

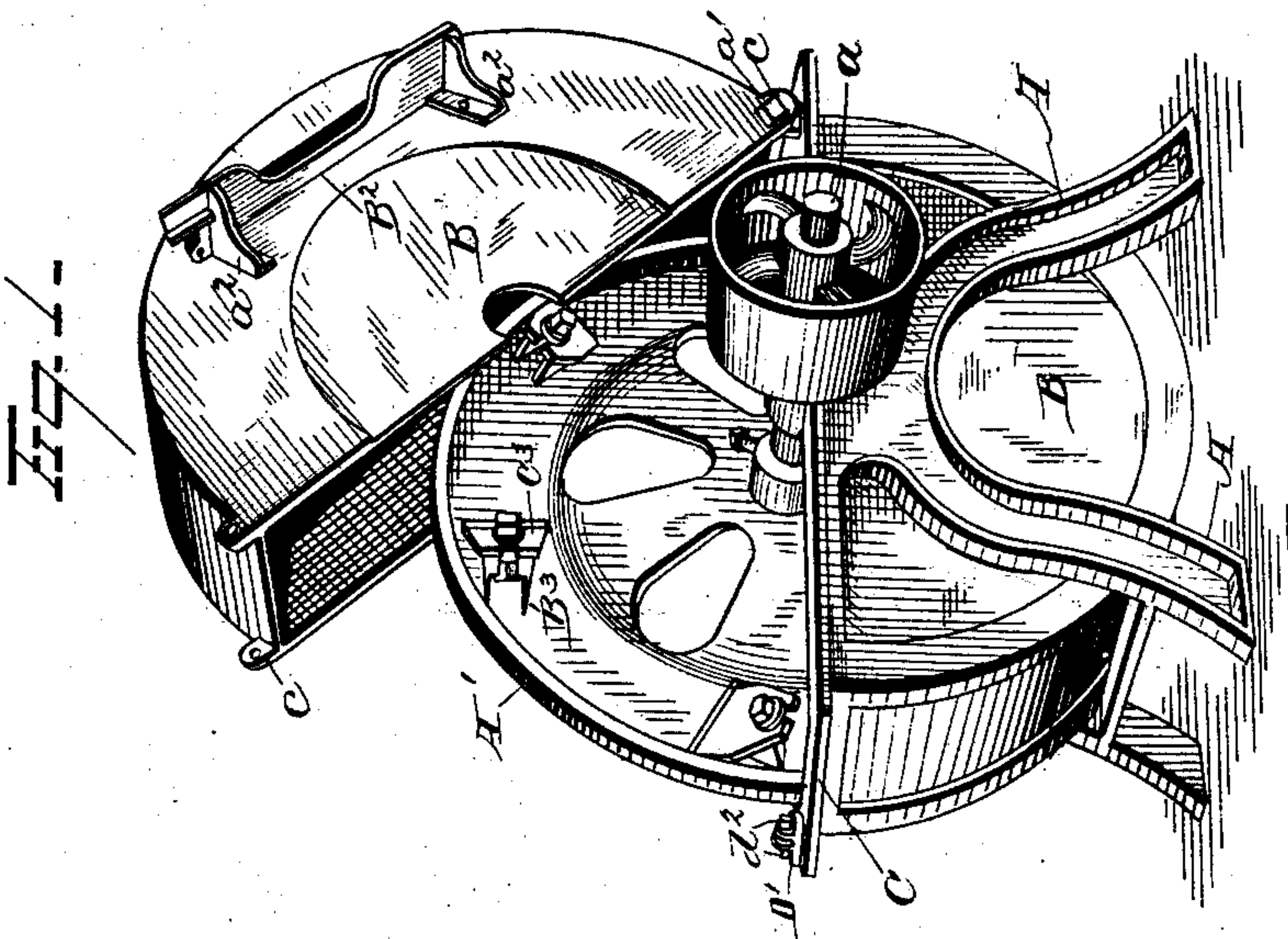
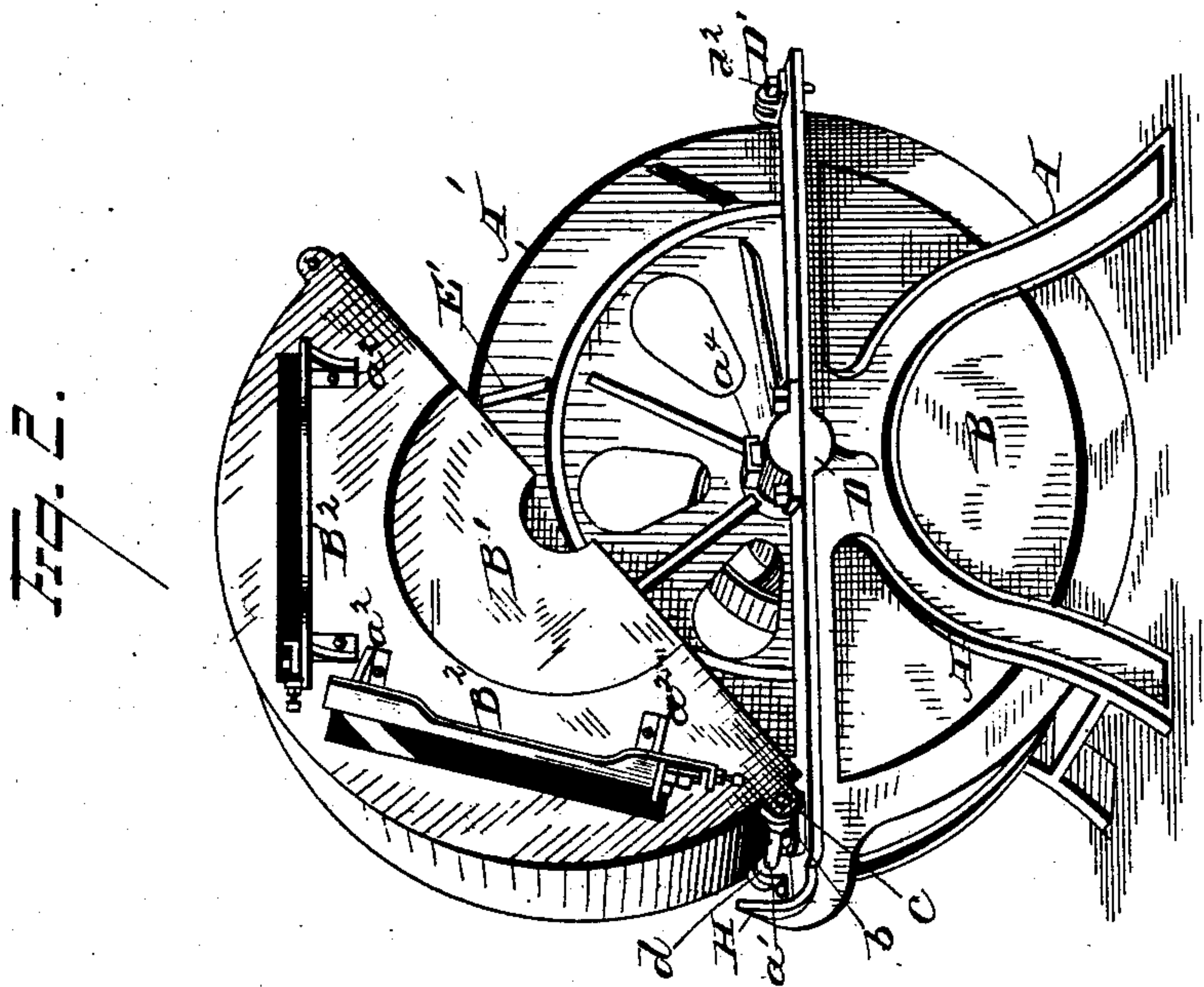
(No Model.)

2 Sheets—Sheet 1.

W. J. PERKINS.
SHINGLE JOINTING MACHINE.

No. 244,928.

Patented July 26, 1881.



WITNESSES

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(No Model.)

2 Sheets—Sheet 2.

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FIG. 4.

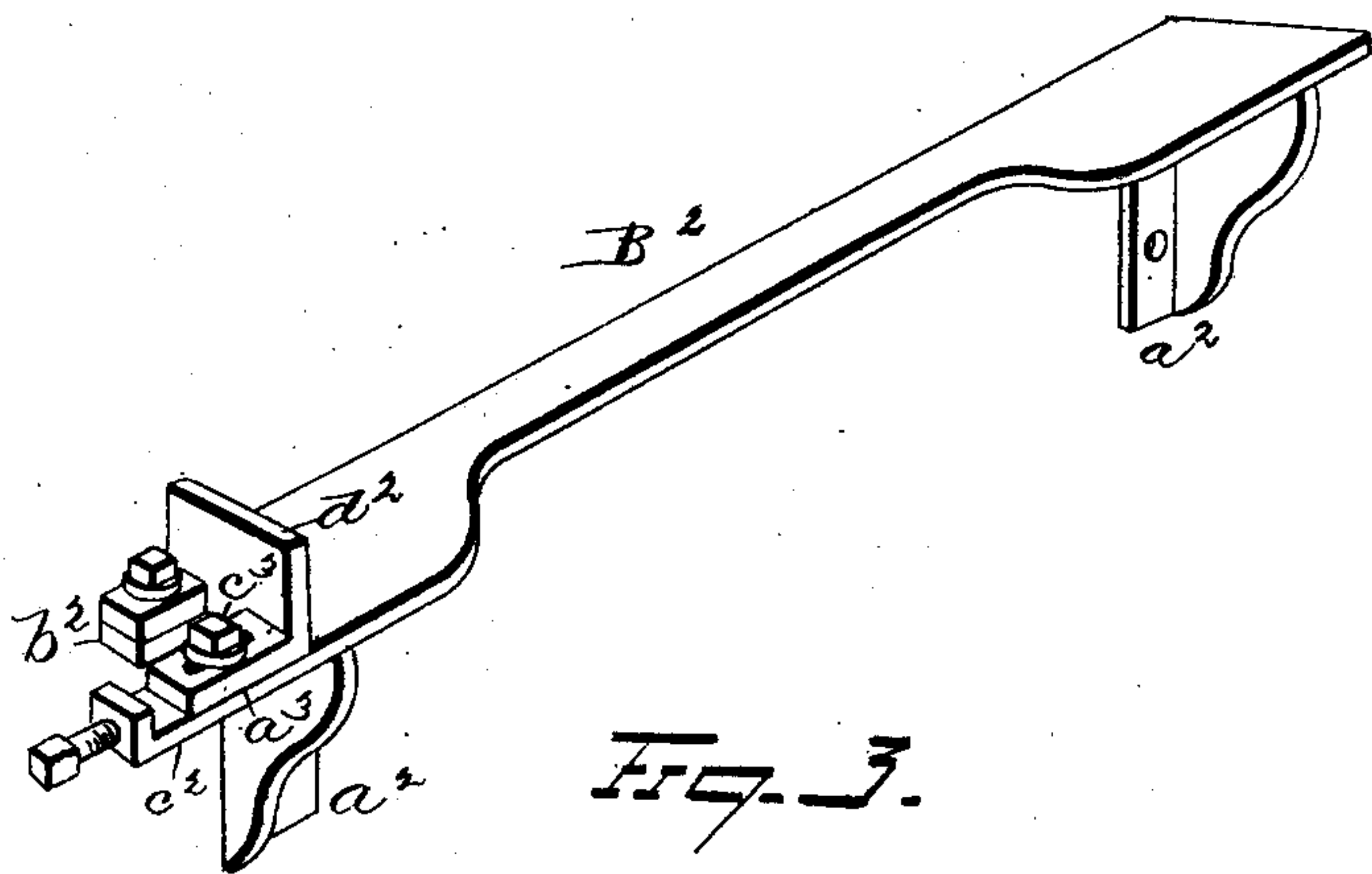
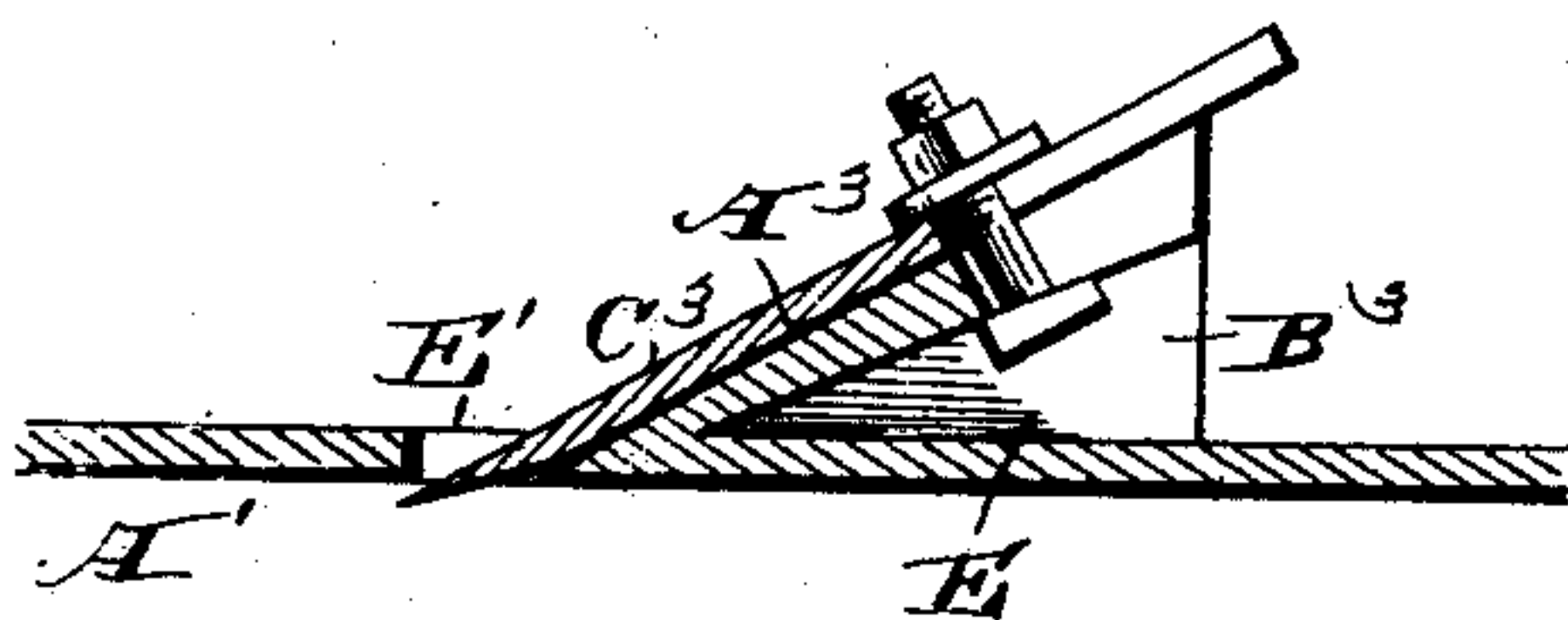
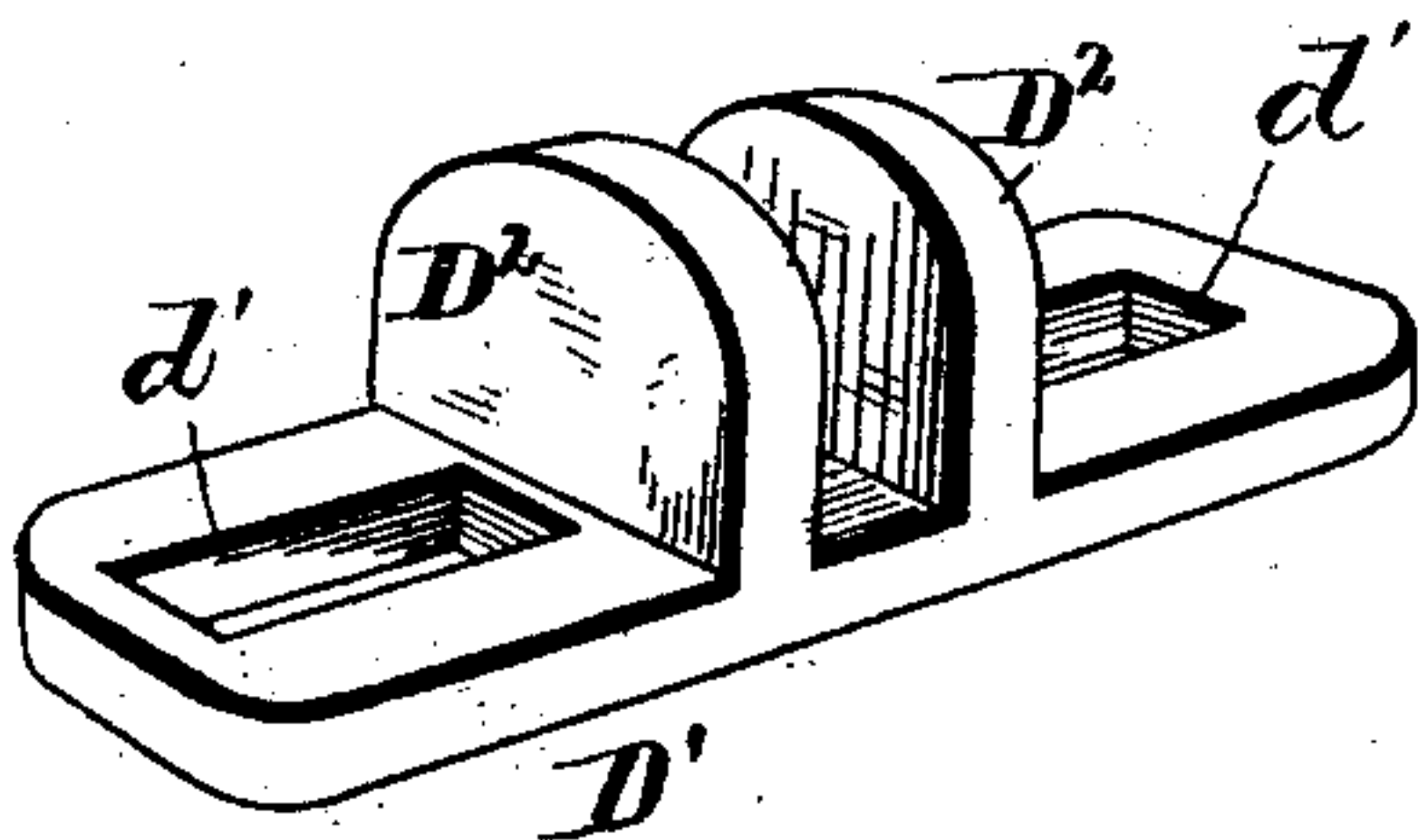


FIG. 3.

FIG. 5.



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UNITED STATES PATENT OFFICE.

WILLIS J. PERKINS, OF GRAND RAPIDS, MICHIGAN.

SHINGLE-JOINTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 244,928, dated July 26, 1881.

Application filed December 13, 1880. (No model.)

To all whom it may concern:

Be it known that I, WILLIS J. PERKINS, of Grand Rapids, in the county of Itasca and State of Michigan, have invented certain new and useful Improvements in Shingle-Jointing Machines; 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in shingle-jointing machines.

The object of machines of the character indicated is to true the edges of shingles as they come in the rough from the shingle-machine in such manner that their sides shall be parallel and at right angles to the butt, thereby adapting them to be laid closely together and in straight rows on a roof.

My improvement in shingle-jointing machines relates to that class of machines which employ a revolving disk or wheel provided with knives or cutters against which the shingle to be jointed is held while the jointing-wheel is revolving.

The main objects of my invention, then, are, first, to provide a shingle-jointing machine with a shield adapted to be raised to expose one-half of the cutting-wheel, and thus facilitate the sharpening and adjustment of the knives; second, to adapt a shingle-machine, by providing one face of the shield with two tables or rests, and the opposite face thereof with one table and making the said shield reversible, to be used either by one or two persons in truing shingles; and, third, to provide adjustment for the butting-pieces on the table on which they are mounted.

My invention further consists in certain details of construction and combinations of parts, as will be hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a view in perspective of a shingle-jointing machine constructed in accordance with my invention, and presenting that face of the reversible hood which is provided with one operating table or rest. Fig. 2 is a rear view in perspective of my improvement, wherein that face of the hood is shown which is provided with but two tables or rests. Fig. 3 is a perspective view of an adjustable butting-piece su-

perposed on the operating table or rest. Fig. 4 is a view in longitudinal vertical section of a bed on which the cutting knives are mounted on the jointing-wheel, and Fig. 5 is an enlarged view of the adjustable socket.

Let A represent a frame supporting a semi-cylindrical box, B, having a flange, C, extending around its open upper face.

Midway the length of the flange C, formed as above described, on each side of the semi-cylindrical box B, a journal-bearing, D, is placed to receive the shaft *a* of the jointing-wheel A', said shaft being retained in position in its journal-box by a cap designated by *a*⁴. One-half of the cutting-wheel A', at whatever part of its revolution it may be, is always inclosed in the stationary box or sheave B, that portion of the wheel extending above the said box B being covered and protected by a reversible hinged shield or hood, B', the several uses and functions of which will be hereinafter stated.

It is to be observed that the rear portion of the flange C, which spans the periphery of the box B at each end thereof, is provided with angled plates *b*, the same being in any suitable manner secured thereto, said plates *b* offering convenient points, whereby the hood or shield B' may be hinged, by means of ears *c* forming a part thereof, to the flange C of the box or sheath B. The vertical arms *d* of the angled plates *b* are perforated to admit a bolt, *a'*, as are also the ears *c* of the shield. The bolt *a'* passing through the said vertical arms and ears, as shown in the drawings, forms a pivotal adjustment for the shield well adapted to resist lateral motion, and yet one that may be easily severed by removing the bolt, thus allowing the shield to be reversed to present either face thereof to the front of the jointing-wheel. The forward and rear portions of the shield being counterparts of each other, and each end being provided with ears, as above described, both will be equally well adapted to assume a pivotal or hinged relation with respect to the rear end of the flange C.

I have described above one method of adjustably pivoting the shield of a jointing-machine to the semi-cylindrical box thereof; but I wish it to be distinctly understood that I do not limit myself to any peculiar form of pivoting device, as I may employ any one of numerous means

of accomplishing this end as occasion may suggest or exigency require.

An adjustable socket is secured to that portion of the flange C which spans the forward end of the box B. The object of the adjustable socket aforesaid is to lock the shield B' firmly on the flange C when in a closed position, and thus effectually prevent any lateral movement thereof and consequent alteration and variance in the sides of the shingle, and also to replace the shield after having opened it to adjust the knives in exactly the same position in which it was before being opened, so that the shingles may be uniform. The socket which I have here shown for the purpose indicated consists in an elongated plate, D', having two lateral slots, d', by means of which latter it is adapted to be secured by bolts d² to the flange C, and have lateral movement thereon. The said plate D' is further provided with two vertical arms, between which one of the ears e of the shield is received when closed into working adjustment on the wheel-casing. It is to be noted that this locking will be effected in either of the two positions which the shield may assume, inasmuch as one end thereof is a counterpart of the other. I would again declare that I do not limit myself to this particular form of socket, as it is evident that other devices entirely independent of the ears e of the shield may be attached thereto, and may have suitable sockets secured to flange C to receive them.

I have provided the rear end of flange C with a horn, H. This is designed to support the shield after it has been opened sufficiently far to allow the cutting or jointing wheel to be operated upon, thereby avoiding the strain on the pivotal connection between the shield and box were it allowed to fall over as far as it would without the interposition of some medium, as this horn H, to prevent it.

The front face of the shield B' is provided with two tables or rests, B², so called because the shingles are rested or supported on them when presented to the cutting or truing action of the knives on the jointing-wheel A'. The front face of the shield is provided with two tables, while the rear face thereof has only one.

It will be often a great advantage and saving of power to put two operators at the same machine, whereby one machine is made to perform twice the amount of work than if operated by one man unaided. In order to secure accommodation for both I provide one face of the shield with two rests, as seen in Fig. 2 of the drawings, and yet as the presence of the second table is a source of inconvenience when the machine is being operated by a single person, I have made the shield reversible and provided its reverse face with a single table. By reversing the shield by means hereinbefore described I am thus enabled to make the shield perform a twofold function. The said tables, B² are constructed in the usual manner, and are secured to the shield by means of depending flanges a². The inner end of the tables

which have a broader bearing-surface than their outer ends, are provided with two arms, b² c², upon which butting-pieces d² are superposed and have pivotal movement to gage the shingle parallel and square with the butts. The inner end of the butting-piece is adapted to be pivoted to the arm b² of the rest, while the outer arm, a³, thereof is provided with an elongated slot, through which a bolt, c³, passes, and by means of which the adjustment of the butting-piece d² is controlled.

The jointing-wheel A', as shown in the drawings, is provided with six knives. A greater or even less number may be used if desired, but six are found to admirably fill every requirement. These knives are set at such an angle to the periphery of the wheel that, as it revolves, a draw-stroke, cutting smoothly, rapidly, and easily, will be imparted to them. The rear face of the jointing-wheel A' is provided with knife-bearings, having a slotted plate, A³, and supporting lugs or webs B³, which strengthen the bearing. The plate A³ has its upper face planed true for the reception of the knife C³. The under face of plate E forming an inclined plane with the upper face or knife-seat, it will follow that the action of centrifugal force in tending to throw the knives off will in reality bring them into tighter connection with the bearing-plate E by forcing the head of the T-bolt, by which they are secured thereto, up the inclined plane of its under face; hence the knives will be held on the wheel by a force directly increasing with the rapidity of its revolution. The edges of the knives will, as observed, project through apertures E' in the jointing-wheel A'.

The operation of my improved jointing-machine is too apparent from the drawings to need further description than to say that the shingles are rested on the table, or rest, while their different sides are successively presented to the cutting-action of the knives of the wheel, which latter makes some hundred revolutions per minute.

Having thus described my invention with regard to its mechanical construction and its *modus operandi*, I will now briefly recite some of the numerous advantages it possesses over the forms of shingle-jointing machines now in use. An advantage of paramount importance lies in the pivotal and reversible adjustment of the shield. By means of the pivotal adjustment I am enabled to raise the shield for the purpose of changing and sharpening the knives, and when this is accomplished to replace it in exactly the same position that before obtained to it. By making the shield reversible, and providing one face of shield with two rests and the other with one, I am enabled to operate it with a force of one or two workmen, as desired. Other advantages will be found in the adjustable socket, by means whereof the shield is always returned to its proper position on the flange-face of the lower casing, in the butting pieces or gage pivotally secured

to table-rests, and in the manner of strengthening the knife-bearing on the wheel.

A shingle-jointing machine constructed in accordance with my invention is simple, being
5 composed of comparatively few parts, easily operated, and is capable of a wide range of adjustment.

It is evident that many slight changes in the construction and arrangement of parts of
10 my machine may be resorted to without departing from the spirit of my invention, and hence I would have it understood that I hold myself at liberty to make any such changes as fairly fall within the scope thereof.

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

1. In a shingle-jointing machine, a shield adapted to be reversed to present either its front
20 or rear face to the front face of the jointing-wheel, and having one face provided with one and the opposite face with two apertures through which shingles may be presented to the wheel, substantially as set forth.

25 2. In a shingle-jointing machine, the combination, with a jointing-wheel having cutters projecting from one side thereof, of a pivoted cowl adapted to cover the upper portion of the jointing-wheel, said pivoted cowl being pro-
30 vided on one side thereof with two shingle-feeding apertures inclined to each other, each of said apertures being furnished with a supporting-table, substantially as set forth.

35 3. In a shingle-jointing machine, a shield having its front and rear faces respectively

provided with one and two devices for supporting shingles while being cut in the jointing-wheel, substantially as set forth.

4. In a shingle-jointing machine, the combination, with an adjustable socket consisting in
40 an elongated plate having lateral slots, by means of which it is secured to the wheel-casing, and two vertical arms or lugs, of a shield provided with ears at each end, any one of said ears being adapted to be received between the
45 arms of the plate, and thus hold the shield from lateral movement, substantially as set forth.

5. In a shingle-jointing machine, a shield adapted to be reversed to present either its
50 front or rear face to the front face of the jointing-wheel, one face of the said shield being provided with two tables, and the opposite face thereof with one table, substantially as set forth.

6. In a shingle-jointing machine, the combination, with a jointing-wheel having cutters
55 projecting from one side thereof, of a pivoted cowl adapted to cover the upper portion of the jointing-wheel, shingle-feeding apertures (one or more) located in both sides of the pivoted cowl, and supporting-tables provided with ad-
60 justable end pieces located at the underside of said feeding apertures, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand.

WILLIS J. PERKINS.

Witnesses:

PHILIP MAURO,
GEO. D. SEYMOUR.