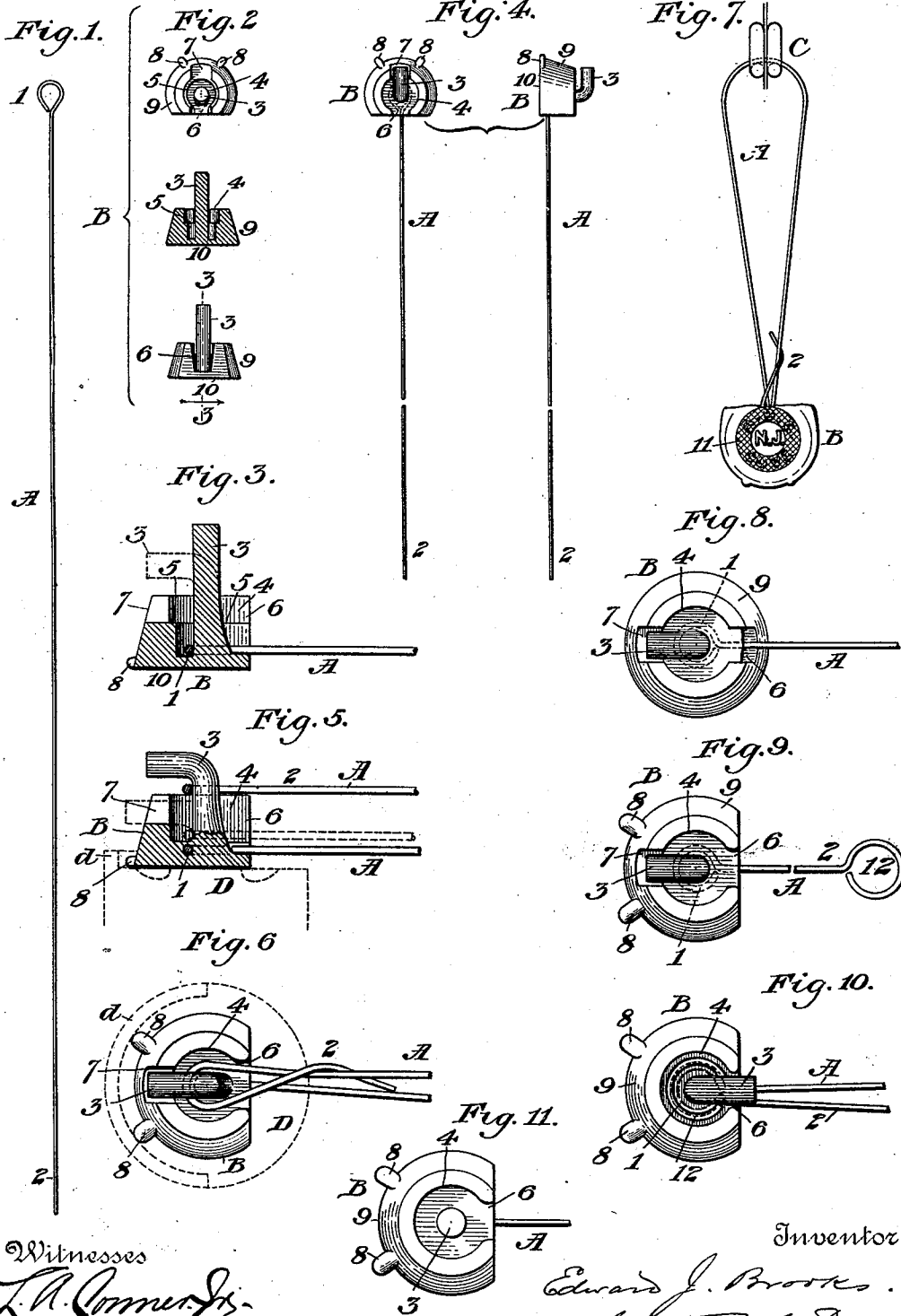


(No Model.)

E. J. BROOKS.
SEAL.

No. 521,137.

Patented June 5, 1894.



Witnesses
L. A. Conner
Geo. M. Whitney

Inventor
Edward J. Brooks
by *M. L. Ewin*,
Attorney

UNITED STATES PATENT OFFICE.

EDWARD J. BROOKS, OF EAST ORANGE, NEW JERSEY, ASSIGNOR TO THE
E. J. BROOKS & COMPANY, OF NEW YORK, N. Y.

SEAL.

SPECIFICATION forming part of Letters Patent No. 521,137, dated June 5, 1894.

Application filed March 13, 1894. Serial No. 503,473. (No model.)

To all whom it may concern:

Be it known that I, EDWARD J. BROOKS, a citizen of the United States of America, and a resident of East Orange, in the State of New Jersey, have invented a new and useful Improvement in Seals, of which the following is a specification.

This invention relates exclusively to improvements on my "horseshoe" seals set forth in my previous specifications forming part of United States Patents Nos. 294,576, 368,126, and 512,274, in which open-faced compressible seal-disks, commonly of lead, are combined with looped flexible shackles, preferably of single wire; and primarily to those horseshoe-seals in which the seal-disk is attached to the shackle-wire in the manner set forth and claimed in said Patent No. 512,274.

The present invention consists in certain novel features of construction hereinafter set forth and claimed whereby the free-end of the shackle is held in place within the seal-disk preparatory to the pressing operation, without materially complicating the manufacture of the seal, or necessarily increasing its weight or its cost, as compared with seals having no such provision, and filling the open-face at the pressing operation, so as to insure distinct press-marks and greater security against successfully tampering with the seal, is at the same time provided for; and centering the seal-disk relatively to the dies of the seal-press is provided for, so as to insure complete and symmetrical impressions, and thus to further add to the security of the seal.

A sheet of drawings accompanies this specification as part thereof.

Figure 1 of the drawings is an elevation of the shackle of the specific seal represented by Figs. 1 to 7 inclusive. Fig. 2 represents its seal-disk as it leaves the mold. Fig. 3 represents a magnified longitudinal section through the seal-disk, illustrating its completion in the act of attaching the seal-disk to the shackle. Fig. 4 represents face and edge views of the seal as it leaves the factory. Fig. 5 represents a magnified longitudinal section through the seal-disk, illustrating the preparation of the seal for the seal-press, and the beginning of the pressing operation. Fig. 6 represents a face view projected from Fig. 5, showing in

dotted lines the bed-die of the seal-press behind the seal-disk. Fig. 7 is a face view of the pressed seal; and Figs. 8, 9, 10 and 11 are magnified face views illustrating modifications of the invention, as hereinafter described.

Like letters and numbers refer to like parts in all the figures.

In each of the seals represented by the drawings, a flexible shackle A, of suitable wire, is combined with an open-faced compressible seal-disk B, of soft-metal, preferably lead; and these parts are preliminarily united with each other before the seal leaves the factory, so that the seal (Fig. 4) can be handled as if composed of but one part; the seal being applied to a pair of car-door staples C, Fig. 7, and fastened by means of a suitable seal-press, as illustrated by Figs. 5, 6 and 7, in customary manner, to secure the doors of railway freight-cars, the lids of boxes, &c. The specific seal illustrated by Figs. 1 to 7 is composed of the said shackle-wire A Fig. 1 and seal-disk B Fig. 2; the former being provided in the first place with a permanent loop 1 at one of its ends, while its other end 2, hereinafter termed its free end, is plain; and said seal-disk B having, as it leaves the mold, an elongated stud-pin 3 to engage with both shackle-ends, the customary recess 4 concentric with said stud-pin, and preferably provided at mid-height with an annular shoulder 5, within which said shackle-loop 1 fits, and which is upset to attach the seal-disk to the shackle as set forth in said Patent No. 512,274 and hereinafter more fully set forth, the customary notch 6 through which the shackle-ends extend, a supplemental notch 7 diametrically opposite said notch 6, and a pair of radial gage-studs or "horns" 8 projecting radially from the customary beveled edge 9 of the seal-disk immediately in front of its flat back 10. As the seal-disk leaves the mold, said stud-pin 3 is straight, and said shoulder 5 at about mid-height of the recess 4 of the seal-disk, as shown in Fig. 2 and in full lines in Fig. 3. In assembling the parts the seal-disk B is supported upon an anvil or table as in Fig. 3, and the loop 1 of the shackle A is applied to the stud-pin 3 by hand. A simple mechanical device then presses down the shoulder 5 so as to fasten said loop 1 within

the seal disk, and thus to attach the seal-disk to the shackle as above, and at the same time bends backward the upper end of the stud-pin 3 so as to give it the hooked shape represented in dotted lines in Fig. 3 and in full lines in Figs. 4, 5 and 6; its free end now projecting rearwardly above said notch 7 in the seal-disk. In this condition the seal is shipped from the factory, ready for use, as illustrated by Fig. 4.

After the shackle A has been threaded through the car-door staples C or their equivalent, the free end 2 of the shackle is wrapped around the stud-pin 3 one or more times, and its extremity interlocked with the shackle adjacent to the seal-disk by a bend, in customary manner; and a seal-press is then applied as illustrated by Figs. 5 and 6. As the dies of the seal-press close, the first effect is to bend the stud-pin 3 into the notch 7, as in dotted lines in Figs. 5 and 6, and thus to carry the looped free end 2 of the shackle A fully into the recess 4 of the seal-disk, if it is not already in place, so as to insure superposing the whole of the lead within the walls which surround said recess 4, and thus securely fastening the seal; while the stud-pin closes said notch 7, and thus insures an unimpaired face in the pressed seal-disk, and distinct press-marks 11, Fig. 7. Said notch 7 serves not only to admit the hooked stud-pin as above, but obviates any addition to the weight of the seal by the extended length of the stud-pin, such saving being material owing to the great number of seals which are consumed. The bed-die D of the seal-press represented by dotted lines in Figs. 5 and 6 is provided customarily with a gage-flange *d*, and said horns 8 of the improved seal coact with said flange, as in these figures, to center the seal-disk between the dies, and thus to insure complete impressions and greater security than when the

seal-disk is not symmetrically stamped. Heretofore with such flanged dies it has been necessary to insert the seal into contact with the gage-flange and then withdraw it a little, to provide for the lateral expansion of the lead between the dies, in order to secure perfect impressions. The shape of the seal-disk B may be varied, and said horns 8 omitted, without impairing the functions of said hooked stud-pin 3 and supplemental notch 7, as illustrated by Fig. 8; the shackle-wire A may have a permanent loop 12 at the extremity of its free end as in Figs. 9 and 10; in connection with such shackle having two loops, the stud-pin 3 may project over the notch 6, and said supplemental notch 7 be omitted, as in Fig. 10, the stud-pin in this case serving to fill up the open edge of a segmental seal-disk; said horns 8 may be used on horseshoe-seals having ordinary stud-pins 3, as in Fig. 11; and other like modifications will suggest themselves to those skilled in the art.

Having thus described the said improvement, I claim as my invention and desire to patent under this specification--

1. In a horseshoe-seal, the combination with a flexible wire-shackle of an open-faced seal-disk having a supplemental notch diametrically opposite the customary edge notch and a hooked stud-pin which overhangs such supplemental notch, substantially as hereinbefore specified.

2. In a horseshoe-seal, the combination with a flexible wire shackle of an open-faced seal-disk having beveled edges provided with radially projecting horns, substantially as hereinbefore specified.

EDWARD J. BROOKS.

Witnesses:

NORMAN S. KLINE,
H. L. C. WENK.