

No. 705,378

Patented July 22, 1902.

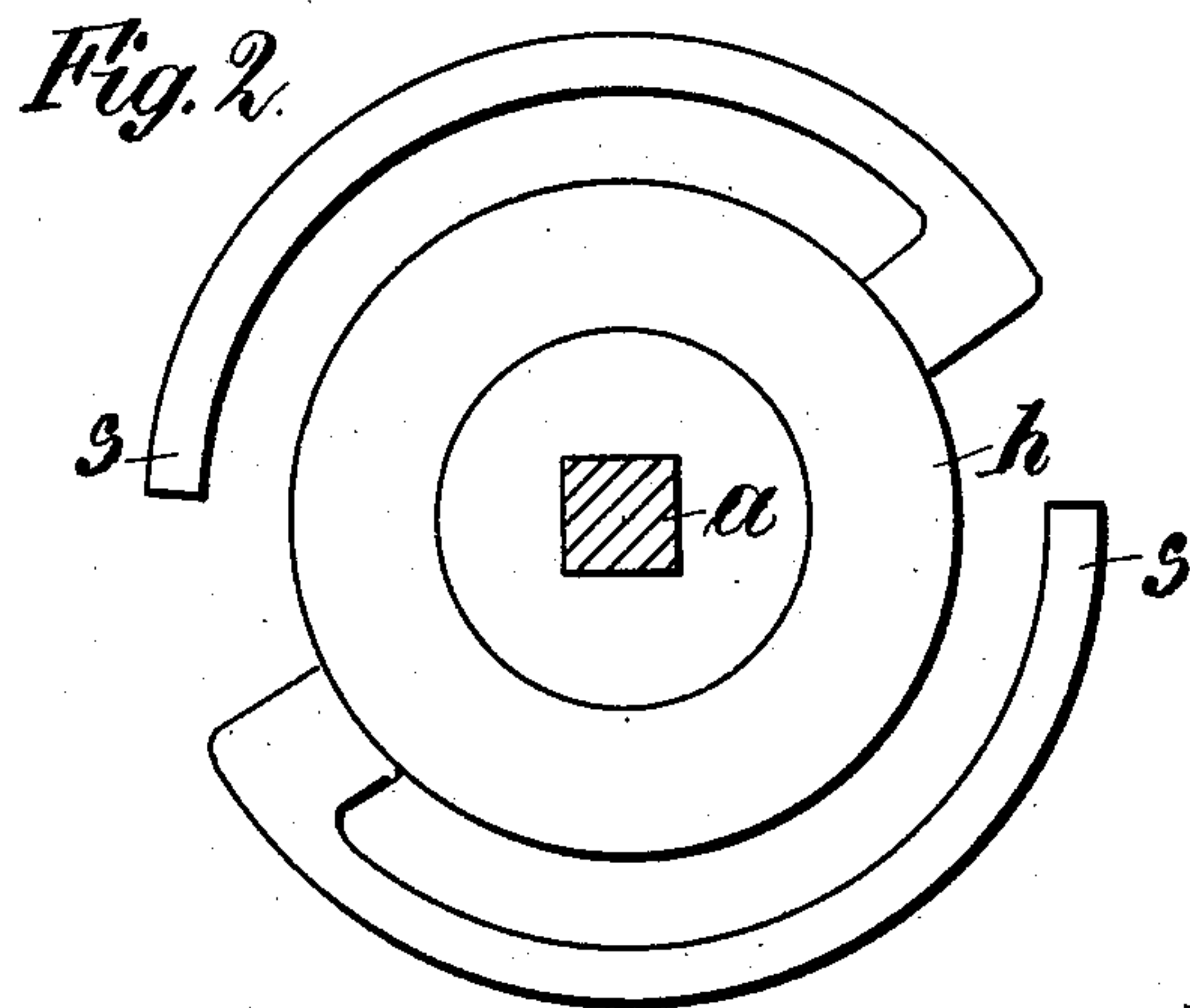
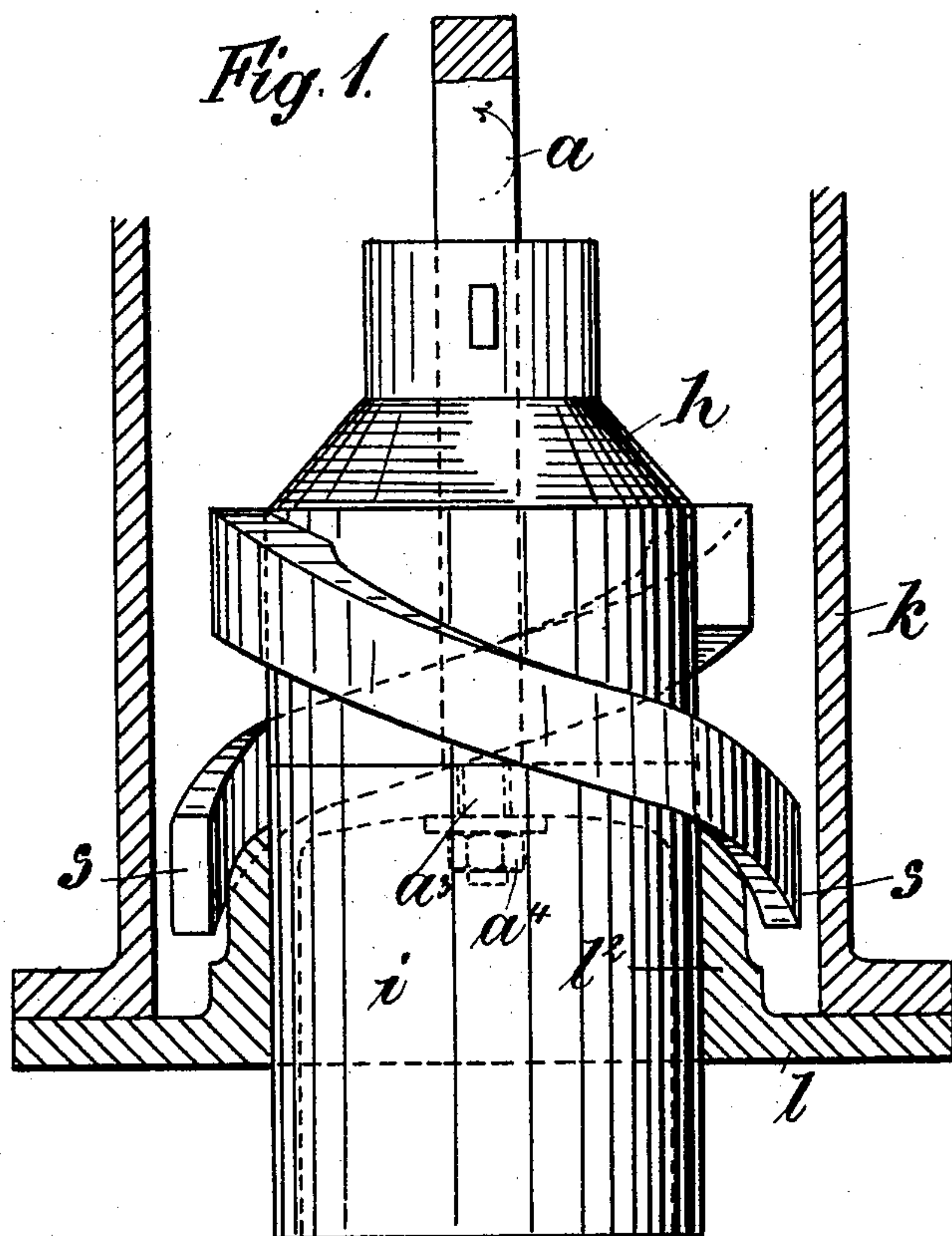
F. BURGERS.

PROFILE TOOL FOR MAKING PIPE MOLDS.

(Application filed Feb. 25, 1902.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES :

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2 Sheets—Sheet 2.

Fig. 3.

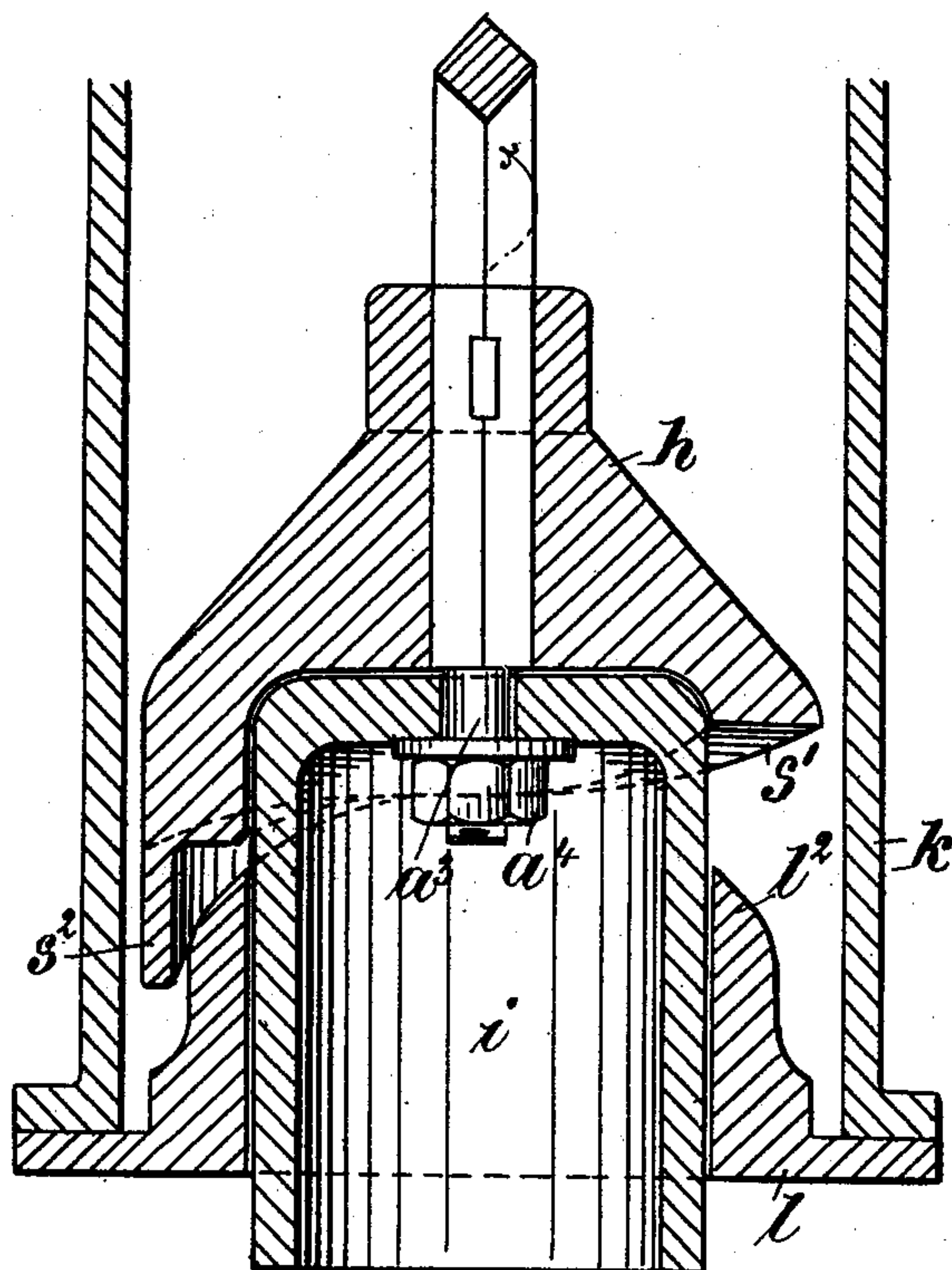
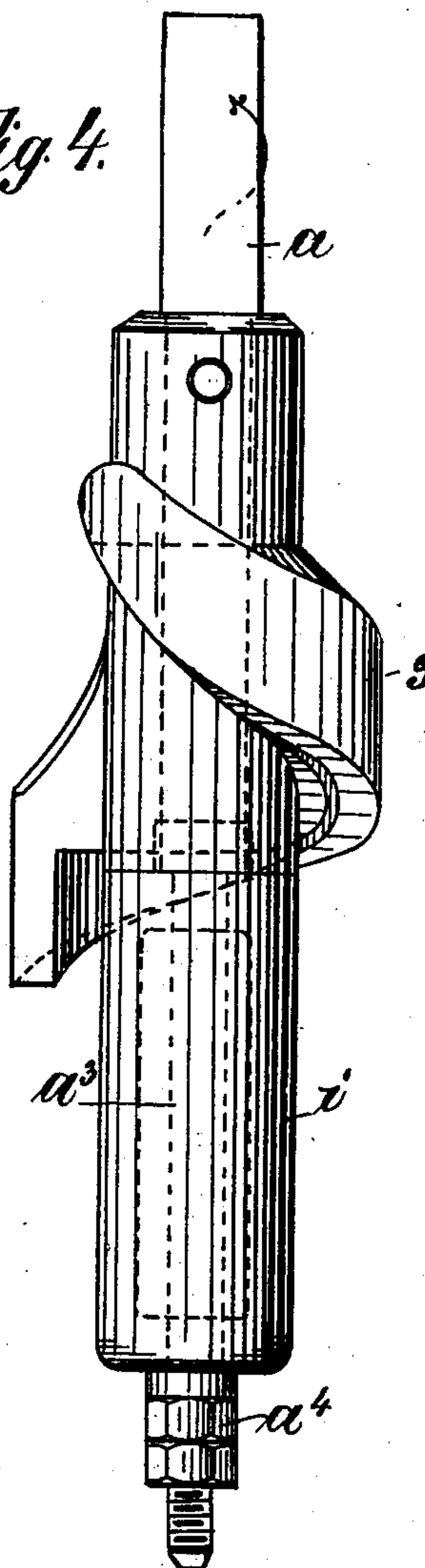


Fig. 4.



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UNITED STATES PATENT OFFICE.

FRANZ BURGERS, OF BULMKE, GERMANY.

PROFILE-TOOL FOR MAKING PIPE-MOLDS.

SPECIFICATION forming part of Letters Patent No. 705,378, dated July 22, 1902.

Application filed February 25, 1902. Serial No. 95,610. (No model.)

To all whom it may concern:

Be it known that I, FRANZ BURGERS, a subject of the German Emperor, residing at Bulmke, Germany, have invented certain new and useful Improvements in Profile-Tools for Making Pipe-Molds; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to profile-tools for making the outer mold for cast-metal pipes. The tool is intended for use in that class of molding-machines in which a pressing-block having a spiral compressing-face gives by rotation the molding-sand which is in a flask the necessary compression and in connection with a cylindrical molding-block forms the outer mold for the pipe. A core being set in the mold the latter is ready for casting by the usual well-known methods.

In the case of the profile-tools hitherto known and employed the pressing-block is fast on the cylindrical molding-block. The rotation of this latter in the molding-sand, however, causes friction, which calls for the employment of considerable force and occasions rapid wear and deterioration of the molding-block and also inaccuracy of the resulting castings. To prevent these drawbacks, the pressing-block, with its spiral face, is according to this invention brought into connection with the molding-block in such manner that the pressing-block can be rotated without turning the cylindrical molding-block therewith.

Figure 1 shows a vertical section through the lower portion of the flask with the molding-block and pressing-block in place therein. Fig. 2 shows a view of the pressing-block; Fig. 3, a modification of the latter in vertical section; and Fig. 4, an elevation, on a smaller scale, of the pressing-block similar to such seen in Fig. 3, but with another combination with the molding-block.

The pressing-block *h*, which is to be set in the flask *k*, is attached to a rod *a*, that serves only to turn the block and which bears below a pin *a*³, by means of which there is formed

a swiveled connection between the pressing-block and the cylindrical molding-block *i*. A nut *a*⁴, with suitable washer on the pin *a*³, holds the molding-block in connection with the pressing-block. The pressing-block *h* bears, for example, in Figs. 1 and 2 two spiral strips *s*, which run worm-like partly around the molding-block *i*. The flask in which molding-sand and the profile-tool are introduced stands on a base or footpiece *l*, that has on its upper side a ring-shaped guide *l*², in which the molding-block is introduced. The spiral strips or worm-like members are attached at their upper ends to the pressing-block *h*, and between them and this block there is a spiral space or "play" in order to permit penetration for about half height around the guide *l*² into that part of the flask in which is formed the mold for the bell of the pipe. The molding-block *i* lies exactly central in the flask and is up to the time of its entering into action positively guided. The outer side of the annular guide *l*² corresponds to the outer shape of the enlarged end piece or bell of the pipe which is to be molded. If the flask is filled to the proper point with molding-sand around the profile-tool and if this latter is given partial rotation in the direction of the arrow, the pressing-block and its worms are turned therewith, while the molding-block *i* does not take part in the rotation. By reason of the screw action of the two spiral surfaces of the two prolongations *s* the sand is pressed downward against the foot-plate or base, and thus the end or bell of the pipe is molded. The worms *s* are forced for about half its length into that part of the flask which serves for the bell, and the profile-tool by reason of the resistance of the compressed sand moves gradually upward. Thus the forming-block *i* makes only the upward movement with the profile-tool and does not take part in the rotation of the rod *a* and the pressing-block *h*. In this way the outer mold for the pipe is made ready in the flask *k*. When this outer mold is ready, a loam or other core is placed therein, properly central, and the mold is then ready for pouring.

In the example shown in Fig. 3 the combination of the molding-block *i* with the pressing-block *h* is the same as that shown in Fig. 1. In this case the lower edge of the press-

ing-block is so formed into a spiral surface s' that it can as the result of its rotation compress the sand in the flask. At the lower end of the spiral surface s' there is a pressing-beak
 5 s^2 , which projects to about half the height of that part of the flask which serves for forming the outer mold part for the bell of the pipe. Here also the outer shape of the annular guide l^2 of the footpiece l corresponds
 10 to that of the enlarged end or bell of the pipe which is to be made.

In the example shown in Fig. 4 the pressing-block is similar to that shown in Fig. 3, only the swivel connection of the pressing-
 15 block with the molding-block differs in so far that the pin a^3 goes entirely through the molding-block and the nut a^4 , with its washer, lies on the bottom of the molding-block, the lower end of which is closed.

20 Having thus described my invention, what

I claim as new therein, and desire to secure by Letters Patent, is—

In a machine of the character described, the combination with a flask having a ring-shaped guide, a non-rotary mold-block movable through the guide, a pressing-block surrounding and having a rotary connection with the mold-block and movable up and down therewith, and spirally-disposed strips secured to the pressing-block, each strip embracing about one-half the diameter of the block and spaced therefrom throughout the greater portion of its length.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

FRANZ BURGERS.

Witnesses:

PETER LIEBER,
 ERNEST ANDRÉ.