.

Fig. 1.

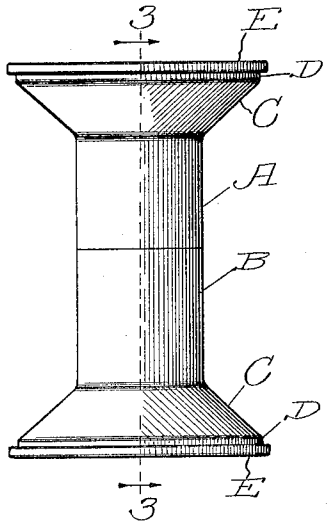


Fig. 3.

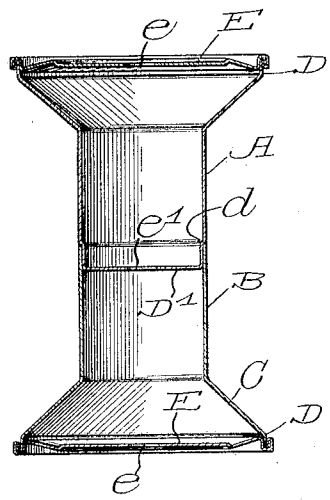


Fig. 4.

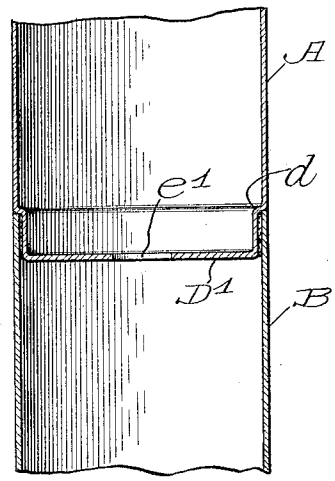
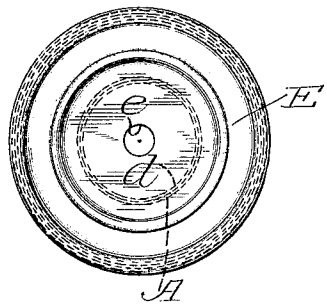


Fig. 2.



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UNITED STATES PATENT OFFICE.

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SHEET-METAL SPOOL.

1,104,458. Specification of Letters Patent. Patented July 21, 1914.

Application filed August 25, 1911. Serial No. 645,905.

To all whom it may concern:

Be it known that I, GEORGE W. WEBER, a citizen of the United States, residing in New York, in the county of New York and State of New York, have invented a new and useful Improvement in Sheet-Metal Spools, of which the following is a specification.

This invention relates to improvements in sheet metal spools.

The principal object of the invention is to produce a spool of great strength.

Other objects are simplicity and cheapness of construction and manufacture.

The invention consists in the novel features hereinafter described and made the subject of the claims.

In the accompanying drawing which forms a part of this specification, Figure 1 is a side elevation. Fig. 2 is an end view. Fig. 3 is a section on the line 3—3 of Fig. 1. Fig. 4 is an enlarged fragmentary section of the body of the spool, similar to the section of Fig. 3.

Spools of this character, when tightly wound full of thread must be strong enough to resist about two thousand pounds pressure per square inch upon the body of the spool, tending to crush said body, and a considerable pressure upon the conical or sloping flanges, tending both to crush said flanges toward the center of the spool and to force the two ends of the spool apart. While these great pressures constitute no difficulty in the path of constructing a spool of wood, it will be at once seen that where the spool is to be made of thin sheet metal, the capacity for resisting the pressure becomes a vital matter. At the same time the structure of a sheet metal spool is limited by the further requirement that the spool shall not only be strong, but must be capable of being cheaply manufactured. These qualities of strength and cheapness are united in the spool herein described.

In the manufacture of the improved spools by means of suitable dies, two similar shells A and B are drawn up, each constituting a half of the spool body, and each having a conical end flange C and a straight terminal D, adapted to be seamed or infolded with a head piece E, centrally perforated at *e* for the passage of a spindle. One of these shells, B, has its inner end cut out. The other part, A, has its inner end, D, left intact, but centrally perforated with a hole e^1 to permit the passage of a spindle. The shell A is also necked in with the neck *d* to receive the shell B. The two parts of the spool, each made of the two pieces above mentioned, are united together as follows: The necked in portion of the shell A is coated with solder smoothly by dipping in molten solder or otherwise, after which the two parts are brought together, set up straight and the solder is fused, thus forming a neat, strong soldered joint at small cost, capable of resisting the end thrust of the thread pressure tending to separate the two parts, and capable of resisting the crushing pressure because of the uncut diaphragm or partition D standing in a radial plane of the spool.

I claim:—

1. A spool of the character described comprising, in combination: two substantially cylindrical, drawn sheet metal members having tapered outer end portions and telescoped one within the other at their inner ends, one of said members having an integral, perforated diaphragm at its inner end adapted to strengthen the members and prevent crushing thereof, said members being rigidly and permanently secured to each other to thereby prevent separation of the parts when longitudinal outward pressure is exerted on the tapered end portions; and heads secured to each member at the outer ends thereof, substantially as specified.

2. A spool of the character described comprising, in combination: two substantially cylindrical, drawn sheet metal members each having a tapered outer end portion, one of said members being necked-in at its inner end and provided with an integral, perforated diaphragm, the latter being adapted to strengthen the member and prevent crushing thereof, said necked-in end being telescoped within the inner end of the other member, said members being soldered together to thereby prevent separation when longitudinal outward pressure is exerted on the tapered ends; and sheet metal heads secured to each of said members at the outer ends thereof, substantially as specified.

GEORGE W. WEBER.

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."